Memo to File No. 1

February 1, 2021

MA 5600 NA170000050

for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales, Inc. dba Fleetmind Solutions (Contractor)
and the
City of Austin

Background:

- This contract went through a re-write of Milestones and Bid Sheet during Amendment #5 (both attached) from 2019 to early 2020 to clarify what had been completed to date, and what was left remaining.
- The total vehicle count increased from 207 in the original proposal to 260 (including spares) and stayed within contract authority over 6 years.
- In September 2020 Mike Turner left ARR and Carla (CJ) Sisco has been designated as new Project Manager for the VFTU.
- ARR is almost complete with Project Implementation (Hardware Installations).
- There remains one more set of vehicles to install (Milestone #5) and the final payment of the holdback/retainage (Milestone #4).

While on-boarding CJ to the contract, it came to our attention that the Bid Sheet does not match the Milestone Payment Plan for a certain type of vehicle listed in the Milestones:

- Milestone #2
    - Qty. 7 x FleetLink OnBoard Computer H/W [Hardware] kits with Actuators and RFID - Solid Waste @ $9,557.87 ea.,
- Milestone #3
    - Qty. 22 x FleetLink Onboard Computer H/W kits with Actuators & RFID - Solid Waste @ $9,557.87 ea., and
- Milestone #5

    - Qty. 23 x FleetLink On Board Computer H/W kits with Actuators & RFID - Solid Waste - 10 REL [rear loader], 10 ASL [automatic side loader], 3 T. [Tractor] Trailers @ $9,557.87 ea.)
- There are a total of 52 vehicles priced at $9,557.87.

This unit per vehicle price comes from totaling Rows 45, 48, and 50 in Section II - Balance of Implementation in the Bid Sheet. However, if 1 vehicle requires 1 Quantity each, the price per vehicle totals $9,456.25. This is a difference of approx. $101 per vehicle.

When the City processed Amendment #5 in 2020, this discrepancy was not caught by ARR's Project Manager, ARR Contract Management, nor CTM Purchasing.

Vendor's Composite Rate in the Milestone Payment Plan:

When recently asked about this discrepancy, the Vendor Called it a "Composite Rate." They took the total amount of each extended cost amount ($497,009.25) and divided it by the number of this type of vehicle left to install in Milestones 2, 3, and 5 (Qty. 52) = $9,557.87. See math further below.

- The Vendor provided the information in this manner to meet the requirement of the Milestone Payment Plan for Project Implementation (structure of the RFP from 2016).
- It allowed the City flexibility to finalize Project Implementation regardless of final vehicle inventory or components required.
    - Some vehicles require 2 Actuators, while others require 1.
    - After Amendment #5 was finalized, ARR has decided to remove Tractor Trailers from Milestone #5, and replace them with 3 more rear loaders, which require more actuators and RFID's than the Tractor Trailers.
    - ARR will receive a total of at least 3 more Actuators and 3 more RFID's when Project Implementation is complete than what will be charged.

Amendment No. 7
to
Contract No. MA 5600 NA170000050
for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales, Inc. dba Fleetmind Solutions (Contractor)
and the
City of Austin

1.0 The above referenced contract is amended as follows:

Incorporate Clarification into Scope of Work

2.0 The total Contract authorization is recapped below:

Action	Action Amount	Total Contract Amount
Initial Term: 03/20/2017 – 03/19/2020	$2,773,044.00	$2,773,044.00
Amendment No. 1: Contract Modification; Reduce Initial Term 07/06/2017	$0.00	$2,773,044.00
Amendment No. 2: Administrative Increase Q190221B1624 05/01/2019	$25,200.00	$2,798,244.00
Amendment No. 3: Administrative Increase Q190418B1703 06/13/2019	$25,042.50	$2,823,286.50
Amendment No. 4: Administrative Increase 10/24/2019	$15,105.00	$2,838,391.50
Amendment No. 5: Attachments 5.1 Project Payment Milstone 5.2 Reconcile RFP 5600 PAX01229 Final 5.3 Warranty language final 5.4 Austin Fleet Survey 02/10/2020	$0.00	$2,838,391.50
Amendment No. 6: Option 1 – Extension Per the master contract, Project Payment Milestones #4 and #5 deliverable due dates may be pushed back due to the Pandemic to the end of Quarter 1 Calendar Year 2021. Milestone completion dates are subject to change based on the Pandemic and current associated needs. 03/20/2020 – 03/19/2021	$471,784.00	$3,310,175.50
Amendment No. 7: Clarification to Scope of Work	$0.00	$3,310,175.50

3.0 MBE/WBE goals were not established for this contract.

4.0 By signing this amendment the Contractor certifies that the Contractor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration (GSA) List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas or the City of Austin.

5.0 All other terms and conditions remain the same.

By the signature affixed below, this amendment is hereby incorporated into and made a part of the above referenced contract.

Authorized Representative:

Contractor Signature: _____

Printed Name: Susan Gill

Date: Feb 1/2021

Seon Systems Sales, Inc. dba Fleetmind Solutions
1751 Rue Richardson
Montreal
H3K-1G6 CA

Signature: Sai Xoomsai Purcell Digitally signed by Sai Xoomsai Purcell Date: 2021.03.01 12:55:01 -06'00'

City of Austin Purchasing Office

Printed Name: _____

Date: _____

City of Austin
124 W. 8th St., Ste. 310
Austin, TX 78701

CLARIFICATION

Austin Resource Recovery (ARR) no longer requires 3 T. Trailers (Tractor Trailers) as initially planned in Amendment #5, and has replaced them for another vehicle type, 3 more ASL (Automatic Side Loaders).

Milestone #5 Changes (highlighted in yellow):

- Column 1, Milestones
  - - 23 x FleetLink OnBoard Computer H/W kits with Actuators & RFID - Solid Waste -10 REL, 13 ASL, ~~3 T. Trailers~~
- Column 7, Pricing
  - - 23 x FleetLink On Board Computer H/W kits with Actuators & RFID - Solid Waste - 10 REL, 13 ASL, ~~3 T. Trailers~~ @ $9,557.87 ea.

ARR will still receive everything else currently listed in Milestone #5.

Amendment No. 6
to
Contract No. MA 5600 NA170000050
for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales, Ind. dba Fleetmind Solutions
and the
City of Austin

1.0 The City hereby exercises this extension option for the subject contract. This extension option will be effective March 20, 2020 to March 19, 2021. Two options will remain.

2.0 The total contract amount is increased by $471,784 by this extension period. The total contract authorization is recapped below:

Action	Action Amount	Total Contract Amount
Initial Term: 03/20/2017 – 03/19/2020	$2,773,044.00	$2,773,044.00
Amendment No. 1: Contract Modification; Reduce Initial Term 07/06/2017	$0.00	$2,773,044.00
Amendment No. 2: Administrative Increase Q190221B1624 05/01/2019	$25,200.00	$2,798,244.00
Amendment No. 3: Administrative Increase Q190418B1703 06/13/2019	$25,042.50	$2,823,286.50
Amendment No. 4: Administrative Increase 10/24/2019	$15,105.00	$2,838,391.50
Amendment No. 5: Attachments 5.1 Project Payment Milstone 5.2 Reconcile RFP 5600 PAX01229 Final 5.3 Warranty language final 5.4 Austin Fleet Survey 02/10/2020	$0.00	$2,838,391.50
Amendment No. 6: Option 1 – Extension Per the master contract, Project Payment Milestones #4 and #5 deliverable due dates may be pushed back due to the Pandemic to the end of Quarter 1 Calendar Year 2021. Milestone completion dates are subject to change based on the Pandemic and current associated needs. 03/20/2020 – 03/19/2021	$471,784.00	$3,310,175.50

3.0 By signing this Amendment the Contractor certifies that the vendor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the GSA List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 All other terms and conditions remain the same.

BY THE SIGNATURES affixed below, this amendment is hereby incorporated into and made a part of the above-referenced contract.

Sign/Date: May 20/2020.

Printed Name: Susan Gill
Authorized Representative
Seon Systmes Sales, Inc. dba Fleetmind Solutions
1751 Richardson, Suite 7200
Montreal, Quebec Canada H3K1G6 980488358
mdemers@fleetmind.com
888-639-1666 x 4411

Sign/Date: JAMES T HOWARD

Digitally signed by JAMES T HOWARD
DN: cn=JAMES T HOWARD, o=CITY OF AUSTIN, ou=FINANCE, email=JIM.HOWARD@AUSTINTEXAS.GOV, c=US
Date: 2020.05.20 15:49:46 -05'00'

Jim Howard
Procurement Manager
City of Austin Purchasing Office
124 West 8th Street
Austin, Texas 78701

jb

Amendment No. 5
MA 5600 NA170000050
for
Vehicle Fleet Technical Upgrade
between
Sean Systems Sales, Ind. dba Fleetmind Solutions
and the
City of Austin

1.0 The City hereby amends this Contract by adding/revising base contract language as indicated by attachments 1 through 4 (attached and incorporated herein by this reference) · In all other respects this contract will remain the same.

Term	Action Amount	Total Contract Amount
Initial Term: 03/20/2017-03/19/2020	$2,773,044.00	$2,773,044.00
Amendment No. 1: Contract Modification	$0.00	$2,773,044.00
Amendment No. 2: Administrative Increase Q-190221B1624	$25,200.00	$2,798,244.00
Amendment No. 3 06/05/19 Administrative increase Q-190418B1703	$25,042.00	$2,823,286.00
Amendment No. 4 12/31/19 Administrative Increase	$15,105.00	$2,838,391.00
Amendment No. 5 2/6/2020 Attachments: 1) City of Austin Deployment Project Payment Milestone 2) Reconciled RFP 5600 PAX0129 Final 3) Warranty language final 4) Austin Fleet Survey	$0	$2,838,391.00

2.0 MBE/WBE goals were not established for this contract.

3.0 By signing this Amendment the Contractor certifies that the Contractor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration (GSA) List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 With the exception of the changes listed above and attached (attachments 1 through 4), all other terms and conditions remain the same.

BY THE SIGNATURE(S) affixed below, this Amendment is hereby incorporated and made a part of the above referenced contract.

Signature: _____

Printed name: Susan Gill, Dir. of Finance

Date: 2/7/20

Signature: _____

Printed name: James T. Howard, IT Procurement

Date: 2/10/20

Seon Systems Sales, Inc. dba FleetMind Solutions 1751 Richardson, Suite 2.207
Montreal, Qc, H3K-1G6

Tab 10 – Ongoing Service Agreement and Warranties

The following warranty clarifications have been made to the original contract in the following sections of Tab 10. These changes are indicated by italics.

1. Warranty Start Date:

Paragraph 1: The appropriate verbiage as to the "start date" for the warranty period is as follows

When hardware/software is purchased from FleetMind specifically as "spare units", the start date for the warranty period will be the first day of the month following the installation and acceptance verification date of the hardware/software.

Paragraph 2: The appropriate verbiage as to the "start date" for the warranty period is as follows

When the hardware/software is purchased from FleetMind, the start date for the warranty period will be the first day of the month following the installation and acceptance verification date of the hardware/software. For the City of Austin proposed hardware/software solution, the following criteria will be used.

Paragraph 5:

Hardware warranties do not include labor, travel, or living expenses to replace warrantied parts.

2. Support and Maintenance/Extended Hardware Warranty Contract Start Date:

The three year warranty for the Motorola MC67 Handheld applies to new Panasonic FZM1 hardware. The three year warranty is a manufacturer warranty.

FleetMind will manage and coordinate directly with all manufacturers on all hardware warranties on behalf of the City of Austin.

LOB	FZG1	FZG1 RFID	DVR Trek	Actuator	RFID	Cameras
Supervisor	2	1	0	0	0	0
Carts	0	12	0	0	0	0
Dead Animal	3	0	0	0	0	0
Sweeper	0	0	21	21	0	21
Tractor	0	0	3	0	0	0
REL - Dual	0	0	21	42	21	0
REL - Single	0	0	4	4	4	0
ASL	0	0	19	19	19	0
Boom	0	0	3	0	0	0
Unknown	0	0	1	1	1	0
	5	13	72	87	45	21

Balance to do 90

Amendment No. 4
to
Contract No.NA170000050
for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales, Inc. dba Fleetmind Solutions
and the
City of Austin

1.0 The City hereby amends this Contract by adding an additional $ 15,105.00 to the contract for Travel line. Quote attached hereto.

Action	Action Amount	Total Contract Amount
Initial Term: 03/20/17-3/19/2022	$2,773,044.00	$2,773,044.00
Amendment No. 1 Contract Modification	$0.00	$2,773,044.00
Amendment No. 2: Administrative Increase (Q-A0221B1624)	$25,200.00	$2,798,244.00
Amendment No.3 06/05/19 Admistrative increase (Q-190418B1703)	$25,042.00	$2,823,286.00
Amedment No. 4 Administrative Increase	$15,105.00	$2,838,391.00

2.0 MBE/WBE goals do not apply to this contract.

3.0 By signing this Amendment the Contractor certifies that the vendor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the GSA List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 All other terms and conditions remain the same.

BY THE SIGNATURES affixed below, this amendment is hereby incorporated into and made a part of the above-referenced contract.

Sign/Date: SGill 2/10/2020.

Printed Name: Susan Gill, Director of Finance.
Authorized Representative

Sign/Date:

James Howard
Procurement Manager

City of Austin
Purchasing Office
124 W. 8th Street, Ste. 310
Austin, Texas 78701

Amendment No. 3
MA 5600 NA170000050
for
Vehicle Fleet Technical Upgrade
between
Sean Systems Sales, Ind. dba Fleetmind Solutions
and the
City of Austin

1.0 The City hereby amends this Contract by adding an additional $25,200 to the contract for keyboards and installation. Quote attached hereto.

Term	Action Amount	Total Contract Amount
Initial Term: 03/20/2017 - 03/19/2020	$2,773,044.00	$2,773,044.00
Amendment No. 1: Contract Modification	$0.00	$2,773,044.00
Amendment No. 2: Administrative Increase (Q-A0221B1624)	$25,200.00	$2,798,244.00
Amendment No. 3 06/05/19 Administrative increase (Q-190418B1703)	$25,042.00	$2,823,286.00

2.0 MBE/WBE goals were not established for this contract.

3.0 By signing this Amendment the Contractor certifies that the Contractor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration (GSA) List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 All other terms and conditions remain the same.

BY THE SIGNATURE(S) affixed below, this Amendment is hereby incorporated and made a part of the above referenced contract.

Signature: _____

Printed name: _____

Date: 6/12/19

Signature: _____

Printed name: James T. Howard, IT Procurement

Date: 6/13/19

Seons Systems Sales, Inc. dba Fleetrnind Solutions 1751 Richardson, Suite 7200
Montreal, H3K-1G6

Amendment No. 2
of
MA 5600 NA170000050
for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales, Ind. dba Fleetmind Solutions
and the
City of Austin

1.0 The City hereby amends this Contract by adding an additional $25,200 to the contract for keyboards and installation. Quote attached hereto.

Term	Action Amount	Total Contract Amount
Initial Term: 03/20/2017 – 03/19/2020	$2,773,044.00	$2,773,044.00
Amendment No. 1: Contract Modification	$0.00	$2,773,044.00
Amendment No. 2: Administrative Increase	$25,200.00	$2,798,244.00

2.0 MBE/WBE goals were not established for this contract.

3.0 By signing this Amendment the Contractor certifies that the Contractor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration (GSA) List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

4.0 All other terms and conditions remain the same.

BY THE SIGNATURES affixed below, this Amendment is hereby incorporated into and made a part of the above-referenced contract.

Signature: _____

Date: April 24, 2019

Printed Name: Kenneth Trueman, Director of Product Marketing
Authorized Representative

Seons Systems Sales, Inc. dba Fleetmind Solutions
1751 Richardson, Suite 7200
Montreal, H3K-1G6

Signature: _____

Signature: _____

Date: 5/1/19

Elisa Folco
Procurement Specialist IV

Jim Howard
Procurement Manager

City of Austin
Purchasing Office
124 W. 8th Street, Suite 310
Austin, TX 78701

Amendment No. 1
to
Contract No. NA170000050
for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales, Inc. dba Fleetmind Solutions
and the
City of Austin, Texas

1.0 The City hereby modifies the above referenced contract, Section 1.3 - Term of Contract as follow:

The Contract will be in effect for the initial term of thirty-six (36) months in an amount not to exceed $2,773,044, with three 12-month extension options in an amount not to exceed $471,784 for the first extension option, $480,645 for the second extension option, and $489,507 for the third extension option, for a total contract amount not to exceed $4,214,980.

2.0 The total Contract amount is recapped below:

Term	Contract Amount for the Item	Total Contract Amount
Basic Term: 03/20/2017 – 03/19/2022	$2,773,044.00	$2,773,044.00
Amendment No. 1: Contract Modification	$0.00	$2,773,044.00

3.0 MBE/WBE goals were not established for this contract.

4.0 By signing this Amendment the Contractor certifies that the Contractor and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration (GSA) List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

5.0 ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME.

BY THE SIGNATURE(S) affixed below, this Amendment is hereby incorporated and made a part of the above referenced contract.

Signature & Date:

July 6, 2017

Printed Name: Martin Demers
Authorized Representative

Seon Systems Sales, Inc.
1751 Richardson, Suite 7200
Montreal, H3K-1G6

Signature & Date:

Sai Purcell, Senior Buyer Specialist
City of Austin Purchasing Office

Amendment No. 1
of
Contract No. NA170000050
for
Vehicle Fleet Technical Upgrade
between
Seon Systems Sales Inc.
Dba Fleetmind Solutions
and the
The City of Austin

1.0 The Contract is hereby amended as follows: Change name to the Contractor as requested by the Contractor:

	From	To
Vendor Name	Fleetmind Solutions	**Seon Systmes Sales Inc.** **Dba Fleetmind Solutions**
Vendor Code (for City use only)	V00000913814	V00000944200
Vendor Federal Tax ID (FEIN)	[redacted]	[redacted]

2.0 All other terms and conditions of the Contract remain unchanged and in full force and effect.

BY THE SIGNATURE affixed below, this Amendment No. 1 is hereby incorporated into and made a part of the Contract.

Lineil Goodin-Brown

Lineil Goodin-Brown
Contract Management Supervisor II
City of Austin, Purchasing Office

3-31-17
Date

City of Austin
Purchasing Office, Financial Services Department
P.O. Box 1088, Austin, TX 78767

The Austin City Council approved the execution of a contract with your company for accordance with the referenced solicitation.

Responsible Department:	Austin Resource Recovery
Department Contact Person:	Mike Turner
Department Contact Email:	Mike.Turner2@austintexas.gov
Department Contact Telephone:	512-974-96739
Project Name:	Vehicle Fleet Technical Upgrade
Contractor Name:	Seon Systems Sales, Inc. dba. Fleetmind Solutions
Contract Period:	60 months
Dollar Amount	$2,773,044.00
Extension Options:	3 12-month options/$471,784
Agenda Item Number:	21
Council Approval Date:	03/02/2017
Contract No.	NA170000050

Thank you for your interest in doing business with the City of Austin. If you have any questions regarding this contract, please contact the person referenced under Department Contact Person.

Sincerely,

Sai Xoomsai Purcell
Senior Buyer Specialist
City of Austin
Purchasing Office

CONTRACT BETWEEN THE CITY OF AUSTIN ("City")
AND
Seon Systems Sales Inc. DBA Fleetmind Solutions
(formerly known as "Fleetmind Solutions, Inc.") ("Contractor")
for
Vehicle Fleet Technical Upgrade
NA170000050

The City accepts the Contractor's Offer (as referenced in Section 1.1.3 below) for the above requirement and enters into the following Contract.

This Contract is between Seon Systems Sales Inc. dba. Fleetmind Solutions (formerly known as "Fleetmind Solutions, Inc.") having offices at Montreal, QC, Canada and the City, a home-rule municipality incorporated by the State of Texas, and is effective as of the date executed by the City ("Effective Date").

Capitalized terms used but not defined herein have the meanings given them in Solicitation Number PAX0129.

1.1 **This Contract is composed of the following documents:**

1.1.1 This Contract

1.1.2 The City's Solicitation, Request for Proposal (RFP), PAX0129 including all documents incorporated by reference

1.1.3 Seon Systems Sales Inc. DBA Fleetmind Solutions (formerly known as "Fleetmind Solutions, Inc.")Offer's dated 04/22/2016, including subsequent clarifications

1.2 **Order of Precedence.** Any inconsistency or conflict in the Contract documents shall be resolved by giving precedence in the following order:

1.2.1 This Contract

1.2.2 The City's Solicitation as referenced in Section 1.1.2, including all documents incorporated by reference

1.2.3 The Contractor's Offer as referenced in Section 1.1.3, including subsequent clarifications.

1.3 **Term of Contract.** The Contract will be in effect for an initial term of sixty (60) months in an amount not to $2,773,044, with three 12-month extension option in an amount not to exceed $471,784 per extension option, for a total contract amount not to exceed $4,214,980. See the Term of Contract provision in Section 0400 for additional Contract requirements.

This Contract (including any Exhibits) constitutes the entire agreement of the parties regarding the subject matter of this Contract and supersedes all prior and contemporaneous agreements and understandings, whether written or oral, relating to such subject matter. This Contract may be altered, amended, or modified only by a written instrument signed by the duly authorized representatives of both parties.

In witness whereof, the parties have caused a duly authorized representative to execute this Contract on the date set forth below.

Seon Systems Sales Inc.
dba. Fleetmind Solutions

Martin Demers Eng. MBA

Printed Name of Authorized Person

Signature

Business Unit Vice-President

Title:

March 16, 2017

Date:

CITY OF AUSTIN

Sai Xoomsai Purcell

Printed Name of Authorized Person

Signature

Senior Buyer Specialist

Title:

3/16/2017

Date:

CITY OF AUSTIN, TEXAS

Purchasing Office

REQUEST FOR PROPOSAL (RFP)

OFFER SHEET

SOLICITATION NO: PAX0129

DATE ISSUED: 02/22/2016

REQUISITION NO.: 13051300373

COMMODITY CODE: 2204336,91829,9203130,96246

FOR CONTRACTUAL AND TECHNICAL ISSUES CONTACT THE FOLLOWING AUTHORIZED CONTACT PERSON:

Sai Xoomsai Purcell
Senior Buyer Specialist
Phone: (512) 974-3058
E-Mail: Sai.Xoomsai@austintexas.gov

COMMODITY/SERVICE DESCRIPTION: Vehicle Fleet Technical Upgrade

PRE-PROPOSAL CONFERENCE AND SITE-VISIT TIME AND DATE: 03/02/2016, 1:00 pm, local time
LOCATION: Kenneth Gamer Service Center, 4108 Todd Lane, Austin, TX (ARR SSC Auditorium)

PROPOSAL DUE PRIOR TO: 04/19/2016, 2:00 pm, local time
COMPLIANCE PLAN DUE PRIOR TO: 04/19/2016, 2:00 pm, local time

LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET
RM 308, AUSTIN, TEXAS 78701

LIVE SOLICITATION CLOSING ONLINE: For RFP's, only the names of respondents will be read aloud
For information on how to attend the Solicitation Closing online, please select this link:
http://www.austintexas.gov/department/bid-opening-webinars

When submitting a sealed Offer and Compliance Plan, use the proper address for the type of service desired, as shown below:

Address for US Mail (Only)	**Address for Fedex, UPS, Hand Delivery or Courier Service**
City of Austin	City of Austin, Municipal Building
Purchasing Office-Response Enclosed for Solicitation # PAX0129	Purchasing Office-Response Enclosed for Solicitation # PAX0129
P.O. Box 1088	124 W 8th Street, Rm 310
Austin, Texas 78767-8845	Austin, Texas 78701
	Reception Phone: (512) 974-2500

NOTE: Offers must be received and time stamped in the Purchasing Office prior to the Due Date and Time. It is the responsibility of the Offeror to ensure that their Offer arrives at the receptionist's desk in the Purchasing Office prior to the time and date indicated. Arrival at the City's mailroom, mail terminal, or post office box will not constitute the Offer arriving on time. See Section 0200 for additional solicitation instructions.

All Offers (including Compliance Plans) that are not submitted in a sealed envelope or container will not be considered.

SUBMIT 1 ORIGINAL AND 9 ELECTRONIC COPIES OF YOUR RESPONSE
The electronic version must be on CD or flash drive in PDF format

*****SIGNATURE FOR SUBMITTAL REQUIRED ON PAGE 3 OF THIS DOCUMENT*****

This solicitation is comprised of the following required sections. Please ensure to carefully read each section including those incorporated by reference. By signing this document, you are agreeing to all the items contained herein and will be bound to all terms.

SECTION NO.	TITLE	PAGES
0100	STANDARD PURCHASE DEFINITIONS	*
0200	STANDARD SOLICITATION INSTRUCTIONS	*
0300	STANDARD PURCHASE TERMS AND CONDITIONS	*
0400	SUPPLEMENTAL PURCHASE PROVISIONS	7
0500	SCOPE OF WORK	29
0600	PROPOSAL PREPARATION INSTRUCTIONS & EVALUATION FACTORS	8
0605	LOCAL BUSINESS PRESENCE IDENTIFICATION FORM – Complete and return	2
0700	REFERENCE SHEET – Complete and return if required	2
0800	NON-DISCRIMINATION CERTIFICATION	*
0805	NON-SUSPENSION OR DEBARMENT CERTIFICATION	*
0810	NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING CERTIFICATION	*
0835	NONRESIDENT BIDDER PROVISIONS – Complete and return	1
0900	COMPLIANCE PLAN PACKET – Must be completed and returned	21
	Availability List	2
Attachment A	Price Proposal	3
Attachment B	Vehicle and Equipment List	9
Attachment C	Oracle Customer Care and Billing System Description	2
Attachment D	Driver's Daily Report	1
Attachment E	CTM Technical Reference Model	6
Attachment F	CTM Technical Standards	11

*** Documents are hereby incorporated into this Solicitation by reference, with the same force and effect as if they were incorporated in full text. The full text versions of the * Sections are available on the Internet at the following online address:**

http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS

If you do not have access to the Internet, you may obtain a copy of these Sections from the City of Austin Purchasing Office located in the Municipal Building, 124 West 8th Street, Room #308 Austin, Texas 78701; phone (512) 974-2500. Please have the Solicitation number available so that the staff can select the proper documents. These documents can be mailed, expressed mailed, or faxed to you.

INTERESTED PARTIES DISCLOSURE

In addition, Section 2252.908 of the Texas Government Code requires the successful offeror to complete a Form 1295 "Certificate of Interested Parties" that is signed and notarized for a contract award requiring council authorization. The "Certificate of Interested Parties" form must be completed on the Texas Ethics Commission website, printed, signed and submitted to the City by the authorized

agent of the Business Entity with acknowledgment that disclosure is made under oath and under penalty of perjury prior to final contract execution.

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

The undersigned, by his/her signature, represents that he/she is submitting a binding offer and is authorized to bind the respondent to fully comply with the solicitation document contained herein. The Respondent, by submitting and signing below, acknowledges that he/she has received and read the entire document packet sections defined above including all documents incorporated by reference, and agrees to be bound by the terms therein.

Company Name:	FleetMind Solutions Inc.
Company Address:	1751 Richardson, Suite 7200
City, State, Zip:	Montreal, Quebec Canada H3K1G6
Federal Tax ID No.:	[redacted]
Printed Name of Officer or Authorized Representative:	Martin Demers
Title:	CEO, Managing Partner
Signature of Officer or Authorized Representative:	
Date:	April 22, 2016
Email Address:	mdemers@fleetmind.com
Phone Number:	888-639-1666 ext. 4411
Cell Number:	514-583-4411

*** Completed Bid Sheet, section 0600 must be submitted with this Offer Sheet to be considered for award**

CITY OF AUSTIN
PURCHASING OFFICE
STANDARD PURCHASE TERMS AND CONDITIONS

By submitting an Offer in response to the Solicitation, the Contractor agrees that the Contract shall be governed by the following terms and conditions. Unless otherwise specified in the Contract, Sections 3, 4, 5, 6, 7, 8, 20, 21, and 36 shall apply only to a Solicitation to purchase Goods, and Sections 9, 10, 11 and 22 shall apply only to a Solicitation to purchase Services to be performed principally at the City's premises or on public rights-of-way.

1. **CONTRACTOR'S OBLIGATIONS**. The Contractor shall fully and timely provide all Deliverables described in the Solicitation and in the Contractor's Offer in strict accordance with the terms, covenants, and conditions of the Contract and all applicable Federal, State, and local laws, rules, and regulations.

2. **EFFECTIVE DATE/TERM**. Unless otherwise specified in the Solicitation, this Contract shall be effective as of the date the contract is signed by the City, and shall continue in effect until all obligations are performed in accordance with the Contract.

3. **CONTRACTOR TO PACKAGE DELIVERABLES**: The Contractor will package Deliverables in accordance with good commercial practice and shall include a packing list showing the description of each item, the quantity and unit price Unless otherwise provided in the Specifications or Supplemental Terms and Conditions, each shipping container shall be clearly and permanently marked as follows: (a) The Contractor's name and address, (b) the City's name, address and purchase order or purchase release number and the price agreement number if applicable, (c) Container number and total number of containers, e.g. box 1 of 4 boxes, and (d) the number of the container bearing the packing list. The Contractor shall bear cost of packaging. Deliverables shall be suitably packed to secure lowest transportation costs and to conform with requirements of common carriers and any applicable specifications. The City's count or weight shall be final and conclusive on shipments not accompanied by packing lists.

4. **SHIPMENT UNDER RESERVATION PROHIBITED**: The Contractor is not authorized to ship the Deliverables under reservation and no tender of a bill of lading will operate as a tender of Deliverables.

5. **TITLE & RISK OF LOSS**: Title to and risk of loss of the Deliverables shall pass to the City only when the City actually receives and accepts the Deliverables.

6. **DELIVERY TERMS AND TRANSPORTATION CHARGES**: Deliverables shall be shipped F.O.B. point of delivery unless otherwise specified in the Supplemental Terms and Conditions. Unless otherwise stated in the Offer, the Contractor's price shall be deemed to include all delivery and transportation charges. The City shall have the right to designate what method of transportation shall be used to ship the Deliverables. The place of delivery shall be that set forth in the block of the purchase order or purchase release entitled "Receiving Agency".

7. **RIGHT OF INSPECTION AND REJECTION**: The City expressly reserves all rights under law, including, but not limited to the Uniform Commercial Code, to inspect the Deliverables at delivery before accepting them, and to reject defective or non-conforming Deliverables. If the City has the right to inspect the Contractor's, or the Contractor's Subcontractor's, facilities, or the Deliverables at the Contractor's, or the Contractor's Subcontractor's, premises, the Contractor shall furnish, or cause to be furnished, without additional charge, all reasonable facilities and assistance to the City to facilitate such inspection.

8. **NO REPLACEMENT OF DEFECTIVE TENDER**: Every tender or delivery of Deliverables must fully comply with all provisions of the Contract as to time of delivery, quality, and quantity. Any non-complying tender shall constitute a breach and the Contractor shall not have the right to substitute a conforming tender; provided, where the time for performance has not yet expired, the Contractor may notify the City of the intention to cure and may then make a conforming tender within the time allotted in the contract.

9. **PLACE AND CONDITION OF WORK**: The City shall provide the Contractor access to the sites where the Contractor is to perform the services as required in order for the Contractor to perform the services in a timely and efficient manner, in accordance with and subject to the applicable security laws, rules, and regulations. The Contractor acknowledges that it has satisfied itself as to the nature of the City's service requirements and specifications, the location and essential characteristics of the work sites, the quality and quantity of materials, equipment, labor and facilities necessary to perform the services, and any other condition or state of fact which could in any way affect performance of the Contractor's obligations under the contract. The Contractor hereby releases and holds the City

harmless from and against any liability or claim for damages of any kind or nature if the actual site or service conditions differ from expected conditions.

10. **WORKFORCE**

A. The Contractor shall employ only orderly and competent workers, skilled in the performance of the services which they will perform under the Contract.

B. The Contractor, its employees, subcontractors, and subcontractor's employees may not while engaged in participating or responding to a solicitation or while in the course and scope of delivering goods or services under a City of Austin contract or on the City's property .

i. use or possess a firearm, including a concealed handgun that is licensed under state law, except as required by the terms of the contract; or
ii. use or possess alcoholic or other intoxicating beverages, illegal drugs or controlled substances, nor may such workers be intoxicated, or under the influence of alcohol or drugs, on the job.

C. If the City or the City's representative notifies the Contractor that any worker is incompetent, disorderly or disobedient, has knowingly or repeatedly violated safety regulations, has possessed any firearms, or has possessed or was under the influence of alcohol or drugs on the job, the Contractor shall immediately remove such worker from Contract services, and may not employ such worker again on Contract services without the City's prior written consent.

11. **COMPLIANCE WITH HEALTH, SAFETY, AND ENVIRONMENTAL REGULATIONS**: The Contractor, its Subcontractors, and their respective employees, shall comply fully with all applicable federal, state, and local health, safety, and environmental laws, ordinances, rules and regulations in the performance of the services, including but not limited to those promulgated by the City and by the Occupational Safety and Health Administration (OSHA). In case of conflict, the most stringent safety requirement shall govern. The Contractor shall indemnify and hold the City harmless from and against all claims, demands, suits, actions, judgments, fines, penalties and liability of every kind arising from the breach of the Contractor's obligations under this paragraph.

12. **INVOICES**:

A. The Contractor shall submit separate invoices in duplicate on each purchase order or purchase release after each delivery. If partial shipments or deliveries are authorized by the City, a separate invoice must be sent for each shipment or delivery made.

B. **Proper Invoices must include a unique invoice number, the purchase order or delivery order number and the master agreement number if applicable, the Department's Name, and the name of the point of contact for the Department**. Invoices shall be itemized and transportation charges, if any, shall be listed separately. A copy of the bill of lading and the freight waybill, when applicable, shall be attached to the invoice. The Contractor's name and, if applicable, the tax identification number on the invoice must exactly match the information in the Vendor's registration with the City. Unless otherwise instructed in writing, the City may rely on the remittance address specified on the Contractor's invoice.

C. Invoices for labor shall include a copy of all time-sheets with trade labor rate and Deliverables order number clearly identified. Invoices shall also include a tabulation of work-hours at the appropriate rates and grouped by work order number. Time billed for labor shall be limited to hours actually worked at the work site.

D. Unless otherwise expressly authorized in the Contract, the Contractor shall pass through all Subcontract and other authorized expenses at actual cost without markup.

E. Federal excise taxes, State taxes, or City sales taxes must not be included in the invoiced amount. The City will furnish a tax exemption certificate upon request.

13. **PAYMENT**:

A. All proper invoices received by the City will be paid within thirty (30) calendar days of the City's receipt of the Deliverables or of the invoice, whichever is later.

B. **If payment is not timely made, (per paragraph A), interest shall accrue on the unpaid balance at the lesser of the rate specified in Texas Government Code Section 2251.025 or the maximum lawful rate; except, if payment is not timely made for a reason for which the City may withhold payment hereunder, interest shall not accrue until ten (10) calendar days after the grounds for withholding payment have been resolved.**

C. If partial shipments or deliveries are authorized by the City, the Contractor will be paid for the partial shipment or delivery, as stated above, provided that the invoice matches the shipment or delivery.

D. The City may withhold or set off the entire payment or part of any payment otherwise due the Contractor to such extent as may be necessary on account of:

i. delivery of defective or non-conforming Deliverables by the Contractor;
ii. third party claims, which are not covered by the insurance which the Contractor is required to provide, are filed or reasonable evidence indicating probable filing of such claims;
iii. failure of the Contractor to pay Subcontractors, or for labor, materials or equipment;
iv. damage to the property of the City or the City's agents, employees or contractors, which is not covered by insurance required to be provided by the Contractor;
v. reasonable evidence that the Contractor's obligations will not be completed within the time specified in the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
vi. failure of the Contractor to submit proper invoices with all required attachments and supporting documentation; or
vii. failure of the Contractor to comply with any material provision of the Contract Documents.

E. Notice is hereby given of Article VIII, Section 1 of the Austin City Charter which prohibits the payment of any money to any person, firm or corporation who is in arrears to the City for taxes, and of §2-8-3 of the Austin City Code concerning the right of the City to offset indebtedness owed the City.

F. Payment will be made by check unless the parties mutually agree to payment by credit card or electronic transfer of funds. The Contractor agrees that there shall be no additional charges, surcharges, or penalties to the City for payments made by credit card or electronic funds transfer.

G. The awarding or continuation of this contract is dependent upon the availability of funding. The City's payment obligations are payable only and solely from funds Appropriated and available for this contract. The absence of Appropriated or other lawfully available funds shall render the Contract null and void to the extent funds are not Appropriated or available and any Deliverables delivered but unpaid shall be returned to the Contractor. The City shall provide the Contractor written notice of the failure of the City to make an adequate Appropriation for any fiscal year to pay the amounts due under the Contract, or the reduction of any Appropriation to an amount insufficient to permit the City to pay its obligations under the Contract. In the event of non or inadequate appropriation of funds, there will be no penalty nor removal fees charged to the City.

14. **TRAVEL EXPENSES**: All travel, lodging and per diem expenses in connection with the Contract for which reimbursement may be claimed by the Contractor under the terms of the Solicitation will be reviewed against the City's Travel Policy as published and maintained by the City's Controller's Office and the Current United States General Services Administration Domestic Per Diem Rates (the "Rates") as published and maintained on the Internet at:

http://www.gsa.gov/portal/category/21287

No amounts in excess of the Travel Policy or Rates shall be paid. All invoices must be accompanied by copies of detailed itemized receipts (e.g. hotel bills, airline tickets). No reimbursement will be made for expenses not actually incurred. Airline fares in excess of coach or economy will not be reimbursed. Mileage charges may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulations.

15. **FINAL PAYMENT AND CLOSE-OUT**:

A. If an MBE/WBE Program Compliance Plan is required by the Solicitation, and the Contractor has identified Subcontractors, the Contractor is required to submit a Contract Close-Out MBE/WBE Compliance Report to the Project manager or Contract manager no later than the 15th calendar day after completion of all work under the contract. Final payment, retainage, or both may be withheld if the Contractor is not in compliance with the requirements of the Compliance Plan as accepted by the City.

B. The making and acceptance of final payment will constitute:

i. a waiver of all claims by the City against the Contractor, except claims (1) which have been previously asserted in writing and not yet settled, (2) arising from defective work appearing after final inspection, (3) arising from failure of the Contractor to comply with the Contract or the terms of any warranty specified herein, (4) arising from the Contractor's continuing obligations under the Contract, including but not limited to indemnity and warranty obligations, or (5) arising under the City's right to audit; and

ii. a waiver of all claims by the Contractor against the City other than those previously asserted in writing and not yet settled.

16. **SPECIAL TOOLS & TEST EQUIPMENT**: If the price stated on the Offer includes the cost of any special tooling or special test equipment fabricated or required by the Contractor for the purpose of filling this order, such special tooling equipment and any process sheets related thereto shall become the property of the City and shall be identified by the Contractor as such.

17. **AUDITS and RECORDS**:

A. The Contractor agrees that the representatives of the Office of the City Auditor or other authorized representatives of the City shall have access to, and the right to audit, examine, or reproduce, any and all records of the Contractor related to the performance under this Contract. The Contractor shall retain all such records for a period of three (3) years after final payment on this Contract or until all audit and litigation matters that the City has brought to the attention of the Contractor are resolved, whichever is longer. The Contractor agrees to refund to the City any overpayments disclosed by any such audit.

B. Records Retention:

i. Contractor is subject to City Code chapter 2-11 (Records Management), and as it may subsequently be amended. For purposes of this subsection, a Record means all books, accounts, reports, files, and other data recorded or created by a Contractor in fulfillment of the Contract whether in digital or physical format, except a record specifically relating to the Contractor's internal administration.

ii. All Records are the property of the City. The Contractor may not dispose of or destroy a Record without City authorization and shall deliver the Records, in all requested formats and media, along with all finding aids and metadata, to the City at no cost when requested by the City

iii. The Contractor shall retain all Records for a period of three (3) years after final payment on this Contract or until all audit and litigation matters that the City has brought to the attention of the Contractor are resolved, whichever is longer.

C. The Contractor shall include sections A and B above in all subcontractor agreements entered into in connection with this Contract.

18. **SUBCONTRACTORS**:

A. If the Contractor identified Subcontractors in an MBE/WBE Program Compliance Plan or a No Goals Utilization Plan the Contractor shall comply with the provisions of Chapters 2-9A, 2-9B, 2-9C, and 2-9D, as applicable, of the Austin City Code and the terms of the Compliance Plan or Utilization Plan as approved by the City (the "Plan"). The Contractor shall not initially employ any Subcontractor except as provided in the Contractor's Plan. The Contractor shall not substitute any Subcontractor identified in the Plan, unless the substitute has been accepted by the City in writing in accordance with the provisions of Chapters 2-9A, 2-9B, 2-9C and 2-9D, as applicable. No acceptance by the City of any Subcontractor shall constitute a waiver of any rights or remedies of the City with respect to defective Deliverables provided by a Subcontractor. If a Plan has been approved, the Contractor is additionally required to submit a monthly Subcontract Awards and Expenditures Report to the Contract Manager and the Purchasing Office Contract Compliance Manager no later than the tenth calendar day of each month.

B. Work performed for the Contractor by a Subcontractor shall be pursuant to a written contract between the Contractor and Subcontractor. The terms of the subcontract may not conflict with the terms of the Contract, and shall contain provisions that:

i. require that all Deliverables to be provided by the Subcontractor be provided in strict accordance with the provisions, specifications and terms of the Contract;
ii. prohibit the Subcontractor from further subcontracting any portion of the Contract without the prior written consent of the City and the Contractor. The City may require, as a condition to such further subcontracting, that the Subcontractor post a payment bond in form, substance and amount acceptable to the City;
iii. require Subcontractors to submit all invoices and applications for payments, including any claims for additional payments, damages or otherwise, to the Contractor in sufficient time to enable the Contractor to include same with its invoice or application for payment to the City in accordance with the terms of the Contract;
iv. require that all Subcontractors obtain and maintain, throughout the term of their contract, insurance in the type and amounts specified for the Contractor, with the City being a named insured as its interest shall appear; and
v. require that the Subcontractor indemnify and hold the City harmless to the same extent as the Contractor is required to indemnify the City.

C. The Contractor shall be fully responsible to the City for all acts and omissions of the Subcontractors just as the Contractor is responsible for the Contractor's own acts and omissions. Nothing in the Contract shall create for the benefit of any such Subcontractor any contractual relationship between the City and any such Subcontractor, nor shall it create any obligation on the part of the City to pay or to see to the payment of any moneys due any such Subcontractor except as may otherwise be required by law.

D. The Contractor shall pay each Subcontractor its appropriate share of payments made to the Contractor not later than ten (10) calendar days after receipt of payment from the City.

19. **WARRANTY-PRICE**:

A. The Contractor warrants the prices quoted in the Offer are no higher than the Contractor's current prices on orders by others for like Deliverables under similar terms of purchase.

B. The Contractor certifies that the prices in the Offer have been arrived at independently without consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such fees with any other firm or with any competitor.

C. In addition to any other remedy available, the City may deduct from any amounts owed to the Contractor, or otherwise recover, any amounts paid for items in excess of the Contractor's current prices on orders by others for like Deliverables under similar terms of purchase.

20. **WARRANTY – TITLE**: The Contractor warrants that it has good and indefeasible title to all Deliverables furnished under the Contract, and that the Deliverables are free and clear of all liens, claims, security interests and encumbrances. The Contractor shall indemnify and hold the City harmless from and against all adverse title claims to the Deliverables.

21. **WARRANTY – DELIVERABLES**: The Contractor warrants and represents that all Deliverables sold the City under the Contract shall be free from defects in design, workmanship or manufacture, and conform in all material respects to the specifications, drawings, and descriptions in the Solicitation, to any samples furnished by the Contractor, to the terms, covenants and conditions of the Contract, and to all applicable State, Federal or local laws, rules, and regulations, and industry codes and standards. Unless otherwise stated in the Solicitation, the Deliverables shall be new or recycled merchandise, and not used or reconditioned.

    A. Recycled Deliverables shall be clearly identified as such.

    B. The Contractor may not limit, exclude or disclaim the foregoing warranty or any warranty implied by law; and any attempt to do so shall be without force or effect.

    C. Unless otherwise specified in the Contract, the warranty period shall be at least one year from the date of acceptance of the Deliverables or from the date of acceptance of any replacement Deliverables. If during the warranty period, one or more of the above warranties are breached, the Contractor shall promptly upon receipt of demand either repair the non-conforming Deliverables, or replace the non-conforming Deliverables with fully conforming Deliverables, at the City's option and at no additional cost to the City. All costs incidental to such repair or replacement, including but not limited to, any packaging and shipping costs, shall be borne exclusively by the Contractor. The City shall endeavor to give the Contractor written notice of the breach of warranty within thirty (30) calendar days of discovery of the breach of warranty, but failure to give timely notice shall not impair the City's rights under this section.

    D. If the Contractor is unable or unwilling to repair or replace defective or non-conforming Deliverables as required by the City, then in addition to any other available remedy, the City may reduce the quantity of Deliverables it may be required to purchase under the Contract from the Contractor, and purchase conforming Deliverables from other sources. In such event, the Contractor shall pay to the City upon demand the increased cost, if any, incurred by the City to procure such Deliverables from another source.

    E. If the Contractor is not the manufacturer, and the Deliverables are covered by a separate manufacturer's warranty, the Contractor shall transfer and assign such manufacturer's warranty to the City. If for any reason the manufacturer's warranty cannot be fully transferred to the City, the Contractor shall assist and cooperate with the City to the fullest extent to enforce such manufacturer's warranty for the benefit of the City.

22. **WARRANTY – SERVICES**: The Contractor warrants and represents that all services to be provided the City under the Contract will be fully and timely performed in a good and workmanlike manner in accordance with generally accepted industry standards and practices, the terms, conditions, and covenants of the Contract, and all applicable Federal, State and local laws, rules or regulations.

    A. The Contractor may not limit, exclude or disclaim the foregoing warranty or any warranty implied by law, and any attempt to do so shall be without force or effect.

    B. Unless otherwise specified in the Contract, the warranty period shall be <u>at least</u> one year from the Acceptance Date. If during the warranty period, one or more of the above warranties are breached, the Contractor shall promptly upon receipt of demand perform the services again in accordance with above standard at no additional cost to the City. All costs incidental to such additional performance shall be borne by the Contractor. The City shall endeavor to give the Contractor written notice of the breach of warranty within thirty (30) calendar days of discovery of the breach warranty, but failure to give timely notice shall not impair the City's rights under this section.

    C. If the Contractor is unable or unwilling to perform its services in accordance with the above standard as required by the City, then in addition to any other available remedy, the City may reduce the amount of services it may be

required to purchase under the Contract from the Contractor, and purchase conforming services from other sources. In such event, the Contractor shall pay to the City upon demand the increased cost, if any, incurred by the City to procure such services from another source.

23. **ACCEPTANCE OF INCOMPLETE OR NON-CONFORMING DELIVERABLES**: If, instead of requiring immediate correction or removal and replacement of defective or non-conforming Deliverables, the City prefers to accept it, the City may do so. The Contractor shall pay all claims, costs, losses and damages attributable to the City's evaluation of and determination to accept such defective or non-conforming Deliverables. If any such acceptance occurs prior to final payment, the City may deduct such amounts as are necessary to compensate the City for the diminished value of the defective or non-conforming Deliverables. If the acceptance occurs after final payment, such amount will be refunded to the City by the Contractor.

24. **RIGHT TO ASSURANCE**: Whenever one party to the Contract in good faith has reason to question the other party's intent to perform, demand may be made to the other party for written assurance of the intent to perform. In the event that no assurance is given within the time specified after demand is made, the demanding party may treat this failure as an anticipatory repudiation of the Contract.

25. **STOP WORK NOTICE**: The City may issue an immediate Stop Work Notice in the event the Contractor is observed performing in a manner that is in violation of Federal, State, or local guidelines, or in a manner that is determined by the City to be unsafe to either life or property. Upon notification, the Contractor will cease all work until notified by the City that the violation or unsafe condition has been corrected. The Contractor shall be liable for all costs incurred by the City as a result of the issuance of such Stop Work Notice.

26. **DEFAULT**: The Contractor shall be in default under the Contract if the Contractor (a) fails to fully, timely and faithfully perform any of its material obligations under the Contract, (b) fails to provide adequate assurance of performance under Paragraph 24, (c) becomes insolvent or seeks relief under the bankruptcy laws of the United States or (d) makes a material misrepresentation in Contractor's Offer, or in any report or deliverable required to be submitted by the Contractor to the City.

27. **TERMINATION FOR CAUSE:**. In the event of a default by the Contractor, the City shall have the right to terminate the Contract for cause, by written notice effective ten (10) calendar days, unless otherwise specified, after the date of such notice, unless the Contractor, within such ten (10) day period, cures such default, or provides evidence sufficient to prove to the City's reasonable satisfaction that such default does not, in fact, exist. The City may place Contractor on probation for a specified period of time within which the Contractor must correct any non-compliance issues. Probation shall not normally be for a period of more than nine (9) months, however, it may be for a longer period, not to exceed one (1) year depending on the circumstances. If the City determines the Contractor has failed to perform satisfactorily during the probation period, the City may proceed with suspension. In the event of a default by the Contractor, the City may suspend or debar the Contractor in accordance with the "City of Austin Purchasing Office Probation, Suspension and Debarment Rules for Vendors" and remove the Contractor from the City's vendor list for up to five (5) years and any Offer submitted by the Contractor may be disqualified for up to five (5) years. In addition to any other remedy available under law or in equity, the City shall be entitled to recover all actual damages, costs, losses and expenses, incurred by the City as a result of the Contractor's default, including, without limitation, cost of cover, reasonable attorneys' fees, court costs, and prejudgment and post-judgment interest at the maximum lawful rate. All rights and remedies under the Contract are cumulative and are not exclusive of any other right or remedy provided by law.

28. **TERMINATION WITHOUT CAUSE**: The City shall have the right to terminate the Contract, in whole or in part, without cause any time upon thirty (30) calendar days' prior written notice. Upon receipt of a notice of termination, the Contractor shall promptly cease all further work pursuant to the Contract, with such exceptions, if any, specified in the notice of termination. The City shall pay the Contractor, to the extent of funds Appropriated or otherwise legally available for such purposes, for all goods delivered and services performed and obligations incurred prior to the date of termination in accordance with the terms hereof.

29. **FRAUD**: Fraudulent statements by the Contractor on any Offer or in any report or deliverable required to be submitted by the Contractor to the City shall be grounds for the termination of the Contract for cause by the City and may result in legal action.

30. **DELAYS**:

A. The City may delay scheduled delivery or other due dates by written notice to the Contractor if the City deems it is in its best interest. If such delay causes an increase in the cost of the work under the Contract, the City and the Contractor shall negotiate an equitable adjustment for costs incurred by the Contractor in the Contract price and execute an amendment to the Contract. The Contractor must assert its right to an adjustment within thirty (30) calendar days from the date of receipt of the notice of delay. Failure to agree on any adjusted price shall be handled under the Dispute Resolution process specified in paragraph 48. However, nothing in this provision shall excuse the Contractor from delaying the delivery as notified.

B. Neither party shall be liable for any default or delay in the performance of its obligations under this Contract if, while and to the extent such default or delay is caused by acts of God, fire, riots, civil commotion, labor disruptions, sabotage, sovereign conduct, or any other cause beyond the reasonable control of such Party. In the event of default or delay in contract performance due to any of the foregoing causes, then the time for completion of the services will be extended; provided, however, in such an event, a conference will be held within three (3) business days to establish a mutually agreeable period of time reasonably necessary to overcome the effect of such failure to perform.

31. **INDEMNITY**:

A. Definitions:

i. "Indemnified Claims" shall include any and all claims, demands, suits, causes of action, judgments and liability of every character, type or description, including all reasonable costs and expenses of litigation, mediation or other alternate dispute resolution mechanism, including attorney and other professional fees for:
(1) damage to or loss of the property of any person (including, but not limited to the City, the Contractor, their respective agents, officers, employees and subcontractors; the officers, agents, and employees of such subcontractors; and third parties); and/or
(2) death, bodily injury, illness, disease, worker's compensation, loss of services, or loss of income or wages to any person (including but not limited to the agents, officers and employees of the City, the Contractor, the Contractor's subcontractors, and third parties),

ii. "Fault" shall include the sale of defective or non-conforming Deliverables, negligence, willful misconduct, or a breach of any legally imposed strict liability standard.

B. **THE CONTRACTOR SHALL DEFEND (AT THE OPTION OF THE CITY), INDEMNIFY, AND HOLD THE CITY, ITS SUCCESSORS, ASSIGNS, OFFICERS, EMPLOYEES AND ELECTED OFFICIALS HARMLESS FROM AND AGAINST ALL INDEMNIFIED CLAIMS DIRECTLY ARISING OUT OF, INCIDENT TO, CONCERNING OR RESULTING FROM THE FAULT OF THE CONTRACTOR, OR THE CONTRACTOR'S AGENTS, EMPLOYEES OR SUBCONTRACTORS, IN THE PERFORMANCE OF THE CONTRACTOR'S OBLIGATIONS UNDER THE CONTRACT. NOTHING HEREIN SHALL BE DEEMED TO LIMIT THE RIGHTS OF THE CITY OR THE CONTRACTOR (INCLUDING, BUT NOT LIMITED TO, THE RIGHT TO SEEK CONTRIBUTION) AGAINST ANY THIRD PARTY WHO MAY BE LIABLE FOR AN INDEMNIFIED CLAIM.**

32. **INSURANCE**: (reference Section 0400 for specific coverage requirements). The following insurance requirement applies. (Revised March 2013).

A. General Requirements.

i. The Contractor shall at a minimum carry insurance in the types and amounts indicated in Section 0400, Supplemental Purchase Provisions, for the duration of the Contract, including extension options and hold over periods, and during any warranty period.

ii. The Contractor shall provide Certificates of Insurance with the coverages and endorsements required in Section 0400, Supplemental Purchase Provisions, to the City as verification of coverage prior to contract execution and within fourteen (14) calendar days after written request from the

City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or hold over period is exercised, as verification of continuing coverage.

iii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.

iv. The City may request that the Contractor submit certificates of insurance to the City for all subcontractors prior to the subcontractors commencing work on the project.

v. The Contractor's and all subcontractors' insurance coverage shall be written by companies licensed to do business in the State of Texas at the time the policies are issued and shall be written by companies with A.M. Best ratings of B+VII or better.

vi. The "other" insurance clause shall not apply to the City where the City is an additional insured shown on any policy. It is intended that policies required in the Contract, covering both the City and the Contractor, shall be considered primary coverage as applicable.

vii. If insurance policies are not written for amounts specified in Section 0400, Supplemental Purchase Provisions, the Contractor shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it shall follow the form of the primary coverage.

viii. The City shall be entitled, upon request, at an agreed upon location, and without expense, to review certified copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modification of particular policy terms, conditions, limitations, or exclusions except where policy provisions are established by law or regulations binding upon either of the parties hereto or the underwriter on any such policies.

ix. The City reserves the right to review the insurance requirements set forth during the effective period of the Contract and to make reasonable adjustments to insurance coverage, limits, and exclusions when deemed necessary and prudent by the City based upon changes in statutory law, court decisions, the claims history of the industry or financial condition of the insurance company as well as the Contractor.

x. The Contractor shall not cause any insurance to be canceled nor permit any insurance to lapse during the term of the Contract or as required in the Contract.

xi. The Contractor shall be responsible for premiums, deductibles and self-insured retentions, if any, stated in policies. Self-insured retentions shall be disclosed on the Certificate of Insurance.

xii. The Contractor shall provide the City thirty (30) calendar days' written notice of erosion of the aggregate limits below occurrence limits for all applicable coverages indicated within the Contract.

xiii. The insurance coverages specified in Section 0400, Supplemental Purchase Provisions, are required minimums and are not intended to limit the responsibility or liability of the Contractor.

B. Specific Coverage Requirements: Specific insurance requirements are contained in Section 0400, Supplemental Purchase Provisions

33. **CLAIMS**: If any claim, demand, suit, or other action is asserted against the Contractor which arises under or concerns the Contract, or which could have a material adverse affect on the Contractor's ability to perform thereunder, the Contractor shall give written notice thereof to the City within ten (10) calendar days after receipt of notice by the

Contractor. Such notice to the City shall state the date of notification of any such claim, demand, suit, or other action; the names and addresses of the claimant(s); the basis thereof; and the name of each person against whom such claim is being asserted. Such notice shall be delivered personally or by mail and shall be sent to the City and to the Austin City Attorney. Personal delivery to the City Attorney shall be to City Hall, 301 West 2nd Street, 4th Floor, Austin, Texas 78701, and mail delivery shall be to P.O. Box 1088, Austin, Texas 78767.

34. **NOTICES**: Unless otherwise specified, all notices, requests, or other communications required or appropriate to be given under the Contract shall be in writing and shall be deemed delivered three (3) business days after postmarked if sent by U.S. Postal Service Certified or Registered Mail, Return Receipt Requested. Notices delivered by other means shall be deemed delivered upon receipt by the addressee. Routine communications may be made by first class mail, telefax, or other commercially accepted means. Notices to the Contractor shall be sent to the address specified in the Contractor's Offer, or at such other address as a party may notify the other in writing. Notices to the City shall be addressed to the City at P.O. Box 1088, Austin, Texas 78767 and marked to the attention of the Contract Administrator.

35. **RIGHTS TO BID, PROPOSAL AND CONTRACTUAL MATERIAL**: All material submitted by the Contractor to the City shall become property of the City upon receipt. Any portions of such material claimed by the Contractor to be proprietary must be clearly marked as such. Determination of the public nature of the material is subject to the Texas Public Information Act, Chapter 552, Texas Government Code.

36. **NO WARRANTY BY CITY AGAINST INFRINGEMENTS**: The Contractor represents and warrants to the City that: (i) the Contractor shall provide the City good and indefeasible title to the Deliverables and (ii) the Deliverables supplied by the Contractor in accordance with the specifications in the Contract will not infringe, directly or contributorily, any patent, trademark, copyright, trade secret, or any other intellectual property right of any kind of any third party; that no claims have been made by any person or entity with respect to the ownership or operation of the Deliverables and the Contractor does not know of any valid basis for any such claims. The Contractor shall, at its sole expense, defend, indemnify, and hold the City harmless from and against all liability, damages, and costs (including court costs and reasonable fees of attorneys and other professionals) arising out of or resulting from: (i) any claim that the City's exercise anywhere in the world of the rights associated with the City's' ownership, and if applicable, license rights, and its use of the Deliverables infringes the intellectual property rights of any third party; or (ii) the Contractor's breach of any of Contractor's representations or warranties stated in this Contract. In the event of any such claim, the City shall have the right to monitor such claim or at its option engage its own separate counsel to act as co-counsel on the City's behalf. Further, Contractor agrees that the City's specifications regarding the Deliverables shall in no way diminish Contractor's warranties or obligations under this paragraph and the City makes no warranty that the production, development, or delivery of such Deliverables will not impact such warranties of Contractor.

37. **CONFIDENTIALITY**: In order to provide the Deliverables to the City, Contractor may require access to certain of the City's and/or its licensors' confidential information (including inventions, employee information, trade secrets, confidential know-how, confidential business information, and other information which the City or its licensors consider confidential) (collectively, "Confidential Information"). Contractor acknowledges and agrees that the Confidential Information is the valuable property of the City and/or its licensors and any unauthorized use, disclosure, dissemination, or other release of the Confidential Information will substantially injure the City and/or its licensors. The Contractor (including its employees, subcontractors, agents, or representatives) agrees that it will maintain the Confidential Information in strict confidence and shall not disclose, disseminate, copy, divulge, recreate, or otherwise use the Confidential Information without the prior written consent of the City or in a manner not expressly permitted under this Agreement, unless the Confidential Information is required to be disclosed by law or an order of any court or other governmental authority with proper jurisdiction, provided the Contractor promptly notifies the City before disclosing such information so as to permit the City reasonable time to seek an appropriate protective order. The Contractor agrees to use protective measures no less stringent than the Contractor uses within its own business to protect its own most valuable information, which protective measures shall under all circumstances be at least reasonable measures to ensure the continued confidentiality of the Confidential Information.

38. **PUBLICATIONS**: All published material and written reports submitted under the Contract must be originally developed material unless otherwise specifically provided in the Contract. When material not originally developed is included in a report in any form, the source shall be identified.

39. **ADVERTISING**: The Contractor shall not advertise or publish, without the City's prior consent, the fact that the City has entered into the Contract, except to the extent required by law.

40. **NO CONTINGENT FEES**: The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon any agreement or understanding for commission, percentage, brokerage, or contingent fee, excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the City shall have the right, in addition to any other remedy available, to cancel the Contract without liability and to deduct from any amounts owed to the Contractor, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

41. **GRATUITIES**: The City may, by written notice to the Contractor, cancel the Contract without liability if it is determined by the City that gratuities were offered or given by the Contractor or any agent or representative of the Contractor to any officer or employee of the City of Austin with a view toward securing the Contract or securing favorable treatment with respect to the awarding or amending or the making of any determinations with respect to the performing of such contract. In the event the Contract is canceled by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by the Contractor in providing such gratuities.

42. **PROHIBITION AGAINST PERSONAL INTEREST IN CONTRACTS**: No officer, employee, independent consultant, or elected official of the City who is involved in the development, evaluation, or decision-making process of the performance of any solicitation shall have a financial interest, direct or indirect, in the Contract resulting from that solicitation. Any willful violation of this section shall constitute impropriety in office, and any officer or employee guilty thereof shall be subject to disciplinary action up to and including dismissal. Any violation of this provision, with the knowledge, expressed or implied, of the Contractor shall render the Contract voidable by the City.

43. **INDEPENDENT CONTRACTOR**: The Contract shall not be construed as creating an employer/employee relationship, a partnership, or a joint venture. The Contractor's services shall be those of an independent contractor. The Contractor agrees and understands that the Contract does not grant any rights or privileges established for employees of the City.

44. **ASSIGNMENT-DELEGATION**: The Contract shall be binding upon and enure to the benefit of the City and the Contractor and their respective successors and assigns, provided however, that no right or interest in the Contract shall be assigned and no obligation shall be delegated by the Contractor without the prior written consent of the City. Any attempted assignment or delegation by the Contractor shall be void unless made in conformity with this paragraph. The Contract is not intended to confer rights or benefits on any person, firm or entity not a party hereto; it being the intention of the parties that there be no third party beneficiaries to the Contract.

45. **WAIVER**: No claim or right arising out of a breach of the Contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party. No waiver by either the Contractor or the City of any one or more events of default by the other party shall operate as, or be construed to be, a permanent waiver of any rights or obligations under the Contract, or an express or implied acceptance of any other existing or future default or defaults, whether of a similar or different character.

46. **MODIFICATIONS**: The Contract can be modified or amended only by a writing signed by both parties. No pre-printed or similar terms on any the Contractor invoice, order or other document shall have any force or effect to change the terms, covenants, and conditions of the Contract.

47. **INTERPRETATION**: The Contract is intended by the parties as a final, complete and exclusive statement of the terms of their agreement. No course of prior dealing between the parties or course of performance or usage of the trade shall be relevant to supplement or explain any term used in the Contract. Although the Contract may have been substantially drafted by one party, it is the intent of the parties that all provisions be construed in a manner to be fair to both parties, reading no provisions more strictly against one party or the other. Whenever a term defined by the Uniform Commercial Code, as enacted by the State of Texas, is used in the Contract, the UCC definition shall control, unless otherwise defined in the Contract.

48. **DISPUTE RESOLUTION**:

A. If a dispute arises out of or relates to the Contract, or the breach thereof, the parties agree to negotiate prior to prosecuting a suit for damages. However, this section does not prohibit the filing of a lawsuit to toll the running of a statute of limitations or to seek injunctive relief. Either party may make a written request for a meeting between representatives of each party within fourteen (14) calendar days after receipt of the request or such later period as agreed by the parties. Each party shall include, at a minimum, one (1) senior level individual with decision-making authority regarding the dispute. The purpose of this and any subsequent meeting is to attempt in good faith to negotiate a resolution of the dispute. If, within thirty (30) calendar days after such meeting, the parties have not succeeded in negotiating a resolution of the dispute, they will proceed directly to mediation as described below. Negotiation may be waived by a written agreement signed by both parties, in which event the parties may proceed directly to mediation as described below.

B. If the efforts to resolve the dispute through negotiation fail, or the parties waive the negotiation process, the parties may select, within thirty (30) calendar days, a mediator trained in mediation skills to assist with resolution of the dispute. Should they choose this option, the City and the Contractor agree to act in good faith in the selection of the mediator and to give consideration to qualified individuals nominated to act as mediator. Nothing in the Contract prevents the parties from relying on the skills of a person who is trained in the subject matter of the dispute or a contract interpretation expert. If the parties fail to agree on a mediator within thirty (30) calendar days of initiation of the mediation process, the mediator shall be selected by the Travis County Dispute Resolution Center (DRC). The parties agree to participate in mediation in good faith for up to thirty (30) calendar days from the date of the first mediation session. The City and the Contractor will share the mediator's fees equally and the parties will bear their own costs of participation such as fees for any consultants or attorneys they may utilize to represent them or otherwise assist them in the mediation.

49. **JURISDICTION AND VENUE**: The Contract is made under and shall be governed by the laws of the State of Texas, including, when applicable, the Uniform Commercial Code as adopted in Texas, V.T.C.A., Bus. & Comm. Code, Chapter 1, excluding any rule or principle that would refer to and apply the substantive law of another state or jurisdiction. All issues arising from this Contract shall be resolved in the courts of Travis County, Texas and the parties agree to submit to the exclusive personal jurisdiction of such courts. The foregoing, however, shall not be construed or interpreted to limit or restrict the right or ability of the City to seek and secure injunctive relief from any competent authority as contemplated herein.

50. **INVALIDITY**: The invalidity, illegality, or unenforceability of any provision of the Contract shall in no way affect the validity or enforceability of any other portion or provision of the Contract. Any void provision shall be deemed severed from the Contract and the balance of the Contract shall be construed and enforced as if the Contract did not contain the particular portion or provision held to be void. The parties further agree to reform the Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this section shall not prevent this entire Contract from being void should a provision which is the essence of the Contract be determined to be void.

51. **HOLIDAYS:** The following holidays are observed by the City:

Holiday	Date Observed
New Year's Day	January 1
Martin Luther King, Jr.'s Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	First Monday in September
Veteran's Day	November 11

Thanksgiving Day	Fourth Thursday in November
Friday after Thanksgiving	Friday after Thanksgiving
Christmas Eve	December 24
Christmas Day	December 25

If a Legal Holiday falls on Saturday, it will be observed on the preceding Friday. If a Legal Holiday falls on Sunday, it will be observed on the following Monday.

52. **SURVIVABILITY OF OBLIGATIONS:** All provisions of the Contract that impose continuing obligations on the parties, including but not limited to the warranty, indemnity, and confidentiality obligations of the parties, shall survive the expiration or termination of the Contract.

53. **NON-SUSPENSION OR DEBARMENT CERTIFICATION:**

The City of Austin is prohibited from contracting with or making prime or sub-awards to parties that are suspended or debarred or whose principals are suspended or debarred from Federal, State, or City of Austin Contracts. By accepting a Contract with the City, the Vendor certifies that its firm and its principals are not currently suspended or debarred from doing business with the Federal Government, as indicated by the General Services Administration List of Parties Excluded from Federal Procurement and Non-Procurement Programs, the State of Texas, or the City of Austin.

54. **EQUAL OPPORTUNITY**

A. **Equal Employment Opportunity:** No Contractor, or Contractor's agent, shall engage in any discriminatory employment practice as defined in Chapter 5-4 of the City Code. No Offer submitted to the City shall be considered, nor any Purchase Order issued, or any Contract awarded by the City unless the Offeror has executed and filed with the City Purchasing Office a current Non-Discrimination Certification. Non-compliance with Chapter 5-4 of the City Code may result in sanctions, including termination of the contract and the Contractor's suspension or debarment from participation on future City contracts until deemed compliant with Chapter 5-4.

B. **Americans with Disabilities Act (ADA) Compliance:** No Contractor, or Contractor's agent, shall engage in any discriminatory practice against individuals with disabilities as defined in the ADA, including but not limited to: employment, accessibility to goods and services, reasonable accommodations, and effective communications.

55. **INTERESTED PARTIES DISCLOSURE**

As a condition to entering the Contract, the Business Entity constituting the Offeror must provide the following disclosure of Interested Parties to the City prior to the award of a contract with the City on Form 1295 "Certificate of Interested Parties" as prescribed by the Texas Ethics Commission for any contract award requiring council authorization. The Certificate of Interested Parties Form must be completed on the Texas Ethics Commission website, printed, and signed by the authorized agent of the Business Entity with acknowledgment that disclosure is made under oath and under penalty of perjury. The City will submit the "Certificate of Interested Parties" to the Texas Ethics Commission within 30 days of receipt from the successful Offeror. The Offeror is reminded that the provisions of Local Government Code 176, regarding conflicts of interest between the bidders and local officials remains in place. Link to Texas Ethics Commission Form 1295 process and procedures below:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

56. **BUY AMERICAN ACT-SUPPLIES (Applicable to certain Federally funded requirements)**

A. Definitions. As used in this paragraph –

i. "Component" means an article, material, or supply incorporated directly into an end product.

ii. "Cost of components" means -

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

iii. "Domestic end product" means-

(1) An unmanufactured end product mined or produced in the United States; or

(2) An end product manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as those that the agency determines are not mined, produced, or manufactured in sufficient and reasonably available commercial quantities of a satisfactory quality are treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic.

iv. "End product" means those articles, materials, and supplies to be acquired under the contract for public use.

v. "Foreign end product" means an end product other than a domestic end product.

vi. "United States" means the 50 States, the District of Columbia, and outlying areas.

B. The Buy American Act (41 U.S.C. 10a - 10d) provides a preference for domestic end products for supplies acquired for use in the United States.

C. The City does not maintain a list of foreign articles that will be treated as domestic for this Contract; but will consider for approval foreign articles as domestic for this product if the articles are on a list approved by another Governmental Agency. The Offeror shall submit documentation with their Offer demonstrating that the article is on an approved Governmental list.

D. The Contractor shall deliver only domestic end products except to the extent that it specified delivery of foreign end products in the provision of the Solicitation entitled "Buy American Act Certificate".

Section 0605: Local Business Presence Identification

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this Contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE) TO BE CONSIDERED FOR LOCAL PRESENCE.

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN (REFERENCE SECTION 0900).

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm	FleetMind Solutions Inc.	
Physical Address	1751 Richardson, Suite 7200, Montreal Quebec H3K1G6	
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm	Soal Technologies, LLC	
Physical Address	8801 Research Boulevard #104, Austin Texas 78758	
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

Section 0700: Reference Sheet

Responding Company Name: FleetMind Solutions, Inc.

The City at its discretion may check references in order to determine the Offeror's experience and ability to provide the products and/or services described in this Solicitation. The Offeror shall furnish at least 3 complete and verifiable references. References shall consist of customers to whom the offeror has provided the same or similar services within the last 5 years. References shall indicate a record of positive past performance.

1. Company's Name: Miller Waste Services, Inc.

   Name and Title of Contact: Gus Kalnins, Special Projects

   Project Name: Onboard Computers, Scale Integration, Mapping, Enterprise Reporting

   Present Address: 8050 Woodbine Ave

   City, State, Zip Code: Markham, ON L1S 4V9 Canada

   Telephone Number: (416) 678-3675

   Email Address: gus.kalnins@millergroup.ca

2. Company's Name: Kimble Recycling and Disposal

   Name and Title of Contact: Keith Walker, General Manager

   Project Name: Two hundred Onboard Computers, integration customer billing, map/reporting

   Present Address: 409 Crooked Run Road

   City, State, Zip Code: New Philadelphia, OH 44663

   Telephone Number: (330) 575-5881

   Email Address: kwalker@kimblecompanies.com

3. Company's Name: City of Mesa Environmental Management & Sustainability Department

   Name and Title of Contact: Erin Romaine, Management Assistant II

Project Name	75 OBC w/ scale & ECM, 19 Cart Delivery and QA, Utility Billing & CIS Integration
Present Address	730 N Mesa Drive
City, State, Zip Code	Mesa AZ 85201
Telephone Number	(480) 644-3673 Mobile Number (602) 510-1693
Email Address	erin.romaine@mesaaz.gov

Section 0835: Non-Resident Bidder Provisions

Company Name FleetMind Solutions, Inc.

A. Bidder must answer the following questions in accordance with Vernon's Texas Statues and Codes Annotated Government Code 2252.002, as amended:

Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "non-resident Bidder"?

Answer: Nonresident, Canadian based (Montreal, Quebec)

(1) Texas Resident Bidder- A Bidder whose principle place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
(2) Nonresident Bidder- A Bidder who is not a Texas Resident Bidder.

B. If the Bidder id a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state?

Answer: Not applicable – Canadian Which State: Not applicable - Canadian

C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

Answer: _____

CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS

The following Supplemental Purchasing Provisions apply to this solicitation:

1. **EXPLANATIONS OR CLARIFICATIONS:** (reference paragraph 5 in Section 0200)

   All requests for explanations or clarifications must be submitted in writing to the Purchasing Office no later than 02/12/2016, 2:00 pm, local time by email to sai.xoomsai@austintexas.gov

2. **INSURANCE:** Insurance is required for this solicitation.

   A. **General Requirements:** See Section 0300, Standard Purchase Terms and Conditions, paragraph 32, entitled Insurance, for general insurance requirements.

      i. The Contractor shall provide a Certificate of Insurance as verification of coverages required below to the City at the below address prior to contract execution and within 14 calendar days after written request from the City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award
      ii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.
      iii. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or holdover period is exercised, as verification of continuing coverage.
      iv. The Certificate of Insurance, and updates, shall be mailed to the following address:

         City of Austin Purchasing Office
         P. O. Box 1088
         Austin, Texas 78767

   B. **Specific Coverage Requirements:** The Contractor shall at a minimum carry insurance in the types and amounts indicated below for the duration of the Contract, including extension options and hold over periods, and during any warranty period. These insurance coverages are required minimums and are not intended to limit the responsibility or liability of the Contractor.

      i. **Worker's Compensation and Employers' Liability Insurance:** Coverage shall be consistent with statutory benefits outlined in the Texas Worker's Compensation Act (Section 401). The minimum policy limits for Employer's Liability are $100,000 bodily injury each accident, $500,000 bodily injury by disease policy limit and $100,000 bodily injury by disease each employee.
         (1) The Contractor's policy shall apply to the State of Texas and include these endorsements in favor of the City of Austin:
            (a) Waiver of Subrogation, Form WC420304, or equivalent coverage
            (b) Thirty (30) days Notice of Cancellation, Form WC420601, or equivalent coverage
      ii. **Commercial General Liability Insurance:** The minimum bodily injury and property damage per occurrence are $500,000 for coverages A (Bodily Injury and Property Damage) and B (Personal and Advertising Injury).
         (1) The policy shall contain the following provisions:
            (a) Contractual liability coverage for liability assumed under the Contract and all other Contracts related to the project.
            (b) Contractor/Subcontracted Work.
            (c) Products/Completed Operations Liability for the duration of the warranty period.
            (d) If the project involves digging or drilling provisions must be included that provide Explosion, Collapse, and/or Underground Coverage.
         (2) The policy shall also include these endorsements in favor of the City of Austin:
            (a) Waiver of Subrogation, Endorsement CG 2404, or equivalent coverage

(b) Thirty (30) days Notice of Cancellation, Endorsement CG 0205, or equivalent coverage
(c) The City of Austin listed as an additional insured, Endorsement CG 2010, or equivalent coverage

iii. **Business Automobile Liability Insurance:** The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of $500,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are $250,000 bodily injury per person, $500,000 bodily injury per occurrence and at least $100,000 property damage liability per accident.

(1) The policy shall include these endorsements in favor of the City of Austin:
(a) Waiver of Subrogation, Endorsement CA0444, or equivalent coverage
(b) Thirty (30) days Notice of Cancellation, Endorsement CA0244, or equivalent coverage
(c) The City of Austin listed as an additional insured, Endorsement CA2048, or equivalent coverage.

C. **Endorsements:** The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

3. **PROPOSAL BOND: ("BOND")**

All Offers shall be accompanied by a Proposal Bond in an amount of not less than five percent (5%) of the total Offer. The Proposal Bond must have a Power of Attorney attached, issued by a solvent surety authorized under the laws of the State of Texas and acceptable to the City.

A. The Proposal Bond accompanying the Offer of the apparent successful Offeror will be retained until a Contract is awarded and the successful Offeror executes the Contract and furnishes any required bonds and insurance, after which the Bid / Proposal / Response Bond will be returned to the Offeror. The Bid / Proposal / Response Bond provided by the next lowest or next Best Offeror will be retained until a Contract is awarded. All other Bid / Proposal / Response Bonds will be returned within a reasonable amount of time necessary to make an award recommendation.

4. **PAYMENT BOND:**

A. The Contractor shall provide a Payment Bond in an amount equal to 10% of the Contract amount within 14 calendar days (14 unless a different period is inserted) after notification of award. The Payment Bond serves as security for the faithful payment of all of the Contractor's obligations for subcontracts, work, labor, equipment, supplies, and materials furnished under the Contract. The Payment Bond shall be issued by a solvent company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by the City pursuant to applicable law. The Surety must obtain reinsurance for any portion of the risk that exceeds 10% of the Surety's capital and surplus. For bonds exceeding $100,000, the Surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Texas and holds a certificate of authority from the U.S. Secretary of the Treasury.

B. The Payment Bond shall remain in effect throughout the term of the Contract, and shall be renewed for each respective extension.

5. **TERM OF CONTRACT:**

A. The Contract shall be in effect for an initial term of 60 months and may be extended thereafter for up to three additional 12 month periods, subject to the approval of the Contractor and the City Purchasing Officer or his designee.

B. Upon expiration of the initial term or period of extension, the Contractor agrees to hold over under the terms and conditions of this agreement for such a period of time as is reasonably necessary to re-solicit and/or complete the project (not to exceed 120 days unless mutually agreed on in writing).

C. Upon written notice to the Contractor from the City's Purchasing Officer or his designee and acceptance of the Contractor, the term of this contract shall be extended on the same terms and conditions for an additional period as indicated in paragraph A above.

D. Prices are firm and fixed for the first 12 months. Thereafter, price changes are subject to the Economic Price Adjustment provisions of this Contract.

6. **QUANTITIES:** The quantities listed herein are estimates for the period of the Contract. The City reserves the right to purchase more or less of these quantities as may be required during the Contract term. Quantities will be as needed and specified by the City for each order. Unless specified in the solicitation, there are no minimum order quantities.

7. **INVOICES and PAYMENT:** (reference paragraphs 12 and 13 in Section 0300)

A. Invoices shall contain a unique invoice number and the information required in Section 0300, paragraph 12, entitled "Invoices." Invoices received without all required information cannot be processed and will be returned to the vendor.

Invoices shall be mailed to the below address:

	City of Austin
Department	Austin Resources Recovery
Attn:	Accounts Payable
Address	PO Box 1088
City, State Zip Code	Austin Texas 78767

B. The Contractor agrees to accept payment by either credit card, check or Electronic Funds Transfer (EFT) for all goods and/or services provided under the Contract. The Contractor shall factor the cost of processing credit card payments into the Offer. There shall be no additional charges, surcharges, or penalties to the City for payments made by credit card.

8. **RETAINAGE:** The City will withhold ten (10) percent (%) retainage until completion of all work required by the Contract. The Contractor's invoice shall indicate the amount due, less the retainage. Upon final acceptance of the work, the Contractor shall submit an invoice for the retainage to the City and payment will be made as specified in the Contract. Payment of the retainage by the City shall not constitute nor be deemed a waiver or release by the City of any of its rights and remedies against the Contractor for recovery of amounts improperly invoiced or for defective, incomplete or non-conforming work under the Contract.

9. **MATERIALS SPECIFICATIONS/DESCRIPTIVE LITERATURE:**

A. If a solicitation refers to a Qualified Products List (QPL), Standard Products List (SPL) or a manufacturer's name and product, any Offeror offering products not referenced in the solicitation must submit as part of their Offer materials specifications/descriptive literature for the non-referenced product. Materials specifications/descriptive literature must be identified to show the item(s) in the Offer to which it applies.

B. Materials specifications/descriptive literature are defined as product manufacturer's catalog pages, "cut sheets" applicable tests results, or related detailed documents that specify material construction, performance parameters, and any industrial standards that are applicable such as ANSI, ASTM, ASME, SAE, NFPA, NBS, EIA, ESL, and NSA. The submitted materials specifications/descriptive literature must include the manufacturer's name and product number of the product being offered.

C. The failure of the materials specifications/descriptive literature to show that the product offered conforms to the requirements of the Solicitation shall result in rejection of the Offer.

D. Failure to submit the materials specifications/descriptive literature as part of the Offer may subject the Offer to disqualification from consideration for award.

10. **PREVAILING WAGE:** Contractor shall comply with the requirements of Section 00830 Prevailing Wage Rates and Payroll Reporting including the wage rates listed in Section 00830BC Wage Rates for Building Construction or Section 00830HH Wage Rates for Heavy and Highway Construction.

11. **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING:**

A. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2.7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offerors or potential Offerors are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.

B. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.

C. If an Offeror has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Offeror is given written notice and a hearing in advance of the debarment.

D. The City requires Offerors submitting Offers on this Solicitation to certify that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance. The text of the City Ordinance is posted on the Internet at: http://www.ci.austin.tx.us/edims/document.cfm?id=161145

12. **WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID):**

A. Access to the City Department building by the Contractor, all subcontractors and their employees will be strictly controlled at all times by the City. Security badges will be issued by the Department for this purpose. The Contractor shall submit a complete list of all persons requiring access to the City building at least thirty (30) days in advance of their need for access. The City reserves the right to deny a security badge to any Contractor personnel for reasonable cause. The City will notify the Contractor of any such denial no more than twenty (20) days after receipt of the Contractor's submittal.

B. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work of the contract, the Contractor shall so notify the City's Contract Manager, in writing, within ten (10) days of the receipt of notification of denial.

C. Contractor personnel will be required to check in at the security desk when entering or leaving the City building and security badges must be on display at all times when in the building. Failure to do so may

be cause for removal of Contractor Personnel from the worksite, without regard to Contractor's schedule. Security badges may not be removed from the premises.

D. The Contractor shall provide the City's Contract Manager with a list of personnel scheduled to enter the building, seven days in advance. The list shall identify the persons by name, date of birth, driver's license number, the times that they will be inside the building and the areas where they will be working. Only persons previously approved by the City for the issuance of security badges will be admitted to the building.

E. The Contractor shall comply with all other security requirements imposed by the City and shall ensure that all employees and subcontractors are kept fully informed as to these requirements.

13. **MONTHLY SUBCONTRACT AWARDS AND EXPENDITURES REPORT:** (reference paragraph 18 in Section 0300) (applicable when an MBE/WBE Compliance Plan is required)

A. The Contractor must submit a monthly Subcontract Awards and Expenditures Report to the Contract Manager specified herein and to the Purchasing Office Contract Compliance Manager no later than the tenth calendar day of each month.

B. Mail the Purchasing Office Copy of the report to the following address:

City of Austin
Purchasing Office
Attn: Contract Compliance Manager
P. O. Box 1088
Austin, Texas 78767

14. **ECONOMIC PRICE ADJUSTMENT:**

A. **Price Adjustments:** Prices shown in this Contract shall remain firm for the first twelve month of the Contract. After that, in recognition of the potential for fluctuation of the Contractor's cost, a price adjustment (increase or decrease) may be requested by either the City or the Contractor on the anniversary date of the Contract or as may otherwise be specified herein. The percentage change between the contract price and the requested price shall not exceed the percentage change between the specified index in effect on the date the solicitation closed and the most recent, non-preliminary data at the time the price adjustment is requested. The requested price adjustment shall not exceed ten percent (10%) for any single line item and in no event shall the total amount of the contract be automatically adjusted as a result of the change in one or more line items made pursuant to this provision. Prices for products or services unaffected by verifiable cost trends shall not be subject to adjustment.

B. **Effective Date:** Approved price adjustments will go into effect on the first day of the upcoming renewal period or anniversary date of contract award and remain in effect until contract expiration unless changed by subsequent amendment.

C. **Adjustments:** A request for price adjustment must be made in writing and submitted to the other Party prior to the yearly anniversary date of the Contract; adjustments may only be considered at that time unless otherwise specified herein. Requested adjustments must be solely for the purpose of accommodating changes in the Contractor's direct costs. Contractor shall provide an updated price listing once agreed to adjustment(s) have been approved by the parties.

D. **Indexes:** In most cases an index from the Bureau of Labor Standards (BLS) will be utilized; however, if there is more appropriate, industry recognized standard then that index may be selected.

i. The following definitions apply:
(1) **Base Period:** Month and year of the original contracted price (the solicitation close date).

(2) **Base Price:** Initial price quoted, proposed and/or contracted per unit of measure.
(3) **Adjusted Price:** Base Price after it has been adjusted in accordance with the applicable index change and instructions provided.
(4) **Change Factor:** The multiplier utilized to adjust the Base Price to the Adjusted Price.
(5) **Weight %:** The percent of the Base Price subject to adjustment based on an index change.

ii. **Adjustment-Request Review:** Each adjustment-request received will be reviewed and compared to changes in the index(es) identified below. Where applicable:
(1) Utilize final Compilation data instead of Preliminary data
(2) If the referenced index is no longer available shift up to the next higher category index.

iii. **Index Identification:** Complete table as they may apply.

Weight % or $ of Base Price: 100	
Database Name: Commodities	
Series ID: WPU37310101	
☒ Not Seasonally Adjusted	☐ Seasonally Adjusted
Geographical Area: N/A	
Description of Series ID: Telecommunications, cable, and internet user services	
This Index shall apply to the following items of the Bid Sheet / Cost Proposal: All	

E. **Calculation:** Price adjustment will be calculated as follows:

Single Index: Adjust the Base Price by the same factor calculated for the index change.

Index at time of calculation
Divided by index on solicitation close date
Equals Change Factor
Multiplied by the Base Rate
Equals the Adjusted Price

Adjustment of a Portion of the Base Price: A portion of the Base Price changes such that only part

F. If the requested adjustment is not supported by the referenced index, the City, at its sole discretion, may consider approving an adjustment on fully documented market increases.

15. **INTERLOCAL PURCHASING AGREEMENTS:** (applicable to competitively procured goods/services contracts).

A. The City has entered into Interlocal Purchasing Agreements with other governmental entities, pursuant to the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code. The Contractor agrees to offer the same prices and terms and conditions to other eligible governmental agencies that have an interlocal agreement with the City.

B. The City does not accept any responsibility or liability for the purchases by other governmental agencies through an interlocal cooperative agreement.

38. **CONTRACT MANAGER:** The following person is designated as Contract Manager, and will act as the contact point between the City and the Contractor during the term of the Contract:

Mike Turner

Mike.Turner2@austintexas.gov

512-974-9739

*Note: The above listed Contract Manager is not the authorized Contact Person for purposes of the **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING Provision** of this Section; and therefore, contact with the Contract Manager is prohibited during the no contact period.

CITY OF AUSTIN, TEXAS
AUSTIN RESOURCE RECOVERY DEPARTMENT
SCOPE OF WORK/SPECIFICATION
RFP PAX0129
Vehicle Fleet Technology Upgrade

1.0 PURPOSE

The City of Austin, Austin Resource Recovery Department ("ARR" or "the City") is in need of upgrading its fleet of solid waste collection vehicles with a fully integrated data management system as described herein. ARR is seeking proposals from vendors ("Contractor") qualified and experienced in the provision and maintenance of solid waste data management and electronic fleet management hardware and software systems that can fulfill the current and future needs of the department's collection operations.

This contract will establish a technology upgrade agreement to provide an 'all-in-one' system solution for improving the overall efficiency of garbage and recycling collection and litter abatement programs through technological enhancements in the management of ARR's vehicle fleet and business operations. The essential technology upgrade categories include the following: On-Board GPS/AVL Units and Touchscreen Control Displays, including various sensors, for all collection vehicles; Work Management System Software and Hardware; Radio Frequency Identification (RFID) System for all collection vehicles; 'All-in-One' System Automation and Integration which will also incorporate existing Route Smart (Routing Software) and CC&B (Billing System) and Standard, Custom, and Analytical Reporting capabilities.

This technology upgrade will significantly improve the overall efficiency, productivity, and safety of ARR's collection programs. This upgrade will also enable ARR to better anticipate and plan for the impacts of service area expansions and major program changes.

ARR's existing outdated systems and manual methods cannot be integrated, which results in duplicate entries, excessive amounts of manual data entry, errors, conflicting data, and cumbersome wasteful paper forms. The existing systems and methods do not support sophisticated quantitative analysis needed to improve efficiency and productivity, and are unable to timely monitor fleet management, personnel performance, and business productivity indicators.

The technology upgrade will enhance and streamline ARR's vehicle and business operations, protect City resources, support the Austin Climate Protection Plan and ARR's Master Plan, and will enable ARR to move forward more quickly and effectively to implement new waste reduction initiatives in order to reach the City's zero waste goals.

The city would prefer not to host this new solution in its data centers.

ARR is seeking to procure an 'all-in-one' system, including any and all necessary infrastructure, from a primary Contractor who can provide and coordinate all necessary hardware and software components/solutions, and who can install, interface, integrate, implement, and maintain/repair all components of the system.

ARR acknowledges that due to the multiple functions and complexity of the entire system described herein, subcontracting may be an important aspect in achieving a satisfactory solution.

Proposers responding to this RFP may submit multiple, alternate proposals if they feel they have other technologically innovative and cost effective solutions to provide. ARR welcomes and encourages the submittal of dynamic and creative solutions that have the potential to economically and effectively meet ARR's current and future needs. All proposals submitted will be reviewed.

2.0 BACKGROUND

Austin Resource Recovery Department (ARR) employs approximately 400 staff members and operates five separate facilities throughout the Austin area. ARR provides a broad range of services to the citizens of Austin including curbside collection service for over 192,000 accounts of trash, recycling, yard trimmings, large brush and bulky items, as well as street sweeping, litter abatement, household hazardous waste collection, and dead animal collection services. ARR utilizes the following types of collection vehicles: semi-automated rear loaders, fully-automated side loaders, bucket trucks, dump trucks, street sweepers, tractor-trailers, box and flatbed cranes, pickup trucks, and enclosed dead animal collection trucks. There are currently approximately 200 collection vehicles and 100 light-duty vehicles in ARR's collection fleet. (Please refer to Attachment B - Vehicle and Equipment List which identifies existing equipment and proposed equipment.)

Each year there is an increase in the number of customer accounts serviced by ARR due to factors such as population growth and annexations. In order to maintain the current level of service, it is estimated that over the next ten (10) years ARR will add approximately **five (5)** new collection vehicles and **two (2)** new light duty vehicles each year to the fleet. During the same time frame, it is also estimated that approximately **ten (10)** collection vehicles and **two (2)** light duty vehicles will be taken out of service each year due to age and will be replaced with new vehicles. In addition, approximately **two (2)** collection vehicles and **two (2)** light duty vehicles will be replaced each year due to contingencies such as accidents and fires.

Proposers should keep these estimates in mind with regard to future installations and future equipment switch-outs as part of their proposed Ongoing Service Agreement (refer to section 4.11, Ongoing Service Agreement and Warranty).

3.0 DESCRIPTION OF EXISTING SYSTEMS

ARR currently utilizes non-integrated separate software/hardware for each of its operational functions, including routing, billing, operational performance, GPS/AVL, low bandwidth and limited visual range vehicle camera monitoring, as well as the scales operated in-house. ARR's existing system configuration requires a great deal of manual data entry and the use of wasteful paper forms. ARR seeks a system solution that will provide the capability to timely monitor fleet management, personnel performance, and business productivity indicators, and will also provide a mechanism to irrefutably document/record field-related occurrences such as no setouts, improper/extra garbage setouts, collisions, and other incidents/situations. It is ARR's expectation that the system solution will enhance and streamline operations, protect City resources, and support the Austin Climate Protection Plan and ARR's Master Plan.

The Current Operational Technology Systems being used by ARR's collection programs include the following:

3.1 Solid Waste Tracking System (SWTS)

SWTS is ARR's current operational performance software. It is an Oracle database system developed by the City's Communication and Technology Management Department (CTM) which is used to collect, store and report information from the Driver's Daily Reports (DDRs – see Attachment D) for ARR's collection programs.

This system encompasses a component for managing daily activities related to ARR's garbage/recycling/compost cart inventory and distribution, as well as vehicle inspection and check-out procedures and associated record keeping. ARR's existing system configuration is largely paper-based with the DDRs manually filled out by the drivers before being manually entered into SWTS on a daily basis. Significantly, the current system does not support sophisticated quantitative analysis for improving efficiency and productivity, and with excessive amounts of manual data entry is subject to human error.

ARR seeks a Contractor solution to replace the current SWTS with a new automated Work Management Application that will meet existing and anticipated industry standard future operational management needs of the department, minimizing administrative burden on all user groups, and is paper free to the extent possible.

3.2 Global Positioning System (GPS) / Automatic Vehicle Location (AVL)

The current GPS/AVL system being used by ARR's fleet of vehicles utilizes CompassTrac software. This is a stand-alone system of hardware that cannot be integrated with other systems/functions and does not meet the future functionality requirements of ARR. ARR seeks a GPS/AVL system solution that provides greater flexibility, expandability, and maximizes the use of generic industry hardware interfaces and connectivity points. ARR seeks a Contractor solution that will upgrade functionality to meet existing and anticipated industry standard future technology growth in the solid waste industry e.g. wide use of multiple input vehicle sensors and on-board touchscreen control displays.

3.3 RouteSmart Software Version 2013.0.2

ARR uses RouteSmart routing software to plan routing service needs and a largely paper based format for communicating route based information to drivers.
ARR seeks a Contractor solution that is compatible with RouteSmart technology hardware and software, and is paper free to the extent possible.

Note: Please be advised that the City has no intention of replacing the RouteSmart routing software with a different product. Proposals that are submitted with exceptions to the requirements of this Scope of Work will be reviewed as a whole and will not necessarily be automatically disqualified, but as stated in the 0600 Proposal Preparation Instructions and Evaluation Factors, "exceptions to any portion of the Solicitation may jeopardize acceptance of the proposal."

Even if a proposal is not rejected due to an exception, please keep in mind that the highest consideration will be given to proposals that best meet the requirements of, and are consistent with, this Scope of Work.

3.4 Oracle Customer Care and Billing (CC&B) v2.3.1

The City utilizes this billing system for all utility billing, including Austin Energy, Austin Water Utility and ARR. This system is a flexible customer management solution that supports utility industry business objectives within a changing business environment. This system will continue to be used by the City. ARR seeks a solution from the Contractor that is attuned and will successfully integrate with the Oracle CC&B system where applicable. (Please refer to Attachment C - CC&B Description.)

3.5 Diagnostic Equipment

The current diagnostic equipment (Electronic Control Module [ECM]) being used in ARR's operational vehicles is Asset Works and is tied into the City's Fleet Maintenance System and will continue to be supported by the City's Fleet Services. Any solutions accepted resulting from this RFP shall not connect to, or interfere with, this existing equipment. The Contractor shall provide a solution/method of retrieving new vehicle diagnostics data without tying into, or interfering with, the existing ECM. (If the Proposer determines that there is no alternative solution available, it needs to be clearly noted in their proposal.)

3.6 P25 Trunked Radios

Trunked Radios are currently installed in ARR's collection vehicles for digital radio communications in accordance with federal and state emergency communication requirements. Installed in all fleet vehicles, these radios will remain in the vehicles as-is and will continue to be supported by the City's Wireless Communication Services Division. This system will continue to be used by the City. Any solutions accepted resulting from this RFP shall not connect to, or interfere with, usability of this existing safety equipment. (Please refer to Attachment B – Vehicle and Equipment List for a detailed listing of ARR's vehicles which identifies existing equipment and proposed equipment.)

4.0 SCOPE OF WORK

4.1 Objective

The objective of this RFP is to identify and select a Contractor who can supply and service multiple hardware, software upgrades and integrate to improve the efficiency, productivity, and safety of ARR's collection programs and associated administrative support needs.

4.2 Key Improvements

Key improvements listed below can be expected after implementation of the technology upgrade sought in this solicitation:

4.2.1 Short Term

- Automation and integration of routing, billing, AVL, and truck scaling to improve timelines and accuracy of customer service, billing, and fleet management functions
- Real-time remote monitoring and electronic recording of vehicle trip, vehicle diagnostic, and personnel performance data
- Capability to identify routing improvements
- Capability to assign missed or out-of-cycle collection calls to the nearest route driver
- Capability to interface with RFID technology, CSR software and scale weight data from City facilities and contractor facilities
- Capability to interface with and manipulate both historical databases and current data, extract raw data and generate customizable, user-defined and/or ad hoc reports

4.2.2 Long Term

- Reduced fuel and maintenance costs
- Carbon footprint reduction
- Optimization of travel patterns for drivers
- Cost effective implementation of expanded garbage/recycling collection programs
- Ability to produce more accurate budget projections based on actual operational and vehicle maintenance needs
- Reduction in the number of vehicle collisions and employee injuries
- Reduction in the number of billing errors and disputes

4.3 Summary of Required System Upgrades for Initial Implementation

Refer to Functional Requirements in sections 5.0 and attachment E, Technical Reference Model, attachment E and Attachment F, Technical Standards for more specific details and required proposal responses.)

NOTE: All Proposers shall submit a proposed timeline that specifies the length of time required to complete each task related to the entire project, from initial design to full Initial Implementation. The timeline shall include a Proof of Concept Pilot period. Before proceeding with full Initial Implementation, the Contractor shall design and conduct (after written acceptance and notice to proceed by ARR) a Proof of Concept Pilot to verify that all upgrades proposed by the Contractor are feasible as related to ARR's operational activities and needs.

4.4 GPS/AVL Units and On-Board Touchscreen Control Displays

4.4.1 All existing GPS/AVL units in ARR's collection vehicles shall be removed and replaced with new units that have expanded capabilities. All vehicles shall have an unlimited data plan which cost will be built into the annual maintenance fee. ARR's current GPS plan is not a hosted solution, but rather an in-house solution (in-house server) utilizing CompassCom CompassTrac software. Sierra Wireless is currently installed. Existing models are a mix of MP and GX series units, and they include USB connections and GPS antennas.

4.4.2 The new GPS/AVL system shall provide greater flexibility, expandability, and shall maximize the use of generic industry hardware interfaces and connectivity points. The proposed system shall meet existing and anticipated industry standards, as well as anticipate and permit future technology needs, improvements and growth in the solid waste industry. It shall utilize multiple on-board sensors for real-time remote monitoring and electronic recording of vehicle events.

4.4.3 Where applicable, existing low loss coax cables and antennas shall remain in place to be incorporated with new units and repurposed for broadband and GPS.

4.4.4 The Contractor shall transfer existing GPS/AVL MTN account information to the new units or, if feasible, transfer existing SIM cards from old units and utilize in new units.

4.4.5 The Contractor shall remove all pre-existing GPS/AVL units without damaging or cutting connectors so that they can be repurposed in other City vehicles. The Contractor shall carefully place undamaged units in Contractor-supplied boxes and will be instructed by the City's Contract Manager on where to place the old units (collection point) to be picked up by the City and transported to the City's Wireless Communication Services Division office.

4.4.6 The Contractor shall install new on-board touchscreen display computer system in the cab of each vehicle. (Note: The Contractor's proposed system shall include the capability to configure and limit the number of active on-screen controls made available to the driver. For safety reasons, the driver should have minimal interaction capability with the on-board touchscreen control display).

4.4.7 The Contractor shall provide control displays which shall be rugged, water and impact resistant (minimum MIL-STD-810G), and have a top operating temperature of 140°F or higher. Control displays shall have touchscreen capabilities and shall provide full visibility in daylight/sunlight. Displays computer system shall have an operating voltage range of 9 to 18 volts. The Contractor shall mount all on-board touchscreen display computer systems on a Contractor-supplied locking dock and have a uniquely-coded master key specifically for ARR's vehicle fleet.

4.4.8 The Contractor shall provide solutions to prevent unauthorized access, disconnection, removal, and any other types of tampering.

4.5 Work Management Application Software

4.5.1 The Contractor shall install and implement a new work management software application to replace the existing operational performance software (SWTS).

4.5.2 The Contractor shall provide an automated and easy-to-use solution for collecting, storing and reporting information that is currently maintained manually on paper on the Driver's Daily Reports (DDRs).

4.5.3 The Contractor shall provide an automated RFID solution for managing activities related to garbage/recycling/compost cart inventory and distribution capable of reading RFID tags imbedded in the carts. (ARR is currently in the process of installing RFID tags into the existing cart inventory.) The solution shall also integrate with the City's billing system (CC&B).

4.5.4 The Contractor shall ensure that the technology upgrade solution(s) is compatible and integratible with route maps which are currently generated by ARR's RouteSmart optimization software and printed on paper. The solution shall provide for the electronic display of mapping information.

4.5.5 The Contractor shall ensure that the technology upgrade solution(s) is compatible with the current and future versions of the Environmental Systems Research Institute (ESRI) to support GIS. (ARR currently uses ESRI ArcGIS version 10.0.)

4.5.6 The Contractor shall provide all industry standards for all data formats and Contractor shall ensure that all database management systems are widely-accepted and well-supported, such as Oracle 11g (or higher) or MS SQL 2008r2 SP2, or equivalent product.

4.5.7 The Contractor shall ensure that technology upgrades are serviceable and can accommodate user-defined customizable and ad hoc reports regarding applicable operational performance indicators.

4.6 Radio Frequency Identification (RFID) System

4.6.1 The Contractor shall install an RFID system on collection vehicles, and select supervisor vehicles, as identified in Attachment B - Vehicle and Equipment List.

4.6.2 The RFID technology solution shall be capable of identifying and managing RFID equipped garbage/recycling/compost carts, providing vehicle identification at scale facilities (if receiving facility scales are so equipped with compatible system), and supporting the management of various electronic data and analyses.

4.6.3 Ten (10) handheld RFID readers shall be provided for cart delivery crews to facilitate capture of cart data during cart deliveries and retrievals. The handheld RFID readers shall be able to be integrated with the new Work Management Application. (Please note that the number of hand-held RFID readers requested in this solicitation does not necessarily correspond to the list of supervisor vehicles that require RFID readers. It is the intention of the City to assign hand-held RFID readers to individuals, not vehicles.)

4.7 Contractor Responsibilities

The Contractor shall:

4.7.1 Ensure all products and services are capable of meeting project requirements described herein.

4.7.2 Comply with all local, state and federal laws and regulations applicable to the work performed, even if said laws and regulations are not identified herein. (The Contractor is responsible in whole, and on behalf of Contractor's sub-contractors.)

4.7.3 Provide qualified experienced project manager (Project Management Professional certification preferred, subject to approval by the City) and staff to work and coordinate with the City's Contract Manager and ARR staff on all project activities without interrupting normal ARR collection operations.

4.7.4 Provide all installations and associated service activities necessary in order to successfully complete a Proof of Concept Pilot, the Initial Implementation, and Ongoing Service, including technical support, system updates/maintenance/repairs/patches, parts replacement, backend supplies, replacement parts inventory, training and documentation.

4.7.5 Provide an all-in-one system an all-in-one system (along with any and all necessary infrastructure for successful operation) to include design/development, system configuration/integration, all necessary equipment/hardware/parts, all tools and supplies, all software solutions, all installations and associated labor, support services for historical data migration/conversion, end-user and train-the-trainer training, all testing activities and exercises, and complete, successful implementation rollout and warranty.

4.7.6 Remove existing equipment (where applicable) in an undamaged condition, including existing GPS/AVL and work under the direction of the City's Contract Manager to place all removed and undamaged City equipment in Contractor-supplied boxes and place in a mutually agreed upon location to be picked-up by the City for transport to the City's Wireless Communication Services Division office.

4.7.7 Coordinate with the City's Contract Manager to schedule hardware installation on vehicles to avoid disruption to normal collection schedules. Hardware installation on vehicles shall take place at a mutually agreed upon location. **(Note: Vehicle operations typically occur between 6:00am and 6:00pm, Monday through Friday. However, some vehicles may be in operation after 6:00pm and on weekends.)**

4.7.8 Upon request by City's Contract Manager provide all technical support documentation (printed and electronic) such as operating manuals, quick reference guides, and routine maintenance by a mutually agreed upon deadline. The Contractor shall ensure that ARR has the authorization to reproduce any provided documents for internal use.

4.7.9 Responsible for identifying and requesting any specific documentation from the City required by the Contractor in order to successfully perform all installations, system integrations, repair, support and full Initial Implementation.

4.7.10 Provide testing methodology to be approved by the City's Project Manager. Testing shall be successfully performed before the City will provide approval for the final acceptance of each stage of system implementation.

4.7.11 Provide support services for the migration of historical data into the new system.

4.7.12 Coordinate with the City's Contract Manager to ensure that all personnel assigned to conduct work on City property attend a safety orientation training provided by ARR's Safety Division. The Contractor shall be wholly and ultimately responsible for ensuring the safety of all Contractors' personnel, sub-contracted or otherwise.

4.7.13 Provide all equipment, hardware, parts, tools, supplies, labor, supporting hardware, software, safety equipment, and any other associated apparatus and effort necessary to completely provide, install, test and successfully deliver to ARR all systems specified in the proposal.

4.7.14 Remove, dispose and/or recycle all packing materials, debris and trash created by the Contractor and Contractor's sub-contractors.

4.7.15 Provide a protective enclosure or mobile storage unit for all equipment and supplies that needed to be stored at the worksite. Storage unit shall be placed in a mutually agreed upon location. Contractor shall be solely responsible for all equipment and supplies stored on site. The City will not be responsible for any lost, damaged or stolen items.

4.7.16 Contractor employees and sub-contracted personnel shall wear a uniform, including safety equipment and company issued identification. Uniform shall be alike and have the Contractor and employee's name clearly displayed on the front of the shirt and seasonal outerwear.

4.7.17 Identify potential risks associated with this project and take all steps necessary to mitigate risks, whether financial or otherwise.

4.7.18 Provide a proposed schedule to coincide with City's anticipated Deliverables as outlined below.

4.8 City Responsibilities

The City will:

4.8.1 Provide a City's Contract Manager (single point of contact) to work with the Contractor on coordinating meetings, assuring availability of vehicles for installation work at appointed/after hour times, scheduling staff for required training sessions, and working with the Contractor to resolve other project issues that may arise.

4.8.2 Provide a facility for the Contractor to conduct presentations, meetings, equipment/software installations, testing, training, and maintenance activities as mutually agreed upon. The City will provide an area for a Contractor's storage enclosure on as needed basis.

4.8.3 Approve the Testing Methodology, provide acceptance of product after successful testing. Approve the final sign-off, if all City requirements are met, for the acceptance of the entire system.

4.8.4 Notify the Contractor when maintenance, repairs and/or warranty issues are needed on the Contractor's supplied hardware, software, installation and all other equipment.

4.8.5 Notify the Contractor when installation services are needed for newly acquired vehicles.

4.9 Anticipated Milestones and Deliverables

(Note: No payment shall be made on any partially completed deliverable/milestone. Payment shall only occur as each deliverable/milestone is 100% complete and accepted by the City.)

4.9.1 *Milestones*

Ref #	Milestone	When
Milestone #1	Proof of Concept Pilot Design and Implementation Plan (Deliverable #1).	After Proof of Concept Pilot is designed and implementation plan is presented and accepted in writing by ARR.
Milestone #2	Entire System Design and Implementation Plan (Deliverable #2).	After entire system is designed and implementation plan is presented and accepted in writing by ARR.
Milestone #3	Initial cadre of ARR staff trained; software implemented and vehicle hardware installed on at least five representative vehicle types (as determined by ARR) to verify system functionality (Deliverable #3).	After cadre staff is trained, software is installed and implemented, and hardware is installed on representative vehicles and system functionality is verified and accepted in writing by ARR.
Milestone #4	Development and acceptance of the interface to CC&B and RouteSmart (Deliverable #4).	After interface from the system to both CC&B and RouteSmart is completed, verified, and accepted in writing by ARR.
Milestone #5	Develop the system documentation and provide comprehensive end-user training (Deliverable #5).	After system documentation is completely developed and end-user and admin training is delivered and accepted in writing by ARR.
Milestone #6	Final configuration of reports and dashboard (Deliverable #6).	After configuration of reports and dashboard is completed and accepted in writing by ARR.
Milestone #7	Entire system installed and implemented in remainder of operational fleet. (Deliverable #7).	After the system is installed, implemented, and accepted in writing by ARR on a per-vehicle basis (monthly payments will be made based upon actual number of completed installations).

4.9.2 *Deliverables*

Ref #	Deliverable	Description	Payout
Deliverable #1	Proof of Concept Pilot Design and Implementation Plan.	The system design and implementation plan is complete and accepted in writing by ARR.	10%

Deliverable #2	Entire System Design and Implementation Plan.	The entire system design and implementation plan is complete and accepted in writing by ARR.	10%
Deliverable #3	Initial cadre of ARR staff trained; software implemented and vehicle hardware installed on at least five representative vehicle types (as determined by ARR) to verify system functionality.	Cadre of ARR staff is trained; software is implemented and hardware is installed on representative vehicles and system functionality is verified and accepted in writing by ARR.	10%
Deliverable #4	Development and acceptance of the interface to CC&B and RouteSmart.	The interface from the system to both CC&B and RouteSmart is completed, verified and accepted in writing by ARR.	10%
Deliverable #5	Develop system documentation and provide comprehensive end-user and admin training.	System documentation completely developed and end-user and admin training delivered and accepted in writing by ARR.	10%
Deliverable #6	Final configuration of reports and dashboard.	Configuration of reports and dashboard is complete and accepted in writing by ARR.	5%
Deliverable #7	System installed and implemented in remainder of operational fleet.	The system is installed and implemented in the remainder of operational fleet, and accepted in writing by ARR on a per vehicle basis (monthly payments will be made based upon actual completion of installations).	35%
Retainage	Complete system implementation.	System implementation is completed and accepted in writing by ARR.	10%

4.10 Requirements Definition

The City has made a good faith effort to identify the minimum functional and technical requirements of the entire system. However, it is expected that the Contractor shall work with the City to review and refine the City requirements. The Contractor shall conduct a thorough gap-analysis between the City functional and technical requirements and the system technologies proposed. Using the gap-analysis results, the Contractor and the City shall review and consult to identify deficiencies. The Contractor shall be responsible for making any required modifications or customizations to the system, subject to approval by the City.

4.11 Ongoing Service Agreement

In addition to providing the Initial Implementation of the technology upgrades described herein, ARR expects the Contractor to enter into an Ongoing Service Agreement with the City for an initial period of five (5) years, with five (5) 1-year extension options. Proposers shall include an Ongoing Service Agreement component with their proposal and shall provide a Price Schedule with a Total Cost Proposal option related to the following:

- Technical Support
- System Updates/Maintenance/Repairs/Patches
- Parts Replacement, Back-end Supply (availability within 72 hours), On-site Replacement Parts Inventory
- Future New Installations (Installing New Equipment in New Vehicles added to Fleet)
- Future Equipment Switch-Outs (Removing Equipment from Retired or Irreparable Vehicles and Installing in Replacement Vehicles)
- Training and Documentation:
  - Functional Training and Software Training as needed for designated end-users
  - Train-the-Trainer Training as needed for designated City staff
  - Routine Maintenance Training as needed and appropriate for designated ARR and other City fleet maintenance staff
  - Documentation (User/Operator Manuals, Training Manuals, Maintenance Manuals, Quick Reference Guides)

4.12 System Testing Requirements

The Contractor shall perform and complete extensive verification and validation testing of the proposed upgrades. Completion of all testing shall be subject to approval by the City. The Contractor shall be responsible for developing, subject to review and approval by the City, the test plans, test procedures, test cases, test scripts, and shall provide testing tools for the tests listed below:

- Unit testing
- Integration testing
- String testing
- Load testing
- Environment testing
- User acceptance testing

4.13 Progress Reports

The Contractor shall submit weekly and monthly progress reports to the City's Contract Manager, or as otherwise agreed upon between the City and the Contractor. The progress reports shall describe significant accomplishments, issues and risks which have potential effect on schedule or costs, and plans for the upcoming week and month. The progress reports shall be adequately detailed to assure that project steps being pursued are in compliance with established and/or projected goals.

5.0 FUNCTIONAL REQUIREMENTS

Vehicle Fleet Technology Upgrade
Functional Specifications

The following Unified Modeling Language (UML) use-case models identify the functional requirements of our desired Vehicle Fleet Technology Upgrade (VFTU) system. Our proposed operational process provides contextual reference and scope understanding. However, the contractor may propose alternative processes or technologies - we encourage innovative solutions. The contractor may propose any solution configuration such as hosted or internal. However, we prefer a Cloud solution - i.e., Software as a Service (SaaS). The City provides a fully functional IBM Integration Bus (IIB), enterprise service bus (ESB) to include an ESB instance in our demilitarized security zone to interface with internal city applications such as Customer Care and Billing discussed in our use-case model. The City identified the required performance response in each table describing interface descriptions shown on the adjacent sequence diagram.

5.1 Collect Route and Driver Information

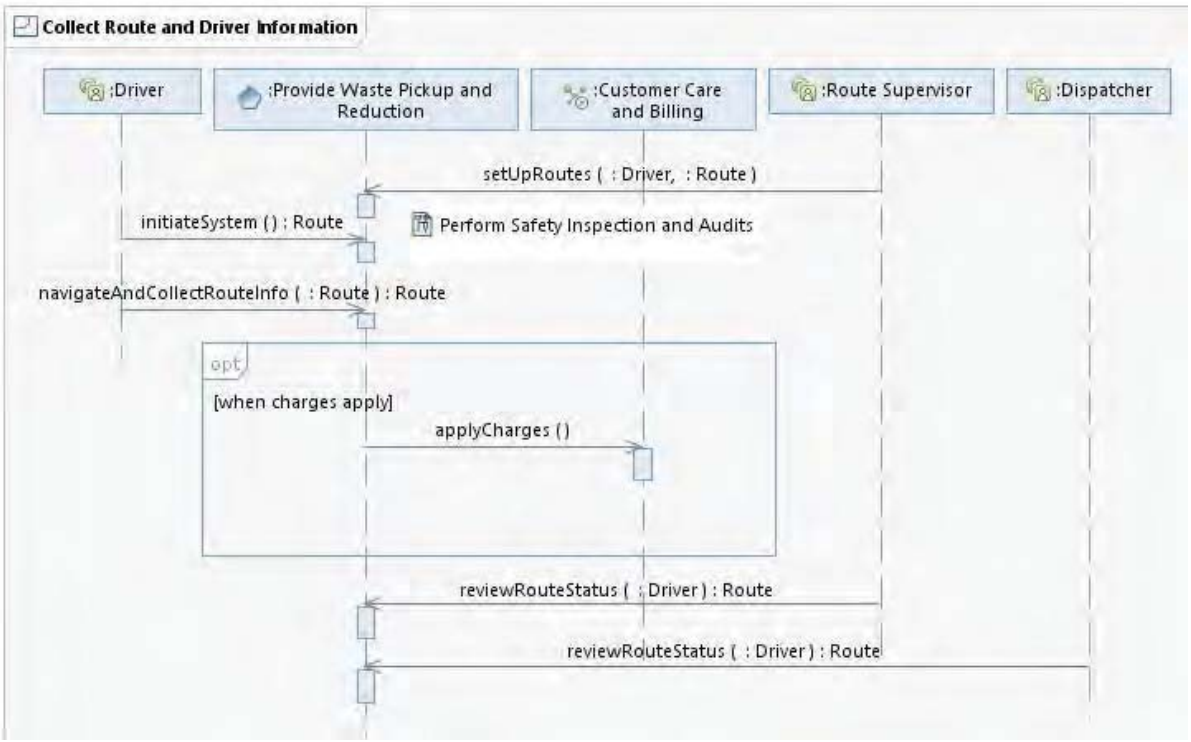
Select to enlarge...

Use Case Diagram - Collect Route and Driver Information

Select to enlarge...

Scope: At any time during daily operations, the Route Supervisor uses a geospatial map to load route templates and/or modify Driver routes. When the Route Supervisor creates a route change, the system updates the Driver's map Route information and notifies the Driver and Dispatcher of the change. The Dispatcher and Route Supervisor map shows near real-time Driver position sent from mobile device. The system provides the turn-by-turn audio and video instructions, which the Driver may disable the audio. When the Driver Route deviates beyond the thresholds settings of the device, the system provides an audible warning and notifies the Dispatcher and Route Supervisor. As the Driver collects and empties carts, the system scans and stores radio frequency identification (RFID) information

possibly using Bluetooth technology or similar wireless technology to communicate information with the mobile device. The system collects and reports Route information and uploads the required Route information incrementally throughout the day. The system interfaces with the City's Customer Care and Billing system to report services requiring extra charges. The Route Supervisor, Dispatcher and Driver communicate using Voice-Over-LTE (VoLTE) or similar technology when needed. The system uses push-to-talk similar to hand-held radios and the system records all communications including text messaging and email when needed.



Sequence Diagram - Collect Route and Driver Information

Table of Interface Descriptions

Req#	Type/Interface - Requirement Description	Performance
CRDI01	**Provide Waste Pickup and Reduction/setUpRoutes**	Describe solution relevant to the functional description or explain developmental approach and experience.
	At any time during daily operations, the Route Supervisor uses a geospatial map to load route templates and/or modify Driver routes. The Route Supervisor may use crowd-sourcing tools such as Waze or other mapping, navigational application to provide the situational awareness of route conditions to reroute Drivers around incidents or road congestion. Ideally, the Route Supervisor map displays real-time traffic information as a geospatial overlay on the Driver positional location and Route. When the Route Supervisor creates a route change, the system updates the Driver's map Route information and notifies the Driver and Dispatcher of the change. The Dispatcher and Route Supervisor map shows near real-time Driver position sent from mobile device. Drivers stay on the assigned Routes unless the Route Supervisor approves a deviation. Approved	

Req#	Type/Interface - Requirement Description	Performance
	city staff set route deviation warning thresholds.	
CRDI02	**Provide Waste Pickup and Reduction/initiateSystem** The Driver performs a system check to ensure accurate load of daily Route information. The system confirms completion of safety inspection with the Driver (see use case Perform Safety Inspection and Audits).	Describe how the system ensures operational status prior to departure or explain developmental approach and experience. The system confirmation of safety inspection is out of the scope of this SOW - information provided for contextual understanding of other planned uses of hand held RFID device.
CRDI03	**Provide Waste Pickup and Reduction/navigateAndCollectRouteInfo** The mobile device uses a touch screen interface and provides push-button controls to quickly move between the information collection and presentation points. The system provides the turn-by-turn audio and video instructions, which the Driver may disable the audio. When the Driver Route deviates beyond the thresholds settings of the device, the system provides an audible warning and notifies the Dispatcher and Route Supervisor. As the Driver collects and empties carts, the system scans and stores radio frequency identification (RFID) information possibly using Bluetooth technology or similar wireless technology to communicate information with the mobile device. When a Customer sets out extra refuse, the system provides the Driver a means to input the amount and type of refuse and ensures application of applicable charges with Customer Care and Billing (CC&B). For special conditions such as damaged, missing carts, or contaminated recycle carts (i.e., inappropriate refuse), the Driver uses a wireless hand-held device to record evidence using relevant media (e.g., photography or video) to upload to the system and stored with the daily Route information and easily observable by the Dispatcher, Route Supervisor or other approved city staff. The system inserts a notation on the picture or video of the responsible customer. The Route information collected by the system includes, but is not limited to, the ability to collect carts set out rate, routes driven, miles driven, accelerometer information, time on route, seat belt use, truck weight, and gross vehicle weight. The mobile device uploads the required Route information incrementally throughout the day representing the entire daily actuals. The mobile device is permanently fixed to the Driver's console and ergonomically accessible. The mobile device must be ruggedized to survive in harsh environments.	Describe solution relevant to the functional description or explain developmental approach and experience.
CRDI04	**Customer Care and Billing/applyCharges** For excess refuse bags or other debris removal, there may be additional charges that apply. The Driver or Operations Staff use the system to enter extra items removed. Based on the type and volume of services entered (extra refuse bags,	Explain ability for the system to interface using the city's IBM Integration Bus,

Req#	Type/Interface - Requirement Description	Performance
	additional debris removal, etc.), the system applies required charges to the Customer Care and Billing (CC&B) system.	enterprise service bus (ESB) or ESB past performance.
CRDI05	**Provide Waste Pickup and Reduction/reviewRouteStatus**	Describe solution relevant to the functional description or explain developmental approach and experience.
	The Route Supervisor and Dispatcher use the mobile device to observe the Driver's status such current location, route driven, and other relevant status information collected by the Driver's mobile device. The Route Supervisor, Dispatcher and Driver communicate using Voice-Over-LTE (VoLTE) or similar technology when needed. The system uses push-to-talk similar to hand-held radios and the system records all communications including text messaging and email when needed. The system uses Long-Term Evolution (LTE), commonly marketed as 4G LTE, a standard for wireless communication of high-speed data for mobile phones or similar technology.	

5.2 Ensure Customer Cart Needs

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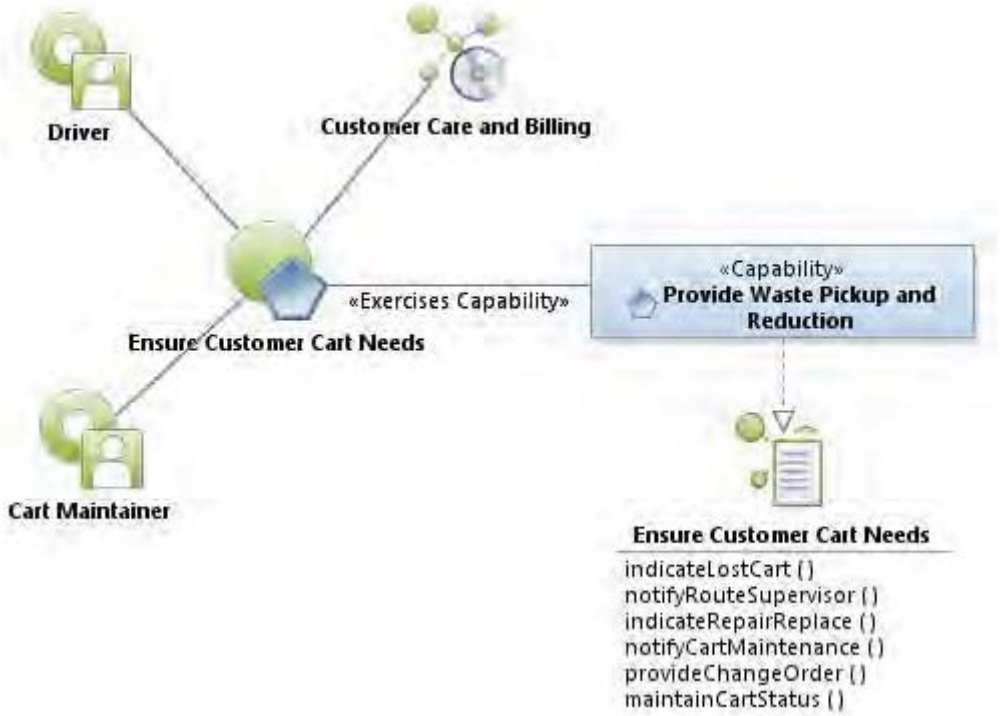
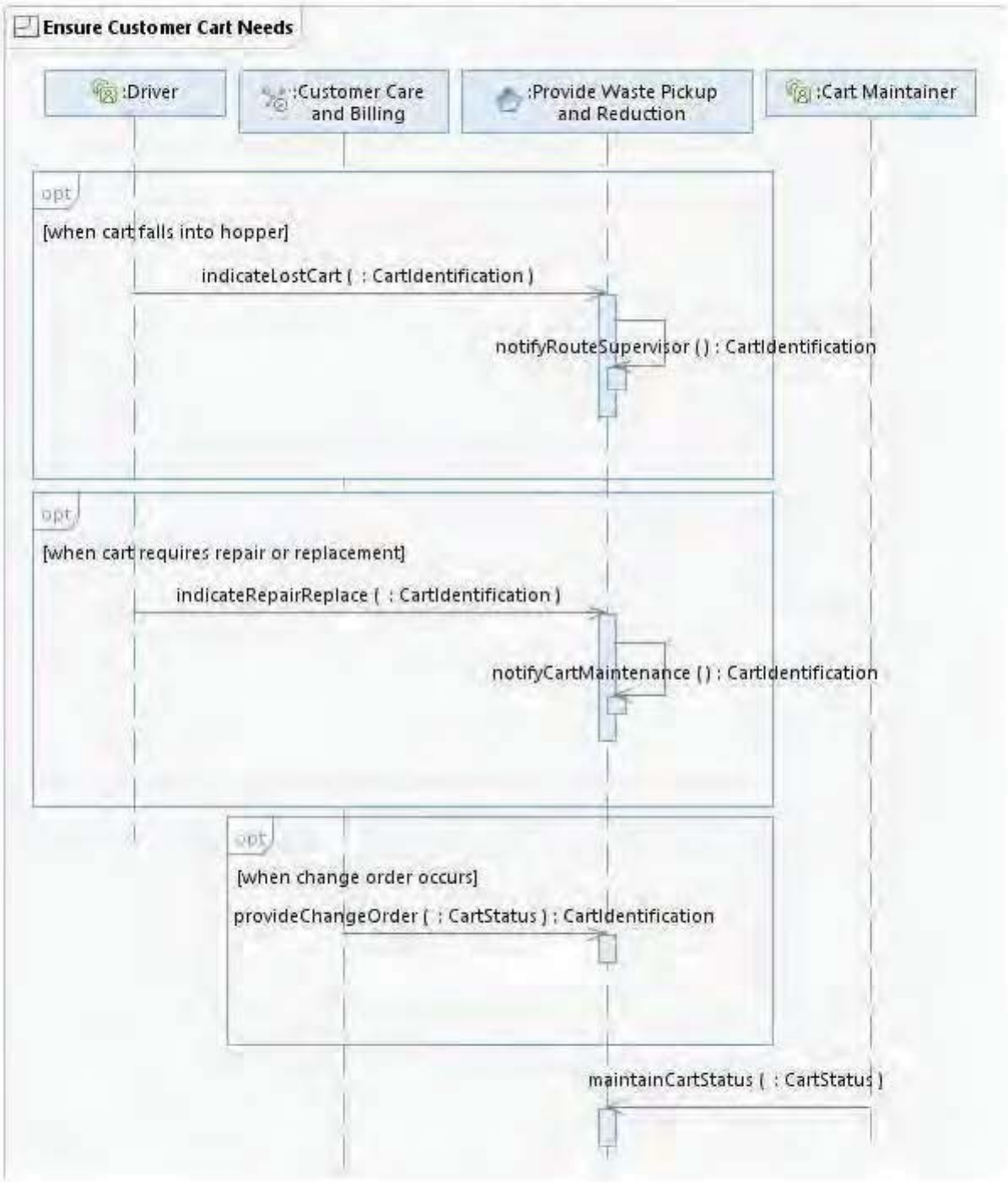


Use Case Diagram - Ensure Customer Cart Needs

Select to enlarge...

Scope: During daily operations, customer carts may inadvertently fall or slip into the truck's hopper. If the system detects that a cart is missing from the dump arm during the return position, the system provides the Driver notification of lost cart. Using the system, the Driver confirms that a cart is lost in the truck's hopper. Current cart

inventory contains a small number of carts equipped with RFID devices. When a Driver confirms that an RFID equipped cart is lost in the hopper, the system captures available cart identification information to store with the lost cart incident. When a confirmed non-RFID equipped cart is lost in the hopper, the system displays a list of known addresses in the surrounding area to enable the Driver to make a visual determination of the proper address selection – i.e. the system correlates lost cart customer address with cart RFID information or the Driver confirms the owner address. The system uses the customer Cart Identification to identify the Customer in the Customer Care and Billing system to provide notification via text message or email of the lost cart and the anticipated replacement schedule. During daily operations, the Driver uses the system to identify a cart as needing repair or replacement. The system stores cart repair or replacement information along with the Cart Identification information. The system provides a queue mechanism to assist in efficient routing for Cart Maintainer staff. Customers call Austin Energy to open or close an account for services with Austin Resource Recovery or to make other changes to services. The Customer Care and Billing system updates the Cart Identification information and updates the system with pickup or delivery schedule. The Cart Maintainer use the system to navigate to scheduled daily cart locations based on service requests for repairs or replacements. After making repairs or replacements, the Cart Maintainer enters action taken or assigns new Cart Identification information with the cart customer. When customers call the Utility Contact Center to start or stop services with Austin Resource Recovery or to make other changes to their cart services, Customer Care & Billing (CC&B) creates a service order (Change Order) indicating relevant Cart Status through an interface with the system. The Cart Maintainer uses the system to navigate to scheduled daily cart locations based on service requests for repairs or replacements. After making repairs or replacements, the Cart Maintainer enters action taken or assigns new Cart Identification information with the cart customer. Using the system, the staff may also originate a service order (Change Order) requiring an interface with CC&B.



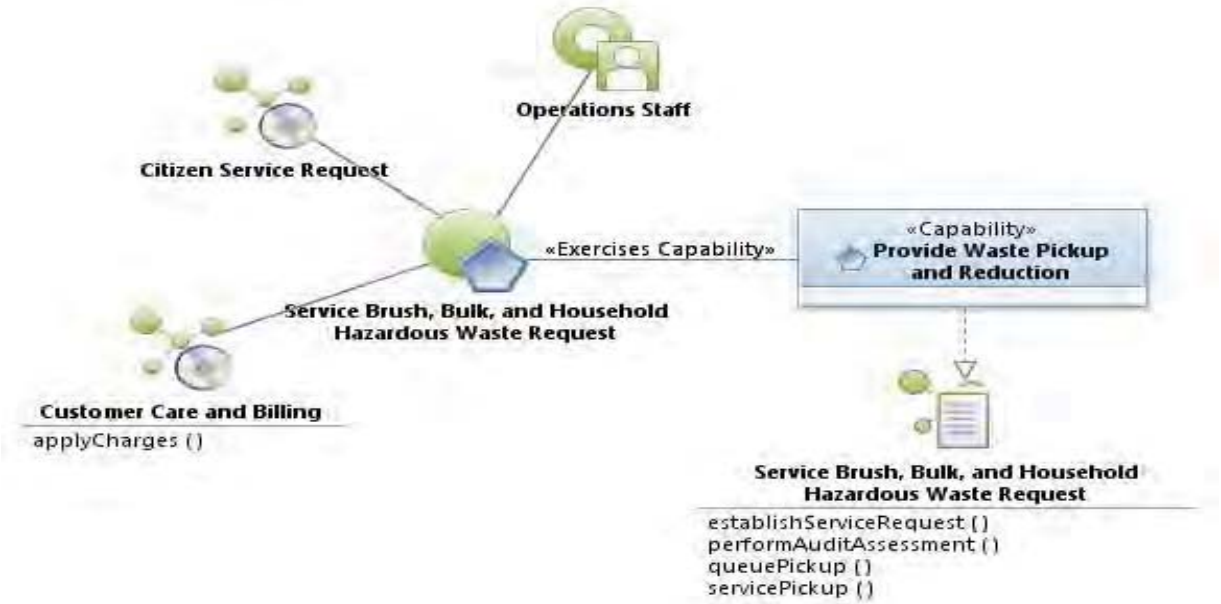
Sequence Diagram - Ensure Customer Cart Needs

Table of Interface Descriptions

Req#	Type/Interface - Requirement Description	Performance
ECCN01	**Provide Waste Pickup and Reduction/indicateLostCart**	Describe solution relevant to the functional description or explain developmental approach and experience. Contractor may propose alternative, effective solution.
	During daily operations, customer carts may inadvertently fall or slip into the truck's hopper. The system provides the Driver a lost cart indication. Using the system, the Driver confirms a cart is lost in truck's hopper. The system ensures a cart in truck dump arm when returned to downward position to verify cart lost in hopper. When a radio frequency identification (RFID) picks up the customer information such as name, phone number, address, etc., this information is stored with the lost cart indication. Current cart inventory provides a small number of carts with an RFID device. If RFID does not exist, the system displays a list of known addresses in the surrounding area for the Driver to make a visual determination of the appropriate address selection - e.g., the system correlates Customer address with the cart number or the Driver makes address observation.	
ECCN02	**Provide Waste Pickup and Reduction/notifyRouteSupervisor**	
	On the Route Supervisor's route display, the system provides indication of lost cart in hopper, including Cart Identification information. The system displays the same information on the Dispatcher's display. The system uses the customer Cart Identification to identify the Customer in the Customer Care and Billing system to provide notification via text message or email of the lost cart and the anticipated replacement schedule. The Driver may also choose to leave a note on the customer door. Route Supervisors are responsible for replace lost carts within 48 hours.	
ECCN03	**Provide Waste Pickup and Reduction/indicateRepairReplace**	
	During daily operations, the Driver uses the system to identify a cart as needing repair or replacement. When the vehicle's radio frequency identification (RFID) identifies the cart, the Driver uses the system to indicate observed cart condition and recommended repair or replacement actions required. When no RFID or RFID is unreadable, the system displays a list of known addresses in the surrounding area for the Driver to make a visual address determination or use the system to determine address from the cart number. The Driver uses a portable hand RFID scanner or cart number to identify damaged carts when the vehicle lift mechanism is unable to scan the cart.	
ECCN04	**Provide Waste Pickup and Reduction/notifyCartMaintenance**	
	The system stores cart repair or replacement information along with the Cart Identification information. The system provides a queue mechanism to assist in efficient routing for Cart Maintainer staff. The queue ensures fair, responsive cart replacement or repair by efficiently concentrating cart maintenance needs within typical workday delivery zone. For carts that fall/slip into the hopper within the vicinity of the daily planned service deliver, replacement information shows up on that day's delivery schedule and provide the appropriate Route Supervisor cart replacement status to ensure 48-hour replacement turnaround. The system tracks cart count inventory prior to accepting replacement of fall/slip carts by Cart Maintainer staff. When Cart Maintainer cannot replace the fall/slip	

Req#	Type/Interface - Requirement Description	Performance
	carts within 48-hour window, the system provides Route Supervisor cart status indication of need to replace the cart.	
ECCN05	**Provide Waste Pickup and Reduction/provideChangeOrder**	
	Customers call the Utility Contact Center to start or stop services with Austin Resource Recovery or to make other changes to services. The service order is created in CC&B and then through an interface will transmit to the work management system. Once the work has been completed, or an update is made to the service request in the work management system, the updated information is transmitted back to CC&B. In the event of a service order such as change to cart size, the Customer Care and Billing system updates the Cart Identification information and updates the system with pickup or delivery schedule. If an order originates in the work management system, that order information should be transmitted to CC&B when created and completed so that billing is updated and customer service reps can view the pending order and avoid creating a duplicate order if a customer calls in regarding a missing cart.	
ECCN06	**Provide Waste Pickup and Reduction/maintainCartStatus**	
	The Cart Maintainer use the system to navigate to scheduled daily cart locations based on service requests for repairs or replacements. After making repairs or replacements, the Cart Maintainer enters action taken or assigns new Cart Identification information with the cart customer. The system uses enumeration elements for commonly repaired items such as replaced lid, wheels, etc. The enumeration list is modifiable by approved city staff.	

5.3 Service Brush, Bulk, and Household Hazardous Waste Request



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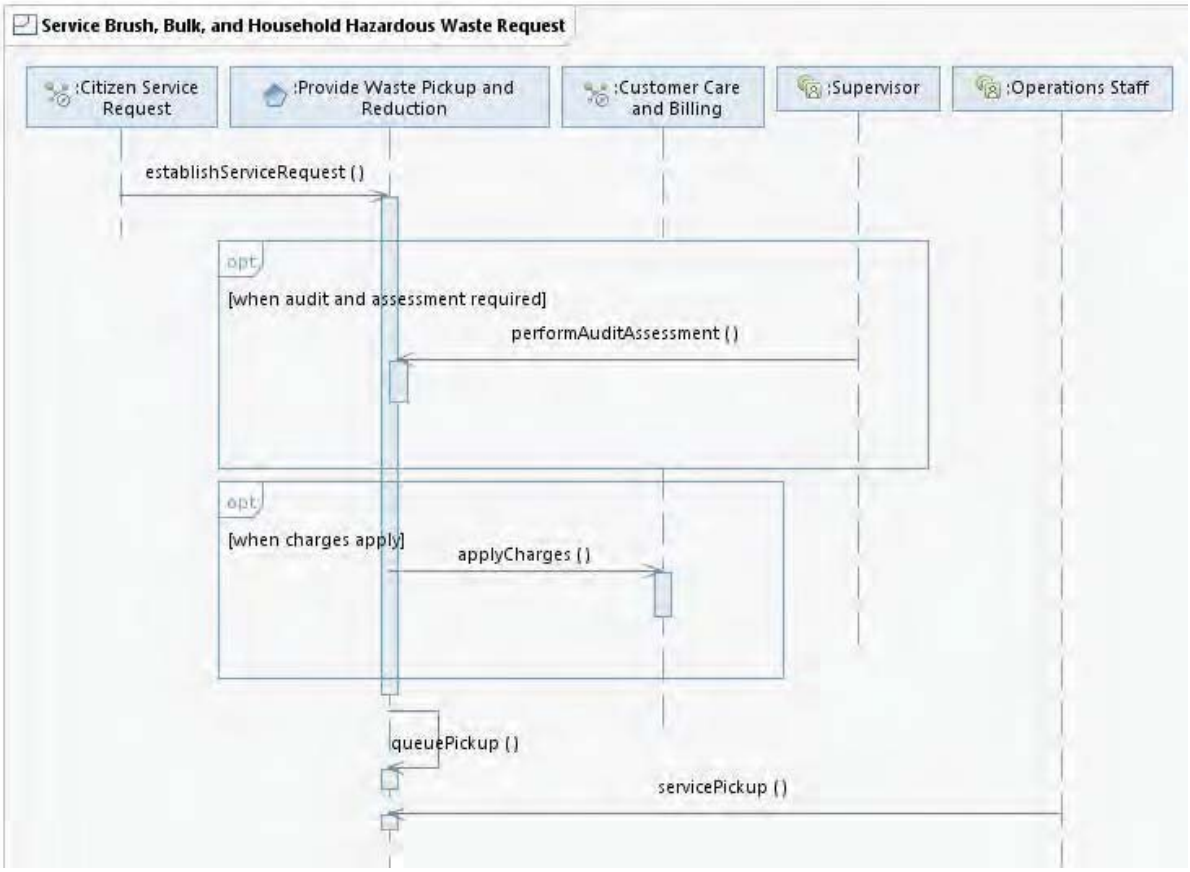
Use Case Diagram – Service Brush, Bulk, and Household Hazardous Waste Request

Scope: The 311 Call Advisor creates service requests for brush, bulk, and household hazardous waste via Motorola's Citizen Service Request (CSR) system. CSR also provides a customer self-service Web portal to allow customers to submit requests online. The 311 Call Advisor uses the system to indicate the type of refuse requested. The 311 Call Advisor uses CSR to generate a brush, bulk, or household hazardous waste work order - CSR processes the work order request with the system. For required audit work orders, the system notifies Supervisor to determine cost for out of cycle pickups. The Supervisor uses the system to determine daily out of cycle audit assessments to establish cost to service the work order. The system assigns audit needs based on geospatial information relevant to the assigned work area of the Supervisor. For excess refuse bags or other debris removal, there may be additional charges that apply. The Driver or Operations Staff use the system to enter extra items removed. The system logs the pickup information and provides a queue mechanism to assist in efficient routing for appropriate Operations Staff. The system displays the daily pickup information on the Operational Staff's mobile device using a geographic information system (GIS) map for optimal routing guidance. The pickup staff uses a mobile device to indicate pickup volumes and types recovered. If a service request (work order), the Operations Staff uses the system to close the request and/or to indicate condition and status serviced through 311 Advisor and the CSR system.



Sequence Diagram - Service Brush, Bulk, and Household Hazardous Waste Request

Table of Interface Descriptions

Req#	Type/Interface - Requirement Description	Performance
SBBH01	**Provide Waste Pickup and Reduction/establishServiceRequest** The 311 Call Advisor creates service requests for brush, bulk, and household hazardous waste via Motorola's Citizen Service Request (CSR) system. CSR also provides a customer self-service Web portal to allow customers to submit requests online. The 311 Call Advisor uses the system to indicate the type of refuse requested (e.g., brush, bulk, and household hazardous waste). The 311 Call Advisor uses CSR to generate a brush, bulk, or household hazardous waste work order - CSR processes the work order request with the system. For required audit work orders, the system notifies Supervisor to determine cost for out of cycle pickups. Based on the information entered, the system returns an estimated pickup date/time or anticipated range. On task completion, the system closes the CSR work order item.	Explain ability to integrate solution with the city's enterprise service bus (ESB) and the Motorola Citizen Service Request (CSR) system.
SBBH02	**Provide Waste Pickup and Reduction/performAuditAssessment** The Supervisor uses the system to determine daily out of cycle audit assessments to establish cost to service brush, bulk, and household hazardous waste work order. The system assigns audit needs based on geospatial information relevant to the assigned work area of the Supervisor. The system tracks the number of requests per household to allow for a set number of free service requests before billing for the service. The number of free service requests is adjustable by approved city staff. The Supervisor uses the system to enter assessed volume/amount of audited material and associated cost relevant to the servicing household.	Describe solution relevant to the functional description or explain developmental approach and experience.
CRDI04	**Customer Care and Billing/applyCharges** For excess refuse bags or other debris removal, there may be additional charges that apply. The Driver or Operations Staff use the system to enter extra items removed. Based on the type and volume of services entered (extra refuse bags, additional debris removal, etc.), the system applies required charges to the Customer Care and Billing (CC&B) system.	
SBBH03	**Provide Waste Pickup and Reduction/queuePickup** The system logs the pickup information and provides a queue mechanism to assist in efficient routing for appropriate Operations Staff. The system displays the daily pickup information on the Operational Staff's mobile device using a geographic information system (GIS) map for optimal routing guidance. GIS indicates pickup points and communicates location information to the Dispatcher and Supervisor device. The queue determines fair and responsive pickup schedule by efficiently concentrating pickup needs within typical workday delivery zones.	
SBBH04	**Provide Waste Pickup and Reduction/servicePickup** The pickup staff uses a mobile device to indicate pickup volumes and types recovered. When a Supervisor previously performed an assessment audit, the system uses the volumes and types assessed. The system stores information to provide analysis of waste type and volume to determine if customer training	

Req#	Type/Interface - Requirement Description	Performance
	and/or other waste management functions provide an effect on the amount and type of waste collected. If a service request (work order), the Operations Staff uses the system to close the request and/or to indicate condition and status (including notes) serviced through 311 Advisor and the Citizen Service Request (CSR) system. The user interface is simple to use and intuitive for simple routine information entry and push button (icon) focused to the maximum extent possible.	

5.4 Logical Data Model: The following logical data model is not complete; rather, its representative of kinds of information we wish to maintain.

Req#	Type/Interface - Requirement Description	Performance
LDM01	**Logical Data Model**	Describe proposed solution relevant to solution logical data model or discuss developmental experience and performance.
	The following logical data model is representative of our existing Solid Waste Tracking System (SWTS) used for reporting. The future system replaces and includes management dashboards useful for day-to-day operations and future planning. The sample logical data model does not propose this structure as a design; rather, we're including the LDM as a representative sample of the information we wish to integrate.	
SS02	**Provide Open Data Access**	Explain solution's ability to provide open data access.
	The system provides access to all data records. The data must be accessible to create reportable data-marts and data warehouses as needed to accomplish reporting needs. The system must provide open standard Web interface protocols in order to synchronize application information using internal enterprise service bus.	

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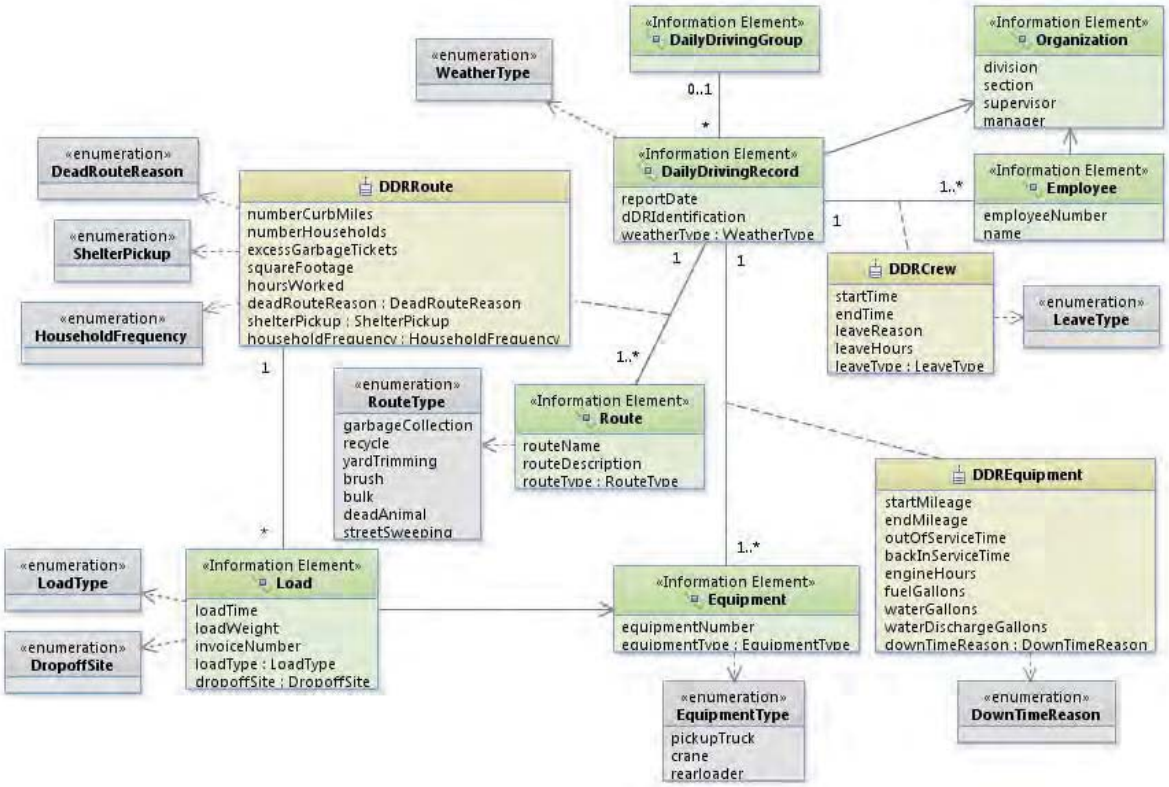

Logical Data Model - Vehicle Fleet Technology Upgrade

5.5 Supplemental Specifications

Req#	Type/Interface - Requirement Description	Performance
SS01	**Manage Records** The system prevents the loss or unauthorized deletion of records before the expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a). The system prevents the unauthorized alteration of records before the expiration of their retention period. The system provides logs or audit trails that document edits and views of records. The system provides systematic deletion of records upon expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a) and §201.003(16), Austin City Code §2-11-11. Sufficient metadata must be present to identify records eligible for disposition based on defined triggering events and dates. Upon expiration of the retention period, the system ensures destruction of all duplicate records to include convenience copies. Texas Rules of Evidence, Rule 1003. The system's back-up strategy ensures retention of backup records doesn't excessively exceed destruction of originals. System procedures must ensure retention rules apply to copies of production data used to develop, test,	Describe solution relevant to records management functionality.

Req#	Type/Interface - Requirement Description	Performance
	or train. The system ensures that records are retrievable and available until the expiration of their approved retention period. Texas Local Government Records Act §205.008(b). Records stored on contractor, outsourced, cloud, or hosted platforms remain the property and responsibility of the City. When contacted by an authorized City employee or when the contract ends or is terminated, contractors must deliver records, in all requested formats and media, along with all finding aids and metadata, to the City at no cost. Austin City Code §2-11-15. Until expiration of retention period, hardware and software must be available to access records and sufficient metadata must be present to facilitate timely retrieval of records. Contracts with hosted solution providers must specify the contractor's duties with respect to management of records as required by Austin City Code §2-11-15. The system ensures retention of specific records – even if their retention period has expired – if they are the subject of known or reasonably anticipated litigation, public information request, audit or other legal action. Texas Local Government Records Act §202.002, Austin City Code § 2-11-11. The system maintains a log of litigation and other holds allowing release of holds after resolution of litigation, audit, or public information requests. The system creates records/logs of destruction activity. Texas Local Government Records Act §203.046, Austin City Code §2-11-11. Destruction logs must (a) show a minimal set of metadata sufficient to uniquely identify the records purged; (b) show who approved and who executed the destruction, and the dates on which these events took place; (c) reflect compliance with an approved, written standard operating procedure; and (d) be retained permanently.	

6.0 APPLICABLE PERMITS AND LICENSES

The Contractor shall obtain and maintain all permits and licenses to perform all services described herein. All services provided in relation to this agreement, directly and indirectly, shall be in compliance with all laws, ordinances, specifications, rules and regulations applicable to this service as established by any federal, state or local governmental provisions prevailing during the term of this agreement. It is solely the Contractor's responsibility to ensure all legal compliance is satisfied as well as ensure all subcontractors and employees are within compliance.

7.0 OMISSIONS

It is the intention of this solicitation to acquire a complete Vehicle Technology Upgrade of the scope described herein, with all necessary components. All items and/or services omitted from this Scope of Work which is clearly necessary for the successful operation of the products and services being sought under this solicitation shall be considered requirements, although not directly specified or included herein.

8.0 LIST OF ATTACHMENTS

- **Attachment A –Cost Proposal Worksheet**
- **Attachment B – Vehicle and Equipment List**
- **Attachment C – Oracle Customer Care and Billing (CC&B) System Description**
- **Attachment D – Driver's Daily Report (DDR)**
- **Attachment E – CTM Technical Reference Model**
  We included the attached Technical Reference Model (TRM) to provide insight into our technical standards and operational IT environment. Please review the TRM and discuss alternative recommendations if required.
- **Attachment F – CTM Technical Standards**
  We included the attached Technical Standards used by our enterprise. If the proposed solution is unable to comply with any of these standards, please explain the alternative approach or solution.

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level 1-Must Have 2-Future 3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
05G014	CRANE CARR	LET2-45	1CYCCK4815T046974		Yes	Yes	COA15195	B453187007410	SIERRA WIREL	MP875-C	Collection Services/Garbage	Rearloader	2001	B 20 Diesel
05G016	CRANE CARR	LET2-45	1CYCCK4855Y046976		Yes	Yes	COA15810	B452987005910	SIERRA WIREL	MP875-C	Collection Services/Garbage	Rearloader	2001	B 20 Diesel
05G018	CRANE CARR	LET2-45	1CYCCK4895T046978		Yes	Yes	COA15807	B452997001110	SIERRA WIREL	MP875-C	Collection Services/Garbage	Rearloader	2001	B 20 Diesel
05G020	ISUZU	T7F042	4GTM7F1385F700974		Yes	Yes	COA16094	B452987001410	SIERRA WIREL	MP875-C	Yard Trimmings	UD Nissan Tonka Truck	2041	B 20 Diesel
05G021	ISUZU	T7F042	4GTM7F1315F700959		Yes	Yes	COA16589	B651050001410	SIERRA WIREL	MP881-A	Litter Control	UD Nissan Tonka Truck	2202	B 20 Diesel
06G044	IHC	7400SBA	1HTWGAZT67J430034		Yes	Yes	COA15568	B450748003810	SIERRA WIREL	MP875-C	Bulky	CCC/PakMor Rearloader	2081	B 20 Diesel
06G047	CRANE CARR	LET2 CREW CA	1CYCCK4846T047621		Yes	Yes	COA15202	B453187007510	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader	2041	B 20 Diesel
06G049	CRANE CARR	LET2 CREW CA	1CYCCK4886T047623		Yes	Yes	COA15922	B452987000110	SIERRA WIREL	MP875-C	Clean Austin Program	CCC/PakMor Rearloader	2082	B 20 Diesel
07G060	CRANE CARR	LET2-45	1CYCCN4847T047850		Yes	Yes	COA15894	B452987003110	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader-CNG	2041	CNG Powered
07G062	CRANE CARR	LET2-45	1CYCCN4867T047851		Yes	Yes	COA16072	B452997000410	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader-CNG	2041	CNG Powered
07G063	CRANE CARR	LET2-45	1CYCCN48X7T047853		Yes	Yes	COA16111	B452987006210	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader-CNG	2041	CNG Powered
07G064	CRANE CARR	LET2-45	1CYCCN4817T047854		Yes	Yes	COA16069	B452997000310	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader-CNG	2041	CNG Powered
07G065	CRANE CARR	LET2-45	1CYCCN4837T047855		Yes	Yes	COA16067	B452997000510	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader-CNG	2041	CNG Powered
07G164	UD	UD23DHK	JNALC80H17AN60478		Yes	Yes	COA16073	B452997000710	SIERRA WIREL	MP875-C	Yard Trimmings	UD 14yd Tonka Truck	2041	B 20 Diesel
08G038	UD	UD23DHH	JNALC81H08AK70006		Yes	Yes	COA16054	B452977002910	SIERRA WIREL	MP875-C	Collection Services/Recycling	Tonka Truck	2021	B 20 Diesel
08G040	UD	UD23DHH	JNALC81HX8AK70062		Yes	Yes	COA15921	B452987000410	SIERRA WIREL	MP875-C	Collection Services/Recycling	Tonka Truck	2021	B 20 Diesel
08G042	CRANE CARR	LET2-45	1CYCCK4838T048715		Yes	Yes	COA15941	B452977004210	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G744	CRANE CARR	LDT2-45	1CYCCK4848T048478		Yes	Yes	COA15939	B452977003810	SIERRA WIREL	MP875-C	Collection Services/Recycling	Side Loader Recycling Truck	2021	B 20 Diesel
08G790	CRANE CARR	LET2-45	1CYCCK4818T048695		Yes	Yes	COA15907	B452977002210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
08G791	CRANE CARR	LET2-45	1CYCCK4838T048696		Yes	Yes	COA16305	B452977008210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
08G792	CRANE CARR	LET2-45	1CYCCK4808T048705		Yes	Yes	COA15892	B452987002910	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G793	CRANE CARR	LET2-45	1CYCCK4828T048706		Yes	Yes	COA15938	B452977005510	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G794	CRANE CARR	LET2-45	1CYCCK4848T048707		Yes	Yes	COA15943	B452977003410	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G796	CRANE CARR	LET2-45	1CYCCK4868T048708		Yes	Yes	COA15918	B452987000510	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level 1-Must Have 2-Future 3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
08G797	CRANE CARR	LET2-45	1CYCCK4888T048709		Yes	Yes	COA15937	B452977005710	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G799	CRANE CARR	LET2-45	1CYCCK4868T048711		Yes	Yes	COA15920	B452987000710	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G800	CRANE CARR	LET2-45	1CYCCK4888T048712		Yes	Yes	COA15919	B452977007210	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G802	CRANE CARR	LET2-45	1CYCCK4818T048714		Yes	Yes	COA15936	B452977005410	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
08G803	CRANE CARR	LET2-45	1CYCCK4838T048701		Yes	Yes	COA16268	B451377002610	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader	2041	B 20 Diesel
08G804	CRANE CARR	LET2-45	1CYCCK4818T048700		Yes	Yes	COA16085	B452977006710	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader	2041	B 20 Diesel
08G814	CRANE CARR	LET2-45	1CYCCK4858T048702		Yes	Yes	COA19266	B651492008910	SIERRA WIREL	MP890-CD	Yard Trimmings	CCC/PakMor Rearloader	2041	B 20 Diesel
08G815	CRANE CARR	LET2-45	1CYCCK4878T048703		Yes	Yes	COA16078	B452977007610	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader	2041	B 20 Diesel
08G816	CRANE CARR	LET2-45	1CYCCK4898T048704		Yes	Yes	COA15184	B453177002310	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/PakMor Rearloader	2041	B 20 Diesel
08G826	CRANE CARR	LET2-45	1CYCCK4858T048697		Yes	Yes	COA16569	B650780004410	SIERRA WIREL	MP881-A	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	B 20 Diesel
08G827	CRANE CARR	LET2-45	1CYCCK4878T048698		Yes	Yes	COA16105	B452987006410	SIERRA WIREL	MP875-C	Bulky	CCC/PaKMor/RearLoader	2081	B 20 Diesel
08G828	CRANE CARR	LET2-45	1CYCCK4898T048699		Yes	Yes	COA16543	B650780001310	SIERRA WIREL	MP881-A	Brush	CCC/PaKMor/RearLoader	2080	B 20 Diesel
09G985	UD	3300	JNAPC81L39AH75127		Yes	Yes	COA16567	B650780004610	SIERRA WIREL	MP881-W	Collection Services/Garbage	Tonka Truck	2001	B 20 Diesel
09G986	IHC	4300	1HTMMAAN29H096463		Yes	Yes	COA15527	B450748007910	SIERRA WIREL	MP875-C	Bulky	IH 4900 Flatbed Crane	2081	B 20 Diesel
10G114	CRANE CARR	LET2-45	1CYCCK483AT049692		Yes	Yes	COA16561	B650780003110	SIERRA WIREL	MP881-A	Collection Services/Garbage	Rearloader	2001	B 20 Diesel
10G754	CRANE CARR	LET2-45	1CYCCK480AT049519		Yes	Yes	COA19896	B451267008410	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
10G755	CRANE CARR	LET2-45	1CYCCK487AT049520		Yes	Yes	COA16056	B452977003910	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
10G756	CRANE CARR	LET2-45	1CYCCK489AT049521		Yes	Yes	COA15528	B450748008110	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
10G757	CRANE CARR	LET2-45	1CYCCK484AT049524		Yes	Yes	COA15809	B452997001210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
10G758	CRANE CARR	LET2-45	1CYCCK480AT049522		Yes	Yes	COA16311	B452987005010	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
10G759	CRANE CARR	LET2-45	1CYCCK482AT049523		Yes	Yes	COA16476	B653538000710	SIERRA WIREL	MP881-A	Collection Services/Garbage	Automated	2001	B 20 Diesel
10G760	CRANE CARR	LET2-45	1CYCCK486AT049525		Yes	Yes	COA16101	B452987001310	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
10G761	CRANE CARR	LET2-45	1CYCCK489AT049518		Yes	Yes	COA16546	B650480009810	SIERRA WIREL	MP881-A	Yard Trimmings	CCC/Heil 25 yd	2041	B 20 Diesel
10G762	CRANE CARR	LET2-45	1CYCCK487AT049517		Yes	Yes	COA16302	B450778002410	SIERRA WIREL	MP875-C	Yard Trimmings	CCC/Heil 25 yd	2041	B 20 Diesel

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level 1-Must Have 2-Future 3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
10G986	UD	3300	JNAPC81L59AH75128		Yes	Yes	COA15209	B453177005010	SIERRA WIREL	MP875-C	Collection Services/Recycling	Tonka Truck/Spare	2021	B 20 Diesel
10G988	CRANE CARR	LET2-45	1CYCCK486AT049685		Yes	Yes	COA16568	B650810003210	SIERRA WIREL	MP881-W	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
10G991	CRANE CARR	LET2-45	1CYCCK48XAT049690		Yes	Yes	COA16560	B650810000610	SIERRA WIREL	MP881-A	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	B 20 Diesel
10G992	CRANE CARR	LET2-45	1CYCCK481AT049691		Yes	Yes	COA16566	B650780004010	SIERRA WIREL	MP881-A	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	B 20 Diesel
10G993	CRANE CARR	LET2-45	1CYCCK488AT049686		Yes	Yes	COA16570	B650810000110	SIERRA WIREL	MP881-A	Collection Services/Recycling	Automated Recycling Truck	2021	B 20 Diesel
10G994	CRANE CARR	LET2-45	1CYCCK481AT049688		Yes	Yes	COA16563	B650810000510	SIERRA WIREL	MP881-A	Collection Services/Garbage	Automated	2001	B 20 Diesel
10G995	UD	3300	JNAPC81L1AAH80279		Yes	Yes	COA15192	B453177002010	SIERRA WIREL	MP875-C	Collection Services/Garbage	Tonka Truck	2001	B 20 Diesel
11G561	CRANE CARR	LET2-45	1CYCCZ487BT050032		Yes	Yes	COA15543	B452987001110	SIERRA WIREL	MP875-C	Brush	Semi Automated Rearloader	2080	CNG Powered
11G562	CRANE CARR	LET2-45	1CYCCZ489BT050033		Yes	Yes	COA15895	B452987002010	SIERRA WIREL	MP875-C	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	CNG Powered
11G563	CRANE CARR	LET2-45	1CYCCZ480BT050034		Yes	Yes	COA15910	B452977002310	SIERRA WIREL	MP875-C	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	CNG Powered
11G564	CRANE CARR	LET2-45	1CYCCZ482BT050035		Yes	Yes	COA16066	B452997000210	SIERRA WIREL	MP875-C	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	CNG Powered
11G565	CRANE CARR	LET2-45	1CYCCZ484BT050036		Yes	Yes	COA15549	B450778009610	SIERRA WIREL	MP875-C	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	CNG Powered
11G566	CRANE CARR	LET2-45	1CYCCZ486BT050037		Yes	Yes	COA15942	B452977005610	SIERRA WIREL	MP875-C	Collection Services/Recycling	CCC/Heil 25 yd Rearloader	2021	CNG Powered
11G567	CRANE CARR	LET2-45	1CYCCZ488BT050038		Yes	Yes	COA16106	B452987007410	SIERRA WIREL	MP875-C	Bulky	CCC/Heil 25 yd Rearloader	2081	CNG Powered
11G568	CRANE CARR	LET2-45	1CYCCZ48XBT050039		Yes	Yes	COA15935	B452997003210	SIERRA WIREL	MP875-C	Bulky	CCC/Heil 25 yd Rearloader	2081	CNG Powered
11G569	CRANE CARR	LET2-45	1CYCCZ486BT050040		Yes	Yes	COA16104	B452987006510	SIERRA WIREL	MP875-C	Bulky	CCC/Heil 25 yd Rearloader	2081	CNG Powered
11G570	AUTOCAR	ACX64	5VCACDLEXBH212986		Yes	Yes	COA15204	B453177005610	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
11G571	AUTOCAR	ACX64	5VCACDLE6BH212984		Yes	Yes	COA15909	B452977001810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
11G572	AUTOCAR	ACX64	5VCACDLE1BH212987		Yes	Yes	COA15511	B450748002810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
11G573	AUTOCAR	ACX64	5VCACDLE4BH212983		Yes	Yes					Collection Services/Garbage	Automated	2001	CNG Powered
11G574	AUTOCAR	ACX64	5VCACDLE8BH212985		Yes	Yes	COA15805	B452997001810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
11G990	IHC	7300SBA	1HTZZAARXBJ366693		Yes	Yes	COA15468	B450748004610	SIERRA WIREL	MP875-C	Collection Services/Recycling	In house Semi- Automated	2021	B 20 Diesel
12G457	AUTOCAR	ACMD42	516M1L9B3CH215912		Yes	Yes	COA23213	CA10253089510	SIERRA WIREL	GX400	Litter Control	Rear Loader/Side Dump	2202	Diesel
12G458	AUTOCAR	ACMD42	516M1L9B1CH215911		Yes	Yes	COA23212	CA10253024510	SIERRA WIREL	GX400	Litter Control	Rear Loader/Side Dump	2202	Diesel

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level* *1-Must Have* *2-Future* *3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
12G578	AUTOCAR	ACX64	5VCACD8G2CH213187		Yes	Yes	COA15928	B452997003410	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	Diesel Hybrid E3
12G579	AUTOCAR	ACX64	5VCACD8G4CH213188		Yes	Yes	COA15457	B450778000410	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	Diesel Hybrid E3
12G580	AUTOCAR	ACX64	5VCACD8G2CH213190		Yes	Yes	COA15200	B453187003310	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	Diesel Hybrid E3
12G581	AUTOCAR	ACX64	5VCACD8G6CH213189		Yes	Yes	COA15213	B453177006010	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated Recycling Truck	2021	Diesel Hybrid E3
12G678	UD	3300	JNAK510LXCAE15101		No	Yes	COA16112	B452987005110	SIERRA WIREL	MP875-C	Collection Services/Recycling	Rearloader	2021	B 20 Diesel
12G680	UD	3300	JNAK510L1CAE15102		Yes	Yes	COA15119	B453517000310	SIERRA WIREL	MP875-C	Collection Services/Recycling	Rearloader	2021	B 20 Diesel
12G681	UD	3300	JNAK510L3CAE15103		Yes	Yes	COA15190	B453177001810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Tonka Truck	2001	B 20 Diesel
12G682	UD	3300	JNAK510L2CAE15111		Yes	Yes	COA15902	B452987007910	SIERRA WIREL	MP875-C	Collection Services/Garbage	Tonka Truck	2001	B 20 Diesel
12G683	UD	3300	JNAK510L4CAE15112		Yes	Yes	COA15815	B452987005210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Tonka Truck	2001	B 20 Diesel
12G687	AUTOCAR	ACX64	5VCACD7F0CH213648		Yes	Yes	COA16113	B452987006010	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
12G688	AUTOCAR	ACX64	5VCACD7F9CH213647		Yes	Yes	COA15898	B452987006810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	B 20 Diesel
13G165	CRANE CARR	LET2-45	1CYCCZ483DT050953		Yes	Yes	COA15273	B453187008710	SIERRA WIREL	MP875-C	Collection Services/Recycling	Rear Loader	2021	CNG Powered
13G166	CRANE CARR	LET2-45	1CYCCZ485DT050954		Yes	Yes	COA16099	B452987001510	SIERRA WIREL	MP875-C	Collection Services/Recycling	Rear Loader	2021	CNG Powered
13G222	UD	3300	JNAK510LXDAH20065		Yes	Yes	COA15544	B452987001010	SIERRA WIREL	MP875-C	Bulky	Tonka Truck	2081	B 20 Diesel
13G456	UD	3300	JNAK510L1DAH20066		Yes	Yes	COA16074	B452977007910	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2002	B 20 Diesel
13G459	AUTOCAR	ACX64	5VCACD8FXDH215777		Yes	Yes	COA22979	CA13072013210	SIERRA WIREL	GX400	Collection Services/Recycling	Garbage	2021	Diesel
13G460	AUTOCAR	ACX64	5VCACDLE0DH215771		Yes	Yes	COA15212	B453177005210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G461	AUTOCAR	ACX64	5VCACDLE4DH215773		Yes	Yes	COA22984	CA12992042610	SIERRA WIREL	GX400	Collection Services/Garbage	Automated	2001	CNG Powered
13G462	AUTOCAR	ACX64	5VCACDLE2DH215772		Yes	Yes	COA15449	B450778001810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G463	AUTOCAR	ACX64	5VCACDLE6DH215774		Yes	Yes	COA22985	CA12992098510	SIERRA WIREL	GX400	Collection Services/Garbage	Automated	2001	CNG Powered
13G464	AUTOCAR	ACX64	5VCACD8F6DH215775		Yes	Yes	COA23215	CA10493081410	SIERRA WIREL	GX400	Collection Services/Garbage	Automated	2001	Diesel
13G465	AUTOCAR	ACX64	5VCACD8F3DH215779		Yes	Yes	COA22987	CA13192056610	SIERRA WIREL	GX400	Collection Services/Recycling	Automated	2021	Diesel
13G466	AUTOCAR	ACX64	5VCACD8F1DH215778		Yes	Yes	COA15940	B452977003610	SIERRA WIREL	MP875-C	Collection Services/Recycling	Automated	2021	Diesel
13G468	CRANE CARR	LET2-45	1CYCCZ486DT050686		Yes	Yes	COA23230	CA10743074210	SIERRA WIREL	GX400	Yard Trimmings	Rear Loader/CC-PakMor	2041	CNG Powered

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level* *1-Must Have* *2-Future* *3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
13G495	AUTOCAR	ACX64	5VCACD8F8DH215776		Yes	Yes	COA23229	CA10793080310	SIERRA WIREL	GX400	Collection Services/Garbage	Automated	2001	Diesel
13G790	CRANE CARR	LET2-26	1CYCLL584DT050830		Yes	Yes	COA23226	CA10493022710	SIERRA WIREL	GX400	Yard Trimmings	Rear Loader/CC-Multipak	2041	Diesel
13G791	CRANE CARR	LET2-26	1CYCLL586DT050831		Yes	Yes	COA22980	CA13402022910	SIERRA WIREL	GX400	Yard Trimmings	Rear Loader/CC-Multipak	2041	Diesel
13G792	CRANE CARR	LET2-26	1CYCLL588DT050832		Yes	Yes	COA22981	CA13222036910	SIERRA WIREL	GX400	Yard Trimmings	Rear Loader/CC-Multipak	2041	Diesel
13G793	CRANE CARR	LET2-26	1CYCLL58XDT050833		Yes	Yes	COA15276	B453187005510	SIERRA WIREL	MP875-C	Yard Trimmings	Rear Loader/CC-Multipak	2041	Diesel
13G794	CRANE CARR	LET2-26	1CYCLL581DT050834		Yes	Yes	COA22982	CA13222091010	SIERRA WIREL	GX400	Yard Trimmings	Rear Loader/CC-Multipak	2041	Diesel
13G795	CRANE CARR	LET2-26	1CYCLL583DT050835		Yes	Yes	COA23224	CA10493004110	SIERRA WIREL	GX400	Yard Trimmings	Rear Loader/CC-Multipak	2041	Diesel
13G796	CRANE CARR	LET2-45	1CYCCZ485DT050940		Yes	Yes	COA15893	B452987003010	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G797	CRANE CARR	LET2-45	1CYCCZ487DT050941		Yes	Yes	COA15816	B452987003210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G798	CRANE CARR	LET2-45	1CYCCZ480DT050943		Yes	Yes	COA15518	B450778009410	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G799	CRANE CARR	LET2-45	1CYCCZ482DT050944		Yes	Yes	COA15206	B453177002710	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G800	CRANE CARR	LET2-45	1CYCCZ484DT050945		Yes	Yes	COA15193	B453187002210	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G801	CRANE CARR	LET2-45	1CYCCZ486DT050946		Yes	Yes	COA16107	B452987006110	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G802	CRANE CARR	LET2-45	1CYCCZ488DT050947		Yes	Yes	COA15901	B452987006910	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G803	CRANE CARR	LET2-45	1CYCCZ48XDT050948		Yes	Yes	COA15801	B452997001610	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G804	CRANE CARR	LET2-45	1CYCCZ489DT050942		Yes	Yes	COA16063	B452977003310	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G806	CRANE CARR	LET2-45	1CYCCZ481DT050949		Yes	Yes	COA16096	B452977008810	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G807	CRANE CARR	LET2-45	1CYCCZ488DT050950		Yes	Yes	COA15196	B453187004410	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G808	CRANE CARR	LET2-45	1CYCCZ48XDT050951		Yes	Yes	COA15914	B452977002110	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
13G809	CRANE CARR	LET2-45	1CYCCZ481DT050952		Yes	Yes	COA15813	B452987003410	SIERRA WIREL	MP875-C	Collection Services/Garbage	Automated	2001	CNG Powered
14G814	AUTOCAR	ACMD42	516M1LBD6EH216471		Yes	Yes	COA15208	B453177005510	SIERRA WIREL	MP875-C	Yard Trimmings	Rear Loader/Side Dump	2041	Diesel
13G769	AUTOCAR	ACX64									Collection Services/Garbage			
14G405	AUTOCAR	ACX64									Collection Services/Recycling			
15G257	AUTOCAR	ACX64												

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	***Priority Level*** *1-Must Have 2-Future 3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
15G543	AUTOCAR	ACMD42	516M1LBD6GH219874								Collection Services/Recycling			
15G544	AUTOCAR	ACX64	5VCACDVF0FH219750								Collection Services/Recycling			
15G545	AUTOCAR	ACX64	5VCACDVF2FH219751								Collection Services/Recycling			
15G546	AUTOCAR	ACX64	5VCACDVF4FH219752								Collection Services/Recycling			
15G552	AUTOCAR	ACX64												
15G744	AUTOCAR	ACX64												
15G767	AUTOCAR	ACX64	516M1LBD0FH219092								Collection Services/Recycling			
15G768	AUTOCAR	ACMD42	516M1LBD2FH219093								Collection Services/Garbage			
15G769	AUTOCAR	ACX64	516M1LBD4FH219094								Collection Services/Garbage			
15G770	CRANE CARR	LET45	1CYCCL480FN051367								Collection Services/Garbage			
15G773	AUTOCAR	ACX64	5VCACDVF4FH219038								Collection Services/Garbage			
15G777	AUTOCAR	ACX64	5VCACDVF6FH219042								Collection Services/Garbage			
15G778	AUTOCAR	ACX64	5VCACDVF8FH129043								Collection Services/Garbage			
15G779	AUTOCAR	ACX64	5VCACDLE7FH219044								Collection Services/Garbage			
15G783	AUTOCAR	ACX64	5VCACDLE4FH219051								Collection Services/Garbage			
15G786	AUTOCAR	ACX64									Collection Services/Garbage			
15G787	AUTOCAR	ACX64	5VCACDVF7FH219034								Collection Services/Recycling			
15G788	AUTOCAR	ACX64	5VCACDVF9FH219035								Collection Services/Recycling			
15G789	AUTOCAR	ACX64	5VCACDLE2FH219047								Collection Services/Garbage			
15G790	AUTOCAR	ACX64	5VCACDLE2GH219050								Collection Services/Garbage			
15G792	CRANE CARR	LET45	1CYCCL482FN051168								Collection Services/Garbage			
15G793	CRANE CARR	LET45	1CYCCL48FN0511369								Collection Services/Garbage			
09B597	Ford	F150	1FTVX12V89KB49323								Collection Services/Garbage			
07B136	Chevy	1500	1GCHC24K67E564962								Collection Services/Garbage			

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level* *1-Must Have* *2-Future* *3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
04B642	Ford	F150	2FTPF17Z334CA82201								Collection Services/Garbage			
					Vehicles with 2-Way Radio	**Vehicles with AVL**								
			Yes -->		116	117								
			No-->		1	0		C VCVC						
05B032	Chevy	1500									Collection Services/Garbage			
14B760	Ford	F150	1FTFX1CF2EKG09033								Collection Services/Garbage			
08B810	Ford	F151	1FTPF12V08KD16185								Collection Services/Recycling			
07B138	Chevy	1500	1GCH2C4K67E564606								Collection Services/Recycling			
10B809	Ford	F150									Collection Services/Garbage			
06B061	Ford	F150	1FTPF12VX6NB73905								litter abaitment / bulky			
07B135	Chevy	1500	1GCHC24K47B566581								Collection Services/Recycling			
09B601	Ford	F150	1FTVX14V99KB49327								Yard Trimmings			
13B402	Ford	F150	1FTVW1BF4DKD10735								Yard Trimmings			
07B134	Chevy	1500	1GCHC24K57E565925								Yard Trimmings			
13B005	Ford	F150									Litter Control			
13Q405	Ford	f150	1FDOW4GT9DEA09676								Litter Control			
15B549	Dodge	1500	3C6UR4HL5FG584257								Litter Control			
07Q826	Ford	F350	1FDXW46P27EA02897								Litter Control			
07B137	Chevy	1500	1GCHC24K67E566601								Litter Control			
10Q723	Ford	F350	1FDAF4GR1AEA55359								Carts			
10Q724	Ford	F350	1FDAF4GRXAEA55358								Carts			
10Q725	Ford	F350	1FDAF4GR8AEA55360								Carts			
11B282	Ford	F250	1FDRF3GT5BBB32769								Carts			

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	*Priority Level* *1-Must Have 2-Future 3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
12Q078	Ford	F350	1FDUF4GT7CEA89303								Carts			
12Q406	Ford	F350	1FDUF4GTOCEA82385								Carts			
14Q816	Ford	F450	1FDUF4GT8EEA35379								Carts			
14Q817	Ford	F450	1FDUF4GT4EEA35380								Carts			
14Q818	Ford	F450	1FDUF4GT6EEA35381								Carts			
14Q819	Ford	F450	1FDUF4GT8EEA35382								Carts			
14B820	Ford	F450	1FT8W3AT2EEA54907								Carts			
04G462	UD	3300	JNAMB43H23AF75090								Carts			
04B654	Ford	F150	2FTPF17Z54CA82202								Collection Services/Garbage			
08B813	Ford	F150	1FTPF12V68KD16188								Collection Services/Garbage			
01B545	Ford	F150	2FTPF17Z31CA81285								Collection Services/Garbage			
09B599	Ford	F150	1FTVX14V59KB49325								Collection Services/Garbage			
13B094	Ford	F150	1FTVX1BFXDKF27509								litter abaitment / bulky			
06B063	Ford	F150	1FTPF12V16NB73906								CAP			
10P729	International	D6600	1HTMYSKLXAH266869								Dead animal			
10P730	International	D6600	1HTMYSKL2AH268406								Dead animal			
11P009	International	D6600	1HTMYSKLOBJ381815								Dead animal			
06G049	CCC	LETS-45	1CYCCK4886TO47623								CAP			
06R728	International	D6600	1HSWDAZR87J478362								brush			
04R431	Freightliner	M2	1FUBBUBS64DM88723								CAP			
05G019	Freightliner	M2	1FVACYBSX6HX01734								CAP			
06G045	CCC	LETS-45	1CYCCK4886TO47619								Yard Trimmings			
14G470	International	D6600	1HTXYSJT4EJ489731								Brush			
14G469	International	D6600	1HTXYSJT6EJ489732								brush			

ATTACHMENT B - Vehicle and Equipment List

Vehicle Fleet Technology Upgrade

CITY OF AUSTIN, TEXAS - AUSTIN RESOURCE RECOVERY DEPARTMENT COLLECTION VEHICLE LIST

Vehicle Number	*Make*	*Model*	*Vehicle Identification Number (VIN)*	***Priority Level*** *1-Must Have 2-Future 3-Not at all*	*Has Two-Way Radio (Yes / No)*	*Has AVL (Yes / No)*	*Current Modem Asset Tag No.*	*Current Modem Serial No.*	*Current Modem Manufacturer*	*Current Modem Model ID*	*Division*	*Unit Type*	*Org*	*Engine Fuel Type*
14G455	International	D6600	1HTXYSJT3EJ489638								brush			
14G440	International	D6600	1HTXYSJT5EJ489639								brush			
06R731	International	D6600	1HSWDAZR87J478365								brush			
10R726	International	D6600	1HSWDAZR4AJ266730								litter abaitment / bulky			
06R730	International	D6600	1HSWDAZR17J478364								brush			
09G930	International	D6600	1HTMMAAN69H097891								brush			
08G043	Freightliner	M2	1FVHCYBS48HY95971								brush			
05G021	ISUZU	3300	4GTM7F1315F700959								Bulky			
15G770	CCC	LETS-45	1CYCCL480FN051367								Bulky			
06G044	International	D6600	1HTWGAZT67J430034								Bulky			
08G827	CCC	LETS-45	1CYCCK4878TO58698								Bulky			
04G384	Freightliner	M2	1FVHBXBS54DM57510								litter abaitment / bulky			
09G986	UD	3300	1HTMMAAN29H096463								litter abaitment / bulky			
09R825	International	D6600	1HSWDAZR49U096459								Brush			
10R727	International	D6600	1HSWDAZR6AJ266731								litter abaitment / bulky			
10R728	International	D6600	1HSWDAZR8AJ266732								litter abaitment / bulky			
12G457	Autocar	ACX4	516M1L9B3CH215912								litter control			
05G020	ISUZU	3300	4GTM7F1385F700974								litter control			
12G458	Autocar	ACX64	516MIL9B1CH215811								litter control			

ATTACHMENT C

City of Austin's Oracle Customer Care and Billing (CC&B) System Description

The City of Austin implemented the Oracle Customer Care and Billing system (CC&B) on October 2, 2011. This system is a flexible customer management solution that supports a utility industry's business objectives within a changing business environment. Customer Care and Billing is equipped with features that allow all users to easily and efficiently manage the software and maintain customer data.

The object oriented design of Customer Care and Billing provides a way of storing and viewing data that was not allowed in previous data models. When a customer's information needs to be updated, the change does not require the user to create a new record. The change is stored in one place, and the information is immediately available and viewable in all related records. The CC&B system also maintains a history of changes to the database and allows the user to view history from various notebooks.

Some defining features of Customer Care and Billing Include the ability to:

- Store data in one place and relate the data to other records
- Change critical information using soft tables and algorithms, rather than hard coding
- Complete transactions in real-time and immediately review results

CC&B is highly configurable and stores customer information in a v-shaped data model which illustrates at a high level, how service is provided to a customer. To provide one or more services to a customer, the right side and left side of the "V" are required:

- Right side of the Diagram has the Premise and Service Points which are records created by an internal work group that capture geographic information about the service territory and a customer's property.
- The premise defines the general location or service address where services are provided (i.e. electric, water, waste water, and solid waste).
- The service point defines each connection point at the premise at which a service is supplied. These points provide data to enable consumption to be measured and billed.
- Left side of the Diagram has the Person and Account record.
- The Person record captures demographic information about the individual or business customer such as person's name and contact information.
- The Account record captures financial information including financial balances, deposit, budget billing amounts.
- The Service Agreement record defines the contract for Service by which the customer agrees to pay for the service(s) provided. This record also specifies the rate and contract terms of the service (i.e. garbage bills for a flat rate of $10.25 for a 64 gallon cart based on the customers cart size).

Today our CARTS system, a component of SWTS, currently interfaces to the CC&B Billing system. CARTS is also fully integrated with the City of Austin's Geographic Information (GIS) system. This allows work orders generated within CC&B to be routed based on the customer's garbage service day. Work orders are then completed in CARTS and information is transmitted automatically back to CC&B. Our existing interface is a system-to-system communication mechanism developed to ensure customer requests generated within the billing system automatically transmit to our work management system. The new Austin Resource Recovery Work Management System will need to interface to the existing Oracle

Customer Care and Billing System. The following types of Field Activities will need to continue to be processed through this interface:

- Deliver New Garbage and Recycle Carts
- Remove Garbage and Recycle Carts
- Add Additional Garbage Cart
- Add Additional Recycle Cart
- Exchange Carts
- Field Check-CARTS
- Missing Garbage Cart
- Missing Recycle Cart
- Orphaned Cart
- Reduce Garbage Cart
- Reduce Multi-Items
- Repair Cart
- Repair Recycling 96
- Vacant Property Removal

Austin Resource Recovery also tracks and bills for overfilled carts/extra garbage. These are considered adjustments. Currently this process to adjust customer accounts is manual. The extra garbage and overfilled carts are tracked manually by garbage crews daily. The data is then collected and sent to ARR Finance to update daily spreadsheets. Information recorded is then placed out on a secure FTP Site and then transmitted via Austin Energy's process server to CC&B. We would like to streamline this process through tracking extra garbage/overfilled carts electronically to interface directly with CC&B.

SOLID WASTE SERVICES COLLECTIONS DDR

DAILY DRIVER REPORT

Driver: _____ PPE Yes / No Co-Driver _____ PPE Yes / No

Co-Driver _____ PPE Yes / No

Route # _____ Date # _____ Supervisor: Gary Litson 525

Truck Number: _____ Assisted Routes: _____

Gloves Hard hat Safety glasses Steel toe boots Uniform Vest

Downtime (check one)

Personnel _____ Equipment _____

Down-Time Hours: From: _____ To: _____ Sub-total: _____

From: _____ To: _____ Sub-total: _____

Total Hrs: _____

Landfill Time: _____ Weight Collected: _____ Extra Garbage Tickets _____

_____ _____ _____

_____ _____ _____

Total:

Inspector Field Visit: Am_____PM_____ Supervisor Field Visit: AM_____PM_____

Signature: _____

Time Start	Time End	Daily Route Notes	Start mileage	End mileage

Daily driving notes: _____

Driver signature

Technical Reference Model
Communications and Technology Management
RFP PAX0129 Vehicle Fleet Technology Upgrade

Area	Category	Standard
Application Technology		
Development Tools	Analysis, Design and Modeling	Unified Modeling Language (UML)
	Requirements Management	Rational Software Architect (RSA)
	Software Change and Configuration Management Tools	GIThub
	Web Authoring Tools	Drupal (outward)
	Application Development Tools	Visual Studio
		PL/SQL Developer
		Notepad++
		Java
		Cold Fusion
Software Engines	Search Engines	Solr
	Geographic Information System (GIS) Engines	ESRI Current minus 2 versions (10.1-10.3)
		ArcGIS for Desktop current minus 2 versions (10.1-10.3)
		ArcGIS for Server current minus 2 versions (10.1-10.3)
		ArcGIS Online current minus 2 versions (10.1-10.3)
		Smallworld Electronic Office (AE only)
		ArcSDE current minus 2 versions (10.1-10.3)
		FME current minus 2 versions (10.1-10.3)
	Business Rules Engines	BPM
		BPMN
	Business Process Management Engines	Websplore
Application and Web Server Software	Application Server Software	ArcGIS Server (includes server extensions) current minus 2 versions (10.1-10.3)
		FME Server current minus 2 versions (10.1-10.3)
	Web Server Software	Apache current minus 2 versions
		Internet Information Services (IIS) current minus 1 version
		IBM WebSphere
Integration Software	Enterprise Service Bus (ESB)	IBM Integration Bus (IIB)

Area	Category	Standard
Application Testing Software	Debugging Test Tools	PL/SQL Developer
		Fiddler
		Firebug (Firefox plugin)
		IE Developer Tools
	Function Testing Tools	PL/SQL Developer
	Load and Performance Testing Tools	PL/SQL Developer
		Visual Studio
		Jmeter
	System Testing Tools	Visual Studio
		PL/SQL Developer
	Unit Testing Tools	Visual Studio
		PL/SQL Developer
Information Management Technologies		
Business Intelligence and Data Warehouse Platforms	Business Intelligence Platforms	MicroStrategy
	Web Reporting Tools	Google Analytics
		DBNetGrid
		CADReports
		Microcall
	Dashboard/Scorecard Tools	MicroStrategy
	Data Mining Tools	Oracle Discoverer
		PL/SQL Developer
	Data Warehouses	Oracle
		SQL Server
	Geospatial Tools	ArcGIS Desktop current minus 2 versions (10.1-10.3)
	Data Analytics (Statistical Analytics, Prediction, and Modeling)	ERWin
		Visio
	Unstructured Data/Natural Language Processing	EDIMS
		OS File
		CIFS
Data Management	Database Connectivity	PL/SQL Developer
		Oracle SQL Developer
		Oracle SQL *Net
	Object Oriented DBMS	Oracle
	Relational DBMS	Oracle
		SQL Server
		Oracle
		SQL Server
	Database Related Management Tools	IDERA
		PL/SQL Developer
Data Integration	Database Replication and Clustering	PL/SQL Developer
		FME
		Oracle Real Applications Cluster (RAC)
		SQL Server Cluster
	Data at Rest	EMC
		NetApp Storage
		Tintri
		Nimble
		Pure

Area	Category	Standard
	Data Synchronization	GeoWorx Sync
		DFS
	Extract, Transform, Load (ETL)	FME Server
		FME Desktop
		Informatica
	Data in Motion (Common Message Terminology and Semantics)	SQL *Net
		TCP/IP
		BigIP
Collaboration and Electronic Workplace		
Collaboration Software	Content Management	Sharepoint
		GIThub
		Drupal CMS
	Electronic Messaging	Microsoft Exchange
	Unified Messaging	Lync/Skype
	Email and Calendaring	Microsoft Outlook
	Real Time and Team Collaboration	Sharepoint
		GoToMyPC
		Cisco VPN
		NetMotion
		Citrix
		Adobe Connect
		Vidyo
		Cleo
		Lync/Skype
	Shared Whiteboard	SmartBoard
		BMC Service Desk Express
	Process and Schedule Synchronization	Tivoli
		Airwatch
	Computer Based Training (CBT)	Adobe Connect
Productivity Software	Accounting and Finance	Advantage
	Desktop Publishing	Microsoft Publisher
	File Manager and Viewer	EDIMS (Opentext)
		Adobe Acrobat
	Enterprise Faxing	Captaris Rightfax
	Graphics Design Software	Adobe Creative Suite
	Multimedia Software	Adobe Creative Suite
	Standard Office Suite	Microsoft Office 2013
	Miscellaneous Productivity Tools and Utilities	Windows Snipping Tool
	Web Browsers	Internet Explorer current minus 1 (IE 11 and 10)
		Firefox current minus 1
		Chrome current minus 1
	Case Management	AMANDA
		BMC Magic Service Desk Express
		FDM
		Versadex
		LIMS

Area	Category	Standard
	Surveys	Survey Monkey
		Survey Builder
		Sharepoint
System Management		
System Management Tools	Alert Management	Orion Solarwinds
		Puppet
		Microsoft SCCM
		Idera
		Trend IWSVA
		Netbotz
		ISX Environmental Monitoring
		Avaya ASA
		Avaya Session Manager
		ADV NMS
	Application Management	Tivoli
	Asset Management and Work Order	Maximo
		BMC Magic Service Desk Express
		Mobile Workforce Manager
	Data Center Automation Software	Appsense
		Idera
		Microsoft SCCM
		EMC Networker
		APC Structureware
		Active Directory
	Disaster Recovery	NetApp VSC
	Monitoring	Orion Solarwinds
	Remote Desktop Management	Dameware
		MS RDP
	System Change and Configuration Management	Puppet
		Microsoft SCCM
Network Infrastructure	Switching and Routing	Cisco
		Brocade
		ADVA
	Load Balancing and Failover	F5 Big IP
	Network Name and Address	Windows DHCP
		Windows DNS
		IP - IPv6 (not used yet)
		Ipsec
		WINS
		BIND DNS
Network and Telecommunications		
Transport	Local/Campus Area Network (LAN/CAN)	Cisco
		Brocade
	Wide Area Network (WAN)	City Owned Fiber
		AT&T Connections
		Avaya Equipment
		Nortel Equipment
		TimeWarner Cable
	Cabling	BICSI
Wireless and Mobile	Cellular Networks	AT&T (Public Safety)

Area	Category	Standard
Networks		Verizon (Public Safety)
		AT&T (AVL- Public Safety)
		Verizon (AVL)
		Sprint (AVL)
	Secure WiFi	Cisco WAP
	Public WiFi	Cisco WAP
		Meraki WAP
	Radio	P25
		Motorola
	Pagers	USA Mobility
	Aircards	Sprint
		Verizon
		AT&T
End User Computer Devices	Personal Computers (PCs)	Dell Workstations/Laptops
	Mobile Hardware	iPad current minus 1
		iPhone current minus 1
		Android current minus 1
	Hardened Laptops	Panasonic
		Dell
Platforms and Storage		
Operating Systems	Desktop/Laptop	Win 7 current minus 1
		Win 8 current minus 1
	Mainframe	AIX current minus 2
	Mobile Device	Android current minus 1
		iOS current minus 1
	Server	Windows Server current minus 1
		AIX current minus 2
		Linux (Redhat) current minus 1
Cloud Services/Virtualization	Cloud Technologies	ArcGIS Online current minus 2
	Virtualization Software	VMWare
		Citrix Xen Server
		VirtualBox
Storage	Long Term Back-up	EMC Networker
		NetApp
		Avamar
	Operational Recovery	EMC Networker
		NetApp
		Avamar
	Production	EMC Networker
		NetApp
		Avamar
System Management Tools	Network Performance Optimization	Microsoft SCCM
		Trend Antivirus
		Puppet
		GitHub
		PKI
		GPO
		IBM HMC
		Trend IWSVA
	Logging	Splunk

Area	Category	Standard
	Patch Management	WSUS
		Microsoft SCCM
Enterprise Architecture		
Employment	Application	Rational Software Architect (RSA)
		MS Picture Manager
		HTML-Kit
		SnagIt
		FTP
		Subversion
	Framework	Eclipse
		Unified Modeling Language (UML)
		IBM UPIA

CITY OF AUSTIN, TEXAS
INFORMATION TECHNOLOGY
Transforming your city with best-managed technology

Chief Information Office
Enterprise Architecture

1124 South IH-35, Suite 300
Austin, Texas 78704-2614

Technical Standards

PAX0129 - Vehicle Fleet Technology Upgrade

SaaS - Solutions using Software as a Service (SaaS)
Internal - Solutions hosted within City of Austin infrastructure.

Mandatory - Essential requirement
Expected - Anticipated or presumed requirement
_____ - No preference

ID#	Topic	Description	Internal	SaaS
1	Application Architecture	The application provides Web-enabled components to meet the Rehabilitation Act of 1973 Section 503, W3C and industry standards for graphics and design; speed; reliability; and security for dynamic content and user interaction.	Mandatory	Mandatory
2	Application Architecture	No requirement to deploy application code to client workstations (note: Java Runtime Environment (JRE) is an exception).	Mandatory	Mandatory
3	Application Architecture	The application provides the ability to automate the deployment of software and updates to user workstations including, but not limited to Web-based deployment tools to push/pull software to the desktop (note: applicable only to run-time environment, like Java). Unless the contractor provides an alternative solution, users do not require administrative privileges.	Mandatory	Mandatory
4	Application Architecture	The application provides built-in application and system configuration tables accessible by all modules.	Mandatory	Mandatory
5	Application Architecture	The application provides (if needed) ability to manage automatic job scheduling (i.e., batch jobs, billing) including, but not limited to, the interface with external job schedulers and automatic notification capabilities when a job abnormally terminates. The City currently support UNIX CRON, Tivoli work Scheduler, Oracle DBMS_JOBS, and MS SQL DTS.	Mandatory	_____
6	Application Architecture	The application provides forms-based data validation (field level validation) and displays error messages when validation fails (i.e., user enters text in a numeric field).	Mandatory	Mandatory

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ID#	Topic	Description	Internal	SaaS
7	Application Architecture	The application provides copy, cut, paste, and undo functions from data fields and screens to other applications.	Mandatory	Mandatory
8	Application Architecture	The application provides ability to perform mass changes to a defined group of transactions with appropriate selection criteria.	Mandatory	Mandatory
9	Application Architecture	The application provides ability to effective date transactions and table updates including, but not limited to future and retroactive changes, based on user-defined criteria.	Mandatory	Mandatory
10	Application Architecture	The application provides ability to drill down from a transaction view to the supporting source document or record, regardless of the module source.	Mandatory	Mandatory
11	Application Architecture	The system provides ability to restrict free form entry (e.g., require use of drop-down calendar for date field).	Mandatory	Mandatory
12	Application Architecture	The system meets Web Accessibility standards including, but not limited to, ability to support ADA and compliant with Section 508 of the Federal Rehabilitation Act (see http://www.access-board.gov/sec508/summary.htm). Web based applications must be compliant following the specifications of 508c of the Americans with Disabilities Act. If compliance is not possible, reasonable alternatives may be considered.	Mandatory	Mandatory
13	Application Architecture	The application provides ability to apply upgrades and patches without impact to existing user interface customizations (e.g., user-defined forms/fields, Web interface, etc.).	Expected	Expected
14	Application Architecture	The solution supports Distributed File System (DFS) shares for file access.	Expected	_____
15	Audit	The system provides user-defined audit features for all transactions in solution including, but not limited to, all historical changes, date, time, and user ID of the person making the change.	Expected	Expected
16	Audit	The system provides ability to prevent audit records from being deleted or altered, except as part of a system administration archival process.	Expected	Expected
17	Audit	The system provides ability for audit-tracking reports including, but not limited to user access and usage logs.	Expected	Expected

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ID#	Topic	Description	Internal	SaaS
18	Audit	The system provides ability to archive and restore audit logs.	Expected	Expected
19	Business Continuity and Disaster Recovery	The system provides full recovery and system backup capabilities for all online and batch transactions according to City-specified timeframes.	Mandatory	Mandatory
20	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, integrity checking capability to identify the existence of program and/or system discrepancies and issue an alert to the appropriate systems operations team.	Mandatory	Mandatory
21	Business Continuity and Disaster Recovery	The system provides ability to alert specified users when key components are unavailable (e.g., DBMS, servers, interfaces, network transport, etc.).	Mandatory	Preferred
22	Business Continuity and Disaster Recovery	The system provides ability to restore transactions from the database transaction log.	Expected	_____
23	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, software crash tolerance (i.e., server and client software shall maintain its integrity in case of power failures and abrupt shutdowns); redundancy in the application server tier with automated cut-over; redundancy in the database server tier with automated cut-over; restart and recovery capability after system/server failure with no loss of data or software components; and roll-back.	Expected	Expected
24	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, file protection capability to limit the types of operations (e.g. read, write, delete, and data dictionary modification) that individual users on given data or program files can perform.	Expected	Expected
25	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, incremental, differential, and full backups and restores of the database, core and customized software, software and database configuration options, user preferences and rights, etc. This includes the ability to recover specific data records and/or files from backup and/or near-line storage.	Expected	_____

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ID#	Topic	Description	Internal	SaaS
26	Data Storage and Archiving	The solution supports future releases of the application without rendering the archived data unusable.	Mandatory	Mandatory
27	Data Storage and Archiving	The solution utilizes storage area network (SAN).	Mandatory	_____
28	Data Storage and Archiving	The system provides online access to the current year plus unlimited previous years of all types of data retained in the system, and provides archive capabilities thereafter.	Expected	Expected
29	Data Storage and Archiving	The system provides ability to archive data to external storage media and support partitions, based on user-defined including, but not limited to, number of years.	Expected	Preferred
30	Data Storage and Archiving	The system allows the City to accurately plan for storage and backup requirements, both for initial implementation and for future growth.	Expected	_____
31	Data Storage and Archiving	The contractor provides the City a complete copy of current and archived data hosted by an ASP provider in the event of contract termination within a month of notification in one of the required formats listed above. (ASP Hosted)	_____	Mandatory
32	Database Architecture	The application provides standardized data extraction Application Program Interface (API) to allow import and export of data to other systems.	Mandatory	Mandatory
33	Database Architecture	The application provides ability to encrypt sensitive data when required by federal or state compliance (e.g., PII, PCI, HIPAA, etc.).	Mandatory	Mandatory
34	Database Architecture	The application provides use of Structured Query Language (SQL) for database queries.	Mandatory	_____
~~35~~	~~Database Architecture~~	~~The application provides ability to exchange database information using industry accepted standards and formats including JavaScript Object Notation (JSON)~~	~~Mandatory~~	~~Mandatory~~
36	Database Architecture	The solution uses the same data validation criteria for bulk data loads as it does for manual data entry.	Mandatory	Mandatory
37	Database Architecture	The application provides ability to exchange database information using industry accepted standards and formats including Extensible Markup Language (XML).	Expected	Expected

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ID#	Topic	Description	Internal	SaaS
38	Database Architecture	The application provides ability to copy, archive and retrieve data to external storage media (e.g., tape, DVD, SAN) based on user-defined selection criteria.	Expected	Expected
39	Database Architecture	The application provides ability to perform database maintenance including, but not limited to, backup and upgrades without requiring system downtime during core business hours.	Expected	Expected
40	Database Architecture	The solution includes a method of purging record data from the database(s) ensuring referential integrity with master/child records.	Expected	Expected
41	Database Architecture	The system provides ability to set up log event triggers to automatically notify the system administrator when user-defined database conditions are met. (Note: If hosted solution, provide access to configurable alerts.)	Expected	_____
42	Information Management	The system prevents the loss or unauthorized deletion of records before the expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a).	Mandatory	Mandatory
43	Information Management	The system prevents the unauthorized alteration of records before the expiration of their retention period. The system provides logs or audit trails that document edits and views of records. This is a requirement for records governed by HIPAA; and, depending on the type of record, there may be additional integrity requirements governed by Texas House Bill 300.	Mandatory	Mandatory
44	Information Management	The system provides systematic deletion of records upon expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a) and §201.003(16), Austin City Code §2-11-11. Sufficient metadata must be present to identify records eligible for disposition based on defined triggering events and dates.	Mandatory	Mandatory

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ID#	Topic	Description	Internal	SaaS
45	Information Management	Upon expiration of the retention period, the system ensures destruction of all duplicate records to include convenience copies. Texas Rules of Evidence, Rule 1003. The system's back-up strategy ensures retention of backup records doesn't excessively exceed destruction of originals. System procedures must ensure retention rules apply to copies of production data used to develop, test, or train.	Mandatory	Mandatory
46	Information Management	The system ensures records are retrievable and available until the expiration of their approved retention period. Texas Local Government Records Act §205.008(b). Records stored on contractor, outsourced, cloud, or hosted platforms remain the property and responsibility of the City. When contacted by an authorized City employee or when the contract ends or is terminated, contractors must deliver records, in all requested formats and media, along with all finding aids and metadata, to the City at no cost. Austin City Code §2-11-15.	Mandatory	Mandatory
47	Information Management	Until expiration of retention period, hardware and software must be available to access records and sufficient metadata must be present to facilitate timely retrieval of records. Contracts with hosted solution providers must specify the contractor's duties with respect to management of records as required by Austin City Code §2-11-15. The system ensures retention of specific records - even if their retention period has expired - if they are the subject of known or reasonably anticipated litigation, public information request, audit or other legal action. Texas Local Government Records Act §202.002, Austin City Code § 2-11-11. The system maintains a log of litigation and other holds allowing release of holds after resolution of litigation, audit, or public information requests.	Mandatory	Mandatory
48	Information Management	The system creates records/logs of destruction activity. Texas Local Government Records Act §203.046, Austin City Code §2-11-11. Destruction logs must (a) show a minimal set of metadata sufficient to uniquely identify the records purged; (b) show who approved and who executed the destruction, and the dates on which these events took place; (c) reflect compliance with an approved, written standard operating procedure; and (d) be retained permanently.	Mandatory	Mandatory

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ID#	Topic	Description	Internal	SaaS
49	Infrastructure	The system uses industry standard virtualization infrastructure to support load balancing.	Mandatory	_____
50	Infrastructure	If the system is Simple Network Management Protocol (SNMP V.3) compliant, the contractor provides standard Management Information Base (MIB) files for all SNMP-enabled components.	Mandatory	_____
51	Infrastructure	The solution uses an accurate, NIST time source for traceable time stamp. If back-end components use date/time stamping, client-side components synchronize with back-end servers.	Mandatory	Mandatory
52	Infrastructure	If the solution includes electronic hardware such as servers or network devices, all network-enabled hardware supports auto-negotiation of network speeds and duplex settings, including 10 mbps, 100 mbps and Gigabit Ethernet, if applicable.	Expected	_____
53	Infrastructure	If applicable, all portable devices (laptops, hand-held units, etc.) provide display screens readable in conditions ranging from darkness to direct sunlight.	Expected	Expected
54	Infrastructure	If applicable, all supplied portable devices (laptops, hand-held units, etc.) are resistant to heat, cold, moisture, dust and shock.	Expected	Expected
55	Infrastructure	If applicable, all supplied portable devices (laptops, hand-held units, etc.) are capable to receive program or firmware updates via network connections.	Expected	Expected
56	Infrastructure	System server components use standard Domain Name Services (DNS).	Expected	_____
57	Integration Architecture	The system provides the ability to set up appropriate approval, audit trail, and reconciliation procedures for all inbound and outbound interfaces.	Mandatory	Mandatory
58	Integration Architecture	If application requires integration with other City data, the application must integrate using an enterprise service bus.	Expected	Expected
59	Security and Authentication	If applicable, the system provides adequate protection of data covered by regulatory or other compliance requirements (e.g., U.S. Health Insurance Portability and Accountability Act (HIPAA), Family Educational Rights and Privacy Act (FERPA), Payment Card Industry (PCI).	Mandatory	Mandatory
60	Security and Authentication	The system authenticates with multiple internal Microsoft Active Directories.	Mandatory	_____

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ID#	Topic	Description	Internal	SaaS
61	Security and Authentication	The application provides encryption for data exchanged between the front-end user application and the back-end servers - federal or state compliance required (e.g., PII, PCI, HIPAA, etc.).	Mandatory	Mandatory
62	Security and Authentication	The system provides protection against unauthorized access to data by persons and other software programs.	Mandatory	Mandatory
63	Security and Authentication	The system masks (i.e., substituting characters with '*') passwords as they are entered into the system.	Mandatory	Mandatory
64	Security and Authentication	The system is PCI-compliant when handling credit card transactions.	Mandatory	Mandatory
65	Security and Authentication	The solution does not require operating system administrator privileges on the client workstation(s) to run or receive application updates or the vendor must provide another solution for updates.	Mandatory	Mandatory
66	Security and Authentication	The solution provides a method to change the passwords for built-in system accounts (i.e. Administrator, Admin, Super, etc.)	Mandatory	Mandatory
67	Security and Authentication	When the contractor is connected to the City's Virtual Private Network (VPN) for solution support purposes, the contractor uses single tunneling, which means the contractor disconnects from their local network during the VPN session.	Mandatory	_____
68	Security and Authentication	Passwords must NOT be included in automated sign-on procedures, stored unencrypted in cache, or transmitted as clear text over the network.	Mandatory	Mandatory
69	Security and Authentication	The application allows the Application Administrator to restrict generic logins.	Mandatory	Mandatory
70	Security and Authentication	When applicable, the system provides 128-bit SSL or higher or TLS, between the client browser and application modules.	Expected	Expected
71	Security and Authentication	The system allows an approved administrator to inactivate user access.	Expected	Expected
72	Security and Authentication	The system provides ability to manage user permissions centrally for all modules of the applications.	Expected	Expected
73	Security and Authentication	The system provides ability to use tokens and/or passwords for user logons.	Expected	Expected
74	Security and Authentication	The system provides users the ability to change password, users to change their password on set period and password expiration.	Expected	Expected

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ID#	Topic	Description	Internal	SaaS
75	Security and Authentication	The system provides ability to configure passwords including, but not limited to the following: minimum password length of at least eight characters; case sensitive, contain numbers, alphanumeric characters, and special characters; and complex passwords based on user-defined criteria.	Expected	Expected
76	Security and Authentication	The system provides ability to record the date and time of changed password.	Expected	Expected
77	Security and Authentication	The system provides ability to deny user access after a definable number of unsuccessful attempts to logon.	Expected	Expected
78	Security and Authentication	The system provides ability to log, based on user-defined criteria, each authorized and/or unauthorized access attempt. Log information includes, but is not limited to, user identification, IP address, date, time, transaction type, and type of access (e.g., read, modify).	Expected	Expected
79	Security and Authentication	The system provides ability to assign application access rights for the entire suite of applications at a single point of entry.	Expected	Expected
80	Security and Authentication	The system provides ability to control access to all activities (e.g., online transactions, batch processing, report writer, query, system utilities) including, but not limited to the following levels: system, database, module, field, inquiry, approval, report, transaction, table, individual, group, organization (e.g., department, division), user role, user site, time period, and position across all functional areas.	Expected	Expected
81	Security and Authentication	The system provides ability to create and maintain security profiles to control access including, but not limited to the following: employee level, module, field, transaction type, employee group, standard report, and ad hoc report.	Expected	Expected
82	Security and Authentication	The system provides ability to automatically log users off the system when there has been no activity for a definable (pre-defined) period.	Expected	Expected

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ID#	Topic	Description	Internal	SaaS
83	Security and Authentication	The system provides ability to generate summary and detail reports including, but not limited to user access, usage logs, audit logs, failed and/or unauthorized access attempts based on user defined parameters (e.g., audit requirements). The system provides ability to alert the application administrator when any of these events exceed a specific, definable threshold.	Expected	Expected
84	Security and Authentication	The system provides ability to utilize session encryption methods necessary to ensure the secure electronic transfer of sensitive information.	Expected	Expected
85	Security and Authentication	If the system requires bulk data loads via the Internet, the system uses a secure network transport method.	Expected	Expected
86	Security and Authentication	New user permissions default to least privileges security permissions.	Expected	Expected
87	Security and Authentication	The application provides a transaction log related to changes made to security (roles, groups, and permissions).	Expected	Expected
88	Security and Authentication	To help enforce City's security policies, the solution allows the application administrator to disconnect a particular user and to lock out a user during an active session.	Expected	Expected
89	Security and Authentication	The system provides ability to restrict remote access to the application by client IP address or network address range.	_____	Expected
90	Security and Authentication	The system uses Microsoft Active Directory Federated Services (ADFS) [current version minus 1] for federated identity management.	_____	Mandatory
91	Security and Authentication	The system ensures the City's data is not made available to any other parties not specifically authorized to view or access the data. (ASP Hosted)	_____	Mandatory
92	Security and Authentication	For systems with sensitive data (personally identifiable information (PII), city confidential data, or data covered by a federal security standard), the contractor conducts an annual security assessment of all tiers of its hosting facility, including application servers and network devices. Provide summary copies of the security audit reports to the City of Austin annually. We prefer an annual 3rd party security assessment, which we may require depending on the data being hosted.	_____	Mandatory

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ID#	Topic	Description	Internal	SaaS
93	System Flexibility	The system provides the ability to define business rules based on user-defined criteria (e.g., organizational level, account code, bargaining unit, location, program, grant, etc.).	Mandatory	Expected
94	System Flexibility	The system solution is compatible with Citrix for client server configurations.	Expected	Expected

CITY OF AUSTIN
PURCHASING OFFICE
PREVAILING WAGE RATES AND PAYROLL REPORTING

1. PAYMENT

A. Classification Definitions, Building and Heavy and Highway

Definitions for Building Construction and Heavy and Highway classifications shall conform to the current "Dictionary of Occupational Titles" as published by the U.S. Department of Labor.

B. Minimum Wages

Workers assigned to perform work under a City Contract that contains the Prevailing Wage provision shall be paid not less than wage rates, including fringe benefits, as published by the Department of Labor (DOL) or the $13.50 minimum wage required by City of Austin Ordinance No. 20160324-015, whichever is higher .The Total Minimum Wage required can be met using any combination of cash and non-cash qualified fringe benefits provided the cash component meets or exceeds the $13.50 minimum wage required.

Such wage rates shall be used throughout the Contract. If a classification is to be used, which is not listed in the attached wage rates, Contractor shall submit to City rates and classification proposed for use, for approval, **prior** to performance of the work.

All laborers and mechanics performing work for this Contract shall be paid unconditionally and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by Secretary of Labor under the Copeland Act, Title 29 CFR, Part 3) full wages accrued and when due, computed at rates not less than wage rates bound herein pertaining to type of work being performed. When work is of such a nature that both Building and Heavy and Highway wage scales are incorporated into Contract, Contractor shall pay wage rates to mechanics or laborers performing work in more than one classification at the rate indicated for each classification for time actually worked as determined by area practice applicable to type (Site Construction Crafts or Building Construction Crafts) of work being performed without regards to skill. Salaried specialists (contract superintendent and administrative personnel only) in the permanent employment of Contractor do not fall under any Wage Classification. A supervisor/foreman who is not exempt under 29 CFR Part 541 and who spends more than a substantial amount of time (20 percent) in a given workweek as a laborer or mechanic must be paid the applicable Wage Rate for the classification of work performed for all hours engaged in such work as a laborer or mechanic.

Wage rates shall be posted by Contractor in easily accessible and conspicuous places, where it can be seen by all workers. The following shall also be posted by the Contractor: City of Austin wage contact posters (English and Spanish), Workers Compensation Notice (English and Spanish), Texas Payday Law (English and Spanish), City Rest Break Ordinance (English and Spanish), City of Austin Non-Discrimination Statement related to Title VI of the Civil Rights Act, and Federal Notices, as appropriate. Link to required Contract posters:

http://www.austintexas.gov/department/wage-compliance

C. Overtime Requirements

No Contractor, Subcontractor, or Sub-subcontractor contracting for any part of contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any workweek in which he is employed on such work, to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours in excess of forty hours in such workweek.

Overtime wages must be calculated using the Adjusted Wage Rate specified in the Wage Rate Determination or actual basic rate of pay, whichever is higher.

2. APPRENTICES

Locally & Federally Funded Contracts

The terms journeyman an apprentice apply to both union and independent workers, and are not intended to imply that these positions are union workers only.

Apprentices and Trainees will be permitted to work as such only when they are registered, individually, under a bonafide Apprenticeship or Trainee program registered with the Bureau of Apprenticeship and Training, United States Department of Labor. The allowable ratio of Apprentices or Trainees to journeymen in any craft classification shall not be greater than the ratio permitted to Contractor as stated in the registered Apprenticeship program standards. Any employee listed on a payroll at an Apprentice or Trainee wage rate, who is not registered as above, shall be paid the wage rate provided in Contract for work employee actually performed. Contractor, Subcontractor, or Sub-subcontractor shall furnish to the City written evidence of registration of his program for Apprentices and Trainees as well as of the appropriate ratios and wage rates, for the area of construction **prior** to using any Apprentices or Trainees on this Contract.

3. WITHHOLDING OF PAYMENTS

The City may withhold or cause to be withheld from Contractor as much of the accrued payments as necessary to pay laborers and mechanics employed by Contractor, Subcontractors, or Sub-subcontractors the amount of wages required to comply with the Contract. In the event of nonpayment of wages to laborers or mechanics working on the site of the work of this Contract, the City may, after written notice to Contractor, take such action as may be necessary to cause suspension of any further payments or advance of funds to Contractor until such violations have ceased and until restitution has been made. Payments may also be withheld if Contractor fails to maintain weekly payroll reports or fails to provide copies in a timely manner upon request of the City.

4. PAYROLLS

A. **Contractor shall keep records showing:**

1. Name, address and occupation of each worker employed by the Contractor or Subcontractor(s) in the construction of the public work.
2. Actual per diem wages paid to each worker.
3. Employee Certification. Contractor and all levels of Subcontractors, shall identify in writing, the classification agreed to by all laborers and mechanics employed by them in the execution of the Contract, and pay not less than rates specified in the attached Building Construction and Heavy and Highway Wage Rate Schedule(s). Contractor shall prepare a completed form for the signature of Employee and a witness shall sign the form in the presence of Employee. If work performed by worker is different than the trade classification agreed upon, the worker shall be paid for that work no less than the minimum prevailing wage for that specified trade.
4. Payroll Deduction Authorization Form. Contractor, Subcontractor, and Sub-subcontractor shall prepare for employee signature a payroll deduction authorization form to identify all payroll deductions excluding those required by statute, such as federal income taxes, Medicare and social security.

B. The record shall be open at all reasonable hours to inspection by the officers and agents of the City as requested. Contractor will be responsible to provide copies of records as requested by the City within two (2) working days. Payrolls relating to this work shall be maintained during term of Contract and preserved for a period of three (3) years thereafter by Contractor for all laborers and mechanics working on the work.

C. **Statement of Compliance**

A Statement of Compliance, a letter signed and dated by party responsible for supervising the payment of persons employed by Contractor or subcontractor shall accompany payrolls required by the City. The Statement of Compliance letter shall identify but is not limited to:

1. Name of signatory party and title.
2. Name of Contract, payroll period.
3. Name of Contractor or Subcontractor.

The signed letter attests that the payroll complies with 29 CFR issued by the Secretary of Labor.

D. **Federal Funding**

In the event that federal funding is used:

1. Contractor and all levels of Subcontractors shall submit weekly certified payroll reports and signed wage compliance statements to the City's designated office no later than seven (7) calendar days after the scheduled payday.
2. Contractors and all levels of Subcontractors shall pay all "mechanics and laborers" not less often than once per week, for work performed the previous week.
3. Submit to the City's designated office Standard Form 1413, Statement and Acknowledgement, from each Subcontractor prior to the Subcontractor performing work on the Contract.

5. NONCOMPLIANCE

According to Chapter 2258 Texas Government Code Title 10A, a Contractor or subcontractor(s) who violates this section shall pay to the political subdivision on whose behalf the Contract is made, $60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the Contract. A public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.

Confirmed Disciplinary action taken by Contractor against employees who provide information during an interview or investigation by the City on wages received, may result in suspension or debarment from consideration of award of City contracts.

6. AREA PRACTICE

A. Heavy and Highway Construction Rates shall be used on this Contract, unless the Contract consists primarily of Building Construction and Building Construction Rates are to be used.

1. Building Construction consists generally of all aspects of construction of buildings, which are sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment or supplies, including without limitation the installation of utilities and equipment, both above and below grade level, as well as incidental demolition, grading, utilities, paving and other site work. Buildings need not be "habitable" to be classified as Building Construction and the installation of heavy machinery and/or equipment will not generally change a Building Construction project's classification.
2. The determination of Building Construction wage rates includes all construction trades and work necessary to complete a building, regardless of the number of contracts involved, so long as all such contracts are closely related in purpose, time and place.

B. For contracts that involve both Building Construction and Heavy and Highway trades, the following classifications shall be used:

1. A multiple classification shall be used if Building Construction items are more than 20% of the Heavy and Highway Contract cost.
2. A multiple classification shall be used if Heavy and Highway Construction items are more than 20% of the Building Construction Contract cost.

C. Split classifications/multiple wage rate schedules: When construction work requires that an employee perform work under multiple classifications or multiple wage scales, the employer must pay that worker (at least) the highest prevailing wage or the employer payroll records must accurately set forth the times spent performing the work of each classification and under each scale. For those contracts that involve both Building Construction and Heavy and Highway trades, the Heavy and Highway wage rates may only be applied to workers when engaged in site work at least five (5) feet beyond the building.

7. TEXAS OPEN RECORDS ACT

Unless covered by an exception to mandatory disclosure under the Texas Public Information Act, Texas Government Code Chapter 552, any and all documents submitted to the City become public records and are, therefore, subject to public disclosure.

Wage Rates For This Contract Are Attached

End

WAGE RATE DETERMINATION

BUILDING CONSTRUCTION TYPE

COUNTY NAME : TRAVIS

Wages based on DOL Prevailing Wage Rate General Decision:TX170323 1/27/2017 TX323 and City of Austin Ordinance #20160324-015

DOL Rate column is for information only. The Total Minimum Wage Rate is derived from the Adjusted Wage Rate Required pursuant to City Ordinance plus the DOL Fringes and can be met using any combination of cash and non-cash qualified fringe benefits, provided the cash component is at least $13.50/hour.

CLASSIFICATION	DOL RATE for info only	ADJUSTED WAGE RATE REQUIRED pursuant to City Ordinance	DOL FRINGES	TOTAL MINIMUM WAGE RATE REQUIRED
Asbestos Worker/Heat & Frost Insulator (Duct, Pipe, and Mechanical System Insulation)	$ 21.57	$ 21.57	$ 10.02	$ 31.59
Boilermaker	$ 23.14	$ 23.14	$ 21.55	$ 44.69
Bricklayer	$ 20.07	$ 20.07	$ -	$ 20.07
Carpenter	$ 20.75	$ 20.75	$ 7.30	$ 28.05
Carpenter (Acoustical Ceiling Installation only)	$ 14.00	$ 14.00	$ -	$ 14.00
Carpenter (Form Work Only)	$ 15.62	$ 15.62	$ 0.05	$ 15.67
Cement Mason/Concrete Finisher	$ 15.71	$ 15.71	$ -	$ 15.71
Drywall Finisher/Taper	$ 17.06	$ 17.06	$ 4.43	$ 21.49
Drywall Hanger and Metal Stud Installer	$ 17.47	$ 17.47	$ 3.45	$ 20.92
Electrical Installer (Sound and Communication Systems, Excluding Wiring)	$ 18.00	$ 18.00	$ 2.30	$ 20.30
Electrician (Excludes Installation of Sound and Communication Systems)	$ 27.38	$ 27.38	$ 7.90	$ 35.28
Elevator Mechanic <5 years experience	$ 38.51	$ 38.51	$ 33.89	$ 72.40
Elevator Mechanic >5 years experience	$ 38.51	$ 38.51	$ 34.66	$ 73.17
Floor Layer (Carpet)	$ 21.88	$ 21.88	$ -	$ 21.88
Glazier	$ 12.83	$ 13.50	$ -	$ 13.50
HVAC Mechanic (HVAC Unit Installation Only)	$ 23.78	$ 23.78	$ 6.89	$ 30.67
Ironworker, Ornamental	$ 23.02	$ 23.02	$ 6.35	$ 29.37
Ironworker, Reinforcing	$ 12.27	$ 13.50	$ -	$ 13.50
Ironworker, Structural	$ 20.73	$ 20.73	$ 5.24	$ 25.97
*Lead Paint or Asbestos Abatement Worker	*	$ 13.50	$ -	$ 13.50
Laborer, Common or General	$ 11.44	$ 13.50	$ -	$ 13.50
Laborer, Mason Tender - Brick	$ 12.22	$ 13.50	$ -	$ 13.50
Laborer, Mason Tender - Cement/Concrete	$ 11.85	$ 13.50	$ -	$ 13.50
Laborer, Pipelayer	$ 12.45	$ 13.50	$ -	$ 13.50
Laborer, Roof Tearoff	$ 11.28	$ 13.50	$ -	$ 13.50
Operator, Backhoe/Excavator/Trackhoe	$ 19.43	$ 19.43	$ 3.49	$ 22.92
Operator, Bobcat/Skid Steer/Skid Loader	$ 13.00	$ 13.50	$ -	$ 13.50
Operator, Bulldozer	$ 14.00	$ 14.00	$ -	$ 14.00

Operator, Crane	$ 34.85	$ 34.85	$ 9.85	$ 44.70
Operator, Drill	$ 14.50	$ 14.50	$ -	$ 14.50
Operator, Forklift	$ 16.64	$ 16.64	$ 6.26	$ 22.90
Operator, Grader/Blade	$ 19.30	$ 19.30	$ -	$ 19.30
Operator, Loader	$ 14.00	$ 14.00	$ -	$ 14.00
Operator, Mechanic	$ 18.75	$ 18.75	$ 5.12	$ 23.87
Operator, Paver (Asphalt, Aggregate, and Concrete)	$ 16.03	$ 16.03	$ -	$ 16.03
Operator, Roller	$ 11.25	$ 13.50	$ -	$ 13.50
Painter (Brush, Roller, and Spray, Excludes Drywall Finishing/Taping)	$ 18.76	$ 18.76	$ 6.35	$ 25.11
Pipefitter (Including HVAC Pipe Installation)	$ 28.03	$ 28.03	$ 12.43	$ 40.46
Plumber, Excludes HVAC Pipe Installation	$ 23.57	$ 23.57	$ 6.37	$ 29.94
Roofer	$ 12.00	$ 13.50	$ -	$ 13.50
*Roofer, Metal	$ 14.05	$ 14.05	$ -	$ 14.05
Sheet Metal Worker (Including HVAC Duct Installation)	$ 24.38	$ 24.38	$ 13.74	$ 38.12
Sprinkler Fitter (Fire Sprinklers)	$ 28.18	$ 28.18	$ 17.52	$ 45.70
Tile Finisher	$ 11.32	$ 13.50	$ -	$ 13.50
Tile Setter	$ 16.35	$ 16.35	$ -	$ 16.35
Truck Driver, Dump Truck	$ 12.39	$ 13.50	$ 1.18	$ 14.68
Truck Driver, Flatbed Truck	$ 19.65	$ 19.65	$ 8.57	$ 28.22
Truck Driver, Semi-Trailer Truck	$ 12.50	$ 13.50	$ -	$ 13.50
Truck Driver, Water Truck	$ 12.00	$ 13.50	$ 4.11	$ 17.61
Waterproofer	$ 16.30	$ 16.30	$ 0.06	$ 16.36

http://www.wdol.gov/wdol/scafiles/davisbacon/tx.html

See below for Additional Wage Information.

Note: *Lead Paint & Asbestos Abatement and Roofer, Metal Classifications have been added to this Prevailing Wage Rate Determination pursuant to a City of Austin Prevailing Wage Survey (trades absent from DOL).

The Wage Compliance information detailed below was excerpted from DOL General Decision TX170323 or other sources.

1. Additional Trade information:

Electricians** - Including low voltage wiring for computers, fire/smoke alarms.
Elevator Mechanics*** - also must be paid for 7 holidays - New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.
Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added upon the advance approval of City of Austin Contract Administration. CONTRACTOR shall submit to City of Austin Contract Administration for review the classification, a bona fide definition of work to be performed and a proposed wage with sample payrolls conforming to area practice **prior** to the start of the job for that type of work.

2. Wages

The Total Wage may be met by any combination of cash wages and credible "bona fide" fringe benefits paid for by the employer. Overtime wages must be calculated using the Adjusted Wage Rate specified in the Wage Rate Determination or the actual basic rate of pay, whichever is higher.

City of Austin Ordinance No. 20160324-015 requires that construction workers are paid a Minimum Wage of at least $13.50/hour. The cash portion of their compensation must meet or exceed this amount.

3. Crediting fringe benefit contributions to meet DBA/DBRA and City of Austin requirements:

The Davis-Bacon Act (and 29 CFR 5.23), list fringe benefits to be considered. Examples are:

> Life Insurance
> Health Insurance
> Pension
> Vacation
> Holidays
> Sick Leave

Note: The use of a truck is not a fringe benefit; a Thanksgiving turkey or Christmas bonus is not a fringe benefit.

No credit may be taken for any benefit required by federal, state, or local law such as: workers compensation, unemployment compensation; or social security contributions.

Contributions to fringe benefit plans must be made regularly, e.g. daily, weekly, etc. They must be more frequent than quarterly. (see 29 CFR 5.5 (a)(1)(I)) A periodic bonus may not be counted as a fringe benefit.

4. Annualization of Benefit Costs

If a firm provides an electrician with $200 per month medical insurance, to calculate allowable fringe benefit credit contributions per hour, the formula ([$200 x 12 months] divided by 2080 hours = $1.15 per hour) should be used.

5. Proper Designation of Trade

A work classification on the wage decision for each worker must be made based on the actual type of work he/she performed and each worker must be paid no less than the wage rate on the wage decision for that classification **regardless** of his or her level of skill.

6. Split Classification

If a firm has employees that perform work in more than one classification, it can pay the wage rates specified for each classification ONLY if it maintains accurate time records showing the amount of time spent in each classification. If accurate time records are not maintained, these employees must be paid the highest wage rate of all the classifications of work performed by each worker. Accurate time records tracking how many hours a worker performed the work of one trade and then switched to another trade must be accounted for on a daily basis and reflected on Employer Certified Payroll accordingly.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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RESPONSE TO REQUEST FOR PROPOSAL:

City of Austin Texas
Vehicle Fleet Technical Upgrade, RFP PAX0129

Deliver To:

Sai Xoomsai Purcell, Senior Buyer Specialist
City of Austin, Municipal Building
Purchasing Office – Response to Solicitation PAX0129
124 W 8th Street, Room 310
Austin, Texas 78701
Phone: 512-974-2500
Email: Sai.Xoomsai@austintexas.gov

Submitted By:

FleetMind Solutions, Inc.
1751 Richardson, Suite 7200
Montreal, Quebec Canada, H3K1G6
Phone: 1-888-639-1666
www.FleetMind.com

May 3, 2016 by 2:00PM

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------ Cost Proposal Sheet (Attachment A), Audited Financials, Credit Report (below)

Note: The following items have been placed in separate envelopes as instructed and include specially marked USB drives for the confidential items in electronic version.

Cost Proposal Sheet (Attachment A) – Confidential – Envelope #1, USB Drive #10
Audited Financials – Confidential – Envelope #2, USB Drive #11
Credit Report – Confidential – Envelope #2, USB Drive #11
All other hard copy items and USB Drives # 1-9 are not marked confidential but should only be used for the purpose of evaluation of the FleetMind proposal and as provided per the contract.

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Table of FleetMind Attachments (See also Tab 11)

FleetMind has included the additional information on products proposed shown below and duplicated under **Tab 11- FleetMind Attachments**;

FleetMind Municipal Waste Solution Overview Brochures

- 360 Degree Brochure, Municipal Waste Highlights, Green Fleet
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-360-4pager.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-municipal-waste.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-green.pdf

FleetLink Mobile OBC Information, ECM Connectivity, Mounting Illustrations, GPS Antenna

- FleetLink Trek SSV10 DVR – Proposed Vehicle Mobile for All Vehicles Except Bin Delivery
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2016/02/FleetMind-SmartTruckTechBrochure.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2016/02/FleetMind-StreetSmart-Vision-10-Smart-Truck.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-ecm.pdf

- FleetLink Lite Getac F110 Tablet - Alternative Tablet Vehicle Mobile (optional, if needed)
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-fleetlink-lite.pdf
  - Getac Website: http://us.getac.com/tablets/F110/specs.html

- FleetLink Motorola (Zebra) MC67 PDA – Proposed Handheld Mobile for Cart Delivery, with optional Zebra RFID5500 Sled, for Bin Delivery Trucks
  - Motorola (Zebra) Website: https://www.zebra.com/us/en/products/mobile-computers/handheld/mc67-mobile-computer-series.html
  - Motorola (Zebra) Website: https://www.zebra.com/us/en/products/rfid/rfid-handhelds/rfd5500.html

- FleetLink Mobile Device Mounting Hardware Options
  - Stage 1 - Mounting the Equipment

- PCTEL External GPS Antenna
  - PCTEL Website: http://www.stepglobal.com/pdfs/ANTENNAS%20(B)%20Housed%20GPS%20Antennas%20(B)/3978D_HR_DH.pdf

RFID Reader Hardware

- Alien 9680 RFID Reader
  - Alien Website: http://www.alientechnology.com/products/readers/commercial-4-port/

FleetLink Mobile Cart Delivery System

- FleetMind Cart Delivery
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-cart.pdf

FleetMind Back Office Products

- FleetLink RMS Route Management System, Automated Service Verification
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-fleetlink-rs.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-asv.pdf

- FleetLink FRM Enterprise Reporting System, Safety
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-dashboard.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-safety.pdf

- FleetLink FleetWeb Tracking System
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2016/02/FleetMind-fleetlink-track-20160106.pdf

FleetMind Azure Hosting Environment

- FleetMind Windows Azure Hosting Overview (FleetMind Hosting Option)

FleetMind Internal Hosting Environment Requirements

- FleetMind Back Office System Requirements for In-house Hosting ***(Confidential)***
  - FleetMind 2015 IT Platform Requirements

FleetMind Conceptual System Diagrams

- FleetMind Proposed Conceptual Diagram of City of Austin Environment (larger version)
  - Pilot Phase Diagram
  - Production Phase Diagram

April 22, 2016

City of Austin
Sai Xoomsai Purcell
Senior Buyer Specialist
Purchasing Office, Municipal Building
124 W 8th Street, Room 310
Austin, Texas 78701

Re: Request for Proposal (RFP) PAX0129 – Vehicle Fleet Technical Upgrade

Dear Ms. Purcell,

FleetMind Solutions, Inc. ("FleetMind") is pleased to submit a response to bid "PAX0129 – Vehicle Fleet Technical Upgrade" issued February 22, 2016 by the City of Austin, Texas.

FleetMind is North America's leading provider of on-board computers, peripherals and automated route management software in the waste industry. With thousands of these ruggedized computers deployed across North America within several of the top ten commercial waste haulers and among the largest municipalities, the FleetMind solution offers information technology and services covering millions of collection customers and assets. Consequently, FleetMind is well positioned to provide best in class products, services and support to the City of Austin and the Austin Resource Recovery Department.

FleetMind solutions meet or exceed all of the technical requirements and agrees to all of the terms, certifications and conditions of this RFP. In addition, FleetMind Solutions, Inc. is in compliance with all applicable rules and regulations of Federal, State and Local governing entities and positively affirms compliance with the terms of this solicitation. As qualified and eligible, FleetMind herein submits our Proposal with full confidence in our ability to perform the requirements as requested within this RFP. We look forward to being selected as the winning bidder and working with the City of Austin on this project.

Respectfully,

Martin Demers, CEO
1751Richardson, Suite
7200 Montréal, QC, H3K
Tel. 888.639.1666
martin.demers@FleetMind.
com www.FleetMind.com

EXECUTIVE SUMMARY

FleetMind Company and Solution Overview

FleetMind Solutions Inc. (FleetMind) was established in 1997. It is a strong growing privately held company, recognized as a market leader in North America in the field of on-board technology for the Waste and Recycling industry. Clients range in size from 3 vehicles to over 1400 installed units. Well- known private haulers that use FleetMind include, but are not limited to: Republic Services Group, BFI Canada/Progressive Waste, Casella Waste Systems, and Waste Pro. Public/Municipal haulers include, but are not limited to: NC State University, City of Fayetteville, City of Raleigh, City of Mesa, City of Santa Cruz, and City of Albuquerque.

FleetMind has over 40 employees in Canada and the United States with a strong engineering foundation in both hardware and software solutions. The company's focus for the past 11 years has been delivering integrated technology solutions to the Waste and Recycling Industry.

FleetMind has reviewed the City's requirements, and is proud to offer the following all-in-one solution to meet your stated functional and technical requirements for the Austin Recovery Vehicle Fleet Technology Upgrade;

- Seamlessly integrated military grade Trek SSV10 DVR 10.4" touch screen on-board computers (OBCs), for the majority of the City fleet. The Trek SSV10 comes standard with built-in GPS, LTE 4G cellular data connectivity, engine ECM integration, external camera integration, and solid state video recording capabilities, out-of-the-box. Though not a part of the current project phase, the camera and DVR integration features will be ready to implement immediately, when the City decides to upgrade the fleet camera systems in the future.
- Motorola MC67 Handheld PDAs with RFID scanning attachments to be used for cart delivery, repair and maintenance activities. The handhelds interface with the cart delivery/repair modules in the FleetLink RMS.
- Trek SSV10 mobile OBC integration with vehicle mounted RFID tag readers.
- Trek SSV10 mobile OBC integration with lift arm actuators for each of the City vehicles outfitted with automated lift arms (side load, front load), to automatically detect/record all lifts made, and enhance service verification activities. Lift actuators for rear load tippers are also available, if desired.
- Comprehensive suite of FleetMind FleetLink web based back office software that includes; a Route Management System (RMS), Enterprise Reporting Manager (FRM), Vehicle Safety Monitoring System (StreetSmart Vision Safety Portal) and Real-time Mapping System (FleetWeb). The RMS component also incorporates

a complete Container Management System and Customer Case Management System.

- Custom integration with the City's existing RouteSmart (Routing Software), ESRI GIS, 311 CSR and CC&B (Billing System) applications. The FleetLink FRM component will serve as the replacement for the existing City SWTS application, and can be customized to meet the unique needs of the City.
- Optional integration with on-board scale systems the City may have installed on their fleet vehicles (body scales, lift arm scales), as well as other vehicle monitoring subsystems.
- FleetMind has optionally included pricing for its Getac F110 military grade tablet on-board computer. This OBC might be advantageous for certain City vehicle types which require a device that can be easily removed from the cab, to collect pictures, or capture customer signatures on contracts/orders. The City can elect to substitute this alternative OBC on vehicles requiring this capability, where needed.

Complete details of the proposed solution are contained under **Tab 7 – System Concept and Solutions Proposed**. Additional product documentation has been supplied under **Tab 11 – FleetMind Attachments**.

With experience installing over 6000 on-board computers throughout North America, FleetMind is well adept at managing complex projects. In the past we have delivered and installed over 850 vehicle units within a three-month timeframe and have extensive experience deploying large fleets. The Project Implementation Plan under Tab 8 - Program of this proposal is a suggested guideline, however FleetMind will collaboratively work with the City of Austin to finalize a mutually defined project timeline with deliverables for the City of Austin to approve before starting the project.

FleetMind's core business focuses are perfectly aligned with the goals of this bid. FleetMind's standard off the shelf FleetLink system meets or exceeds the City's requirements for mobile computers/GPS with back office route management and reporting. In addition, FleetMind will work cooperatively with the City of Austin on developing a method to interface with your CC&B, CSR 311 and GIS systems that are being utilized for billing and work order management. Therefore, FleetMind is confident that we are the most stable and technically capable vendor for this project's requirements utilizing our FleetLink suite of products. We herein encourage the City to allow FleetMind to participate in a product demonstration and give us the opportunity to provide our proven reliable technology to City of Austin. We look forward to helping City to achieve its technology implementation goals.

Authorized Negotiator – FleetMind Solutions, Inc.

The *authorized negotiato*r for this contract is:

Martin Demers, CEO/Managing Partner
FleetMind Solutions, Inc.
1751, Richardson Suite 7200
Montreal, Quebec, Canada H3K 1G6
Office Phone 888-639-1666 ext. 4411
Fax 888-639-1666
Cell phone 514-583-4411
Email: martin.demers@fleetmind.com

The primary contact for *technical questions* for this contract is:

Martin Lord, CIO/Managing Partner
FleetMind Solutions, Inc.
1751, Richardson Suite 7200
Montreal, Quebec, Canada H3K 1G6
Office Phone 888-639-1666 ext. 238
Fax 888-639-1666
Cell phone 514-972-1222
Email: martin.lord@fleetmind.com

The primary contact for *project management and timeline questions* is:

Pierre Hache, Senior Director of Operations
FleetMind Solutions, Inc.
1751, Richardson Suite 7200
Montreal, Quebec, Canada H3K 1G6
Office Phone 888-639-1666 ext. 259
Fax 888-639-1666
Cell phone 514-863-5329
Pierre.hache@fleetmind.com

The primary contact for *pricing questions* is:

Don Diego Padilla II, Vice President Sales
FleetMind Solutions, Inc.
1751, Richardson Suite 7200
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dpadilla@fleetmind.com

The *primary contact for general correspondence* is:

Martin Demers
FleetMind Solutions, Inc.
1751, Richardson Suite 7200
Montreal, Quebec, Canada H3K 1G6
Office Phone 888-639-1666 ext. 4411
Fax 888-639-1666
mdermers@fleetmind.com

BUSINESS INFORMATION

Company Legal/Corporate Name: FleetMind Solutions Inc

Address: 1751 Richardson, Suite 7200

City: Montreal **State:** QC **Zip:** H3K 1G6 **Country:** Canada

Phone: (888) 639-1666 **Fax:** (888) 639-1666

Email: mdemers@fleetmind.com **Website:** www.fleetmind.com

Tax Payer Identification Number: EIN#: 98-0488358

Incorporated in: Quebec, Canada **Years in Business:** Nineteen (19)

Contact for Questions about this proposal:

Name: Martin Demers **Phone:** (888) 639-1666 ext 4411

Email: mdemers@fleetmind.com

Day-to-Day Project Contact (if awarded):

Name: Pierre Hache **Phone:** (888) 639-1666 ext 259

Email: pierre.hache@fleetmind.com

The FleetMind solution has been deployed and operational since 1997, with a specific emphasis in the Waste Industry since 2003.

Since 2003 FleetMind has deployed thousands of on-board solutions across hundreds of locations throughout North America integrating with numerous third party software programs. Consequently, FleetMind is recognized as the leader in the industry. As evidenced throughout this submission, FleetMind is well experienced and prepared to deliver the solution as requested within this RFP.

The following pages contain the information on the personnel assigned to this project as well as reference data on 5 relevant clients and projects that they have been involved with.

FLEETMIND PROJECT TEAM PROFILES INCLUDING SUBCONTRACTOR

Project Manager and Engineer

Pierre Hache – FleetMind Solutions, Inc. Senior Director of Operations

Pierre Hache has over 20 years' experience encompassing large-scale technology integration projects and change management initiatives. With over 6 years at FleetMind Solutions, Inc. Pierre is recognized for his outstanding organizational and management skills while leading a cross-functional staff delivering best practices project management, quality partner participation, and customer support activities based at FleetMind headquarters and in the field. Additionally, Pierre has served in the key Project Lead role for most of the past FleetMind municipal deployments projects. He holds a Bachelor of Science in Electrical Engineering from Ottawa University and an MBA from Concordia University.

Team Member Profiles

Martin Demers – FleetMind Solutions, Inc. CEO & Managing Partner

Martin Demers is a recognized, C-level technology executive building on over 20 years' experience in successfully revitalizing organizations and advancing corporate reputations while inciting positive growth in the businesses. Mr. Demers joined FleetMind in 2007 as co-owner and shortly earned the Chief Executive Officer position, his current role. Previously, Mr. Demers served as President and COO of Radialpoint, CEO of Interstar and CMO for ACE*COMM, a USA-based and NASDAQ-traded telecom software systems company. Mr. Demers has also held a number of leadership roles at Teleglobe Foxboro and CAE where he managed large scale international projects. He has recently authored and gained publication of his industry-visionary articles in select trade magazines including Waste Advantage Magazine, Recycling Product News, and RFID Journal. Mr. Demers holds a B.Sc. Electrical Engineering COOP Degree from the University of Ottawa, where he graduated with honors. He later earned his MBA in International Business and Finance at McGill University. As CEO, he is responsible for overall corporate strategy and leadership at FleetMind.

Martin Lord - FleetMind Solutions, Inc. COO/CIO & Managing Partner

Martin Lord is an entrepreneurial leader and technology executive spanning over 20 years in the software and telecommunications industries. He joined FleetMind in 2002 as the Chief Operating Officer and soon led the reengineering effort of its core fleet management and wireless enabled, on-board computer product suite greatly contributing to the securing of new contracts with leading North American fleets operating in the LTL trucking and waste management verticals. In 2005, Mr. Lord steered the Company to complete a management buyout. Lord, also a Managing Partner, is presently responsible for product development and performs in an operations leadership capacity at the Company. In prior assignments, he served as Vice President of Engineering and Operations at Minacom, where he succeeded in delivering the company's next generation, Voice over IP (VoIP) Quality of Service (QoS) Management product platform and as a General Manager for Bell Canada. At Bell Canada he served to lead the reengineering of the network service assurance Operational Support Systems (OSS) and workforce management platform. Beforehand, Lord held

various positions in the research and development teams at several firms including Syndesis and Memotec. He holds a B.Sc. Engineering Physics Degree from Ecole Polytechnique in Montreal.

Karen Gabrielyan – FleetMind Solutions, Inc. Director, Research and Development

Karen Gabrielyan joined FleetMind (4) years ago to oversee all engineering, research and development activities forming a nearly (20) year long career highlighted by his excellence and core skills in a host of technical areas including enterprise software integration, SaaS, Service Oriented Architecture, Cloud computing, automotive software, hardware sensor integration, web services, REST, JavaScript/HTML, Python, Linux, Azure among others. He has lead notable advancements in the FleetMind product suite during his tenure offering customers greater functionality and value derived from his team's many achievements. Karen previously served in several leading software development capacities at Radialpoint Safecare over a seven year period that followed engineering roles with wireless test platform developer Azimuth Systems. Mr. Gabrielyan earned Bachelor and Masters of Science degrees in Physics from Yerevan State University.

Tim Sears - FleetMind Solutions, Inc. Product Manager/System Administrator

Tim Sears has over 15 years' experience for supporting and maintaining critical small scale and larger enterprise IT infrastructure. His hands on experiences in conjunction with understanding system protocols blends well when serving the specialized IT and mobile information needs of waste customers of FleetMind , a leading integration company for advancing waste industry fleets. Over the past 10 years Sears has grown in his professional career at Fleetmind. He has performed in pivotal roles within the FleetMind product, research and development areas by applying his skills and honed best practices to complex system integrations across a wide spectrum of public and private sector customers, systems, and partners. His in-depth knowledge of the Fleetmind product suite and industry requirements support a keen vision for continued, marketplace benefit drawn from his participation in and leadership contributions for customer systems integration projects. Mr. Sears attended the University of Concordia in Montreal.

Peter Karigiannis - FleetMind Solutions, Inc. Support Team Leader

Peter Karigiannis joined FleetMind over 5 years ago and now serves in the critical role of Support Team Leader. He has deep experience with delivery of on-site and remote training classes that introduce and accelerate learning of the FleetMind product suite for many new customers, supporting installation roll outs, and managing new cellular activations for data reaching the onboard systems. Karigiannis holds a degree in Finance from Concordia University.

Richard Beauchamp – Fleetmind Solutions, Inc. Senior Data Specialist

Richard Beauchamp has compiled more than 20 years' experience as an information technology analyst having served in various technology-driven capacities at CGI, Alcan and Bell Canada. His assignments included working with, transforming and managing large data repositories along with developing new

reporting solutions – acquiring skills very beneficial for serving the FleetMind user community. Beauchamp lists among his accomplishments the certified programmer standing.

Soal Technologies, LLC

Soal Technologies, LLC, a City of Austin certified and Texas Minority Business Enterprise (MBE) was selected by the FleetMind Solutions implementation and technology project team, as its choice among seventy competing firms that hold MBE certified status to join with FleetMind for leading and making the in-vehicle installations in the Austin Resource Recovery fleet once FleetMind has been selected and under contract with the City. With over 25 years combined experience in providing industry with effective business solutions in technology specialties, Soal Technologies, LLC lists among its clients IBM, Dell, Whole Foods Market and the State of Texas government.

Tab 6 - FleetMind Solutions Inc. Recent Project Experience

PROJECT #1

Name of Organization: ***Miller Waste Services, Inc.***
Type: Waste and Recycling Company
Primary Location: 8050 Woodbine Ave, Markham, ON L1S 4V9Canada

Description of Products and Services Provided: (400) truck hauler with (26) Onboard Computers with Scale Integration.
Using current version of FleetWeb mapping software and current version of FleetLink FRM enterprise reporting software.
In process: adding (70) more OBCs and FleetMind Route Management System.

Length of Time Services Performed: Installed2012

Contact Information: Gus Kalnins, Special Projects
Contact Phone: (416) 678-3675
Contact E-Mail Address: gus.kalnins@millergroup.ca

PROJECT #2

Name of Organization: ***Kimble Recycling and Disposal***
Type: Waste and Recycling Company
Primary Location: 409 Crooked Run Rd., New Philadelphia, OH 44663

Description of Products and Services Provided: Over (200) onboard computers installed. FleetMind system is seamlessly integrated with customer's billing software. Current version of FleetLink (FRM) enterprise reporting software and current version of FleetWeb mapping software.

Length of Time Services Performed: Installed initial trucks in 2008 and continue expansion into more vehicles

Contact Information: Keith Walker, General Manager
Contact Phone: (330) 575-5881
Contacts E- Mail Address: kwalker@kimblecompanies.com

PROJECT #3

Name of Organization: ***City of Mesa, AZ, Environmental Management & Sustainability Department***
Type: Municipality
Primary Location: 730 N Mesa Drive, Mesa, AZ 85201

Description of Products and Services Provided: Utilizing FleetLink (RMS) route management system, FleetLink (FRM) enterprise reporting software, FleetWeb mapping software in conjunction with (75) vehicle mobile display devices. Integrating Vulcan scale systems and ECM engine data. Planning RFID implementation near future. Using (19) MC67 mobile handhelds for cart delivery and

QA activities. Integration made with Hanson Banner Utility Billing system and CIS customer management system. Fleet consist of (75) vehicles; ASLs, RELs, FELs and Roll-off.

Length of Time Services Performed: Installed January 2015.

Contact Information: Erin Romaine, Management Assistant II
Contact Phone: Work: (480) 644-3673, Cell: (602) 510-1693
Contact Email: erin.romaine@mesaaz.gov

PROJECT #4

Name of Organization: ***City of Santa Cruz California, Department of Resource Recovery***
Type: Municipality
Primary Location: 809 Center Street Room 201 Santa Cruz CA 95060

Description of Products and Services Provided: Utilizing FleetLink (RMS) route management system, FleetLink (FRM) enterprise reporting software, FleetWeb mapping software in conjunction with (42) vehicle mobile display devices plus (1) Driver Training Unit. Integration with city billing and a work order system for maintenance and fuel. Fleet consist of (42) vehicles; ASLs, RELs, FELs and Roll-off using either GD4010 or Getac mobile computer displays.

Length of Time Services Performed: Commenced installation April 2015

Contact Information: Bob Nelson, Superintendent Resource Recovery Dept.
Contact Phone: Work: (831) 420-5548
Contact Email: bnelson@cityofsantacruz.com

PROJECT #5

Name of Organization: ***City of Albuquerque New Mexico***
Type: Municipality
Primary Location: 4600 Edith NE Albuquerque NM 87107

Description of Products and Services Provided: Utilizing FleetLink (RMS) route management system, FleetLink (FRM) enterprise reporting software, FleetWeb mapping software in conjunction with (143) vehicle mobile display devices many with RFID Readers and Actuators. Operating FleetLink Lite in (17) of the vehicles removable from cradle and for camera use outside the vehicle especially with the graffiti trucks. Residential recycling, waste collection, and commercial waste collection. Integration project with third party software Using (2) MC67 mobile handhelds for cart delivery and QA activities. Fleet consist of (75) vehicles; ASLs, RELs, FELs and Roll-off.

Length of Time Services Performed: Bulk Installation Commenced Q1 2015.

Contact Information: John Soladay, Solid Waste Director
Contact Phone: Work: (505) 761-8105
Contact Email: jsoladay@cabq.gov

Tab 6 – Cancelled Contracts, Lawsuits, Disputes

Over the past ten years, FleetMind Solutions Inc. has had no cancelled or terminated contracts prior to the expiration of their terms, and no judgments or lawsuits related to our operations. There are currently no pending disputes or litigations with any parties.

SYSTEM CONCEPT AND SOLUTIONS PROPOSED

FleetMind Summary Response to Functional and Technical Requirements

This table summarizes FleetMind's response to requirement items from RFP Sections 400, 500, 600 and 700 – Scope of Work/Specifications, Functional Requirements, Applicable Permits and Licenses and Omissions, Attachments 5 Technical Reference Model, and Attachment 6 Technical Standards. Additional details are also contained in the System Concepts and Product Overview section under this tab, following this summary response table. Any exceptions to stated requirements are noted here, and are also presented in the Matrix of Exceptions requested under TAB 3. FleetMind has also included additional product guides and brochures under TAB 11 – FleetMind Attachments. The City is directed in the summary response, as required, to these other documents for more details.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
4.0	**SCOPE OF WORK**				
4.1	**Objective** The objective of this RFP is to identify and select a Contractor who can supply and service multiple hardware, software upgrades and integrate to improve the efficiency, productivity, and safety of ARR's collection programs and associated administrative support needs.	X			FleetMind is confident that we can meet all of your requirements contained within this RFP. Refer to **FleetMind Letter of Introduction**, and **Executive Summary** following **Tab 1 - Table of Contents**, for an overview of our company and proposed response.
4.2.1	**Key Improvements - 4.2.1 Short Term** • Automation and integration of routing, billing, AVL, and truck scaling to improve timelines and accuracy of customer service, billing, and fleet management functions	X			FleetMind's all-in-one solution proposed is fully capable of meeting all City short-term improvement objectives listed here. Refer to the component descriptions for the FleetLink back office RMS, FRM, StreetSmart Vision Safety Portal and FleetWeb applications under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** These sections describe the specific features and functions available to assist City staff in meeting these

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	• Real-time remote monitoring and electronic recording of vehicle trip, vehicle diagnostic, and personnel performance data • Capability to identify routing improvements • Capability to assign missed or out-of-cycle collection calls to the nearest route driver • Capability to interface with RFID technology, CSR software and scale weight data from City facilities and contractor facilities • Capability to interface with and manipulate both historical databases and current data, extract raw data and generate customizable, user-defined and/or ad hoc reports				objectives. FleetMind will work with the City in this phase of the project to develop needed interfaces to the CC&B, 311 CSR and RouteSmart applications, as well as provide a replacement for the existing SWTS system. We have done a review of your system documentation and are confident that a FleetMind Connector can be successfully built for these applications. We are assuming that the City will be providing a test integration CC&B/CSR server that contains an instance and copy of the current City of Austin data and configuration. We have successfully integrated with ESRI/RouteSmart applications for other existing customers, and are currently working on a CC&B/CSR integration for another client. FleetMind has a large, talented systems development staff to support such integration efforts. FleetMind will also work on interfaces to the scale house systems in place for future phases of the project, if desired.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
4.2.2	**Key Improvements - 4.2.2 Long Term** • Reduced fuel and maintenance costs • Carbon footprint reduction • Optimization of travel patterns for drivers • Cost effective implementation of expanded garbage/recycling collection programs • Ability to produce more accurate budget projections based on actual operational and vehicle maintenance needs • Reduction in the number of vehicle collisions and employee injuries • Reduction in the number of billing errors and disputes	X			FleetMind's all-in-one solution proposed is fully capable of meeting all City long-term improvement objectives listed here. Actually, many of these will be able to be met following the initial implementation. Once City staff has mastered the use of the various FleetLink product components, operational efficiencies will be realized quickly. The FleetMind system gives organizations a complete 360-degree view of all aspects of their operations, which in turn allows adjustments to be made to gain efficiencies, reduce costs, identify new revenue opportunities, and improve their safety programs. Refer to the component descriptions for the FleetLink back office RMS, FRM, StreetSmart Vision Safety Portal and FleetWeb applications under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** These sections describe the specific features and functions available to assist City staff in meeting these objectives. .
4.3	**Summary of Required System Upgrades for Initial Implementation** Refer to Functional Requirements in sections 5.0 and attachment E, Technical Reference Model, attachment E and Attachment F, Technical Standards for more specific details and required proposal responses.) **NOTE:** All Proposers shall	X			Refer to the responses in this summary document, as well as the component descriptions for the FleetLink RMS, FRM, StreetSmart Vision Safety Portal and FleetWeb applications under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Our Tab 7 response describes in detail the multitude of features and functions available, to assist City staff in meeting your stated functional and technical requirements from all RFP sections. FleetMind has reviewed the **Attachment E Technical Reference Model**, and has no issues with compatibility with our proposed solution and the City's internal IT infrastructure. FleetMind has proposed a Microsoft Azure cloud-based hosted environment for its

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	submit a proposed timeline that specifies the length of time required to complete each task related to the entire project, from initial design to full Initial Implementation. The timeline shall include a Proof of Concept Pilot period. Before proceeding with full Initial Implementation, the Contractor shall design and conduct (after written acceptance and notice to proceed by ARR) a Proof of Concept Pilot to verify that all upgrades proposed by the Contractor are feasible as related to ARR's operational activities and needs.				FleetLink back office systems, as this was the City's stated preference. Optionally, the City could implement the system on its own infrastructure, if needed. FleetMind has also reviewed **Attachment F Technical Standards**. Refer to the completed compliance table following this summary document for our responses to these technical requirements. The proposed solution will meet all of the stated requirements. A complete project plan, including for the Proof of Concept Pilot Phase, has been outlined. Refer to **Tab 8 – Program** and **Tab 9 – Proposed Technical Plan for Proof of Concept Pilot** for details.
4.4	**GPS/AVL Units and On-Board Touchscreen Control Displays**				
4.4.1	a) All existing GPS/AVL units in ARR's collection vehicles shall be removed and replaced with new units that have expanded capabilities. b) All vehicles shall have an unlimited data plan which cost will be built into the annual maintenance fee. ARR's current GPS plan is not a hosted solution, but rather an in-house solution (in-house server) utilizing CompassCom	X			FleetMind has proposed that your existing GPS/AVL equipment be replaced by our Trek SSV10 DVR mobile on-board computer (OBC), for the majority of the City fleet. This mobile includes all GPS/AVL capabilities required by our solution. An external GPS antenna is supplied with each vehicle mobile kit. A 4G 1GB wireless data plan from Verizon wireless will be needed for each installed mobile OBC. Pricing for this data plan has been included in our **Cost Proposal**. Alternatively, the City may negotiate its own terms with Verizon for a shared data plan for the mobile units. FleetMind does not resell any Verizon "unlimited" data plans. For certain vehicles, FleetMind is proposing its Motorola MC67 handheld PDA OBC, as an alternative to the Trek SSV10. This device can be taken outside of the cab, provides RFID scanning capabilities, and can be used with our proposed Cart Delivery

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	CompassTrac software. Sierra Wireless is currently installed. Existing models are a mix of MP and GX series units, and they include USB connections and GPS antennas.				system that is a part of our RMS component. If a larger portable device is needed, the City could optionally upgrade to the Getac F110 tablet OBC. Both the handheld and the tablet devices support GPS/AVL, electronic route sheets, driving directions, and would also require data plans. Since these alternate devices do not support DVR recording or external camera integrations, their data plan requirement is less than the Trek SSV10 DVR OBC. A 250MB plan is required, and these devices support Verizon, AT&T and Sprint networks. Refer to the specifications for the Trek SSV10, Motorola MC67 handheld and optional Getac F110 tablet under **Tab 11 – FleetMind Attachments.**
4.4.2	The new GPS/AVL system shall provide greater flexibility, expandability, and shall maximize the use of generic industry hardware interfaces and connectivity points. The proposed system shall meet existing and anticipated industry standards, as well as anticipate and permit future technology needs, improvements and growth in the solid waste industry. It shall utilize multiple on-board sensors for real-time remote monitoring and electronic recording of vehicle events.	X			FleetMind is proposing our Trek SSV10 DVR mobile OBC for the majority of your fleet. This mobile includes GPS/AVL, G-shock detection, RFID integration support, on-board scale integration support, ECM connectivity, external camera integration support, and live stream video with full-day DVR video archive/replay capabilities. An external GPS antenna is supplied with each vehicle mobile kit. The SSV10 mobile OBC is also capable of integrating with other on-board monitoring subsystems, such as tire-pressure and hydraulic monitoring systems, and in the near future with collision avoidance systems, lane departure warning systems, etc. It also allows for real-time vehicle diagnostics and troubleshooting, and the ability to remotely connect to the OBC to observe driver and vehicle operations in real-time using on-board external camera connections. Refer to the specifications for the Trek SSV10 mobile OBC under **Tab 11 – FleetMind Attachments.**

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
4.4.3	Where applicable, existing low loss coax cables and antennas shall remain in place to be incorporated with new units and repurposed for broadband and GPS.			X	FleetMind will not reuse any of the previous system hardware components or cabling. New cabling will need to be run for all integrations. Costs for all required installation items have been factored in and are included in the **Cost Proposal**.
4.4.4	The Contractor shall transfer existing GPS/AVL MTN account information to the new units or, if feasible, transfer existing SIM cards from old units and utilize in new units.			X	The Trek SSV10 DVR OBC's being proposed for the majority of the City fleet, as well as the Motorola MC67 handhelds and optional Getac F110 tablet OBCs, will all require new SIMs and 4G data plans. FleetMind will ensure that all mobile OBCs and handhelds delivered are compatible with the associated 4G data service plan providers supported for each model, however the City will own and manage those data plans, not FleetMind. A Verizon 1GB data plan is required for the Trek SSV10 DVR OBC. The MC67 handheld and optional Getac F110 tablet require 250MB data plans, and these devices support the Verizon, AT&T or Sprint networks. FleetMind has included in its **Cost Proposal** pricing for a 1GB Verizon data plan that we resell. Alternatively, the City may negotiate its own terms with Verizon for a shared data plan for the mobile units. FleetMind does not offer or resell any "unlimited" data plans.
4.4.5	The Contractor shall remove all pre-existing GPS/AVL units without damaging or cutting connectors so that they can be repurposed in other City vehicles. The Contractor shall carefully place undamaged units in Contractor-supplied boxes and will be instructed by the City's	X			FleetMind has supplied optional pricing for the removal of the existing City vehicle hardware noted here, per these specifications, in its **Cost Proposal**. The City may elect to perform these equipment removals themselves, or utilize another third-party subcontractor if desired.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Contract Manager on where to place the old units (collection point) to be picked up by the City and transported to the City's Wireless Communication Services Division office.				
4.4.6	The Contractor shall install new on-board touchscreen display computer system in the cab of each vehicle. (Note: The Contractor's proposed system shall include the capability to configure and limit the number of active on-screen controls made available to the driver. For safety reasons, the driver should have minimal interaction capability with the on-board touchscreen control display).	X			FleetMind is proposing the Trek SSV10 DVR mobile OBC for the majority of your fleet. We are also proposing the Motorola MC67 handheld PDA for all cart delivery vehicles. Optional pricing has been supplied for the FleetLink Lite Getac F110 tablet, which has a larger screen for a portable device, and can be taken outside of the cab like the MC67 handheld. Installation charges for each model type has been outlined in our **Cost Proposal**. Our OBC mobile devices do not allow the driver to interact with the touchscreens while the vehicles are moving. The vehicle must be stopped for any of the touchscreen functions to work. In addition, our OBC FleetLink Waste Application is designed to require a minimum amount of driver interaction while processing routes. In fact, there is NO interaction required by the driver for normally processed pickups. Our automation and subsystem integration to lift actuators, ECM, GPS and RFID devices automatically detect successfully serviced stops, and records these for the driver. It is only when a driver encounters an exception that mobile touchscreen interaction is needed. System administrators have control over many of the options and workflows that are presented to drivers on the mobile OBC units, and features can be enabled/disabled on a vehicle by vehicle basis, using the devices hardware profile. Exception tabs, action pick lists, and quick message responses can also be customized to meet the specific needs of each operating division at the City. Refer to the overview of the Trek SSV10 DVR OBC under **Tab 7 – System Concepts and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Also review the

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					FleetLink Cart Container Management brochure under **Tab 11 – FleetMind Attachments**, to review the workflow screens for the MC67 handheld when being used for cart delivery and repair.
4.4.7	The Contractor shall provide control displays which shall be rugged, water and impact resistant (minimum MIL-STD-810G), and have a top operating temperature of 140°F or higher. Control displays shall have touchscreen capabilities and shall provide full visibility in daylight/sunlight. Displays computer system shall have an operating voltage range of 9 to 18 volts. The Contractor shall mount all on-board touchscreen display computer systems on a Contractor-supplied locking dock and have a uniquely-coded master key specifically for ARR's vehicle fleet.	X			FleetMind is proposing the Trek SSV10 DVR mobile OBC for the majority of your fleet. We are also proposing the Motorola MC67 handheld PDA for all cart delivery vehicles. Optional pricing has been supplied for the FleetLink Lite Getac F110 tablet, which has a larger screen for a portable device, and can be taken outside of the cab like the MC67 handheld The Trek SSV10 DVR OBC has two separate parts, the display monitor, and a housing with the computer and DVR that is typically installed in the doghouse of the truck. Both are fixed mounted in the vehicles. The display is not meant to be removed after installation. FleetMind installers will work with your fleet and safety staff to ensure the display is mounted in the best location for each vehicle type. The RAM mounting brackets allows for minor viewing angle adjustments by the driver. Other third-party mounts could be utilized if more flexibility is needed for display adjustments, but at added cost. The SSV10 is rated MIL STD 810G and is IP65/67 certified. The 10.4 " 1024 x 768 resolution display comes with a sun shield and light sensor to improve visibility in direct sunlight. FleetMind also is proposing the Motorola MC67 handheld PDA for the bin delivery vehicles. The MC67 is rated MIL STD 810G and is IP65/67 certified. The 3.5" 640 x 480 display is readable in direct sunlight. A vehicle mount and desktop charger are supplied. There are custom vehicle mounts available through third parties for the MC67 handheld as well, for unique needs, at added cost. Optional pricing has also been supplied for the FleetLink Lite Getac F110 tablet OBC, should a larger screen portable device be required. This unit does come with a locking in-cab dock station for

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					vehicles. The F110 is rated MIL STD 810G and is IP65/67 certified. It has a LumiBond 8.1" sunlight readable display. Detailed specifications for each of the proposed mobile devices (SSV10, F110 and MC67) have been supplied under **Tab 11 – FleetMind Attachments.**
4.4.8	The Contractor shall provide solutions to prevent unauthorized access, disconnection, removal, and any other types of tampering.	X			All of the FleetMind mobile OBC's offer security integration with Microsoft Active Directory for user authentication, prior to allowing system access. The operating system is Windows embedded, which prevents unauthorized tampering. The Trek SSV10 DVR is fix mounted and cannot be removed from the vehicle easily. The Motorola MC67 handheld comes with a vehicle mount and car charger. There may be third-party mounts for the MC67 that allow locking, but none of our current customers have these deployed. Typically, the handhelds are brought back into the office for storage at the end of shifts (placed into desktop chargers overnight). The optional Getac F110 tablet offers an in-cab locking dock station with key. The back office system monitors the health and connectivity of all mobile devices, and will generate alarms if the unit is powered off or disconnected. The system also monitors OBC connections to the external GPS, RFID, ECM and 4G Data Service, and will generate alarms if any of those are not functioning as well. A back office FRM dashboard report allows supervisors to easily see any mobile device issues that may be occurring, and the mobile itself will alert drivers of any system malfunctions with a display status icon.
4.5	**Work Management Application Software**				

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
4.5.1	The Contractor shall install and implement a new work management software application to replace the existing operational performance software (SWTS).	X			The FleetMind back office suite of products proposed will provide the City with a complete replacement for the existing SWTS reporting system, and be able to automate the collection of operational data related to route processing, service verification, pre/post trip reporting, landfill ticket collection, stop exceptions, off-route driver activities (breaks, refueling, etc.), vehicle downtime, and extra lifts performed. The mobile transmits driver and vehicle performance data in real-time, and the FRM, StreetSmart Vision Portal and FleetWeb reporting components makes this data available in a variety of real-time maps, reports and graphical dashboards. Fleetmind would recommend keeping the SWTS active as an archive for trending analysis. Once Fleetmind has been running for a period of time and has accumulated comparable information FleetMind will work with the City to develop a data migration plan for the historical data contained in the SWTS system, including a gap analysis between data stored in SWTS and receiving fields available in the FleetMind system. Costs for this historical data migration have been outlined in our **Cost Proposal**. Refer to the detailed descriptions of the FRM, StreetSmart Safety Portal and FleetWeb back office components under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.**
4.5.2	The Contractor shall provide an automated and easy-to-use solution for collecting, storing and reporting information that is currently maintained manually on paper on the Driver's Daily Reports (DDRs).	X			FleetMind has reviewed the City supplied DDR report form, and our proposed solution will collect, store and report on all of the data fields listed. The mobile OBC and FleetMind back office suite of products automates the collection of operational data related to route processing, service verification, pre/post trip reporting, landfill ticket collection, stop exceptions, off-route driver activities (breaks, refueling, etc.), vehicle downtime and extra lifts performed. The mobile transmits driver and vehicle performance data in real-time,

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					and the FRM, StreetSmart Vision Portal and FleetWeb reporting components makes this data available in a variety of real-time maps, reports and graphical dashboards. Refer to the detailed descriptions of the FRM, StreetSmart Safety Portal and FleetWeb back office components under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.**
4.5.3	The Contractor shall provide an automated RFID solution for managing activities related to garbage/recycling/compost cart inventory and distribution capable of reading RFID tags imbedded in the carts. (ARR is currently in the process of installing RFID tags into the existing cart inventory.) The solution shall also integrate with the City's billing system (CC&B).	X			The FleetMind system is designed to support municipalities that have deployed EPC Gen 2 UHF RFID tags on their carts. The Trek SSV10 OBC supports connection to a vehicle, fix mount installed Alien RFID reader. As containers are lifted, the RFID tag is read, and verified that it matches the assigned container for the customer location being processed. Drivers are alerted to location mismatches (relocated bins), and the system notes all exceptions so that these can be reported on and investigated by back office staff. The system scans the entire container inventory to try and match RFID tagged containers to their customers. If the container is not on the current route loaded for the vehicle, the driver can still service the container, and it will be marked as completed on whatever route it was supposed to be serviced by. These show as exceptions, and the container icons in the FleetWeb real-time map display will highlight that this has occurred. If the RFID tagged container is not assigned to ANY customer in the system, again a waring is displayed to the driver that this container is not on ANY defined route. Reports can be run against the No Customer Correlation (NCC) events, so that billing staff can determine why there is no record for the service stop. Some of our customers have discovered literally hundreds of containers that they had been servicing using this RFID identification process, that were not being billed for. The back office RMS component has a complete container tracking

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					and reporting application. Every registered container can be easily located and displayed on a map. Container information, such as; serial number/RFID tag, start service date, dates serviced (every lift is maintained in history), repair date/information, warranty dates/information, container movements/relocations, material types, size and capacity information, etc., is maintained. FleetMind has proposed Motorola MC67 handheld PDAs with RFID sled attachment for cart delivery and repair activities. Cart service vehicles use the handheld PDA to manage cart delivery/repair routes/stops, which are assembled and delivered to the PDA's electronically based on repair work orders and service start/end requests from the FleetMind RMS component. The MC67 PDA presents a sequenced list of cart service stops, and staff scans RFID tags on containers as they are placed/repaired/relocated. The geolocation of newly assigned/set bins is automatically stored with the correct customer service location, and once bin delivery is complete for a new service, that stop is sent to the RMS unscheduled stops list for a Dispatcher to assign to a route. Refer to descriptions of the Motorola MC67 PDA and RMS Cart Delivery component under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.**
4.5.4	The Contractor shall ensure that the technology upgrade solution(s) is compatible and integratible with route maps which are currently generated by ARR's RouteSmart optimization software and printed on paper. The solution shall provide for the electronic display of mapping information.	X			The FleetMind RMS component can accept route lists that have been optimized by RouteSmart. We have performed this integration for several other customers. The RouteSmart sequenced routes, and their associated route geozones, can be loaded and manipulated within the FleetMind route management system (RMS), using graphical geozone editing tools. Once service routes/zones are imported/constructed, vehicles are then assigned to these. Vehicles are dispatched their electronic routes each day using the 4G wireless cellular data connection. One, or multiple routes can be sent to a vehicle for driver selection and processing. The mobiles provide a route stop list display, as well

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					as a map-based display of all stops assigned. Driving directions to each stop are available, providing both visual and audible driving directions (similar to a Garmin). Our back office suite has displays and reports to ensure that each driver selects a route to process, and there are real-time maps that show each vehicle as they process their stops, with a container service status icon for each item in their dispatched list. As stops are complete, they are removed from the drivers list/map. The driver always knows if there are still unserviced stops by reviewing the list and map. Refer to descriptions of the FleetMind RMS component under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.**
4.5.5	The Contractor shall ensure that the technology upgrade solution(s) is compatible with the current and future versions of the Environmental Systems Research Institute (ESRI) to support GIS. (ARR currently uses ESRI ArcGIS version 10.0.)	X			FleetMind's solution can import/export GIS files to/from the City's ESRI GIS system. We will work with the City to achieve the desired level of data interchange between systems.
4.5.6	The Contractor shall provide all industry standards for all data formats and Contractor shall ensure that all database management systems are widely-accepted and well-supported, such as Oracle 11g (or higher) or MS SQL 2008r2 SP2, or equivalent product.	X			FleetMind's solution utilizes and is compatible with Microsoft SQL Server 2008R2 SP2 or above. We encourage the use of the latest GA version of Microsoft SQL Server to obtain the best system performance results. FleetMind is also familiar with data exchange interfaces between other relational databases, including Oracle. A Web API is available for reporting integration with Crystal Reports, or Microsoft SQL Reports.

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4.5.7	The Contractor shall ensure that technology upgrades are serviceable and can accommodate user-defined customizable and ad hoc reports regarding applicable operational performance indicators.	X			A FleetMind Web API is available for reporting integration with Crystal Reports, or Microsoft SQL Reports. Within the FleetMind FRM component, users can customize the output of reports by using built-in filters and sorting mechanisms in the reporting tool. Data returned by the FRM reporting tool can be exported to CSV or Excel files for further analysis if needed. Refer to descriptions of the FleetMind FRM component under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.**
4.6	**Radio Frequency Identification (RFID) System**				
4.6.1	The Contractor shall install an RFID system on collection vehicles, and select supervisor vehicles, as identified in Attachment B - Vehicle and Equipment List.	X			FleetMind utilized the City supplied vehicle list to determine which vehicle types would require our on-board Alien RFID readers installed. FleetMind's Trek SSV10 DVR mobile OBC proposed supports integration with our fixed mount Alien RFID reader solution for vehicles. Our handheld Motorola MC67 PDA with RFID reader attachment has also been proposed for cart delivery and repair vehicles. Pricing for RFID reader hardware, installation and integration has been included with our **Cost Proposal**. We do not currently offer RFID integration today on the optional Getac F110 tablet OBC, but it could be developed/customized if needed. Refer to specifications for the fixed mount Alien RFID reader and Motorola handheld RFID sled attachment under **Tab 11 – FleetMind Attachments.**
4.6.2		X			

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	a) The RFID technology solution shall be capable of identifying and managing RFID equipped garbage/recycling/compost carts, b) providing vehicle identification at scale facilities (if receiving facility scales are so equipped with compatible system), and supporting the management of various electronic data and analyses				Refer to our response to your requirement 4.5.3 above, and the additional comments below. FleetMind has included pricing for RFID tags that can be placed on the trucks windshields, so they can be identified at facilities that have RFID readers installed Fleetmind is currently in development integrating to 3rd party (Mettler Toledo) scale house. Fleetmind will be able to use knowledge leaned from this integration and apply if Austin decides to integrate scale house applications in the future. Most third-party vendor scale house software solutions support RFID integration out of the box. FleetMind would need to understand the exact requirements for integration between the scale house systems installed and our proposed FleetLink route management suite, before a solution is proposed. FleetMind would be open to working with the City on such integration, when specifications are made available. This integration between systems would be provided free of charge to the City by FleetMind. With the proposed FleetMind system, the input and collection of driver landfill/transfer tickets is an existing feature on the OBC mobiles, and removes the requirement to manually collect paper tickets and key this data into a system for reporting and analysis. Each vehicle landfill/transfer station stop is recorded. The driver inputs on the mobile weight/cost of materials deposited, and this information is automatically transferred in real-time to the back office FRM reporting system. The elapsed time spent at the drop-off facility is automatically calculated and recorded as well.
4.6.3	Ten (10) handheld RFID readers shall be provided for cart delivery crews to facilitate capture of cart data during cart deliveries and retrievals. The handheld RFID readers shall be able to be	X			FleetMind has proposed Motorola MC67 handheld PDAs with RFID sled attachments for cart delivery and repair activities. Cart service vehicle staff use the PDA to manage cart delivery/repair routes. Cart requests are generated in the FleetLink RMS component, assembled into routes, then delivered to the PDA's. The MC67 PDA presents a sequenced list of stops, with driving directions.

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	integrated with the new Work Management Application. (Please note that the number of hand-held RFID readers requested in this solicitation does not necessarily correspond to the list of supervisor vehicles that require RFID readers. It is the intention of the City to assign hand-held RFID readers to individuals, not vehicles.)				Staff scans RFID tags on containers (or barcodes) as they are placed/repaired/relocated. The geolocation of newly assigned/set bins is automatically stored with the correct customer service location, and once bin delivery is complete for a new service, that stop is sent to the RMS unscheduled stops list for a Dispatcher to assign to a pickup route. All set/repair/relocate/remove activities are recorded in the container inventory system. Historical reports can be generated on all container activities, since the container was introduced into inventory. Warranty information is also stored in the cart/container inventory system in RMS. Refer to descriptions of the MC67 PDA and RMS Cart Delivery component under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.**
4.7	**Contractor Responsibilities**				
4.7.1	Ensure all products and services are capable of meeting project requirements described herein	X			FleetMind has read and understands the requirements and deliverables described in this RFP, and is confident that we can supply a solution that meets the City's business requirements.
4.7.2	Comply with all local, state and federal laws and regulations applicable to the work performed, even if said laws and regulations are not identified herein. (The Contractor is responsible in whole, and on behalf of Contractor's sub-contractors.)	X			Noted and accepted.
4.7.3	Provide qualified experienced project manager (Project Management Professional certification preferred, subject to	X			FleetMind will supply a PMP certified project manager to oversee implementation of the solution. Refer to FleetMind's response under **Tab 8 – Program** for details

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	approval by the City) and staff to work and coordinate with the City's Contract Manager and ARR staff on all project activities without interrupting normal ARR collection operations				on project management activities and processes. Also refer to resumes for identified FleetMind staff that will work on the project under **Tab 4 – Business Organization, Qualifications and Experience.**
4.7.4	Provide all installations and associated service activities necessary in order to successfully complete a Proof of Concept Pilot, the Initial Implementation, and Ongoing Service, including technical support, system updates/maintenance/repairs/patches, parts replacement, backend supplies, replacement parts inventory, training and documentation	X			FleetMind will assemble a project team to complete all activities required, including installation, configuration, testing, training and technical support. A proof of concept pilot phase has been outlined in our supplied project plans. Refer to FleetMind's response under **Tab 8 – Program, Tab 9 – Proposed Technical Plan for Proof of Concept Pilot and Tab 10 – Ongoing Service Agreement and Warranty** for details on these items. Also refer to resumes for identified FleetMind staff that will be assigned to work on the project under **Tab 4 – Business Organization, Qualifications and Experience.**
4.7.5	Provide an all-in-one system (along with any and all necessary infrastructure for successful operation) to include design/development, system configuration/integration, all necessary equipment/hardware/parts, all tools and supplies, all software solutions, all installations and associated labor, support services for historical data migration/conversion, end-user and train-the-trainer training, all testing activities and exercises, and complete, successful	X			The system proposed by FleetMind is an all-in-one solution, and includes all hardware, software and services to ensure a successful deployment. The **Cost Proposal** details all items included to meet your stated requirements. FleetMind offers both an in-house hosted system option, as well as a FleetMind hosted system option on the Microsoft Azure Cloud platform. Both platforms meet City requirements. Since your stated preference was for a cloud based hosted solution, this is what has been outlined in the **Cost Proposal**. If the City would rather host the system internally, we have reviewed your supplied **Technical Reference Model**, and see no issues with implementing our system within such an environment. The 4G cellular data plans required for each FleetMind mobile

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	implementation rollout and warranty.				device (SSV10 and MC67 handheld) are owned and managed by the City, not FleetMind. A Verizon 1GB data service package remarketed by FleetMind has been included in the **Cost Proposal**, as an option. The Trek SSV10 DVR requires a 1GB plan from Verizon, and the MC67 handheld or optional Getac F110 tablet require a 250MB plan from either Verizon, AT&T or Sprint. The City is free to negotiate pricing with vendors for these required data plans. With either hosting option, FleetMind warrants that the all-in-one hardware/software solution proposed will meet stated specifications in this RFP, and professional services to address all system integration, installation, development, project management and training/support have been included in the **Cost Proposal**. Fleetmind currently offers a bulk import of customer accounts, subscription, route information and more into its Route Management System. There is no limitation to the start date or active/inactive customers. Additionally, generated data can be replayed into our VDI (Vehicle data importer) on a transaction basis. Fleetmind would recommend keeping the SWTS active as an archive for trending analysis. Once Fleetmind has been running for a period of time and has accumulated comparable information Fleetmind could work with Austin to import the trending information from SWTS. Pricing for the 5-year data conversion has been included in our **Cost Proposal**.
4.7.6	Remove existing equipment (where applicable) in an undamaged condition, including existing GPS/AVL and work under the direction of the City's Contract Manager to place all removed and undamaged City equipment in Contractor-supplied boxes and	X			Refer to FleetMind's response to requirement 4.4.5 above. Costs have been included in the **Cost Proposal** for these equipment removal activities.

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	place in a mutually agreed upon location to be picked-up by the City for transport to the City's Wireless Communication Services Division office				
4.7.7	Coordinate with the City's Contract Manager to schedule hardware installation on vehicles to avoid disruption to normal collection schedules. Hardware installation on vehicles shall take place at a mutually agreed upon location. **(Note: Vehicle operations typically occur between 6:00am and 6:00pm, Monday through Friday. However, some vehicles may be in operation after 6:00pm and on weekends.)**	X			FleetMind's project manager will work with City staff to develop an appropriate vehicle equipment installation schedule. Installers are used to working after-hours and weekends to accommodate operational schedules as needed, so as not to disrupt services. Refer to **Tab 8 – Program** for a proposed implementation plan for vehicles.
4.7.8	Upon request by City's Contract Manager provide all technical support documentation (printed and electronic) such as operating manuals, quick reference guides, and routine maintenance by a mutually agreed upon deadline. The Contractor shall ensure that ARR has the authorization to reproduce any provided documents for internal use	X			Noted and accepted. FleetMind will provide customized training material and quick-reference sheets for drivers, along with standard user/administrator documentation for all proposed FleetMind components.
4.7.9	Responsible for identifying and	X			Noted and accepted.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	requesting any specific documentation from the City required by the Contractor in order to successfully perform all installations, system integrations, repair, support and full Initial Implementation				As part of implementation, FleetMind will train your Fleet Maintenance staff on how to install, troubleshoot and maintain the installed vehicle hardware. Our installation technicians will work with any third-party subsystem integrators, as required. All mobile installations go through a validation process by FleetMind to ensure proper operation and integration, before turnover to the City.
4.7.10	Provide testing methodology to be approved by the City's Project Manager. Testing shall be successfully performed before the City will provide approval for the final acceptance of each stage of system implementation	X			FleetMind's project manager will work with City staff to develop an appropriate system testing and acceptance plan for all components and integrations. Refer to **Tab 8 – Program** for the proposed testing and acceptance processes.
4.7.11	Provide support services for the migration of historical data into the new system	X			Fleetmind currently offers a bulk import of customer accounts, subscription, route information and more into its Route Management System. There is no limitation to the start date or active/inactive customers. Additionally, generated data can be replayed into our VDI (Vehicle data importer) on a transaction basis. Fleetmind would recommend keeping the SWTS active as an archive for trending analysis. Once Fleetmind has been running for a period of time and has accumulated comparable information Fleetmind could work with Austin to import the trending information from SWTS. Pricing for the 5-year data conversion has been included in our **Cost Proposal**.

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4.7.12	Coordinate with the City's Contract Manager to ensure that all personnel assigned to conduct work on City property attend a safety orientation training provided by ARR's Safety Division. The Contractor shall be wholly and ultimately responsible for ensuring the safety of all Contractors' personnel, sub-contracted or otherwise.	X			Understood and accepted.
4.7.13	Provide all equipment, hardware, parts, tools, supplies, labor, supporting hardware, software, safety equipment, and any other associated apparatus and effort necessary to completely provide, install, test and successfully deliver to ARR all systems specified in the proposal	X			Refer to FleetMind's response to requirement 4.7.5 above.
4.7.14	Remove, dispose and/or recycle all packing materials, debris and trash created by the Contractor and Contractor's sub-contractors	X			Noted and accepted.
4.7.15	Provide a protective enclosure or mobile storage unit for all	X			It is FleetMind's understanding that the City will provide space to house vehicle hardware and installation kits for each vehicle installation phase, since they will be taking ownership of these

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	equipment and supplies that needed to be stored at the worksite. Storage unit shall be placed in a mutually agreed upon location. Contractor shall be solely responsible for all equipment and supplies stored on site. The City will not be responsible for any lost, damaged or stolen items				items upon receipt. If a roll-off storage unit is required to be supplied by FleetMind for the delivered hardware, as there are no secure City storage rooms at the installation site, then this would be billed at cost for delivery, rental, and removal of a mobile storage unit. FleetMind installers will be responsible for the storage and protection of their installation tools and equipment during the equipment installation phases.
4.7.16	Contractor employees and sub-contracted personnel shall wear a uniform, including safety equipment and company issued identification. Uniform shall be alike and have the Contractor and employee's name clearly displayed on the front of the shirt and seasonal outerwear	X			Understood and accepted.
4.7.17	Identify potential risks associated with this project and take all steps necessary to mitigate risks, whether financial or otherwise	X			Risk planning is a standard part of FleetMind's project management process. Refer to **Tab 8 – Program** for details on processes.
4.7.18	Provide a proposed schedule to coincide with City's anticipated Deliverables as outlined	X			FleetMind's assigned project manager will work with City staff to develop a mutually agreed upon phased implementation plan for this effort. Refer to **Tab 8 – Program** for details on the proposed project schedule and timeline for all deliverables.

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4.8	**City Responsibilities**	X			Understood and accepted.
4.9	**Anticipated Milestones and Deliverables** Refer to tables 4.9.1 Milestones and 4.9.2 Deliverables	X			FleetMind's supplied project plan addresses these milestones and deliverables. Refer to **Tab 8 – Program and Tab 9 – Proposed Technical Plan for Proof of Concept Pilot** for details on milestones and deliverables.
4.10	**Requirements Definition** The City has made a good faith effort to identify the minimum functional and technical requirements of the entire system. However, it is expected that the Contractor shall work with the City to review and refine the City requirements. The Contractor shall conduct a thorough gap-analysis between the City functional and technical requirements and the system technologies proposed. Using the gap- analysis results, the Contractor and the City shall review and consult to identify deficiencies. The Contractor shall be responsible for making any required modifications or customizations to the system, subject to approval by the City.	X			Understood and accepted. The FleetMind assigned project manager will ensure that activities and deliverables are fully understood and agreed upon for each phase in the implementation. Any changes or customizations are thoroughly documented, and go through a formal change approval process. Refer to **Tab 8 – Program and Tab 9 – Proposed Technical Plan for Proof of Concept Pilot** for details on processes related to change review and approval.

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4.11	**Ongoing Service Agreement** In addition to providing the Initial Implementation of the technology upgrades described herein, ARR expects the Contractor to enter into an Ongoing Service Agreement with the City for an initial period of five (5) years, with five (5) 1-year extension options. Proposers shall include an Ongoing Service Agreement component with their proposal and shall provide a Price Schedule with a Total Cost Proposal option related to the following: • Technical Support • System Updates/Maintenance/Repairs/Patches • Parts Replacement, Back-end Supply (availability within 72 hours), On-site Replacement Parts Inventory • Future New Installations (Installing New Equipment in New Vehicles added to Fleet)	X			Refer to FleetMind's response under **Tab 10 – Ongoing Service Agreement and Warranty** for details as to how the City will be supported following successful project implementation. Pricing for ongoing support/maintenance is outlined in our **Cost Proposal.** FleetMind will provide customized training material and quick-reference sheets for drivers, along with standard user/administrator documentation for all proposed FleetMind components. Onsite training is proposed for all drivers, and back office suite users, on all system components. FleetMind will work with the City on an acceptable training schedule to accommodate operational needs and shifts. FleetMind offers free online WebEx follow-up training to its customers, to accommodate training needs for new staff, or as a primer for new features added to the product set. With each system release, release notes are supplied so that customers can determine if they want to schedule system upgrades. System upgrades are performed by FleetMind staff, via remote system access, and testing/roll-out is scheduled and coordinated with the assigned City system administrators and IT staff, as required.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	• Future Equipment Switch-Outs (Removing Equipment from Retired or Irreparable Vehicles and Installing in Replacement Vehicles) • Training and Documentation: o Functional Training and Software Training as needed for designated end-users o Train-the-Trainer Training as needed for designated City staff o Routine Maintenance Training as needed and appropriate for designated ARR and other City fleet maintenance staff o Documentatio				

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	n (User/Operator Manuals, Training Manuals, Maintenance Manuals, Quick Reference Guides)				
4.12	**System Testing Requirements** The Contractor shall perform and complete extensive verification and validation testing of the proposed upgrades. Completion of all testing shall be subject to approval by the City. The Contractor shall be responsible for developing, subject to review and approval by the City, the test plans, test procedures, test cases, test scripts, and shall provide testing tools for the tests listed below: • Unit testing • Integration testing • String testing • Load testing • Environment testing • User acceptance testing	X			FleetMind's project manager will work with City staff to develop an appropriate system testing and acceptance plan for all components and integrations. Refer to **Tab 8 – Program** for the proposed testing and acceptance processes.
4.13	**Progress Reports** The Contractor shall submit weekly	X			Understood and accepted.

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	and monthly progress reports to the City's Contract Manager, or as otherwise agreed upon between the City and the Contractor. The progress reports shall describe significant accomplishments, issues and risks which have potential effect on schedule or costs, and plans for the upcoming week and month. The progress reports shall be adequately detailed to assure that project steps being pursued are in compliance with established and/or projected goals				Refer to **Tab 8 – Program and Tab 9 – Proposed Technical Plan for Proof of Concept Pilot** for details on project communications and status reporting.
5.0	**Functional Specifications (General)** The following Unified Modeling Language (UML) use-case models identify the functional requirements of our desired Vehicle Fleet Technology Upgrade (VFTU) system. Our proposed operational process provides contextual reference and scope understanding. However, the contractor may propose alternative processes or technologies - we encourage innovative solutions. The contractor may propose any solution configuration such as hosted or internal. However, we prefer a Cloud solution - i.e., Software as a Service (SaaS). The City provides a fully functional IBM Integration Bus (IIB), enterprise service bus (ESB) to include an ESB instance in our		X		FleetMind will work with the City in this phase of the project to develop needed interfaces to the CC&B, 311 CSR and RouteSmart applications, as well as provide a replacement for the existing SWTS system. We have done a review of your system documentation and are confident that a FleetMind Connector can be successfully built. We have successfully integrated with ESRI/RouteSmart applications for other existing customers, and are currently working on a CC&B/CSR integration for another client. For the City of Austin, FleetMind will develop system connectors to the CC&B, 311 CSR and ESRI GIS applications at no charge, as these may benefit other customers down the road. For many years Fleetmind has integrated to various systems over with an approach of designing connectors. These connectors have integrated us with AS400 data queues, web APIs, file transfer mechanisms and more. The connection to this ESB would fall in line with other integrations we have done. Fleetmind would of course expect to be presented with the API for the ESB as well as a test environment for development. FleetMind has a large, talented systems development staff to support such integration efforts. FleetMind utilizes Microsoft Azure cloud-based hosting services, for

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	demilitarized security zone to interface with internal city applications such as Customer Care and Billing discussed in our use-case model. The City identified the required performance response in each table describing interface descriptions shown on the adjacent sequence diagram.				FleetMind hosted installations. The facilities utilized in the Azure cloud-based network provide a high level of security, redundancy and protection against hacking and data loss. Regular certifications are performed by third parties. Data and applications are replicated across multiple facilities to ensure continuous availability, and contingency in the event of an event at one of the many Azure hosting sites across the US. Refer to FleetMind's proposed **City of Austin Conceptual System Layout Diagram** under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview.** A larger copy of this diagram has been included under **Tab 11 – FleetMind Attachments.** Also for more details on the Microsoft Azure hosting environment, refer to **Windows Azure Security Overview** document under **Tab 11 - FleetMind Attachments.**
5.1	**Collect Route and Driver Information** a) At any time during daily operations, the Route Supervisor uses a geospatial map to load route templates and/or modify Driver routes. b) When the Route Supervisor creates a route change, the system updates the Driver's map Route information and notifies the Driver and Dispatcher of the change. c) The Dispatcher and Route Supervisor map shows near real-time Driver position	X – Items a-g, k	X – Item h	X – Items i, j	The FleetMind RMS component allows for the import, and/or creation of route zones. Within each zone, customer service stops are identified, for each defined service type. System administrators can use RMS tools to manipulate route zones, and create specific service routes for each commodity type. FleetMind RMS allows for dynamic changes to dispatched routes. All route stop changes are delivered in real-time to the vehicle mobiles. Drivers are alerted to added/removed stops, and their service stop list and graphical maps are updated to show all changes. In the back office FleetWeb, RMS and FRM components, changes are also reflected to allow supervisors, dispatchers and CSRs to monitor route changes submitted. Each vehicle mobile device provides driving directions to each stop on the route being processed, both audio and visual. Drivers can adjust instructions volume, or mute it. The graphical route driving

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	sent from mobile device. d) The system provides the turn-by-turn audio and video instructions, which the Driver may disable the audio. e) When the Driver Route deviates beyond the thresholds settings of the device, the system provides an audible warning and notifies the Dispatcher and Route Supervisor. f) As the Driver collects and empties carts, the system scans and stores radio frequency identification (RFID) information possibly using Bluetooth technology or similar wireless technology to communicate information with the mobile device. g) The system collects and reports Route information and uploads the required Route information incrementally throughout the day. h) The system interfaces with the City's Customer Care and Billing system to report services requiring extra charges. i) The Route Supervisor, Dispatcher and Driver communicate using Voice-Over-LTE (VoLTE) or				map can be expanded to full-screen mode, if needed, and drivers can zoom in/out to see remaining stops. Route alerts can be configured using a variety of parameters, including deviation from the assigned route zone. Alerts are presented in real-time to the back office FleetWeb and FRM components for analysis and action. All RFID information captured by on-board or handheld RFID readers is transmitted to the back office system in real-time. Any mismatches of assigned RFID containers to customer service locations during lifts or container repair/recovery activities are presented to the driver, and recorded as exceptions for reporting. All information collected by the on-board OBC devices, or handheld PDA devices, is transmitted to the back office systems in real-time. This includes route data, service validations, alerts, events, ECM data, RFID data, Scale data (if scale integration is implemented), driver activities, landfill/transfer stations drop-offs, etc. Text messages sent TO the mobile units are stored locally on the device, until the driver elects to delete them. Messages sent FROM the mobile unit to the back office are transmitted via an email interface, and could be retained within the City email system. Fleetmind's standard is to record all events to/from the vehicle. All text and email messages are stored in our databases and are easily retrieved via our reports. (i.e. Driver log report in FRM). Items "a-g" and "k" are standard product features. Refer to detailed descriptions of RMS component, FRM component and FleetWeb component under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details.** Additional product brochures are contained under **Tab 11 – FleetMind Attachments.** For item "h", FleetMind will work with the City and Oracle to develop an automated method to load any "extra charge" items for services to the CC&B billing system. Refer to **City of Austin Conceptual**

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	similar technology when needed. j) The system uses push-to-talk similar to hand-held radios, k) and the system records all communications including text messaging and email when needed.				**System Layout Diagram** under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview.** A larger copy of this conceptual system diagram has been included under **Tab 11 – FleetMind Attachments.** For items "i" and "j", it is our understanding that these requirements were removed from the RFP, based on City response to question 11 on Addendum 6. FleetMind does support two-way text messaging and email integration for mobile device communications, and could support VoIP communications as an added cost custom modification, if desired. Fleetmind has currently implemented VoIP integration to Cisco-based system for other customers.
CRDI01	**Provide Waste Pickup and Reduction/setUpRoutes** a) At any time during daily operations, the Route Supervisor uses a geospatial map to load route templates and/or modify Driver routes. b) The Route Supervisor may use crowd-sourcing tools such as Waze or other mapping, navigational application to provide the situational awareness of route conditions to reroute Drivers around incidents or road congestion. c) Ideally, the Route Supervisor map displays real-time traffic information as a geospatial overlay on the Driver positional	X – Items a, d-g	X – Items b and c		The RMS and FleetWeb components both provide geospatial map views, for creating and modification of routes, as well as to display vehicle location, service activities, driver off-route activities (breaks, refueling, breakdowns, etc.), landfill activities, and breadcrumb paths. There is also a satellite view overlay capability. Customers can utilize their own custom maps, and can add GIS layers as overlays if desired (both in FleetWeb, as well as the vehicle mobile map). Supervisors can text message drivers about traffic/roadway situations, and drivers can elect to dynamically change from their sequenced route list to proximity mode for stops, to adjust to changing route conditions/issues. Route alerts can be configured using a variety of parameters, including deviation from the assigned route zone. Alerts are presented in real-time to the back office FleetWeb and FRM components for analysis and action. In addition, there are FRM reports available that indicate any deviations from the planned service stop location (lat/lon) and the actual container lift location (lat/lon).

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	location and Route. d) When the Route Supervisor creates a route change, the system updates the Driver's map Route information and notifies the Driver and Dispatcher of the change. e) The Dispatcher and Route Supervisor map shows near real-time Driver position sent from mobile device. f) Drivers stay on the assigned Routes unless the Route Supervisor approves a deviation. g) Approved city staff set route deviation warning thresholds.				Refer to FleetMind's response to requirements 5.1 above for more details. For items "b" and "c", there is an optional traffic information layer that can be added to the back office FleetWeb map displays for supervisors, showing traffic information. Combining Fleetmind with NAVTEQ's real-time traffic data, a traffic layer can be displayed on a map with colored links indicating the average traffic speed. Fleetmind supports NAVTEQ's incident, predictive, and real-time traffic data. The costs for this option have been outlined in the **Cost Proposal**. Fleetmind believes that adding this layer of traffic analysis to the back office FleetWeb product may not produce any tangible benefits to the City in addressing changing route conditions. Because drivers can switch from normal route sequence mode to proximity mode at any time, they can dynamically adjust to any changing route conditions using this built-in feature on the truck OBC. Having Dispatchers attempt to resequence and republish routes for the fleet on a daily basis because of traffic conditions would be quite laborious.
CRDI02	**Provide Waste Pickup and Reduction/initiateSystem** a) The Driver performs a system check to ensure accurate load of daily Route information. b) The system confirms completion of safety inspection with the Driver (see use case Perform Safety Inspection and Audits below). c) The system provides the Safety Professional a checklist-oriented entry form for inspection items	X			When the driver first logs onto the mobile OBC, they are presented with the list of routes that have been dispatched to their vehicle. The driver selects the route to be run, the stop list is presented, and the driving map shows all containers to be serviced. The mobiles can also be setup to automatically load a specific route each day for a given vehicle, without the need for driver intervention. The vehicle mobile OBC monitors the health and status of the unit itself in real-time, including; the GPS system connection, the 4G wireless data connection, the engine ECM connection, the RFID reader system connection, and the on-board scale interface (if present). The driver gets an on screen alert if any of these items are not functional, and this status is also shown in the back office FRM reporting component for supervisors. The RMS component also shows supervisors all of the daily routes that have been dispatched to vehicles, and whether the target vehicle has received

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	using a mobile device. The form and related items must be modifiable by selected city staff. For vehicle inspection, the Driver uses a radio frequency identification (RFID) mobile scanner (or similar technology) to perform a pre-trip inspection. d) For recurring inspections, the system automatically notifies relevant Safety Professions of routine inspection events. The system provides the Safety Professional the ability to set inspection notifications depending on the disposition of the inspection item - i.e., delay or change inspection schedule. e) The system provides for ergonomic inspections based on new employee setup, Employee requests, Physician requests, or Worker Compensation Representative through an Ergonomics Self Evaluation Form (Industrial and Administrative Ergonomic).				and accepted these. In addition, the system shows which drivers have logged onto their mobiles and selected their routes, and whether they have done their pre/post trip inspections. Reports are available for any other off-route activities being tracked as well. FleetMind has a built-in electronic pre/post trip inspection activity for the drivers to complete in the cab on the vehicle mobile OBC, and this is a standard feature today. Reports/checklists can be customized to the specific requirements of each vehicle type. The completed electronic pre/post trip reports are stored and viewable from the vehicle mobile, as well as in the back office applications. Notes can be added by both driver, and mechanic. Signatures are captured from the touchscreen and stored with the report. Drivers select the pre or post trip activity from the OBC device at the start and end of their days. Reports are transferred in real-time to the back office FRM reporting system, and are available for review and action. Any failed vehicle inspections are highlighted in red. Fleet or safety personnel log in to review reports, and schedule repairs as needed. The mechanic can enter notes about the repair on the pre/post trip report stored on the vehicle OBC. Drivers can then review what repairs were made, or items that were not fixed, by selecting the reports to see the mechanics notes. In addition, FleetMind offers a free pre/post trip inspection android application, which can be installed on City purchased mobile android devices that can read NFC tags on the exterior of the trucks. Inspection points are scanned, and a checklist is presented of items to be verified for that “zone”. This information is transmitted to the in-cab mobile OBC to complete the pre/post form, and this information is also transferred to the back office applications for display and reporting For item “e”, Fleetmind’s electronic pre/post trip inspection report is fully configurable. A section on Ergonomics can be defined and detailed out to critical and non-critical items. A history of these trip inspection reports are kept on the mobile as well as copied to the server. Safety personnel, mechanical supervisor, and any other

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					interested party has access to reviewing these reports and commenting.
CRDI03	**Provide Waste Pickup and Reduction/navigateAndCollectRouteInfo** a) The mobile device uses a touch screen interface and provides push-button controls to quickly move between the information collection and presentation points. b) The system provides the turn-by-turn audio and video instructions, which the Driver may disable the audio. c) When the Driver Route deviates beyond the thresholds settings of the device, the system provides an audible warning and notifies the Dispatcher and Route Supervisor. d) As the Driver collects and empties carts, the system scans and stores radio frequency identification (RFID) information possibly using Bluetooth technology or similar wireless technology to communicate information with the mobile device. e) When a Customer sets out	X			The proposed fixed mounted Trek SSV10 OBC, and the proposed portable Motorola MC67 handheld PDA are both touchscreen devices, and have customizable push button interfaces for driver interaction. Each offers turn-by-turn driving directions, using audio and visual instructions. Route alerts can be configured using a variety of parameters, including deviation from the assigned route zone. When alerts are triggered, and audible warning is given to the driver. Alerts are also presented in real-time to the back office FleetWeb and FRM components for analysis and action. In addition, there are FRM reports available that indicate any deviations from the planned service stop location (lat/lon) and the actual container lift location (lat/lon). The Trek SSV10 OBC connects to a fixed mount RFID tag reader located on the vehicle. Readers are located in the best vehicle position to avoid misreads, and sensitivity can be adjusted/tuned for optimal performance. The Motorola MC67 handheld PDA comes with an RFID reader attachment, and can be used outside of the vehicle to scan tags (such as for cart container/repair situations). All RFID tag information is transmitted in real-time to the FleetMind back office system. If the system detects a mismatch between the customer assigned RFID tagged bin, and the bin being serviced at the customer location, a warning is given to the driver. Same is true is a container being scanned cannot be located in inventory, or is not associated with any customer. Reports can be run on mis-located bins, and bins scanned that are not found in inventory. The mobile OBC's allow the driver to note exceptions, and extra pickup processing, using simple push button controls. Count and quantities of extras can be input, and these are then rated and exported to the City billing system so they can be applied. There are a variety of methods that can be used to rate extra pickups

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	extra refuse, the system provides the Driver a means to input the amount and type of refuse, f) and ensures application of applicable charges with Customer Care and Billing (CC&B). g) For special conditions such as damaged, missing carts, or contaminated recycle carts (i.e., inappropriate refuse), the Driver uses a wireless hand-held device to record evidence using relevant media (e.g., photography or video) to upload to the system and stored with the daily Route information and easily observable by the Dispatcher, Route Supervisor or other approved city staff. h) The system inserts a notation on the picture or video of the responsible customer. i) The Route information collected by the system includes, but is not limited to, the ability to collect carts set out rate, routes driven, miles driven, accelerometer information, time on route, seat belt use, truck weight, and gross vehicle weight.				(count, weight, etc.). Both pictures and notes can be attached to any exception, or extra pickup. Exception buttons can be customized for different typically encountered situations (blocked, contaminated, unserviceable, container repair needed, etc.). All of these exceptions can then be reported on, and the RMS case and work order management system can be used to assign actions to groups responsible for addressing the exceptions. Groups are alerted of assigned tasks via emails with links to the tasks, or they can log in and review all open tasks/cases. Any pictures or notes associated with a stop exception are tagged with the service address/customer location, including lat/lon, and the date/time. An FRM report and StreetSmart Vision Portal dashboard have been specifically designed to allow supervisors to review these items quickly and easily. The FleetMind OBC constantly collects information about routes being processed, and transfers this in real-time to the back office system for viewing, mapping, reporting and analysis. Because the OBC is integrated with GPS, lift actuators, the engine ECM, RFID scanners, scale systems, external cameras, DVR recorders and other subsystem monitors, it offers a wealth of information on driver and vehicle performance and productivity. The FleetMind system captures and stores information on all bin collections made/missed, routes completed, miles driven, fuel consumed, idle time, off-route activities (breaks, refueling, downtime, landfill stops), vehicle alarms and incidents, exceptions encountered, commodity weights, driving time, engine fault codes, full-day video stream capture, set out rates, contamination rates, extras processed, and many more. Information collected by OBC's is available immediately in the system for reporting, so there is no waiting for end-of-day "closure" process to run before the data is ready for use. Routes are officially closed when drivers log off their mobile devices at end of day, at which time any unprocessed stops still remaining in their lists are then marked as missed. FleetMind can create an alarm for seat belt use, if the vehicle is equipped with such a sensor. Not all vehicles come with this

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	j) The mobile device uploads the required Route information incrementally throughout the day representing the entire daily actuals. k) The mobile device is permanently fixed to the Driver's console and ergonomically accessible. l) The mobile device must be ruggedized to survive in harsh environments.				installed, so City would need to confirm which vehicles this could be enabled on. If the City installed a camera in the cab of the trucks, the system allows for live stream monitoring of driver behavior, and if the built-in G-Shock sensor detects a collision, the video feeds from all connected cameras is saved and can be reviewed, to see if a seat belt was in use. The FleetMind mobile OBC installers will work with City staff to determine the best location for the OBC displays. Trek The SSV10 OBC is fixed mounted, and comes with an adjustable RAM mount. Other third-party mounts could be utilized as well, at added cost. The Motorola MC67 handheld PDA also has a vehicle mount/charger, as well as an office desktop charger. Most customers remove the MC67 PDA from the vehicles at the end of the day, and place them in a secure location in their desktop chargers. All FleetMind supplied mobile devices are MIL STD 810 and IP65/67 rated, and are extremely rugged. Refer to the detailed description under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more detailed information on how drivers utilize the OBC's to perform the on-route tasks noted in this requirement. The RMS, FRM and FleetWeb back office components present the data collected from the mobiles in map-based displays, graphical dashboards and tabular reports. Custom reports can be created using Microsoft SQL Reports or Crystal Reports if needed. Report data can be exported from FRM to csv or Excel formats as well. Detailed hardware specifications for OBCs (SSV10, MC67, F110), and installation/mounting guides, are under **Tab 11 – FleetMind Attachments.**
CRDI04	**Customer Care and Billing/applyCharges**	X – Item a	X – Item b		The FleetMind mobiles (Trek SSV10 and Motorola MC67) allow the driver to note additional pickups made via simple touchscreen buttons. The driver can also take a picture from any of the

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	a) For excess refuse bags or other debris removal, there may be additional charges that apply. The Driver or Operations Staff use the system to enter extra items removed. b) Based on the type and volume of services entered (extra refuse bags, additional debris removal, etc.), the system applies required charges to the Customer Care and Billing (CC&B) system.				connected vehicle cameras on the SSV10 to document that extras were present at the service location (the MC67 handheld can be taken outside of the cab to take pictures). Extra lifts/pickups have defined rates that are applied to them for each service/commodity type, and this data can be exported on a scheduled basis to be loaded to the City's CC&B billing system. For item "b", FleetMind is capable of defining services that allow "extras" to be processed and charged. The setup for "extra" charges is very flexible. During CC&B integration Fleetmind will work with the City and Oracle to develop a method to load any "extra charge" items for services to the CC&B billing system. Refer to FleetMind's proposed **City of Austin Conceptual System Layout Diagram** under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview.** A larger copy of this diagram has been included under **Tab 11 – FleetMind Attachments.**
CRDI05	**Provide Waste Pickup and Reduction/reviewRouteStatus** a) The Route Supervisor and Dispatcher use the mobile device to observe the Driver's status such current location, route driven, and other relevant status information collected by the Driver's mobile device. b) The Route Supervisor, Dispatcher and Driver communicate using Voice-Over-LTE (VoLTE) or similar technology when needed. c) The system uses push-to-talk similar to hand-held	X – Items a, d and e		X – Items b and c	The FleetWeb, StreetSmart Vision Safety Portal and FRM reporting back office components provide a variety of ways to view the collected data from stops, vehicle locations, alarms/incidents detected, landfill stops, and off-route activities (breaks, refueling, pre/post trip inspections, etc.). For items "b" and "c", it is our understanding that these requirements were removed from the RFP, based on City response to question 11 on Addendum 6. FleetMind does support two-way text messaging and email integration for mobile unit communications, and could support VoIP communications as a custom modification if desired, at added cost. Fleetmind has currently implemented VoIP integration to Cisco-based system for other customers. Text messages and email messages sent to and from the mobiles are stored in the FleetMind databases. This communication traffic can be seen in the FRM Driver log.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	radios and d) the system records all communications including text messaging and email when needed. e) The system uses Long-Term Evolution (LTE), commonly marketed as 4G LTE, a standard for wireless communication of high-speed data for mobile phones or similar technology.				The proposed Trek SSV10 DVR and Motorola MC67 handheld PDA both utilizes 4G LTE for data connections. The SSV10 must have a 1GB plan from Verizon, and the MC67 or optional Getac F110 tablet require a 250MB plan from either Verizon, AT&T or Sprint. FleetMind remarkets a 1GB data plan from Verizon, and this has been included as an option in the **Cost Proposal**. The City is free to negotiate their own plans for the mobiles as well. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments**, for more details on how supervisors can monitor routes and the vehicle fleet, using RMS, FRM and FleetWeb.
5.2	**Ensure Customer Cart Needs** During daily operations, customer carts may inadvertently fall or slip into the truck's hopper. a) If the system detects that a cart is missing from the dump arm during the return position, the system provides the Driver notification of lost cart. Using the system, the Driver confirms that a cart is lost in the truck's hopper. Current cart inventory contains a small number of carts equipped with RFID devices. When a Driver confirms that an RFID equipped cart is lost in the hopper, the system captures available cart identification information to store with the	X – Items a-e and g	X – Part of Item a (auto detect cart lost), Items f and h.		The Trek SSV10 mobile OBC allows for connectivity to external cameras that can be located in the hopper area, so that the driver can visually identify a lost bin. The driver can then use the mobile to note an exception of "lost cart" for the current service location on his electronic route list. This exception information is sent via email (in real-time) to a work group that handles cart delivery/repair for action. The serial and/or RFID tag numbers associated with the lost cart are automatically transferred to this exception event record, along with the customer name, service address and geolocation from the driver selected stop he is processing. Back office personnel can examine these exceptions from FleetWeb, StreetSmart Vision Portal or FRM reporting components. Daily exception reports can be generated on these "lost cart" events as well. Concerning automatically detecting the lost carts, with the FleetMind sensors installed on the vehicle (RFID reader and angle switch), and with an additional RFID antenna, Fleetmind could create an algorithm to detect the carts dropped in the hopper. The Alien RFID reader supports up to four antennas, and it may be possible to located an antenna inside the hopper area that can detect that the cart is still in the hopper. FleetMind is willing to

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	lost cart incident. When a confirmed non-RFID equipped cart is lost in the hopper, the system displays a list of known addresses in the surrounding area to enable the Driver to make a visual determination of the proper address selection – i.e. the system correlates lost cart customer address with cart RFID information or the Driver confirms the owner address. b) The system uses the customer Cart Identification to identify the Customer in the Customer Care and Billing system to provide notification via text message or email of the lost cart and the anticipated replacement schedule. During daily operations, the Driver uses the system to identify a cart as needing repair or replacement. c) The system stores cart repair or replacement information along with the Cart Identification information. d) The system provides a queue mechanism to assist in efficient routing for Cart Maintainer staff. Customers call Austin Energy to open or close an account for services with Austin Resource				work on such a mechanism with the City, if desired. We have concerns about how we would keep the hopper antenna protected during collection and packing activities, but there could be a solution engineered. At a minimum, FleetMind will implement the automation needed to have lost carts replaced when the driver manually selects the “Lost Cart” exception button on the OBC when he sees that no cart is returned after the lift. The system will intercept such exceptions, and automatically schedule the lost cart replacement for the customer within RMS. The driver can also use the mobile OBC to note any carts that need repair or replacement, using an “Exception” button. Pictures and notes can be attached about the cart services required. These items can be automatically directed by the driver to the Cart Maintenance group, who would get an email alert. The FRM system can also report on cart repair/replace exceptions, to generate a tabular report each day. Staff can then utilize the built-in cart container delivery/repair workflows in RMS to generate a work order to be scheduled and dispatched. FleetMind’s back office products currently provide for automatic email notifications for internally defined users and work groups. These routines could also be leveraged to provide customer emails/texts. We’d need to discuss with the City the proper notification method. It might also be possible to do these notifications as part of the planned CC&B integration. The FleetMind RMS component offers a completely integrated cart inventory management system, including the ability to create and schedule work orders associated with cart deliveries, swaps and repairs. This is used in conjunction with our MC67 handheld PDA mobile, which can be used by the City’s Cart Maintainer to automatically schedule delivery/repair routes, load these schedules to the PDAs for action by delivery/repair staff, and then confirms the actions taken in the field to address the container work order. The MC67 PDA supports integration with a RFID reader attachment, so staff can scan and update the associated container record in real-time in the cart inventory management system. Carts are

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Recovery or to make other changes to services. The Customer Care and Billing system updates the Cart Identification information and updates the system with pickup or delivery schedule. e) The Cart Maintainer use the system to navigate to scheduled daily cart locations based on service requests for repairs or replacements. After making repairs or replacements, the Cart Maintainer enters action taken or assigns new Cart Identification information with the cart customer. f) When customers call the Utility Contact Center to start or stop services with Austin Resource Recovery or to make other changes to their cart services, Customer Care & Billing (CC&B) creates a service order (Change Order) indicating relevant Cart Status through an interface with the system. g) The Cart Maintainer uses the system to navigate to scheduled daily cart locations based on service requests for repairs or replacements. After making repairs or replacements, the Cart Maintainer enters action taken or assigns new Cart				automatically geocoded and associate to the customer service location where activities occur, and a complete history of all cart deliveries, swaps and repairs is maintained. Using RMS, customer service representatives can look up any customer container deployed, and see its current status, location (on a map) and complete service history. The history also includes all past pickup/empty, exception and not-out data from regular or on-demand cart service from pickup routes performed. For item “f” and “h”, this would be handled by the custom CC&B interface that FleetMind would develop in conjunction with the City. FleetMind has developed interfaces with several other work order management systems, and is confident we can meet these requirements. Fleetmind has a fully functional cart inventory and cart management system within the Fleetmind Route management system. In the proposed solution Fleetmind will be integrating with CC&B to pull the Work Orders into the RMS and have it scheduled on a route. The solution is flexible and not limited to work orders originating from CC&B. The FleetLink Route Management System dispatcher could also generate the work order via “on demand” stops and dispatch immediately onto cart maintenance or any other type of route. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on the RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Identification information with the cart customer. h) Using the system, the staff may also originate a service order (Change Order) requiring an interface with CC&B.				
ECCN01	**Provide Waste Pickup and Reduction/indicateLostCart** a) During daily operations, customer carts may inadvertently fall or slip into the truck's hopper. The system provides the Driver a lost cart indication. b) Using the system, the Driver confirms a cart is lost in truck's hopper. c) The system ensures a cart in truck dump arm when returned to downward position to verify cart lost in hopper. d) When a radio frequency identification (RFID) picks up the customer information such as name, phone number, address, etc., this information is stored with the lost cart indication. e) Current cart inventory provides a small number of carts with an RFID device. If RFID does not exist, the system displays a list of known addresses in the surrounding area for the	X			Refer to FleetMind response for requirement 5.2 above, and see additional comments below. If the cart has an RFID tag that matches to a customer location, that information is automatically recorded and sent with the "exception" created. If the cart had no RFID tag, the system still knows which customer location is being serviced based on GPS location information, and the driver can visually confirm that the lost cart exception is being recorded under the proper customer stop in his list. A picture can also be taken of the location where the bin was "lost" and attached to the record. The picture is stamped with the lat/lon of the location, date/time, customer address, bin serial number and/or RFID number. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on the RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Driver to make a visual determination of the appropriate address selection - e.g., the system correlates Customer address with the cart number or the Driver makes address observation.				
ECCN02	**Provide Waste Pickup and Reduction/notifyRouteSupervisor** a) On the Route Supervisor's route display, the system provides indication of lost cart in hopper, including Cart Identification information. The system displays the same information on the Dispatcher's display. b) The system uses the customer Cart Identification to identify the Customer in the Customer Care and Billing system to provide notification via text message or email of the lost cart and the anticipated replacement schedule. c) The Driver may also choose to leave a note on the customer door. d) Route Supervisors are responsible for replace lost carts within 48 hours.	X			Refer to FleetMind response for requirement 5.2 above. See additional comments below. There are a number of ways within the FleetMind back office system to identify route stops that had exceptions (such as cart lost in hopper, among others). In the FleetWeb and StreetSmart Vison Safety Portal components, City staff can visually see on a map any cart serviced that had exceptions noted for them (the cart icon has a RED lid to indicate a driver attached note or picture). Exceptions are recorded and displayed on the maps in real-time. Also within the StreetSmart Vision Safety Portal and FRM reporting components, daily exceptions are presented in a list for every driver/truck/route. These reports can be reviewed periodically during the day to identify exceptions that need to be acted upon in a timely manner. As noted in our response to item 5.2 above, FleetMind will implement the automation needed to have lost carts replaced when the driver manually selects the “Lost Cart” exception button on the OBC when he sees that no cart is returned after the lift. The system will intercept such exceptions, and automatically schedule the lost cart replacement for the customer within RMS. There can also be a “Lost Cart” report for the Cart Maintainers. Cart delivery activities are tracked within RMS, and reports could be generated to show turnaround times for deliveries for “lost cart” exceptions. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on the

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.
ECCN03	**Provide Waste Pickup and Reduction/indicateRepairReplace** a) During daily operations, the Driver uses the system to identify a cart as needing repair or replacement. When the vehicle's radio frequency identification (RFID) identifies the cart, the Driver uses the system to indicate observed cart condition and recommended repair or replacement actions required. When no RFID or RFID is unreadable, the system displays a list of known addresses in the surrounding area for the Driver to make a visual address determination or use the system to determine address from the cart number. b) The Driver uses a portable hand RFID scanner or cart number to identify damaged carts when the vehicle lift mechanism is unable to scan the cart.	X			Refer to FleetMind response for requirement 5.2 above. See additional comments below. With the FleetMind OBC in the vehicle, the driver sees his stop list for every customer service location on his route. The stop not only has the customer name, address and geolocation, but shows the serial number and/or RFID tag number for every cart at that location. If an exception is noted on a cart lift (i.e. lost cart, needs repair), the cart serial number/RFID is already present, and recorded with the lift exception. There is no need for the driver to use a hand-held RFID scanner to ID the cart, he just needs to confirm that the exception is being recorded against the correct customer cart/service location on his screen, before pressing the EXCEPTION button to note the repair. The RFID should correctly identify the specific cart being processed in the majority of situations. Any RFID mismatches are present to the driver, and are recorded as exceptions automatically. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on the RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.
ECCN04	**Provide Waste Pickup and Reduction/notifyCartMaintenance**	X			Refer to FleetMind response for requirement 5.2 above, as well as additional notes on ECCN01-03, and the notes below.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	a) The system stores cart repair or replacement information along with the Cart Identification information. b) The system provides a queue mechanism to assist in efficient routing for Cart Maintainer staff. The queue ensures fair, responsive cart replacement or repair by efficiently concentrating cart maintenance needs within typical workday delivery zone. c) For carts that fall/slip into the hopper within the vicinity of the daily planned service deliver, replacement information shows up on that day's delivery schedule and provide the appropriate Route Supervisor cart replacement status to ensure 48-hour replacement turnaround. d) The system tracks cart count inventory prior to accepting replacement of fall/slip carts by Cart Maintainer staff. e) When Cart Maintainer cannot replace the fall/slip carts within 48-hour window, the system provides Route Supervisor				Cart delivery and repair requests are initiated through the RMS component. The RMS container management system indicates available cart inventory. Once initiated, these cart delivery/repair requests are placed into the "unscheduled on-demand stops queue". A Dispatcher then assigns the cart activities to a cart delivery/repair route each day, and this stop list is then dispatched to the Motorola MC67 handheld PDA for the associated cart delivery/repair vehicle assigned that on-demand route. The Dispatcher can decide what order the stops should be handled in, and how many stops are assigned. Once the delivery/repair is completed, the associated work order in RMS is closed, and the status of the cart is updated. Via RMS, dispatchers and supervisors can monitor to see which work orders have been closed, and which are still open. For cart fall/slips, it could be possible to design a report that shows which of these have been completed within the 48-hour window, and which were not. Also, as previously described, FleetMind will develop an automated workflow to create replacement deliveries when a driver selects the "Lost Cart" exception on the OBC. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on the RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	cart status indication of need to replace the cart.				
ECCN05	**Provide Waste Pickup and Reduction/provideChangeOrder** a) Customers call the Utility Contact Center to start or stop services with Austin Resource Recovery or to make other changes to services. The service order is created in CC&B and then through an interface will transmit to the work management system. b) Once the work has been completed, or an update is made to the service request in the work management system, the updated information is transmitted back to CC&B. c) In the event of a service order such as change to cart size, the Customer Care and Billing system updates the Cart Identification information and updates the system with pickup or delivery schedule. d) If an order originates in the work management system, that order information should be transmitted to CC&B when created and completed so that billing is		X		These requirements would be handled by the custom CC&B interface that FleetMind would develop in conjunction with the City. FleetMind has developed interfaces with several other billing and work order management systems, and is confident we can meet these requirements. Fleetmind will be relying on an extract from CC&B that has passed through RouteSmart. All active customer service subscription associations will be assigned to a route with a sequence. Additionally, non-recurring services (i.e. deliveries, repairs, etc.…) will be required with associated workflow. Fleetmind's Billing connector will take this extract and perform the required changed in the FleetLink RMS. On a periodic basis when carts with RFID tags and barcoded SNs are purchased they will need to be manually imported to the route system cart inventory as well. Fleetmind will report newly associated and disassociated customer carts to CC&B through ESB connector planned. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on the RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.

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	updated and customer service reps can view the pending order and avoid creating a duplicate order if a customer calls in regarding a missing cart.				
ECCN06	**Provide Waste Pickup and Reduction/maintainCartStatus** a) The Cart Maintainer use the system to navigate to scheduled daily cart locations based on service requests for repairs or replacements. b) After making repairs or replacements, the Cart Maintainer enters action taken or assigns new Cart Identification information with the cart customer. c) The system uses enumeration elements for commonly repaired items such as replaced lid, wheels, etc. The enumeration list is modifiable by approved city staff.	X			Refer to FleetMind response for requirement 5.2 above, notes on ECCN01-05, and additional notes below. Cart delivery/repairs/swaps are initiated in RMS, by looking up the associated container and/or customer, and initiating the service. In some cases, services can be auto-generated by RMS as well. There are several predefined workflows associated with cart maintenance that can be selected. Additionally, repair workflows can be defined per cart repair type (i.e. repair wheel, replace lid, etc.…) and will be enumerated in the cart repairer's call list. Details of the repairs/maintenance to be performed are noted in the service order. Target delivery dates can be noted. Cart work orders are sent to the unscheduled on-demand stops list, for assignment by a Dispatcher. Each stop is placed on a cart delivery route, sequenced, and then sent to a Motorola MC67 handheld PDA for processing by the cart delivery/maintenance crews. Using the MC67 the delivery staff scans the bins being delivered/repaired, and the bin information is automatically updated in the RMS system with any new/changed customer associations for those bins. A cart maintenance workflow is flexible and on the mobile device it can be converted to a swap once the cart repairer diagnoses the situation onsite. The work order tasks indicate actions taken in the field, and staff can enter notes or take pictures to be attached to the completed work order. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details,**

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					and Tab 11 – FleetMind Attachments for more details on the RMS container inventory system and MC67 handheld PDA cart delivery/repair solution.
5.3	Service Brush, Bulk, and Household Hazardous Waste Request The 311 Call Advisor creates service requests for brush, bulk, and household hazardous waste via Motorola's Citizen Service Request (CSR) system. CSR also provides a customer self-service Web portal to allow customers to submit requests online. The 311 Call Advisor uses the system to indicate the type of refuse requested. The 311 Call Advisor uses CSR to generate a brush, bulk, or household hazardous waste work order - CSR processes the work order request with the system. For required audit work orders, the system notifies Supervisor to determine cost for out of cycle pickups. The Supervisor uses the system to determine daily out of cycle audit assessments to establish cost to service the work order. The system assigns audit needs based on geospatial information relevant to the assigned work area of the Supervisor. For excess refuse bags or other debris removal, there may be	X			The FleetMind RMS back office component support the creation, scheduling and routing of on-demand service stops. In RMS, customer service representatives initiate these requests by searching for the requesting customer service location, and initiating the on-demand request. In some cases, services can be auto-generated by RMS as well. On-demand requests are then sent to the “unscheduled stops” dispatching queue, for assignment to a truck/route. Dispatchers then select which truck/route the request should be added to. The system automatically creates an available truck/route list, showing the closest truck/route at the top of the list. Once assigned, the stop is added to that truck/route list as a temporary one-time pickup. If needed, the pickup can be added to currently active routes being run that day. In that case, the driver receives a message that a new stop has been added to his existing route, and confirms or rejects the stop. Costs for on-demand extra pickups can be defined within the RMS system. These costs are applied to the “extras” processed, and this data can be exported on a regular basis for import to the CC&B billing system. As previously noted, FleetMind will work with the City on developing a billing interface to CC&B for extras processed. On the FleetMind mobile OBC, dynamically added stops appear in their stop list and route map. Driving directions are provided for all added stops. If there are exceptions or extras associated with the stop, these can be recorded and tracked for billing. If the stop requires the entry of volumes, this can be added to the lift record via the exception process. Once the stop is completed, all information related to the pickup is transferred in real-time to the back office FleetWeb and FRM reporting systems. Customer service representatives can query the

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	additional charges that apply. The Driver or Operations Staff use the system to enter extra items removed. The system logs the pickup information and provides a queue mechanism to assist in efficient routing for appropriate Operations Staff. The system displays the daily pickup information on the Operational Staff's mobile device using a geographic information system (GIS) map for optimal routing guidance. The pickup staff uses a mobile device to indicate pickup volumes and types recovered. If a service request (work order), the Operations Staff uses the system to close the request and/or to indicate condition and status serviced through 311 Advisor and the CSR system.				system to determine if the on demand stop was process, and review and driver notes or exceptions for the service stop. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on RMS capabilities for initiating on-demand pickups and special services.
SBBH01	**Provide Waste Pickup and Reduction/establishServiceRequest** a) The 311 Call Advisor creates service requests for brush, bulk, and household hazardous waste via Motorola's Citizen Service Request (CSR) system. CSR also provides a customer self-service Web portal to allow customers to submit	X			Refer to FleetMind response for requirement 5.3 above. See additional comments below. The RMS systems allows administrators to set fees/rates for one-time services, and then when the work order is created, scheduled, dispatched and completed, the charges are then calculated for the service. Those one-time charges can then be sent to the CC&B billing system to be applied to the customer's bill. This rating and service information is readily available in the FleetLink RMS. Supervisors will have access though the FleetLink RMS interface to check this rate and service information.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	requests online. The 311 Call Advisor uses the system to indicate the type of refuse requested (e.g., brush, bulk, and household hazardous waste). The 311 Call Advisor uses CSR to generate a brush, bulk, or household hazardous waste work order - CSR processes the work order request with the system. b) For required audit work orders, the system notifies Supervisor to determine cost for out of cycle pickups. Based on the information entered, the system returns an estimated pickup date/time or anticipated range. c) On task completion, the system closes the CSR work order item.				As part of the planned CC&B and 311 CSR connector interfaces, FleetMind will transfer work orders for services from these systems to the FleetMind RMS component, to create the required service request, and place it in queue for a Dispatcher to route. The FleetLink RMS additionally offers its own case management system. If the CSR opens a ticket and assigns it to the supervisor in RMS, they will receive an email notification to start processing the work order. If a service job needs to be analyzed or evaluated first, the RMS case management system can be used to generated a task for the evaluation of the customer pickup request, and then be assigned to a work group for completion of a cost estimate. Assigned staff receive an email of the case to be worked, and then update and close the case record in the RMS system. On demand service stops are generated in RMS, and scheduled by the Dispatcher. A list of all "unscheduled stops" is displayed each day for assignment to a truck/route. Once assigned, tracking and completion can be monitored using FleetWeb or RMS. Reporting on "on demand" services is available through FRM. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on RMS capabilities for initiating on-demand pickups and special services.
SBBH02	**Provide Waste Pickup and Reduction/performAuditAssessment** a) The Supervisor uses the system to determine daily out of cycle audit assessments to establish cost to service brush, bulk, and household hazardous	X – Items a and d	X – Items b and c		Refer to FleetMind response for requirement 5.3 and SBBH01 above. See additional comments below. For items "b" and "c", Fleetmind offers numerous operational reports. For the case described here, the supervisor would use the FleetLink RMS's Billing Charges report. In combination with the rates associated to services and workflows the supervisor would be presented with, the cost of each of these out of cycle assignments (on demand) can be assigned. Fleetmind would simply need to add

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	waste work order. b) The system assigns audit needs based on geospatial information relevant to the assigned work area of the Supervisor. c) The system tracks the number of requests per household to allow for a set number of free service requests before billing for the service. The number of free service requests is adjustable by approved city staff. d) The Supervisor uses the system to enter assessed volume/amount of audited material and associated cost relevant to the servicing household.				a district filter which is definable at the customer location level for the geospatial aspect. This change will be done at no charge. Fleetmind can associated a percentage rate discount per customer subscription and apply to the billing charge. Additionally, both free and not free workflows could be added to the customer's service subscription. A rate of 0$ would be associated to the free. Currently we do not have a counter for free requests. This might be able to be addressed in the CC&B integration. FleetMind will work with the City to see how this could be accomplished.
CRDI04	**Customer Care and Billing/applyCharges** a) For excess refuse bags or other debris removal, there may be additional charges that apply. The Driver or Operations Staff use the system to enter extra items removed. b) Based on the type and volume of services entered (extra refuse bags, additional debris removal, etc.), the system applies	X – Item a	X – Item b		The FleetMind mobiles (SSV10, MC67, F110) allow the driver to note additional pickups made via simple touchscreen buttons. The driver can also take a picture from any of the connected vehicle cameras on the SSV10 to document that extras were present at the service location (the MC67 handheld and F110 tablet can be taken outside of the cab to take pictures). Extra lifts/pickups have defined rates that are applied to them for each service/commodity type, and this data can be exported on a scheduled basis to be loaded to the City's CC&B billing system. For item "b", FleetMind will work with the City and Oracle to develop an automated method to load any "extra charge" items for services to the CC&B billing system. Refer to FleetMind's proposed **City of Austin Conceptual System**

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	required charges to the Customer Care and Billing (CC&B) system.				**Layout Diagram** under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview.** A larger copy of this diagram has been included under **Tab 11 – FleetMind Attachments.**
SBBH03	**Provide Waste Pickup and Reduction/queuePickup** a) The system logs the pickup information and provides a queue mechanism to assist in efficient routing for appropriate Operations Staff. b) The system displays the daily pickup information on the Operational Staff's mobile device using a geographic information system (GIS) map for optimal routing guidance. c) GIS indicates pickup points and communicates location information to t h e Dispatcher and Supervisor device. d) The queue determines fair and responsive pickup schedule by efficiently concentrating pickup needs within typical workday delivery zones.	X			The proposed FleetMind mobile OBCs provide for the display of all stops to be serviced for the route selected by the driver. Turn by turn driving directions are available for stops, and a map window shows the exact location of each bin to be serviced. A tabular list indicates the sequence the route should be run in, which contains customer information (name, address), as well as container information (size, color, type). Notes can be attached to each stop with any special processing instructions. On the on-board mobile computers, as containers are successfully serviced, they are removed from the driver's map and list. If a container location is driven by, without the driver stopping to service it, these are marked as "driven by not out" and turned yellow on their maps. They are left on the maps in case the driver later returns to service it. If a bin is not out, or cannot be serviced for some reason (blocked, locked gate, overloaded, etc.), the driver enters the exception reason, and the container is removed from their map and list. For bins not serviced, pictures can be taken to document why the service could not be performed. In the case of "drive by not out" situations, the mobile can be configured to automatically take a picture, to document that no bin was set out. Via the stop list and map view on the mobile, the driver clearly sees what containers have not been serviced, and where these are located. At the end of the day when the driver closes their route, any "drive by not out" bins are automatically converted to "missed" bins. All of the stop service information is transmitted in real-time to the back end RMS, FRM and FleetWeb components for review by supervisors. Using FleetWeb, supervisors or CSR's can monitor the progress of each route (where the trucks are at, which bins

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					have been serviced or not, and which stops had exceptions that prevented service. Any pictures or videos captured while servicing a location are available for viewing, by simply clicking on the container icons on the route map. The FleetMind RMS component offers a complete geozone-based recurring and on-demand route management system. It supports the dynamic dispatching of on-demand pickup requests that may come in during the day. Driver routes can be manipulated on the fly by the Dispatcher. Stops can be added, transferred to another vehicle (as a helper route, or as a permanent transfer for all future runs), reordered, or removed. Simple point and click tools are available to manipulate routes and geozones. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on RMS capabilities for route and geozone processing.
SBBH04	**Provide Waste Pickup and Reduction/servicePickup** a) The pickup staff uses a mobile device to indicate pickup volumes and types recovered. When a Supervisor previously performed an assessment audit, the system uses the volumes and types assessed. b) The system stores information to provide analysis of waste type and volume to determine if customer training and/or other waste management functions provide an effect	X – Items a,b and d	X – Item c		Refer to FleetMind response for requirement 5.3 and SBBH01-SBBH03 above. See additional comments below. Since the mobile tracks the material types associated with scheduled or on-demand services, reports can be run from the FRM component that show the number of bins services for each commodity type. Weight data collected from the landfill and transfer station via the mobile OBC interface, is also available for reporting. If vehicles have on-board scale system, it is also possible to track individual container lift weights, and report on those as well for each customer. For “extras” processed, the driver can enter the quantity and type of material processed on each stop. The driver can note if loads are “contaminated”, “overloaded” or other types of exceptions. These exceptions can be reported on in the FRM component. The user interfaces on the OBC mobiles were designed to make it easy for drivers to record exceptions. Large push buttons are

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	on the amount and type of waste collected. c) If a service request (work order), the Operations Staff uses the system to close the request and/or to indicate condition and status (including notes) serviced through 311 Advisor and the Citizen Service Request (CSR) system. d) The user interface is simple to use and intuitive for simple routine information entry and push button (icon) focused to the maximum extent possible.				displayed for exception types, and "quick list" drop down messages are setup to cut down on the amount of manual typing done for common situations where notes are needed. Drivers are given quick reference cards as a guide as well. For item "c", when work is completed one of the many things Fleetmind captures is the driver notes. Fleetmind will use all the available fields when integrating with CC&B through the enterprise service bus to update the work order (sometimes referred to as field activity in our diagram). If subsystems like 311/CSR require update and are available on ESB, Fleetmind will update these as well. Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on OBC mobile capabilities, and available FRM commodity and service reporting.
5.4	**Logical Data Model** The following logical data model is not complete; rather, its representative of kinds of information we wish to maintain.	X			FleetMind's data store for all information is Microsoft SQL Server. A Web API is supplied that provides access to data for custom reporting. Using the RMS Reference Data import/export feature, data for all system utilized fields can be manipulated.
LDM01	**Logical Data Model** The following logical data model is representative of our existing Solid Waste Tracking System (SWTS) used for reporting. The future system replaces and includes management dashboards useful for day-to-day operations and future planning. The sample logical data model does not propose this structure as a design; rather, we're	X			FleetMind has reviewed your supplied data model diagram. The majority of the fields outlined do exist in our existing data model for the FleetMind application. FleetMind would be open to analyzing the items that currently do not exist, to see if they could be incorporated for collection and reporting. Fleetmind currently offers a bulk import of customer accounts, subscription, route information and more into its Route Management System. There is no limitation to the start date or active/inactive customers. Additionally, generated data can be replayed into our VDI (Vehicle

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	including the LDM as a representative sample of the information we wish to integrate.				data importer) on a transaction basis. Fleetmind would recommend keeping the SWTS active as an archive for trending analysis. Once Fleetmind has been running for a period of time and has accumulated comparable information Fleetmind could work with Austin to import the trending information from SWTS. Cost for SWTS historical data imports have been included in the **Cost Proposal**. The FleetMind FRM component offers an abundance of standard reports, and a dashboard feature. FleetMind is willing to create and included additional reports as needed. If these reports benefit the majority of our customer base, these are typically done at no charge. The City can also create their own reports, using Microsoft SQL Reports or Crystal Reports, using our Web API.
SS02	**Provide Open Data Access** a) The system provides access to all data records. The data must be accessible to create reportable data-marts and data warehouses as needed to accomplish reporting needs. b) The system must provide open standard Web interface protocols in order to synchronize application information using internal enterprise service bus.	X			The FleetMind FRM component offers an abundance of standard reports, and a dashboard feature. FleetMind is willing to create and included additional reports needed. If these reports benefit the majority of our customer base, these are typically done at no charge. The City can also create their own reports, using Microsoft SQL Reports or Crystal Reports, using our Web API. System data can be exported/imported using the RMS Reference Data utilities. As part of the FleetMind connector development effort for CC&B and 311 CSR applications, we will work with the City to determine what data elements can be synchronized between systems. Refer to FleetMind's proposed **City of Austin Conceptual System Layout Diagram** under **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview.** A larger copy of this diagram has been included under **Tab 11 – FleetMind Attachments.** Refer to **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details on RMS

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					and FRM capabilities.
5.6	**Supplemental Specifications**				
SS01	**Manage Records** a) The system prevents the loss or unauthorized deletion of records before the expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a). b) The system prevents the unauthorized alteration of records before the expiration of their retention period. c) The system provides logs or audit trails that document edits and views of records. d) The system provides systematic deletion of records upon expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a) and §201.003(16), Austin City Code §2-11-11. Sufficient metadata must be	X – Items a-i	X - Items j, k l		The FleetMind system allows customers to set retention limits for certain record types within the system. Microsoft SQL Server is used to store and retain all system information, and standard utilities can be used to backup, archive and purge data. Reporting databases can be established to hold historical data, and remove these from the "active" operational databases. For in-house hosted FleetMind systems, the City's DBA would establish appropriate backup, archival and purging processes, as needed. For the FleetMind Azure hosted solution, backup/archive and purge routines could be established that meet City criteria. Standard Microsoft Active Directory security services are utilized to control access to system data, and logging features built in to Microsoft AD security can be used to audit access. Microsoft SQL Server also offers built-in features to limit access and provide transaction audit data. For items "j,k" and "i", the City would need to establish processes surrounding the management of the FleetMind databases and backup copies to meet these requirements. FleetMind logs all record destructions in the RMS component based on audit tags, and this information is available in the RMS system log files. Any data requiring special handling can be exported by the City, and managed for retention using an external City-supplied application.

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	present to identify records eligible for disposition based on defined triggering events and dates. e) Upon expiration of the retention period, the system ensures destruction of all duplicate records to include convenience copies. Texas Rules of Evidence, Rule 1003. f) The system's back-up strategy ensures retention of backup records doesn't excessively exceed destruction of originals. System procedures must ensure retention rules apply to copies of production data used to develop, test, or train. g) The system ensures that records are retrievable and available until the expiration of their approved retention period. Texas Local Government Records Act §205.008(b). Records stored on contractor, outsourced, cloud, or hosted platforms remain the property and responsibility of the City. h) When contacted by an authorized City employee or when the contract ends or is terminated, contractors must deliver records, in all requested formats and media, along with all finding aids and				

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	metadata, to the City at no cost. Austin City Code §2-11-15. i) Until expiration of retention period, hardware and software must be available to access records and sufficient metadata must be present to facilitate timely retrieval of records. Contracts with hosted solution providers must specify the contractor's duties with respect to management of records as required by Austin City Code §2-11-15. j) The system ensures retention of specific records – even if their retention period has expired – if they are the subject of known or reasonably anticipated litigation, public information request, audit or other legal action. Texas Local Government Records Act §202.002, Austin City Code § 2-11-11. k) The system maintains a log of litigation and other holds allowing release of holds after resolution of litigation, audit, or public information requests. l) The system creates records/logs of destruction activity. Texas Local Government Records Act				

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	§203.046, Austin City Code §2-11-11. Destruction logs must (a) show a minimal set of metadata sufficient to uniquely identify the records purged; (b) show who approved and who executed the destruction, and the dates on which these events took place; (c) reflect compliance with an approved, written standard operating procedure; and (d) be retained permanently.				
6.1	**APPLICABLE PERMITS AND LICENSES** The Contractor shall obtain and maintain all permits and licenses to perform all services described herein. All services provided in relation to this agreement, directly and indirectly, shall be in compliance with all laws, ordinances, specifications, rules and regulations applicable to this service as established by any federal, state or local governmental provisions prevailing during the term of this agreement. It is solely the Contractor's responsibility to ensure all legal compliance is satisfied as well as ensure all subcontractors and employees are within compliance.	X			Understood and accepted.
7.0	OMISSIONS	X			Understood and accepted.

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	It is the intention of this solicitation to acquire a complete Vehicle Technology Upgrade of the scope described herein, with all necessary components. All items and/or services omitted from this Scope of Work which is clearly necessary for the successful operation of the products and services being sought under this solicitation shall be considered requirements, although not directly specified or included herein.				
	PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS Item E, Tab 5 - System Concept and Solutions Proposed, pages 2-3. These are answers to questions posed in this section of the RFP;				Refer to the responses below to the specific questions asked under the Proposal Preparation Instructions section of the RFP. This Summary Table, the answers below, and the System Overview and Concepts sections following this Summary table, constitute FleetMind's response to all Functional and Technical requirements we found throughout your RFP.
1	Provide a detailed plan to protect City-owned data from unauthorized access, hack, leak, or unavailability, including a continuity plan that shall provide assurance of a smooth transition in the event all data being retained by the Contractor must be transferred to the City or another	X			FleetMind has proposed a FleetMind hosted solution for your implementation. FleetMind utilizes Microsoft Azure cloud-based hosting services. The facilities utilized in the Azure cloud-based network provide a high level of security, redundancy and protection against hacking and data loss. Regular certifications are performed by third parties. Data and applications are replicated across multiple facilities to ensure continuous availability, and contingency in the event of an event at one of the many Azure hosting sites across the US. For the FleetMind Azure hosted solution, security, backup/archive and purge routines could be established that meet

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Contractor. The Contractor shall demonstrate how data they retain shall be backed-up and protected against loss.				City criteria. Refer to the **Windows Azure Security Overview** supplied under **Tab 11 – FleetMind Attachments** for more details on the hosting environment provided. If the City elected an in-house hosted FleetMind systems, the City's Security Administrator and DBA would establish appropriate security, backup, archival and purging processes, as needed. Standard Microsoft Active Directory security services are utilized to control access to system data, and logging features built in to Microsoft AD security can be used to audit access. Microsoft SQL Server also offers built-in features to limit access and provide transaction audit data. Should the City contract with FleetMind be terminated, the City shall be delivered copies of the FleetMind system Microsoft SQL data bases so that data extraction/migration can be performed.
2	Propose a solution/method of retrieving new vehicle diagnostics data without tying into, or interfering with, the existing Electronic Control Module (If the Proposer determines that there is no alternative solution available, it needs to be clearly noted in their proposal.)	X			The ECM connectors utilized by FleetMind do not interfere with access to the ECM ports by other applications. For vehicles older than 2008, an ECM adapter may be required, and pricing has been included as an optional item in the **Cost Proposal**.
3	Describe how your proposed system solution aligns with the requirements outlined in 0500 Scope of Work sections 5.0	X			This Summary Table outlines FleetMind's ability to meet each of the specifications listed in sections 400, 500, 600, 700, Attachments 5 Technical Reference Model and Attachment 6 Technical Standards. Any modification or exceptions have been

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Functional Requirements, Attachment E, Technical Reference Model, and Attachment F, Technical Standards. Please clearly identify within your proposal the different solutions for accommodating the 7- day, 14-day, and 30-day data storage/retention capability options. If your solution is unable to meet any requirements, please list those specifically with a brief explanation as to why.				noted, with comments. It is our understanding that the requirements for video capture and camera integration have been removed from this phase of the project. However, the Trek SSV10 DVR mobile FleetMind is proposing for the current project comes standard with a built-in DVR solution. The City can elect to make use of this during this phase of the project with any currently existing on-board cameras, or wait for the camera upgrade project that is planned for a later phase to make use of these out-of-the-box capabilities. The Trek SSV10 DVR OBC being proposed is capable of providing DVR video capture, storage and archive functionality, out of the box, so the City can elect to activate this feature whenever they are ready. The standard 250GB solid state drive that comes with the SSV10 DVR can store between 7-20 days of full-day video capture, depending on the quality level selected for the video feeds and number of attached cameras (up to eight). An optional 500GB solid state hard drive can be ordered for the SSV10, at added cost. This doubles the storage capacity. The Trek SSV10 DVR OBC is capable of capturing video snippets and still image shots, which are tied to vehicle incidents, events or exceptions. Should the built-in G-shock sensor detect an incident, the 15 seconds of video before and after the event is automatically saved, and posted to the back office system for immediate review. Any still images or video recording manually initiated by the driver while on route are also transferred in real-time to the back office FleetMind system. Refer to details on the Trek SSV10 DVR mobile hardware, and the StreetSmart Vision Safety Portal included in **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details
4		X			

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	The City plans to upgrade its camera systems in the future; the proposer shall include how it shall integrate the exiting low bandwidth cameras (Section 0500, Scope of Work, Item 3.5) into its proposed systems, as well as provide detailed information of how its proposed GPS/AVL and Work Management software systems will have the capabilities to effectively be integrated, operate and complement a new camera system with features that will include, but are not limited to: new cable support, full 360° coverage, onboard solid state data storage, adequate storage, still and video abilities, g-force sensors that will trigger the camera on impact, ability to record locations utilizing the GPS, export files, videos and single-frame photography into non-proprietary formats and have a range to capture a picture up to 75 feet from the vehicle.				It is our understanding that the requirements for video capture and camera integration have been removed from this phase of the project. However, the Trek SSV10 DVR mobile FleetMind is proposing for the current project comes standard with a built-in DVR solution. The City can elect to make use of this during this phase of the project with any currently existing on-board cameras, or wait for the camera upgrade project that is planned for a later phase to make use of these out-of-the-box capabilities The Trek SSV10 DVR OBC being proposed is capable of providing DVR video capture, storage and archive functionality, out of the box, so the City can elect to activate this feature whenever they are ready. The standard 250GB solid state drive that comes with the SSV10 can store between 7-20 days of full-day video capture, depending on the quality level selected for the video feeds, and number of cameras connected. An optional 500GB solid state hard drive can be ordered for the SSV10, at added cost. This doubles the storage capacity. The Trek SSV10 OBC is capable of capturing video snippets and still image shots, which are tied to vehicle incidents, events or exceptions. Should the built-in G-shock sensor on the SSV10 detect an incident, the 15 seconds of video before and after the event from all connected cameras is automatically saved, and posted to the back office system for immediate review. Any still images or video recording manually initiated by the driver while on route are also transferred in real-time to the back office FleetMind system. These are accessible from the FRM, FleetWeb and StreetSmart Vision Safety Portal interfaces. Supervisors can also “live stream” into vehicles as any time to review live footage from all connected cameras. The StreetSmart Vision Safety Portal component is utilized to connect to the SSV10 DVR system, to review any archived videos stored on the vehicle solid state drives. The City can also manually transfer any archived videos stored on the SSV10 DVR OBC to external removable USB drives/SD cards, for longer term retention when needed.

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
					The SSV10 DVR OBC is compatible with many of the major brand cameras on the market. FleetMind would review compatibility with any existing City cameras in use, and those selected for the camera upgrade, when this phase of the project launches. Refer to details on the Trek SSV10 DVR mobile hardware, and the StreetSmart Vision Safety Portal included in **Tab 7 – System Concept and Solutions Proposed, FleetMind Solution Overview and FleetMind Solution Details, and Tab 11 – FleetMind Attachments** for more details.
Attach 5	**Technical Reference Model Communications and Technology Management** Refer to Attachment 5 to RFP	X			The proposed FleetMind Solution is compatible with the products and technologies illustrated in the **Attachment 5 - Technical Reference Model** from the City. There are no known issues with the FleetMind system being proposed, and the Microsoft Sever, OS, Database, Office, or Browser versions noted. FleetMind will work with the City in building the needed interfaces to the CC&B billing system, or any other applications which require interfaces, utilizing these standards. FleetMind offers both an in-house hosted system option, as well as a FleetMind hosted system option on the Microsoft Azure Cloud platform. Both platforms meet City requirements. Since your stated preference was for a cloud based hosted solution, this is what has been outlined in the **Cost Proposal**. If the City would rather host the system internally, we have reviewed your supplied Technical Reference Model, and see no issues with implementing our system within such an environment. Refer to the **2015 FleetMind System Requirements** document contained under **TAB 11 – FleetMind Attachments** for more detailed information on FleetMind hardware/software system requirements, if the City elects to run the system in-house.
Attach 6	**Technical Standards**	X – All	X – Items		

Item #	Requirement Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	Summary Response
	Refer to Attachment 6 to RFP	Items except as noted under change needed	2, 48, 58, 60, 90		Refer to completed table below. FleetMind answers apply to both City Internal or Microsoft Azure cloud-based hosted options.

ATTACHMENT 6 – TECHNICAL STANDARDS COMPLIANCE MATRIX

FleetMind has reviewed the Attachment 6 Technical Standards, and has indicated below our compliance status with these requirements. There are no Technical Standards that FleetMind's proposed solution cannot meet.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
1	Application Architecture	The application provides Web-enabled components to meet the Rehabilitation Act of 1973 Section 503, W3C and industry standards for graphics and design; speed; reliability; and security for dynamic content and user interaction.	X			
2	Application Architecture	No requirement to deploy application code to client workstations (note: Java Runtime Environment (JRE) is an exception).		X		IE Web Browser Required. IE11 recommended. VLC is used in FleetWeb and the SSV10 mobile for video streaming. The VLC plug-in is a free and open source cross-platform multimedia player. An installation package is provided for the required video viewer plug-in; http://www.videolan.org/vlc/ Since the City is not implementing camera integrations in this phase, there will be no need for this VLC plug-in. If the City does enable the built-in SSV10 video streaming feature for the fleet, then the VLC plug-in is required for those users who wish to live stream to vehicles, or review recorded videos.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
3	Application Architecture	The application provides the ability to automate the deployment of software and updates to user workstations including, but not limited to Web-based deployment tools to push/pull software to the desktop (note: applicable only to run-time environment, like Java). Unless the contractor provides an alternative solution, users do not require administrative privileges.	X			IE Web Browser Required. IE11 recommended. VLC is used in FleetWeb and the SSV10 mobile for video streaming. The VLC plug-in is a free and open source cross-platform multimedia player. An installation package is provided for the required video viewer plug-in; http://www.videolan.org/vlc/ See notes on item #2 above.
4	Application Architecture	The application provides built-in application and system configuration tables accessible by all modules.	X			System is highly configurable via system administration components.
5	Application Architecture	The application provides (if needed) ability to manage automatic job scheduling (i.e., batch jobs, billing) including, but not limited to, the interface with external job schedulers and automatic notification capabilities when a job abnormally terminates. The City currently support UNIX CRON, Tivoli work Scheduler, Oracle DBMS_JOBS, and MS SQL DTS.	NA			The application handles all scheduling of tasks internally. No external job/batch scheduler required.
6	Application Architecture	The application provides forms-based data validation (field level validation) and displays error messages when validation fails (i.e., user enters text in a numeric field).	X			
7	Application Architecture	The application provides copy, cut, paste, and undo functions from data fields and screens to other applications.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
8	Application Architecture	The application provides ability to perform mass changes to a defined group of transactions with appropriate selection criteria.	X			
9	Application Architecture	The application provides ability to effective date transactions and table updates including, but not limited to future and retroactive changes, based on user-defined criteria.	X			
10	Application Architecture	The application provides ability to drill down from a transaction view to the supporting source document or record, regardless of the module source.	X			
11	Application Architecture	The system provides ability to restrict free form entry (e.g., require use of drop-down calendar for date field).	X			
12	Application Architecture	The system meets Web Accessibility standards including, but not limited to, ability to support ADA and compliant with Section 508 of the Federal Rehabilitation Act (see http://www.access-board.gov/sec508/summary.htm). Web based applications must be compliant following the specifications of 508c of the Americans with Disabilities Act. If compliance is not possible, reasonable alternatives may be considered.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
13	Application Architecture	The application provides ability to apply upgrades and patches without impact to existing user interface customizations (e.g., user-defined forms/fields, Web interface, etc.).	X			FleetMind performs all system and mobile maintenance activities, as part of support and maintenance contract.
14	Application Architecture	The solution supports Distributed File System (DFS) shares for file access.	X			
15	Audit	The system provides user-defined audit features for all transactions in solution including, but not limited to, all historical changes, date, time, and user ID of the person making the change.	X			
16	Audit	The system provides ability to prevent audit records from being deleted or altered, except as part of a system administration archival process.	X			
17	Audit	The system provides ability for audit-tracking reports including, but not limited to user access and usage logs.	X			User access/authentication failures will be logged in the application logs. Unauthorized or erroneous system access will be logged in the web platform's logs as well as the Azure platform logs.
18	Audit	The system provides ability to archive and restore audit logs.	X			The solution can be configured to archive application logs
19	Business Continuity and Disaster Recovery	The system provides full recovery and system backup capabilities for all online and batch transactions according to City-specified timeframes.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
20	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, integrity checking capability to identify the existence of program and/or system discrepancies and issue an alert to the appropriate systems operations team.	X			FleetMind uses Alchemy to proactively monitor all system components, and alerts are generated for anomalies to our support staff.
21	Business Continuity and Disaster Recovery	The system provides ability to alert specified users when key components are unavailable (e.g., DBMS, servers, interfaces, network transport, etc.).	X			FleetMind uses Alchemy to proactively monitor all system components, and alerts are generated for anomalies to our support staff.
22	Business Continuity and Disaster Recovery	The system provides ability to restore transactions from the database transaction log.	X			Fleetmind is a store and forward system. Transactions that are pending to be processed are queued until application or environment variable is restored. Fleetmind also keeps a record per transaction on the application file system if restore is required. Databases can be set to full recovery model.
23	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, software crash tolerance (i.e., server and client software shall maintain its integrity in case of power failures and abrupt shutdowns); redundancy in the application server tier with automated cut-over; redundancy in the database server tier with automated cut-over; restart and recovery capability after system/server failure with no loss of data or software components; and roll-back.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
24	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, file protection capability to limit the types of operations (e.g. read, write, delete, and data dictionary modification) that individual users on given data or program files can perform.	X			
25	Business Continuity and Disaster Recovery	The system provides software redundancy including, but not limited to, incremental, differential, and full backups and restores of the database, core and customized software, software and database configuration options, user preferences and rights, etc. This includes the ability to recover specific data records and/or files from backup and/or near-line storage.	X			
26	Data Storage and Archiving	The solution supports future releases of the application without rendering the archived data unusable.	X			
27	Data Storage and Archiving	The solution utilizes storage area network (SAN).	X			
28	Data Storage and Archiving	The system provides online access to the current year plus unlimited previous years of all types of data retained in the system, and provides archive capabilities thereafter.	X			FleetMind supports the creation of Reporting Databases to archive older system data to, to improve performance (if needed). Customer sets data retention levels.
29	Data Storage and Archiving	The system provides ability to archive data to external storage media and support partitions, based on user-defined including, but not limited to, number of years.	X			FleetMind supports the creation of Reporting Databases to archive older system data to, to improve performance (if needed). Customer sets data retention levels.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
30	Data Storage and Archiving	The system allows the City to accurately plan for storage and backup requirements, both for initial implementation and for future growth.	X			
31	Data Storage and Archiving	The contractor provides the City a complete copy of current and archived data hosted by an ASP provider in the event of contract termination within a month of notification in one of the required formats listed above. (ASP Hosted)	X			All information is stored in Microsoft SQL databases, and copies can be provided as needed.
32	Database Architecture	The application provides standardized data extraction Application Program Interface (API) to allow import and export of data to other systems.	X			All information is stored in Microsoft SQL databases, and can be exported/imported using SQL utilities. A reporting Web API is provided by FleetMind for reporting access by Microsoft SQL Reports or Crystal Reports.
33	Database Architecture	The application provides ability to encrypt sensitive data when required by federal or state compliance (e.g., PII, PCI, HIPAA, etc.).	X			
34	Database Architecture	The application provides use of Structured Query Language (SQL) for database queries.	X			
~~35~~	~~Database Architecture~~	~~The application provides ability to exchange database information using industry accepted standards and formats including JavaScript Object Notation (JSON)~~	NA			NA as deleted by City of Austin
36	Database Architecture	The solution uses the same data validation criteria for bulk data loads as it does for manual data entry.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
37	Database Architecture	The application provides ability to exchange database information using industry accepted standards and formats including Extensible Markup Language (XML).	X			
38	Database Architecture	The application provides ability to copy, archive and retrieve data to external storage media (e.g., tape, DVD, SAN) based on user-defined selection criteria.	X			
39	Database Architecture	The application provides ability to perform database maintenance including, but not limited to, backup and upgrades without requiring system downtime during core business hours.	X			
40	Database Architecture	The solution includes a method of purging record data from the database(s) ensuring referential integrity with master/child records.	X			
41	Database Architecture	The system provides ability to set up log event triggers to automatically notify the system administrator when user-defined database conditions are met. (Note: If hosted solution, provide access to configurable alerts.)	X			FleetMind uses Alchemy to proactively monitor all system components, and alerts are generated for anomalies to our support staff. Other monitoring tools may be supported as well.
42	Information Management	The system prevents the loss or unauthorized deletion of records before the expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a).	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
43	Information Management	The system prevents the unauthorized alteration of records before the expiration of their retention period. The system provides logs or audit trails that document edits and views of records. This is a requirement for records governed by HIPAA; and, depending on the type of record, there may be additional integrity requirements governed by Texas House Bill 300.	X			
44	Information Management	The system provides systematic deletion of records upon expiration of their retention period as authorized by an approved records control schedule or with the written permission of the Texas State Library and Archives Commission. Texas Local Government Records Act §202.001(a) and §201.003(16), Austin City Code §2-11-11. Sufficient metadata must be present to identify records eligible for disposition based on defined triggering events and dates.	X			
45	Information Management	Upon expiration of the retention period, the system ensures destruction of all duplicate records to include convenience copies. Texas Rules of Evidence, Rule 1003. The system's back-up strategy ensures retention of backup records doesn't excessively exceed destruction of originals. System procedures must ensure retention rules apply to copies of production data used to develop, test, or train.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
46	Information Management	The system ensures records are retrievable and available until the expiration of their approved retention period. Texas Local Government Records Act §205.008(b). Records stored on contractor, outsourced, cloud, or hosted platforms remain the property and responsibility of the City. When contacted by an authorized City employee or when the contract ends or is terminated, contractors must deliver records, in all requested formats and media, along with all finding aids and metadata, to the City at no cost. Austin City Code §2-11-15.	X			
47	Information Management	Until expiration of retention period, hardware and software must be available to access records and sufficient metadata must be present to facilitate timely retrieval of records. Contracts with hosted solution providers must specify the contractor's duties with respect to management of records as required by Austin City Code §2-11-15. The system ensures retention of specific records - even if their retention period has expired - if they are the subject of known or reasonably anticipated litigation, public information request, audit or other legal action. Texas Local Government Records Act §202.002, Austin City Code § 2-11-11. The system maintains a log of litigation and other holds allowing release of holds after resolution of litigation, audit, or public information requests.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
48	Information Management	The system creates records/logs of destruction activity. Texas Local Government Records Act §203.046, Austin City Code §2-11-11. Destruction logs must (a) show a minimal set of metadata sufficient to uniquely identify the records purged; (b) show who approved and who executed the destruction, and the dates on which these events took place; (c) reflect compliance with an approved, written standard operating procedure; and (d) be retained permanently.		X		Only the FleetLink RMS allows deletions via the user interface. The FleetLink RMS offers different levels of access to users which allows the customer to restrict deletion rights to a trusted group. The FleetLink RMS application logs will contain the audit trail. Fleetmind would require some minor modifications to comply with this case.
49	Infrastructure	The system uses industry standard virtualization infrastructure to support load balancing.	X			
50	Infrastructure	If the system is Simple Network Management Protocol (SNMP V.3) compliant, the contractor provides standard Management Information Base (MIB) files for all SNMP-enabled components.	X			
51	Infrastructure	The solution uses an accurate, NIST time source for traceable time stamp. If back-end components use date/time stamping, client-side components synchronize with back-end servers.	X			
52	Infrastructure	If the solution includes electronic hardware such as servers or network devices, all network-enabled hardware supports auto-negotiation of network speeds and duplex settings, including 10 mbps, 100 mbps and Gigabit Ethernet, if applicable.	X			

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
53	Infrastructure	If applicable, all portable devices (laptops, hand-held units, etc.) provide display screens readable in conditions ranging from darkness to direct sunlight.	X			The proposed mobile units have auto-adjust capabilities for lighting conditions.
54	Infrastructure	If applicable, all supplied portable devices (laptops, hand-held units, etc.) are resistant to heat, cold, moisture, dust and shock.	X			The proposed mobile units have a IP65/MIL 810G rating.
55	Infrastructure	If applicable, all supplied portable devices (laptops, hand-held units, etc.) are capable to receive program or firmware updates via network connections.	X			Through Fleetmind's Remote Software upgrade applications support personnel is able to push new mobile application versions to our different platforms.
56	Infrastructure	System server components use standard Domain Name Services (DNS).	X			
57	Integration Architecture	The system provides the ability to set up appropriate approval, audit trail, and reconciliation procedures for all inbound and outbound interfaces.	X			For many years Fleetmind has integrated to various systems over with an approach of designing connectors. These connectors have integrated us with AS400 data queues, web APIs, file transfer mechanisms and more. The connection to this ESB would fall in line with other integrations we have done. Fleetmind would of course expect to be presented with the API for the ESB as well as a test ENV for Development. When integration development begins as done with all other types of connectors logging/audit trail will be a part of the connector

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
58	Integration Architecture	If application requires integration with other City data, the application must integrate using an enterprise service bus.		X		For many years Fleetmind has integrated to various systems over with an approach of designing connectors. These connectors have integrated us with AS400 data queues, web APIs, file transfer mechanisms and more. The connection to this ESB would fall in line with other integrations we have done. Fleetmind would of course expect to be presented with the API for the ESB as well as a test ENV for Development
59	Security and Authentication	If applicable, the system provides adequate protection of data covered by regulatory or other compliance requirements (e.g., U.S. Health Insurance Portability and Accountability Act (HIPAA), Family Educational Rights and Privacy Act (FERPA), Payment Card Industry (PCI).	NA			The FleetMind system stores no sensitive data covered by HIPAA or PCI.
60	Security and Authentication	The system authenticates with multiple internal Microsoft Active Directories.		X		The proposed solution currently integrates with Active Directory using LDAP. Fleetmind will add support for ADFS as part of this project, at no charge. Scope of Multiple Active Directories will be considered.
61	Security and Authentication	The application provides encryption for data exchanged between the front-end user application and the back-end servers - federal or state compliance required (e.g., PII, PCI, HIPAA, etc.).	X			All communications are HTTPS
62	Security and Authentication	The system provides protection against unauthorized access to data by persons and other software programs.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
63	Security and Authentication	The system masks (i.e., substituting characters with '*') passwords as they are entered into the system.	X			Correct. On all login screens.
64	Security and Authentication	The system is PCI-compliant when handling credit card transactions.	NA			The FleetMind system does not process credit card transactions
65	Security and Authentication	The solution does not require operating system administrator privileges on the client workstation(s) to run or receive application updates or the vendor must provide another solution for updates.	X			The application is entirely web-based.
66	Security and Authentication	The solution provides a method to change the passwords for built-in system accounts (i.e. Administrator, Admin, Super, etc.)	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password
67	Security and Authentication	When the contractor is connected to the City's Virtual Private Network (VPN) for solution support purposes, the contractor uses single tunneling, which means the contractor disconnects from their local network during the VPN session.	X			Fleetmind's employees will not need to connect to the City's network via VPN. If this is ever required, the City can use a WEBEX session they control or alternate methods. This would only be needed for training or end used support questions. Fleetmind's support staff would connect to the cloud based platform.
68	Security and Authentication	Passwords must NOT be included in automated sign-on procedures, stored unencrypted in cache, or transmitted as clear text over the network.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password
69	Security and Authentication	The application allows the Application Administrator to restrict generic logins.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password
70	Security and Authentication	When applicable, the system provides 128-bit SSL or higher or TLS, between the client browser and application modules.	X			We use HTTPS with 256 bit SSL encryption but are not limited to this if higher level of encryption is desired.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
71	Security and Authentication	The system allows an approved administrator to inactivate user access.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password.
72	Security and Authentication	The system provides ability to manage user permissions centrally for all modules of the applications.	X			User access can be controlled by user roles. Certain access and features will only be available to certain users based on their role within the organization. This is best managed with active directory integration and the use of active directory groups. The various components of the proposed solution are also organized by group/division so that someone responsible for a group of vehicles would be able to look at the reports etc.… for that group of vehicles
73	Security and Authentication	The system provides ability to use tokens and/or passwords for user logons.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password.
74	Security and Authentication	The system provides users the ability to change password, users to change their password on set period and password expiration.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password.
75	Security and Authentication	The system provides ability to configure passwords including, but not limited to the following: minimum password length of at least eight characters; case sensitive, contain numbers, alphanumeric characters, and special characters; and complex passwords based on user-defined criteria.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
76	Security and Authentication	The system provides ability to record the date and time of changed password.	X			This will be controlled through Active Directory Integration. The proposed solution does not store any username/password.
77	Security and Authentication	The system provides ability to deny user access after a definable number of unsuccessful attempts to logon.	X			This will be controlled through Active Directory Integration.
78	Security and Authentication	The system provides ability to log, based on user-defined criteria, each authorized and/or unauthorized access attempt. Log information includes, but is not limited to, user identification, IP address, date, time, transaction type, and type of access (e.g., read, modify).	X			User access/authentication failures will be logged in the application logs. Unauthorized or erroneous system access will be logged in the web platform's logs as well as the Azure platform logs.
79	Security and Authentication	The system provides ability to assign application access rights for the entire suite of applications at a single point of entry.	X			Access to the complete suite of application is centrally controlled through the proposed solution's Web Services.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
80	Security and Authentication	The system provides ability to control access to all activities (e.g., online transactions, batch processing, report writer, query, system utilities) including, but not limited to the following levels: system, database, module, field, inquiry, approval, report, transaction, table, individual, group, organization (e.g., department, division), user role, user site, time period, and position across all functional areas.	X			Some machine to machine communications/access are limited to Fleetmind services and not accessible to users. All Fleetmind applications run as services. For access to reports, application features etc., user access can be controlled by user roles. Certain access and features will only be available to certain users based on their role within the organization. This is best managed with active directory integration and the use of active directory groups. The various components of the proposed solution are also organized by group/division so that someone responsible for a group of vehicles would be able to look at the reports etc., for that group of vehicles.
81	Security and Authentication	The system provides ability to create and maintain security profiles to control access including, but not limited to the following: employee level, module, field, transaction type, employee group, standard report, and ad hoc report.	X			User access can be controlled by user roles. Certain access and features will only be available to certain users based on their role within the organization. This is best managed with active directory integration and the use of active directory groups. The various components of the proposed solution are also organized by group/division so that someone responsible for a group of vehicles would be able to look at the reports etc., for that group of vehicles.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
82	Security and Authentication	The system provides ability to automatically log users off the system when there has been no activity for a definable (pre-defined) period.	X			Automatic logoff of inactive users can independently be configured for various components of the proposed solution.
83	Security and Authentication	The system provides ability to generate summary and detail reports including, but not limited to user access, usage logs, audit logs, failed and/or unauthorized access attempts based on user defined parameters (e.g., audit requirements). The system provides ability to alert the application administrator when any of these events exceed a specific, definable threshold.	X			User access/authentication failures will be logged in the application logs. Unauthorized or erroneous system access will be logged in the web platform's logs as well as the Azure platform logs.
84	Security and Authentication	The system provides ability to utilize session encryption methods necessary to ensure the secure electronic transfer of sensitive information.	X			The system makes use of HTTPS.
85	Security and Authentication	If the system requires bulk data loads via the Internet, the system uses a secure network transport method.	X			There are no bulk data loads that will occur over the internet. Any data loads such as the initial customer database upload, route uploads etc., will occur from within the City's private network extended to the Azure platform via a site to site VPN.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
86	Security and Authentication	New user permissions default to least privileges security permissions.	X			If integrated with MS Active directory Fleetmind offers 5-6 standard groups with different levels of access. Users are added and removed to these groups through MS active directories users and computers. Although permissions within the application to these groups are configurable, changes are rare. There would be a trace of these modifications within the application logs that manage these groups.
87	Security and Authentication	The application provides a transaction log related to changes made to security (roles, groups, and permissions).	X			If integrated with MS Active directory Fleetmind offers 5-6 standard groups with different levels of access. Users are added and removed to these groups through MS active directories users and computers. Although permissions within the application to these groups are configurable, changes are rare. There would be a trace of these modifications within the application logs that manage these groups.
88	Security and Authentication	To help enforce City's security policies, the solution allows the application administrator to disconnect a particular user and to lock out a user during an active session.	X			This will be managed through the City's Active Directory "users and computers" platform.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
89	Security and Authentication	The system provides ability to restrict remote access to the application by client IP address or network address range.	X			The Azure platform can manage user connections by IP address. The propose solution would establish a site to site VPN to the City's network which would only allow users of the City's network to access the platform. The mobile computers will establish connections to the hosted server application using fixed IP addresses which can be part of a white list for access.
90	Security and Authentication	The system uses Microsoft Active Directory Federated Services (ADFS) [current version minus 1] for federated identity management.		X		The proposed solution currently integrates with Active Directory using LDAP. Fleetmind will add support for ADFS as part of this project, at no added cost.
91	Security and Authentication	The system ensures the City's data is not made available to any other parties not specifically authorized to view or access the data. (ASP Hosted)	X			Platform access will be controlled via username/password. If active directory integration is desired, features such as automated password rotation will enhance security.
92	Security and Authentication	For systems with sensitive data (personally identifiable information (PII), city confidential data, or data covered by a federal security standard), the contractor conducts an annual security assessment of all tiers of its hosting facility, including application servers and network devices. Provide summary copies of the security audit reports to the City of Austin annually. We prefer an annual 3rd party security assessment, which we may require depending on the data being hosted.	X			The proposed hosted solution leverages Microsoft's Azure Cloud Platform. Rigorous third-party audits, such as by the British Standards Institute, verify Azure's adherence to the strict security controls these standards mandate. As part of Azure's commitment to transparency, you can verify Azure's implementation of many security controls by requesting audit results from the certifying third parties.

ID#	Topic	Description	Comply Standard Feature	Comply Change Needed	Does Not Comply	FleetMind Response
93	System Flexibility	The system provides the ability to define business rules based on user-defined criteria (e.g., organizational level, account code, bargaining unit, location, program, grant, etc.).	X			User access can be controlled by user roles. Certain access and features will only be available to certain users based on their role within the organization. This is best managed with active directory integration and the use of active directory groups. The various components of the proposed solution are also organized by group/division so that someone responsible for a group of vehicles would be able to look at the reports etc., for that group of vehicles.
94	System Flexibility	The system solution is compatible with Citrix for client server configurations.	X			Some of our customers make use of CITRIX to varying degrees mostly to control access to legacy components for external users where access control is required. We also support active directory integration for access control and user authentication.

TAB 7 – SYSTEM CONCEPT AND SOLUTIONS PROPOSED

FleetMind Solution Overview

FleetMind has reviewed the City's requirements, and is proud to offer the following all-in-one solution to meet your stated functional and technical requirements for the Austin Recovery Vehicle Fleet Technology Upgrade;

- Seamlessly integrated military grade Trek SSV10 DVR 10.4" touch screen on-board computers (OBCs), for the majority of the City fleet. The Trek SSV10 comes standard with built-in GPS, LTE 4G cellular data connectivity, engine ECM integration, external camera integration, and solid state video recording capabilities, out-of-the-box. Though not a part of the current project phase, the camera and DVR integration features will be ready to implement immediately, when the City decides to upgrade the fleet camera systems in the future.
- Motorola MC67 Handheld PDAs with RFID scanning attachments to be used for cart delivery, repair and maintenance activities. The handhelds interface with the cart delivery/repair modules in the FleetLink RMS.
- Trek SSV10 mobile OBC integration with vehicle mounted RFID tag readers.
- Trek SSV10 mobile OBC integration with lift arm actuators for each of the City vehicles outfitted with automated lift arms (side load, front load), to automatically detect/record all lifts made, and enhance service verification activities. Lift actuators for rear load tippers are also available, if desired.
- Comprehensive suite of FleetMind FleetLink web based back office software that includes; a Route Management System (RMS), Enterprise Reporting Manager (FRM), Vehicle Safety Monitoring System (StreetSmart Vision Safety Portal) and Real-time Mapping System (FleetWeb). The RMS component also incorporates a complete Container Management System and Customer Case Management System.
- Custom integration with the City's existing RouteSmart (Routing Software), ESRI GIS, 311 CSR and CC&B (Billing System) applications.
- Optional integration with on-board scale systems the City may have installed on their fleet vehicles (body scales, lift arm scales), as well as other vehicle monitoring subsystems.
- FleetMind has optionally included pricing for its Getac F110 military grade tablet on-board computer. This OBC might be advantageous for certain City vehicle types which require a device that can be easily removed from the cab, to collect pictures, or capture customer signatures on contracts/orders. The City can elect to substitute this alternative OBC on vehicles requiring this capability, where needed.

FleetMind's back office software is comprised of four primary components: FleetLink Route Management Software (FleetLink RMS), FleetLink Web Based Mapping Software (FleetWeb), the StreetSmart Vision Safety Portal (for recorded DVR video access, vehicle safety monitoring and driver behavior information) and FleetLink Enterprise Reports (FRM). Although we recognize that camera integration and DVR recording were not part of the current RFP request, the Trek SSV10 mobile OBC and

StreetSmart Vision Safety Portal proposed include these capabilities, and are part of our base system offering. The City would simply need to connect the cameras selected in the future upgrade to the SSV10 mobiles, in order to begin using the DVR recording and camera integration features of our proposed product set.

FleetMind's FleetLink RMS is a comprehensive set of tools for the creation, manipulation and management of routes, container inventories, geozones and customers. The FleetLink RMS allows the user to import and export routes, customers, containers and reference data, including combined routing information. It also allows for the direct creation/management of detailed customer, routing, geozone and container information. Users can create, sequence and manipulate routes, as well as their associated geozone boundaries. The RMS can also automatically create geo-fenced routes with geo-coded stops, on-the-fly. Defined geo-fenced routes offer a variety of benefits, including; the display and number of customers and containers in each route, as well as real-time progress reporting alerts and alarms for each route. The RMS provides real-time service verification, route progress reporting, and dynamic dispatching.

Within FleetLink RMS, customer service requests can be tracked through the customer case module wherein all customer data is tracked including but not limited to; service history, service requests, service issues (with resolution history), associated container information (and activity/maintenance history), along with service information and schedules.

The FleetLink RMS includes a complete container inventory tracking module showing the history of every cart or bin, including associations to different customers over time. Once containers have been imported and assigned, the proposed system will also allow the user to manage future cart deliveries, repairs and maintenance. Container serial numbers, RFID tag numbers, size, commodity type and location can be tracked and associated with customer records. Handheld Motorola MC67 PDA's (which support RFID tag scanning) have been proposed to assist with cart delivery, repair and maintenance tasks. The FleetLink RMS can also be integrated with optimization software (such as Route Smart) to receive optimized routes, and can be integrated with back-end billing systems and work order management systems, such as your CC&B application and 311 CSR application.

The FleetWeb Mapping Software (FleetWeb) provides not only comprehensive real-time tracking but also a number of different views allowing users to track route progress, active alarms and driver activities. The platform provides various search tools to research customer service events, planned service events, service exceptions, etc. Routes completed can be replayed with detailed truck breadcrumb trails, and allows for various layers of event data, such as unjustified stops, off-route activities and cart service verifications to be displayed. FleetWeb is updated in real-time from FleetMind's On-Board Computer system (OBC) and displays all of the trucks' current GPS locations, cart locations, service zones, vehicle speeds and real-time route progress. The route tracking feature highlights every lift that is made, and displays this in a user friendly graphical view by showing different colored icons for each lift, wherein the color denotes the status of the service (i.e. pending carts start out grey, and turn green as they are picked up, yellow if driven by not out and red if the stop is canceled or moved). Cart icons will also differentiate lifts done by the originally assigned driver, versus a lift done by another driver not originally assigned the route (i.e. a helper on a route that is behind, stops transferred to another vehicle, etc.). Confirmations can also be generated on the server side based on lifts detected outside the routing process, and will be identified on the map. FleetWeb users can search for service events by customer address, customer

name, assigned truck or route. Selected customer events will be displayed on the map with the rest of the relevant route data, showing date and time of service, completion code, etc. When pictures are attached to the specific service event or exception (not outs for example) the user can e-mail the picture to the customer as proof of service or presence.

The FleetLink FRM Enterprise Reports are a comprehensive set of pre-defined reports that include a real-time dashboard, detailed driver logs, route progress overview, disposal activities, alarms, truck status, system operation, idle time, weights of commodities processed, etc., all being updated in real-time from the on-board computer (OBC) data feeds. FRM provides an overview dashboard reporting active routes with drill down to detailed driver logs that contain all of the transactional and activity data collected on the truck. These driver logs can be easily exported to PDF or CSV for manipulation in Excel, then imported to other systems. FRM reports on all driver activities, notes, pictures, fuel consumption, idling times, heavy braking and data that is collected from the ECM interface and optional Scale and RFID system connections, if installed. Integration to the on-board scale systems is via a programmable RS232 scale display output interface, provided on the third-party hardware. Most major on-board scale systems are supported (i.e. LoadMan, Vulcan, Air-Weigh, etc.) FleetMind's RFID reader can be used where customers have deployed RFID tags on carts, for added service validation and container tracking. FRM's operational productivity dashboard presents current key performance indicators (KPI's) compared against the 16 prior week's rolling average. FRM can present alarms that have been configured through the FleetLink Command Center, which is responsible for all FleetLink OBC component configurations. Alarms can be setup as threshold, event, or logical, and use as input any sensor on the truck including ECM data, scale system data, GPS data, the context of the route, etc. In addition, FRM provides a driver scorecard to ensure that each driver is utilizing the FleetMind products to their fullest potential.

The Street Smart Vision Safety Portal offers tools to review recorded vehicle DVR videos and images, shows all recorded vehicle alarms and events, and allows supervisors to monitor and score driver behavior based on data collected from the DVR mobile units in the trucks. The safety portal allows the ability to "live stream" into any of your running vehicles, with visibility from up to eight different camera angles. The portal also allows authorized users to review the archived full-day video recordings from past days (7-20 days depending on video quality setting selected), to investigate incidents or complaints. Any videos/pictures captured from vehicle collision incidents (as flagged and recorded by the built in G-shock detector), are displayed for the entire fleet, along with vehicle alarms associated with unsafe driver behaviors (hard braking, tailgating, speeding, etc.). Supervisors can review and score driver behavior, and schedule and track follow-up safety training/reviews held.

The military grade FleetMind Trek SSV10 DVR mobile computer is a lightweight yet rugged touchscreen display that provides waste and recycling organizations with a robust on-board computing platform, all in a complete product package that is fully-integrated and easy-to-install. The Trek DVR mobile provides unprecedented real-time information to drivers and dispatchers about a truck's route status, service completion, vehicular telemetry, driver activities, location, recorded full-day video and incident events, and much more.

The proposed Trek SSV10 DVR mobile comes out-of-the-box with the ability to integrate with vehicle external cameras (up to eight) and the engine ECM for telemetry data. The Trek DVR mobile manages a wide range of other inputs from a vehicle's on-board systems, including; on-board scales, RFID tag readers, tire pressure and fuel monitoring inputs, as well as other devices. The Trek DVR comes with an

external GPS antenna, and a G-Shock Triaxle Accelerometer.

Developed for harsh environments, the Trek DVR mobile includes an advanced feature, including multi-day vehicle video recording and archiving. Standard support and warranty terms for the Trek DVR mobile are typically one (1) year, however for this proposal FleetMind is extending two (2) year terms to all support and warranty(s).

FleetMind has also provided pricing on the optional FleetLink Lite Getac F110 tablet OBC. This may be a good device for roll-off, brush collection and crane trucks. The FleetLink Lite F110 comes in two screen sizes (8.1" and. 10.4" screen), incorporates built-in front/rear cameras, and has signature capture capabilities. It is a more economical OBC for those vehicles which do not require external camera integration, and may have requirements to capture customer signatures for loads processed. It comes with a locking vehicle mount for the tablet, and the Getac F110 tablet is military strength rated. Like the Trek DVR mobile OBC, it supports GPS and engine ECM integration, but does not support on-board scale, RFID system integration, or external camera integration. It does capture pictures/video from the two built-in cameras, to transmit to the back office applications, but does not store full-day DVR recordings for playback. It comes with a three-year extended warranty.

FleetMind is also proposing the Motorola MC67 handheld PDA for use with bin delivery/repair vehicles. The MC67 is a military grade handheld mobile which incorporates bar code/RFID scanning capabilities, built-in cameras, signature capture and GPS. The MC67 supports FleetMind's cart delivery/repair workflows by allowing staff to quickly scan and associate containers being processed to customer accounts, as they are being delivered, retrieved, swapped or repaired. Data is transmitted in real-time to the FleetLink RMS container inventory management component. Driving directions are provided to each container service location based on the daily container work order list published to the MC67 handheld device.

FleetMind will also develop the required system integrations with the City's existing Route Smart (Routing Software), ESRI GIS, 311 CSR and CC&B (Billing System) applications. Using FleetMind developed connector API's, communications and data exchange routines will be put in place to ensure all systems work cooperatively to meet business objectives for the project. On the next page is a conceptual diagram of how existing City applications and the FleetMind system components will communicate. A larger copy diagram has been included under Tab 11 – FleetMind Attachments.

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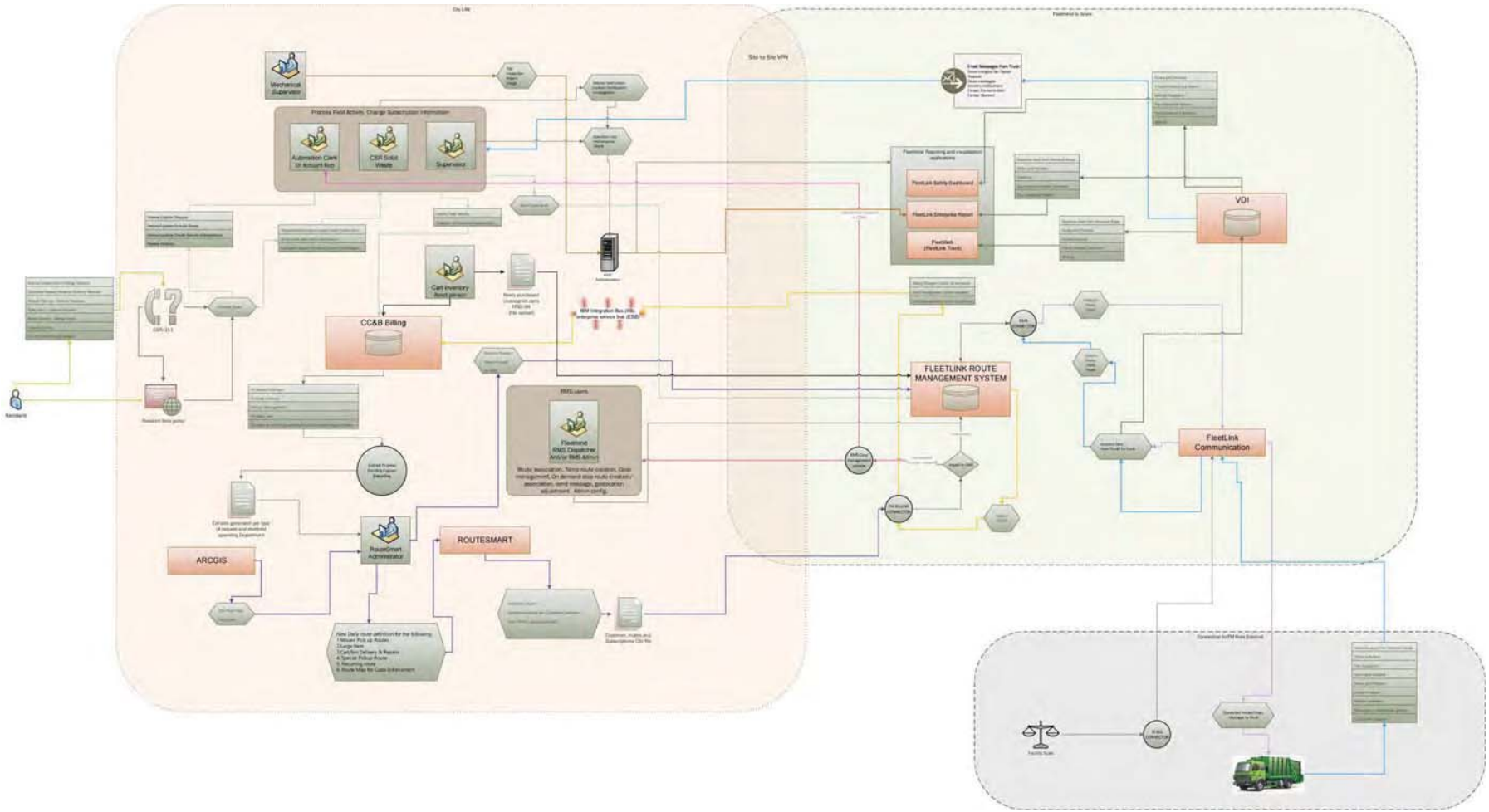
Diagram 7-001 – City of Austin Conceptual System Layout



FleetMind Solution Details

This section describes in detail how the proposed FleetMind products proposed work together deliver a solution to manage the City of Austin's solid waste operations. Additional details car found in the individual product brochures under **Tab 11 – FleetMind Attachments**.

1. GPS Integration

a) Obtains Accurate Position/Location Information of Vehicles.

FleetMind obtains accurate GPS data lat/lon on every vehicle as a standard part of the syster location data is accurate to within 3 meters.

b) Collects GPS Location Data at Least Every 15 Seconds.

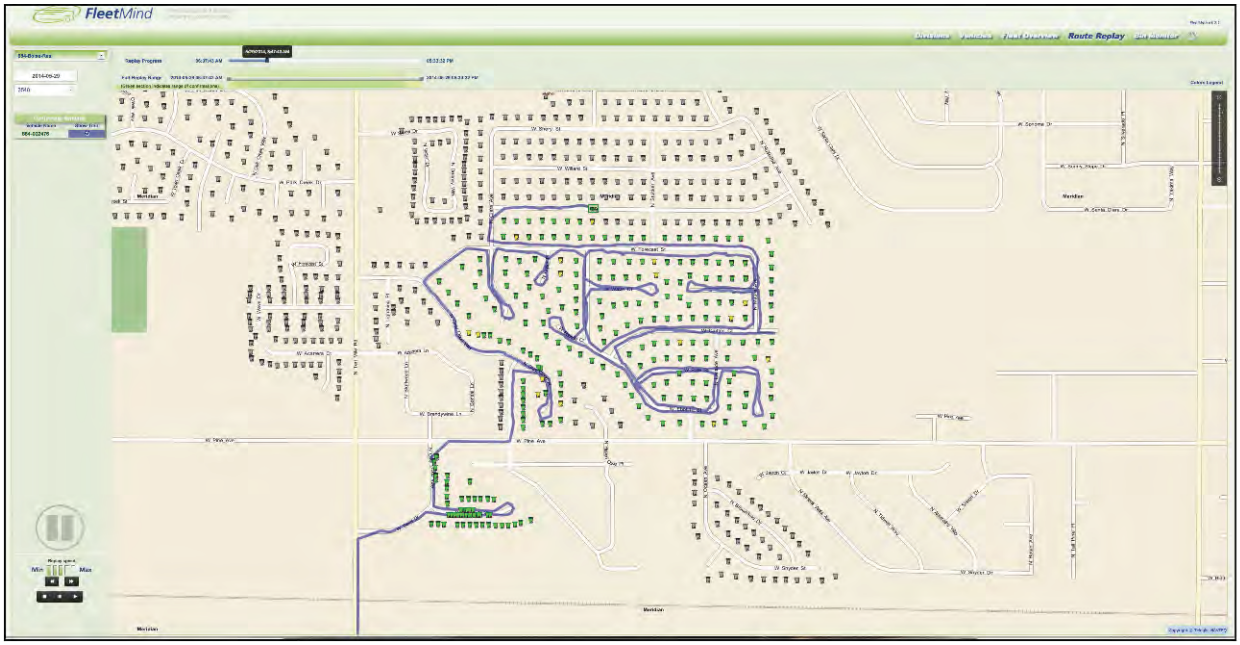
GPS data is collected in several ways:

1. Whenever an event is recorded (lift, alarm, driver activity, etc.) the current GPS positio as current speed and odometer value are recorded on the mobile platform and transm the server in real-time. When the mobile system is out of cellular coverage, this data is accumulated and transmitted when the system goes back into coverage acting as a sto forward device.
2. On a configurable period, the mobile system sends a "keep-alive" message to the serv includes the current GPS position, speed, odometer value and vehicle direction. This p can be configured down to 15 seconds.
3. The GPS data is also collected by our mobile unit in the same way it collects other tele data. The mobile system has a hardware profile that defines all the sensor data that ca retrieved and collected. There is also a software profile that defines which sensor data to be saved and at what frequency. This allows the user to collect data with a more gra period and accumulate the data for transmission in batch at a configurable interval. Fo instance, the GPS data collection can be configured to be captured and stored every 5 seconds and then transmitted in batch every 20 minutes. This data can then be used f detailed bread crumb analysis. Vehicle profiles are maintained using the FleetLink Cor Center administrative tool.

c) Archiving and Retrieving Historical Mapping, Travel Paths, and Activity of Vehicles.

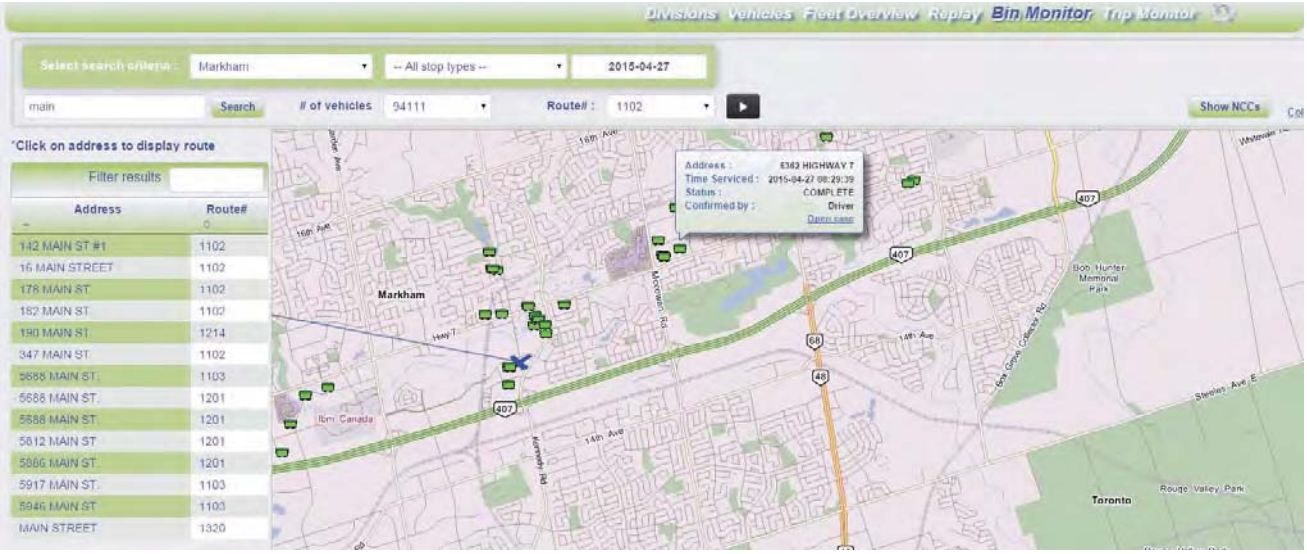
Detailed Vehicular Data per truck is maintained in the FleetLink Enterprise Database based configured retention period (e.g. 6 months, 1 year, 2 years, etc.). This data can be replayed route replay feature of FleetWeb. This feature allows the user to not only replay the breadcru truck at a selectable speed but also to see the progress of the route and other events simulta Multiple vehicles can be selected for replay.

Diagram 7-002 – Vehicle Route Replay



FleetWeb allows the dispatcher or any user to search for specific service events by customer name or address. The user can refine the search and select any event that will then be displayed with the route information from that day from which point the route can be replayed.

Diagram 7-003 – Service Status for Bins



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d) Transfer of Data via 4G Cellular Network

The standard method for the transfer of data from the FleetMind on-board computer is through cellular data. With the SSV10 DVR mobile, FleetMind recommends a minimum 1GB pooled data plan from Verizon for each truck. FleetMind offers a 1GB data plan from Verizon, and pricing has been included under Optional Items in the Cost Proposal. The City is free to negotiate its own contract with Verizon. For the optional F110 tablet, a 250MB data plan is recommended. This alternative device supports data plans from Verizon, AT&T and Sprint. Data transfer is configurable.

e) GPS/AVL Data can be Obtained via Web-based Interface

The proposed solution includes our newest mapping product: FleetWeb. This web based interface allows the user to look at the real-time position of every vehicle in a division, drill down to specific routes or vehicles, display alarms, driver activities, service events, planned route etc... Various views are available to analyze route progress, replay a route, search for events related to a specific address or customer by name etc. Data can be refreshed as quickly as 30 seconds. Route replay can use data with a granularity down to 5 seconds.

The frequency of the vehicle summary data can be adjusted to match business expectations. Data presented on the map has multiple sources. Live data is derived from keep alive messages that can be configured to be sent as frequently as every 30 seconds. Service events, alarms and other business related events are sent in real-time. Detailed telemetry data including positioning data can be accumulated with a 5 second granularity and transmitted back in batch every 15 minutes. The granular data is used for route replays.

The content of the detailed Vehicular Data is based on Software Profiles that is configurable by type of truck and line of business in the FleetLink Command Center as previously described.

Using FleetWeb, our browser based mapping product, the users will be able to see where all the trucks are in real-time. See screen shot below;

Diagram 7-004 – FleetWeb Truck Location Display

The FleetWeb mapping interface can show various vehicle activities, alarms and events. The following screens shots show various detail that can be obtained about a vehicle or service stop. All of these items are being updated in real-time via communications with the on-board OBC;

Diagram 7-005 – FleetWeb Vehicle Stopped Locations (both engine off, or idling)

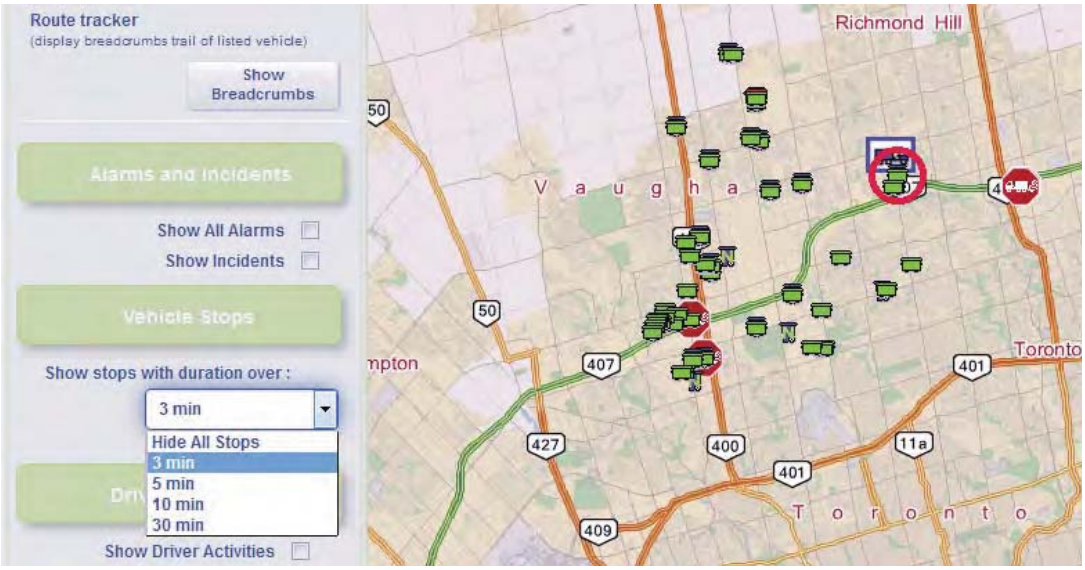
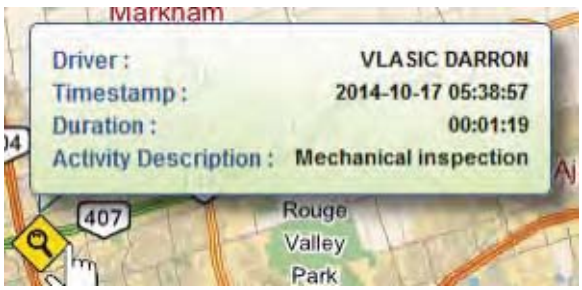
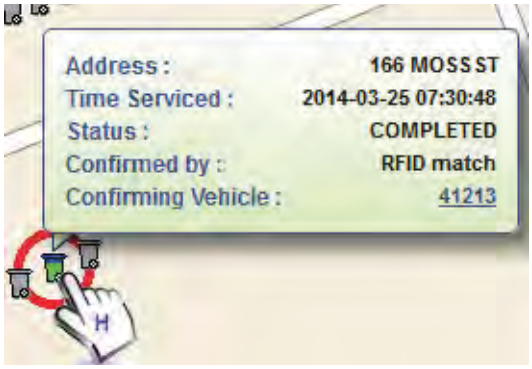


Diagram 7-006 – FleetWeb Vehicle Activities

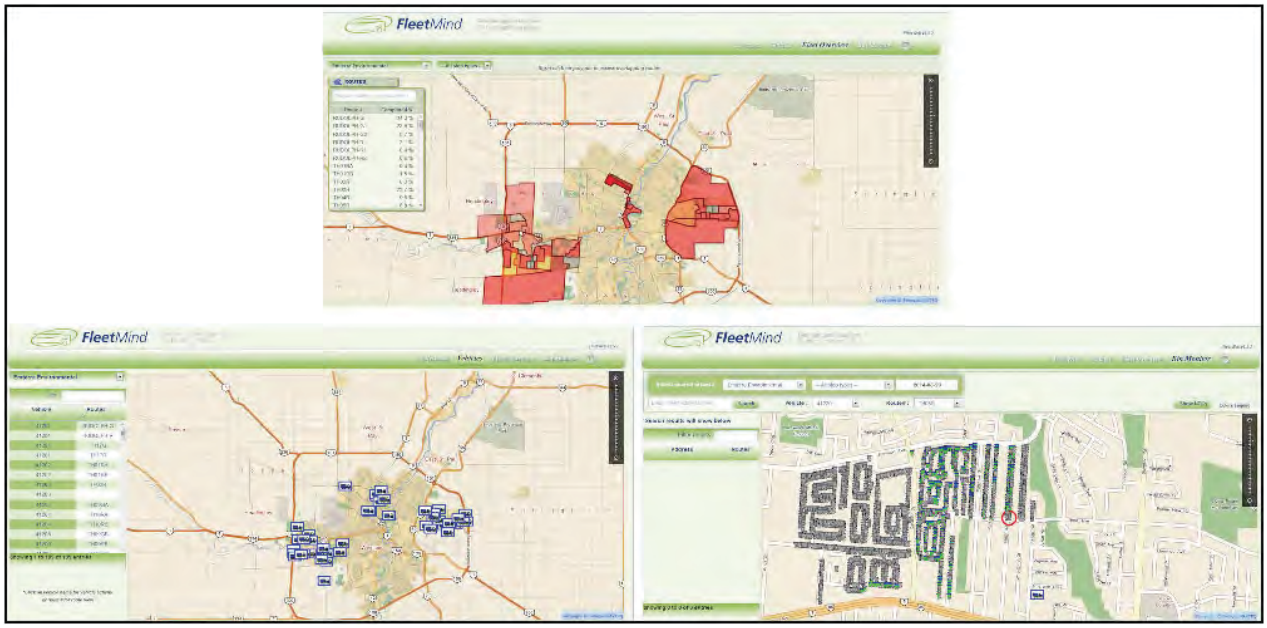




f) Geozone Based Route Management (creation and monitoring of vehicle location within a user defined or designated area/geofence)

The FleetMind system is designed to adapt to your existing operation as a starting point and evolve from there. By creating or uploading the geozones associated with each route given to your drivers you insure that the entire City of Austin is covered (i.e. usually defined in ArcGIS or equivalent and exported in WKT format). As the FleetMind system learns (i.e. breadcrumbs, confirmations) how the drivers actually run each route the individual stops can be re-sequenced to be subsequently presented exactly how the routes should be run. The FleetMind systems various reporting and viewing options can then be used to verify that the driver is actually following the plan and via the FleetMind dashboard validate whether operational productivity is being maintained for each route compared to the past months of executing the routes. The FleetMind system relies on 3rd party vendors such as RouteSmart or IIT to optimize any given route based on constraints and as a result improve the existing sequence into a better one. In all cases the FleetMind system makes it easy to communicate what the plan is to drivers, how drivers can report exceptions, and monitor actual productivity from each driver as they try to conform to the existing plan.

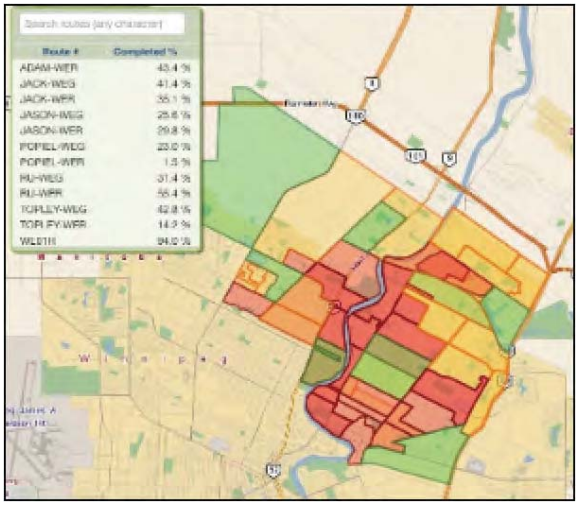
Diagram 7-007 – Route Geozones Being Serviced



h) Geozone Based Reporting with Support for Route Groups

Geozones can be either created within the FleetLink RMS system, imported from 3rd party systems such as ArcGIS, or automatically generated by the RMS system based on the geographical distribution of stops assigned to a route. Multiple routes that are under management by a single supervisor can also be grouped together as a Route Group to facilitate management.

Diagram 7-008 – Defined Route Geozones Being Monitored



i) Ability to Establish Geofenced Areas (for arrival/departure)

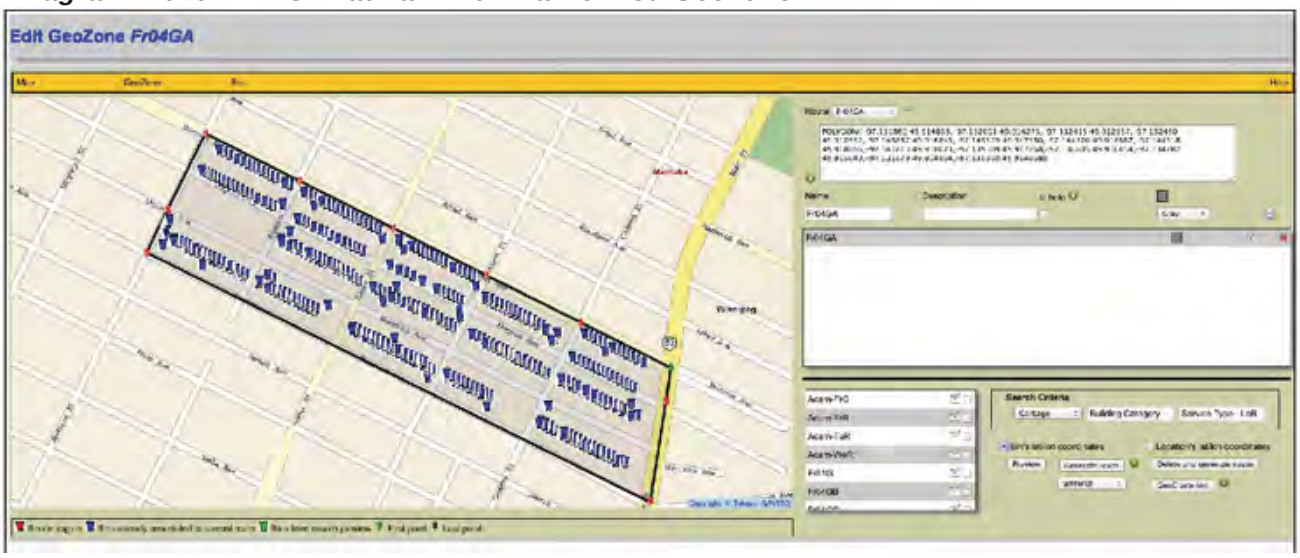
Geozones shapes are defined using GIS industry standard WKT format. Such shapes can be exported from existing GIS systems used by municipalities (i.e. ArcGIS) or purchased from 3rd party vendors that specialize in the definition of GIS shape files for various purposes.

As an option, the FleetLink Route Management System can be used as an adjunct to the existing back office system to manage and manipulate geozones for each route, and other purposes.

Diagram 7-009 – Route Geozone Editor

The primary purpose of geozones on the FM server side is to help manage service zones (e.g. geozones assigned to routes, service day, service area) in order to automate/facilitate assignments of stops to routes and to facilitate route progress monitoring during the day. If geozones assigned to routes have not been created, the FM Server will automatically create approximate ones to facilitate route progress monitoring. There are no predefined limits to the number of geozones that can be created although the performance of some functions may be affected as the number of managed geozones grows.

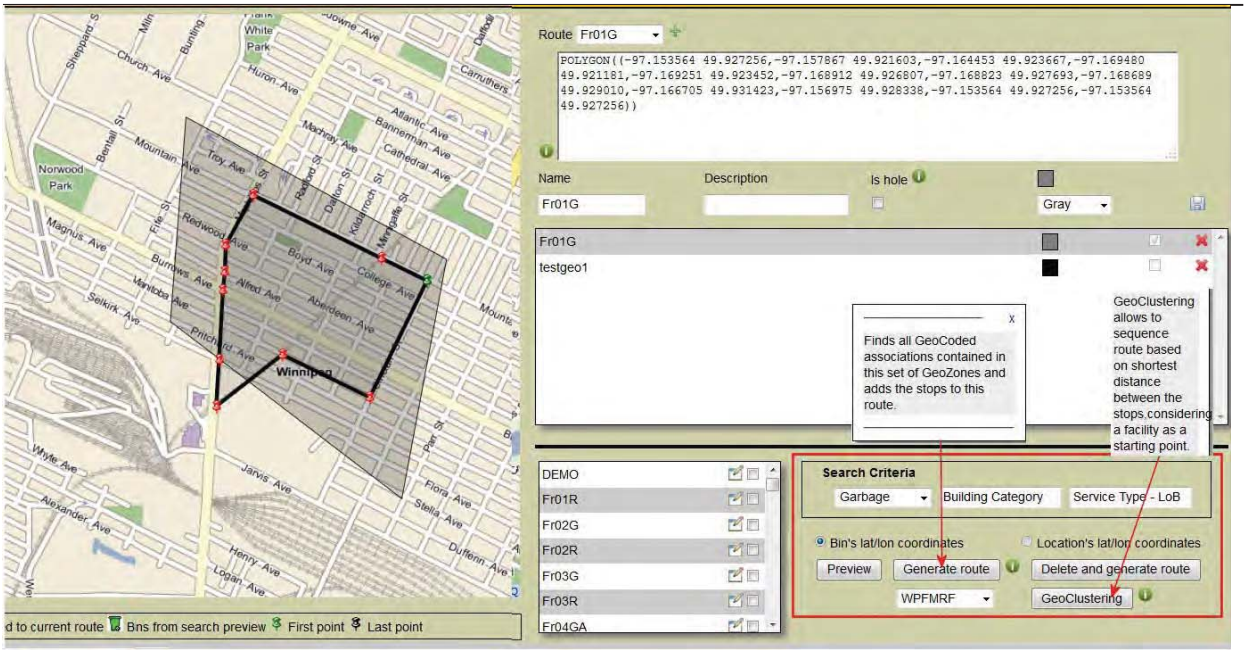
Diagram 7-010 – Bins That Fall Within a Defined Geozone



The Geozone editor can also be used to resequence stops in a zone. Three different resequencing modes are supported; by recorded breadcrumb trail of a route, by service timestamp of a route, or by using the sequence of another route.

Diagram 7-011 – Resequencing Stops in Defined Geozone

Diagram 7-012 – Manipulating Route Geozone Boundaries in Editor



On the Mobile OBC side geozones are used to help automatically capture certain operational timestamps (e.g. yard departure/arrival, disposal site arrival/departure, commercial customer arrival/departure) as well serve as input to configurable operations events/alarms. The key point is that FleetMind has devised ways to leverage GIS data available on the mobile side by combining it with driver input and/or sensor data (i.e. lift sensor) to arrive at those results without having to create a large list of geozones before the system can become operational.

What Event types can be triggered when using them (in/out/not in a time window/outside a time window/incorrect entry)

- Entry geozone condition combined with timeout how long inside geozone with defaultvalue 0 seconds.
- Exit geozone condition combined with timeout how long outside geozone with default value 0 seconds.
- Entry into a restricted geozone (toll road, toll bridge, etc.)
- Managing trucks that are parked near the yard, etc.

What data is collected about the event?

As for all events, generic information such as Vehicle ID, Driver ID, Route ID, Route Date, Current Date/Time, LAT/LON, Odometer, Status (new, end, unique) etc... is included for every geozone triggered event.

Where is the event triggered (from the vehicle or in the back office)?

Events/Alarms are triggered at the FM Mobile to benefit from real-time access to detailed vehicle sensor data (including scale/ECM) as well as operational context. This also allows us to leverage the substantial computing power of the mobile platforms being offered.

j) Vehicle Identification (different symbol types)

FleetMind provides different symbol types for trucks and containers. If City of Austin requires additional truck symbol types FleetMind can provide those as part of the solution. An example of these symbols can be seen in a variety of screen shots included in this section.

2. Data Collection

a) Location (latitude, longitude, elevation)

Accurate location data is collected by all hardware proposed by FleetMind. The location data is sent back in real-time to the FleetMind back office software.

b) Speed

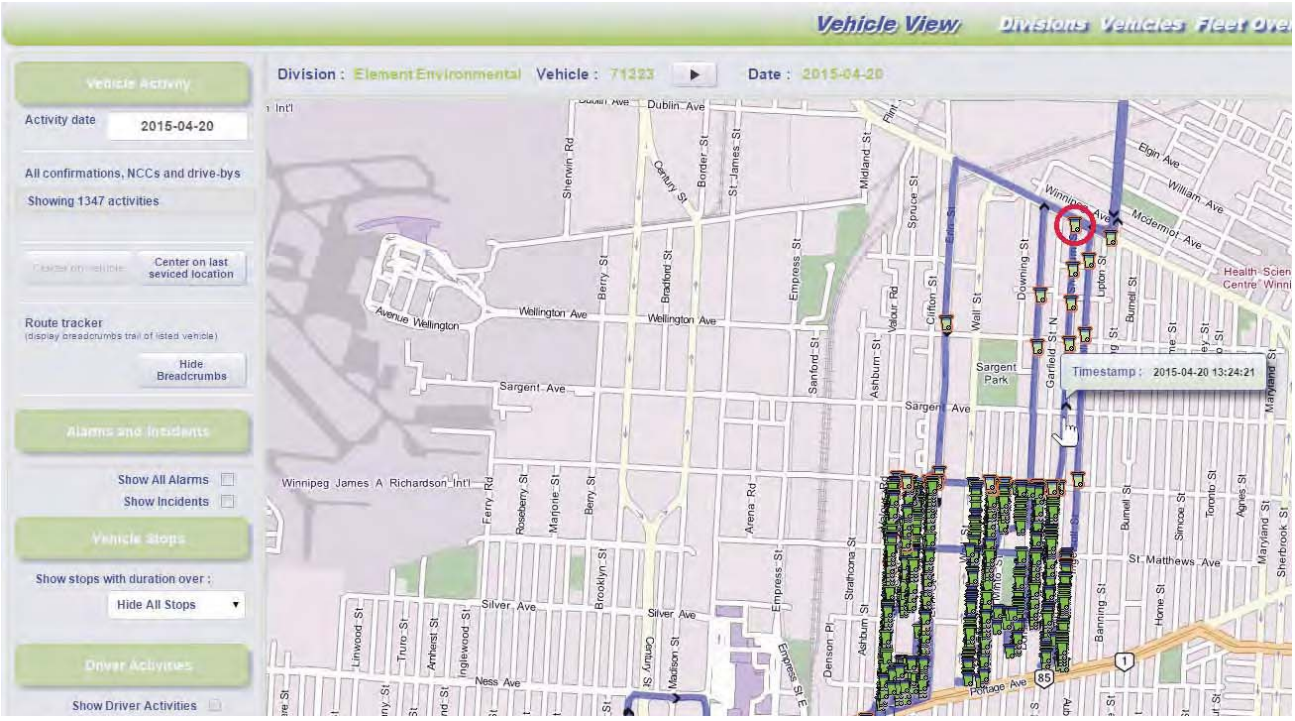
FleetMind captures accurate speed data by GPS data and ECM data. The ECM data is typically more accurate since the information is coming directly from the trucks computer. This speed data can be viewed in our Mapping and Reporting software. Alarms can be set to email and alert supervisors or management of drivers that break designated speed settings. One example of speed reporting can be found below under item c.

c) Direction

FleetMind's GPS/AVL solution records directional GPS coordinates to indicate the direction, speed and route that were driven by each driver. This information is recorded on FleetWeb so that the route data can be viewed in real-time or at a later date based on a route and date search.

This FleetWeb screen shot illustrates the route view of where a truck has been, the direction and turns that were made and contiguous speed markers. The user can see the value associated with each point on the map by clicking on it as seen below;

Diagram 7-013 – Display Vehicle Breadcrumbs



d) Alarms

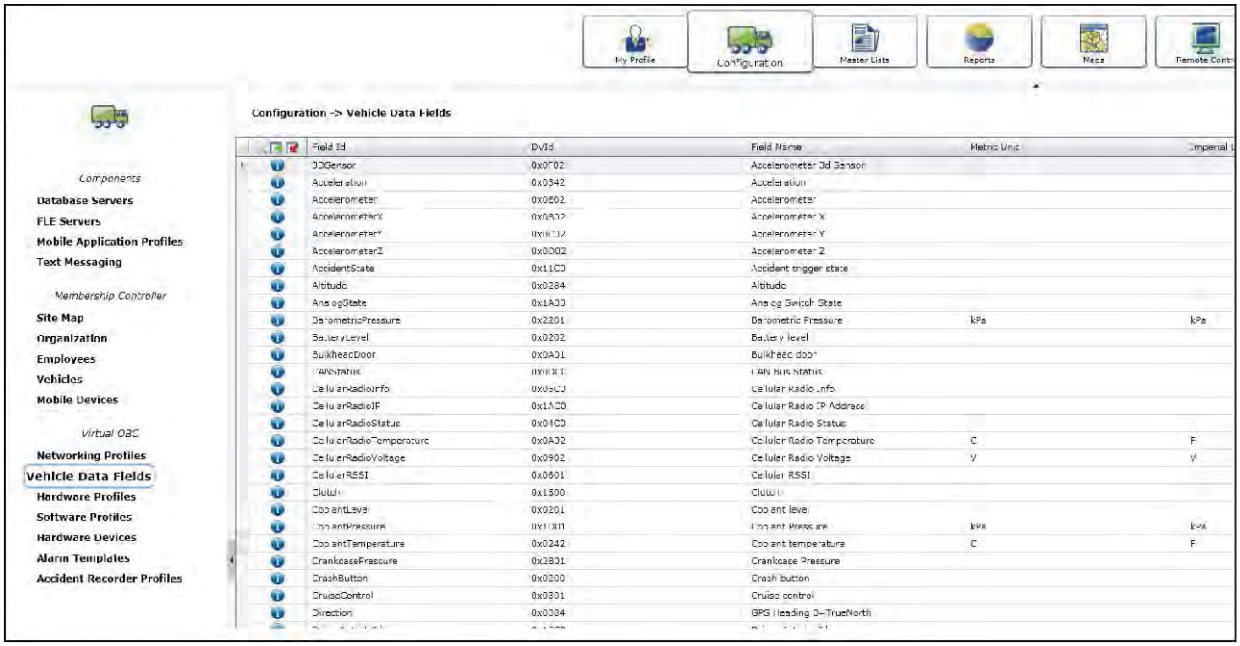
Alarms can be defined based on a variety of parameters. Alarms can be based on ECM sensor data, scale data, geozone transitions, business logic or a combination of all of these.

Each mobile system's configuration is described by a "Hardware Profile" defining the available sensors and peripherals available on the vehicle. An Alarm Template defines which alarms or events need to be evaluated. A software profile then defines the mode of operation of the mobile system including the severity of various alarms, their reporting method, etc.

An Alarm Template defines which alarms or events need to be evaluated. These configurations are managed centrally by the FleetLink Command Center and automatically deployed to the mobile systems when a change is detected. Here are some screen shot examples of these configurations.

The Vehicle Sensors that can be used as a source of alarms (partial list):

Diagram 7-014 – Define Alarms Based on Sensor Data



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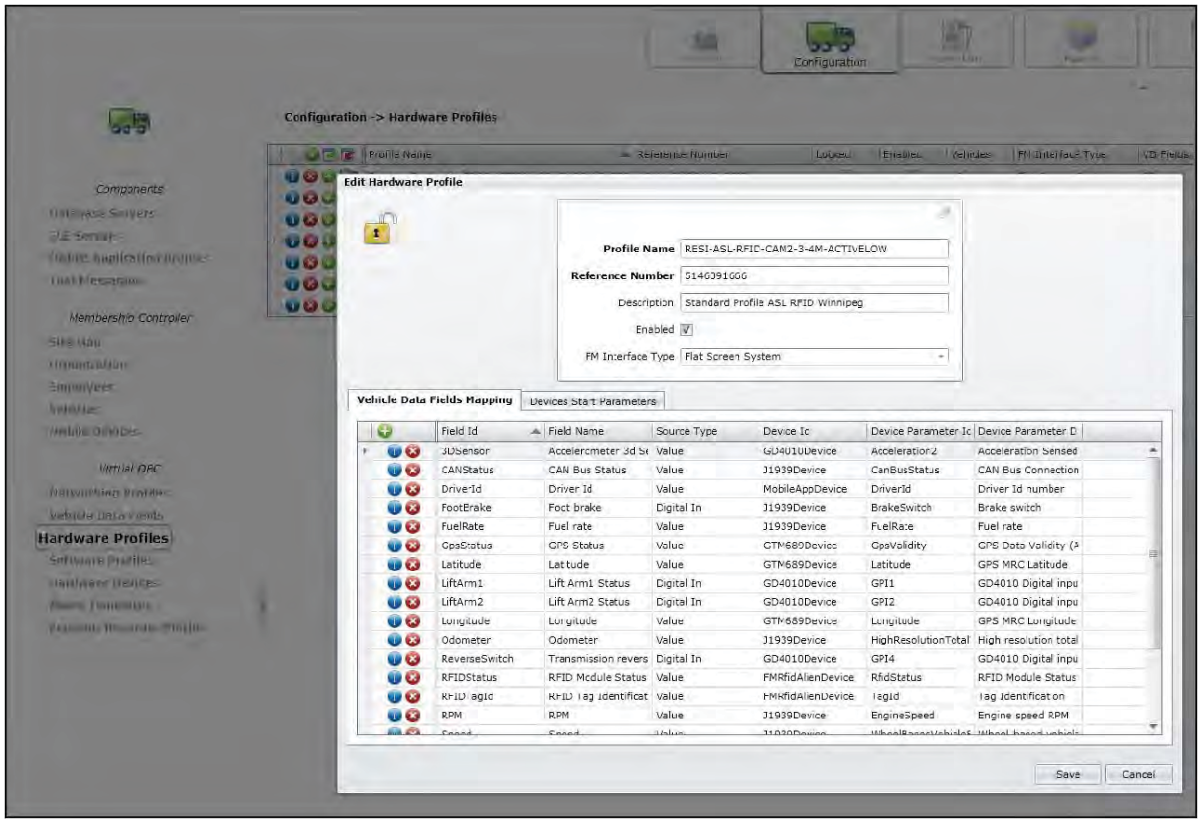
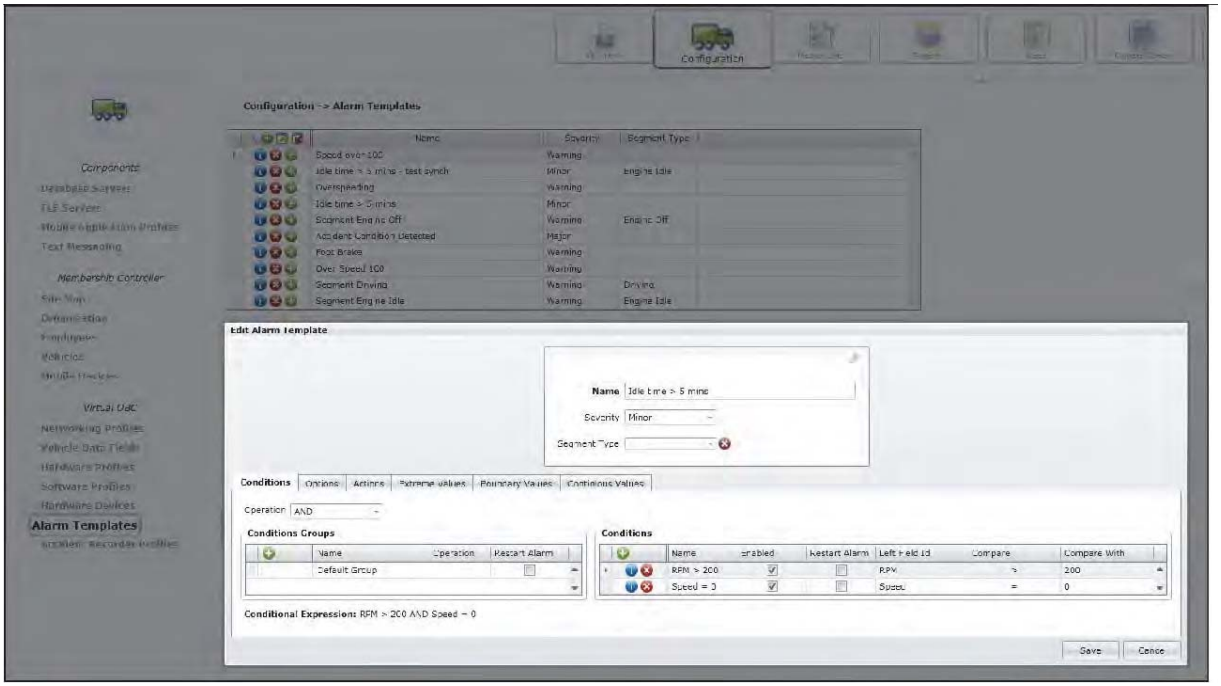
The Vehicle Hardware Profile will determine which of the sensors are available on each vehicle:

Diagram 7-015 – Vehicle Hardware Profile



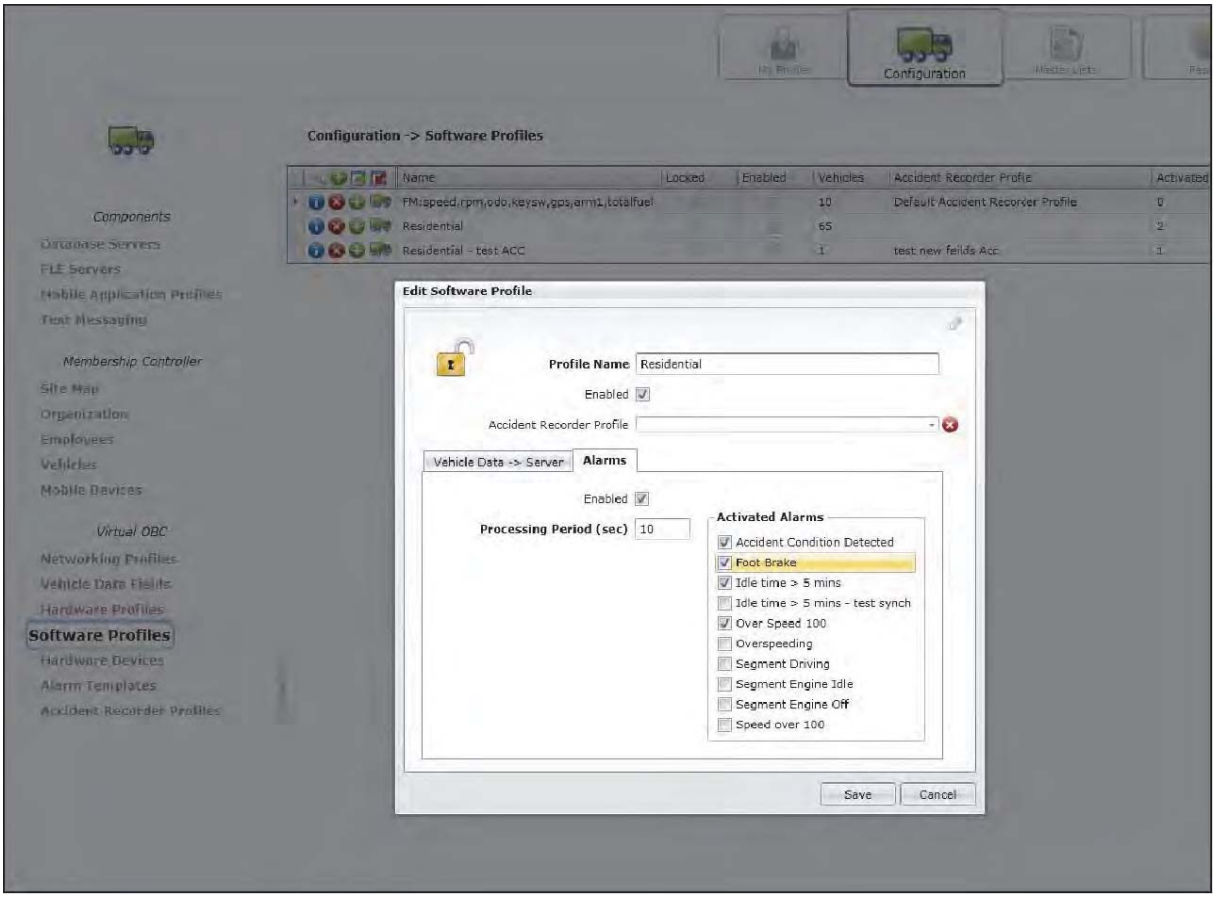
Alarms can be defined in the alarm template. Each alarm can be defined by its source, type, trigger

Diagram 7-016 – Alarm Triggers



Once an alarm is defined, it can be added to the vehicle's software profile:

Diagram 7-017 – Adding Alarms to Truck Profile



Once defined and enabled for a vehicle, the alarms are evaluated continuously and reported back based on their type. Alarms can be viewed in reports or on FleetWeb.

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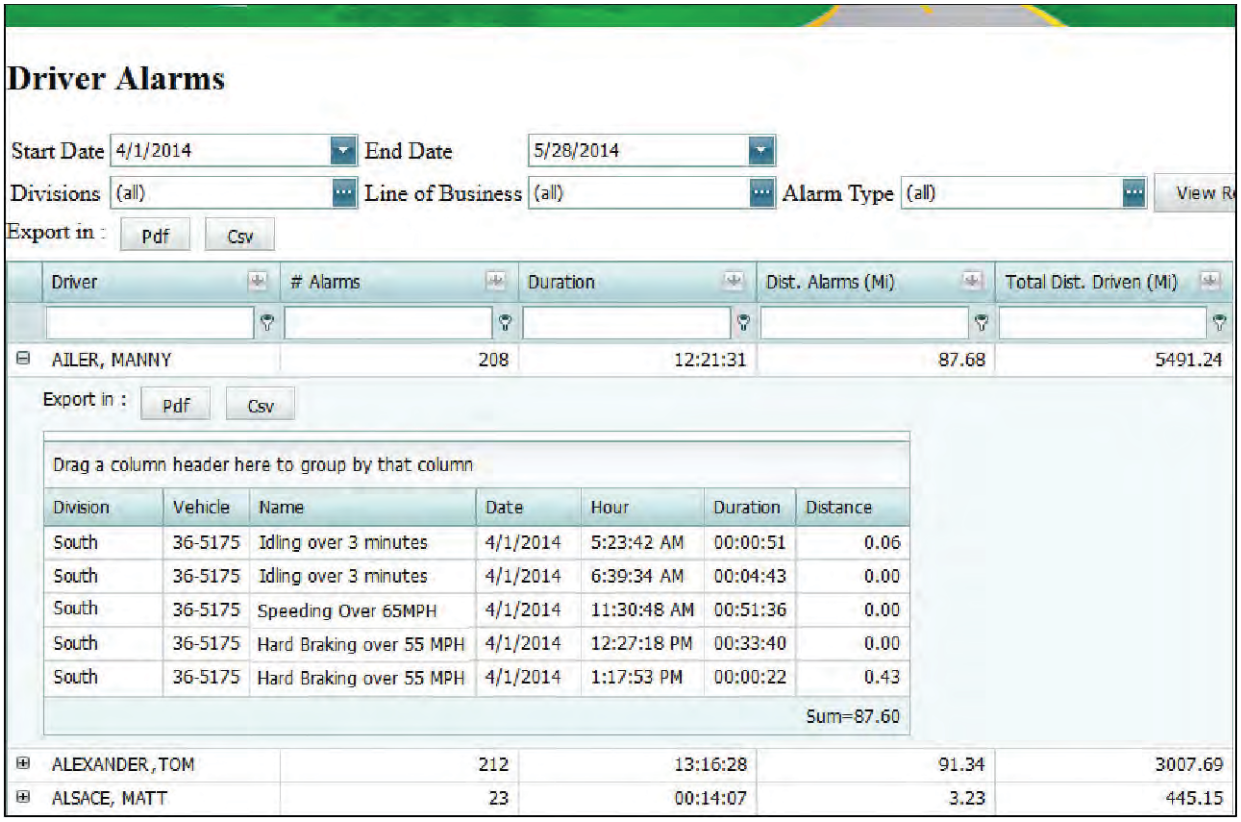
Driver alarms as viewed in the FleetLink FRM Enterprise Report Manager

Diagram 7-018 – View Driver Alarms



Driver Alarms

Start Date 4/1/2014 End Date 5/28/2014

Divisions (all) Line of Business (all) Alarm Type (all) View R

Export in : Pdf Csv

Driver	# Alarms	Duration	Dist. Alarms (Mi)	Total Dist. Driven (Mi)
AILER, MANNY	208	12:21:31	87.68	5491.24

Export in : Pdf Csv

Drag a column header here to group by that column

Division	Vehicle	Name	Date	Hour	Duration	Distance
South	36-5175	Idling over 3 minutes	4/1/2014	5:23:42 AM	00:00:51	0.06
South	36-5175	Idling over 3 minutes	4/1/2014	6:39:34 AM	00:04:43	0.00
South	36-5175	Speeding Over 65MPH	4/1/2014	11:30:48 AM	00:51:36	0.00
South	36-5175	Hard Braking over 55 MPH	4/1/2014	12:27:18 PM	00:33:40	0.00
South	36-5175	Hard Braking over 55 MPH	4/1/2014	1:17:53 PM	00:00:22	0.43
						Sum=87.60

ALEXANDER, TOM	212	13:16:28	91.34	3007.69
ALSACE, MATT	23	00:14:07	3.23	445.15

Driver alarms as viewed in FleetWeb mapping

Diagram 7-019 – Selecting Alarms for Viewing in FleetWeb

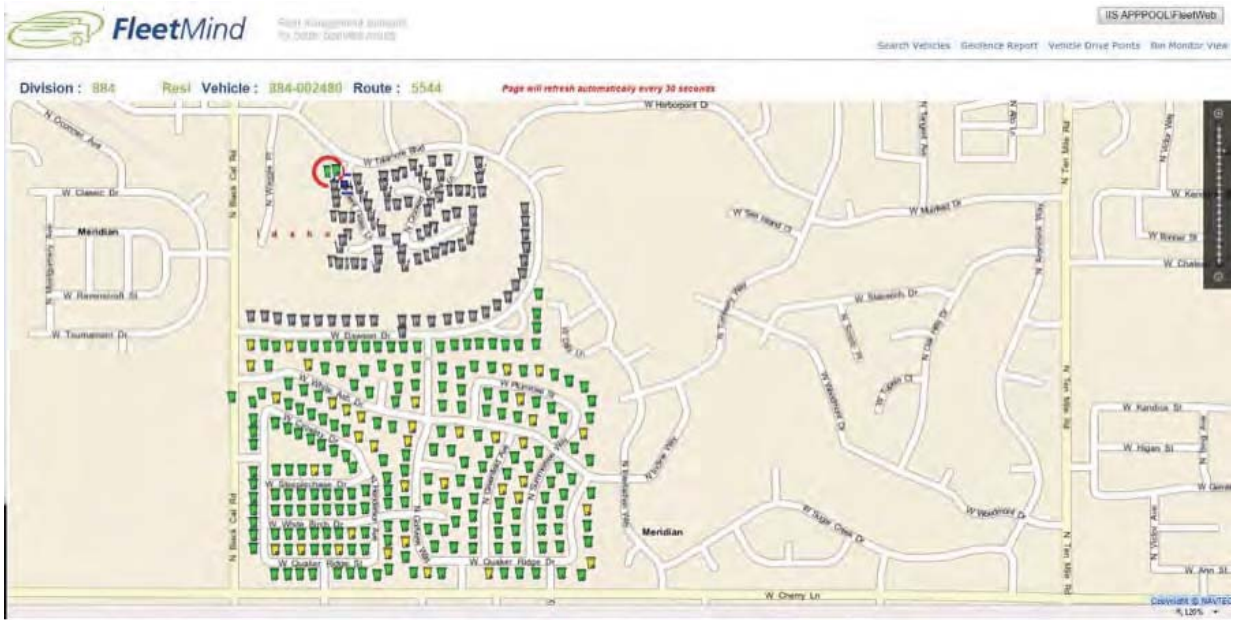
e) Collecting Equipment Usage Data (telemetry events) including and not limited to:

- Ignition on/off PTO
- Arm movements (up and down)
- Other sensory inputs (scales, RFID, tire pressure, hydraulics, seat belts, etc.)

The FleetMind system has the ability to monitor several electrical inputs, including ignition on/off and PTO. FleetMind also installs a dual angle actuator switch on the automated arm to automatically record hydraulic arm movements. If there is an electrical switch available FleetMind can tie into that switch to record each lift. Every lift that is made will be recorded and associated with a GPS longitude and latitude coordinate, and a time stamp. If a touchscreen computer is being used the actuator event along with the GPS longitude and latitude coordinate, time stamp will all be associated with a customer record for service verification. The actuator events are recorded in real-time and displayed in our FleetWeb software.

Below is a screen shot displaying recorded actuator events on a residential route. Green containers were serviced, yellows were driven by (no stop/lift detected) and grey containers are yet to be serviced.

Diagram 7-020 – Container Status Based on GPS/Actuator Feedback



f) G-force Events

FleetMind's Trek SSV10 on-board computer has a built in Tri-Axle Accelerometer. FleetMind can configure the SSV10 to detect g-force events and to program the attached camera(s) to record up to 15 seconds of video prior to the event and 15 seconds after the event. This video is sent to the FleetMind back office software where it is available for viewing.

3. Proposed Handheld Cart Management PDA, with RFID Reader

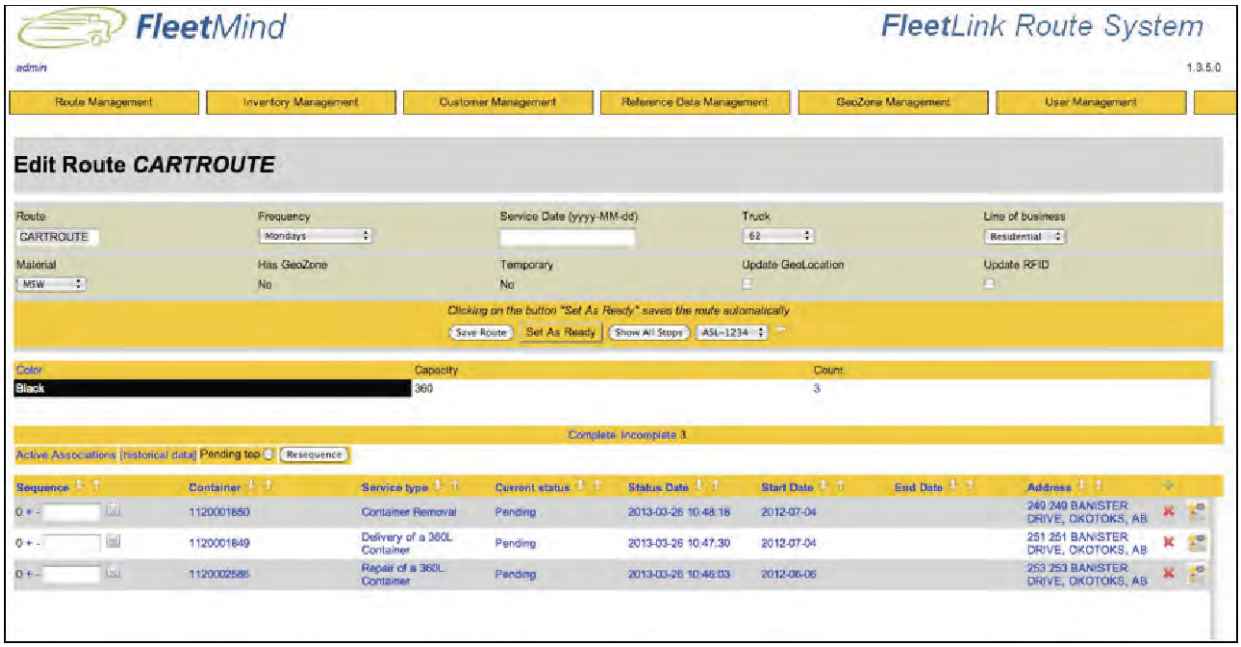
FleetMind has proposed handhelds from Motorola (with RFID readers) to assist with cart delivery and maintenance applications. The handhelds are MC67 models. They are rugged military grade devices and offer a built-in GPS, camera, bar code scanner and 4G data modem. A portable RFID reader sled

can be used to read RFID tags as the containers are delivered removed or repaired. The RFID reader is capable of reading UHF Gen 2 RFID tags. If containers are not RFID tagged, a bar coded serial number can be scanned (or manually entered) to associate the container with a particular customer location.

The FleetLink Route Management System is used to manage the container delivery and maintenance routes. This allows the users to properly plan the delivery; track the progress and most importantly ensure that the container is associated to a customer at the time of delivery. The accurate association of customer to cart at the proper GPS location is the single most important element of any waste collection operation. Failure to do this association properly at the time of delivery will result in discrepancy reporting by the system and therefore add manual intervention by the user to correct this information afterward.

The FleetLink Route Management System allows users to create maintenance routes (repairing cart, swapping for bigger cart, removal, single delivery) and also to plan for large-scale delivery of carts, such as delivery of carts to an entire new campus. Here is a screen shot of the FleetLink route application with a cart maintenance route.

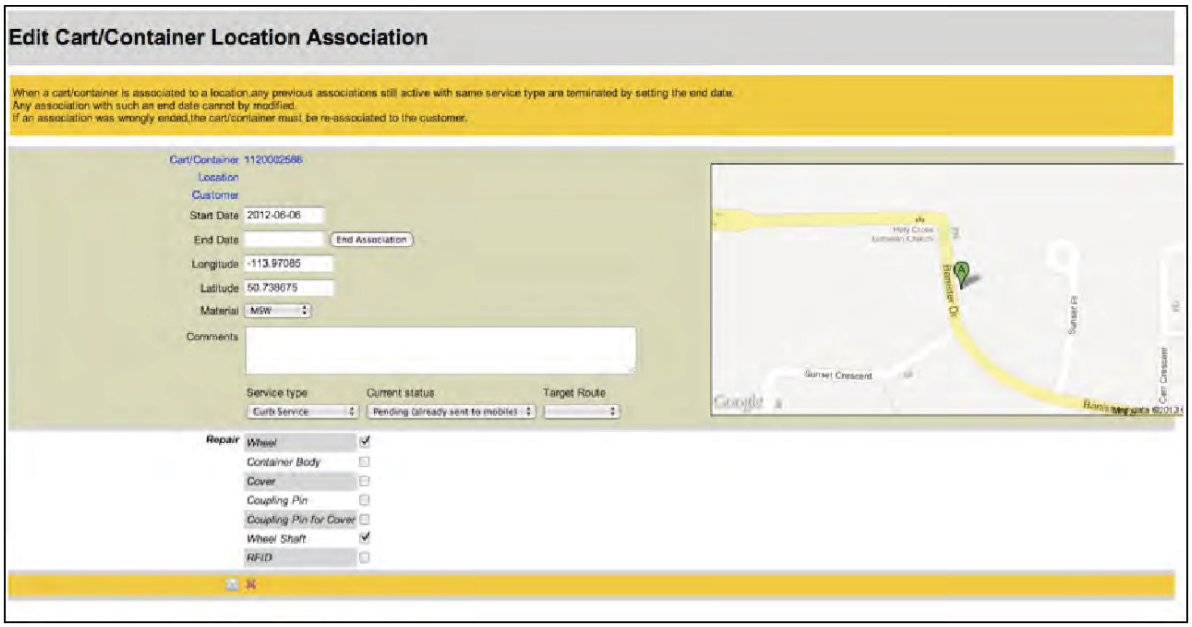
Diagram 7-021 – Cart Management Route



As customers are calling the City of Austin for a new cart or repair, the FleetLink Route Management System will allow the user to create service request that will be combined to create a route (with planned integration to CC&B work orders and CSR 311).

Here is an example of a service ticket for the container repair where a wheel and wheel shaft repair request is being created.

Diagram 7-022 – Create Container Repair Ticket



Cart Delivery and Cart Maintenance Application (on the MC67 handheld PDA)

The MC67 handheld can be used in two modes: mass cart delivery and cart maintenance route.

When doing mass delivery, the route is going to be presented by street and the user will be able to quickly select the house number. It is also possible to filter odd and even addresses so only those are seen when doing delivery on one side of the street at a time. This mode also allows users to create new delivery points (new house, basement apartment in a house, etc.) so no addresses are missed. It is critical that the scanning of the cart be done as close as possible to the collection point or at least near the property in order and that the proper house be selected on the list. As indicated above, a clean association of cart to property and location will make the collection and management of exceptions much easier.

Diagram 7-023 – Handheld Cart Delivery Workflow

Upon arrival at the client's location:

1. Press **Arrived** on the FleetLink Mobile hand-held device.
2. Exit the vehicle and, using the hand-held device and RFID reader, scan the RFID or serial number of the cart.
   The system displays the cart's serial number, container size, and color.
3. Press **Confirm**.
   A confirmation screen displays.
4. Repeat steps 2 and 3, as required, in the event of multiple deliveries at the same location.

Diagram 7-024 – Handheld Cart Exchange Workflow

Upon arrival at the client's location:

1. Press **Arrived** on the FleetLink Mobile hand-held device.
2. Exit the vehicle and, using the hand-held device and RFID reader, scan the RFID or serial number of the new cart. The system displays the cart's serial number, container size, and color.
3. Press **Confirm**. A confirmation screen displays.
4. Repeat steps 2 and 3, as required, in the event of multiple exchanges at the same location.

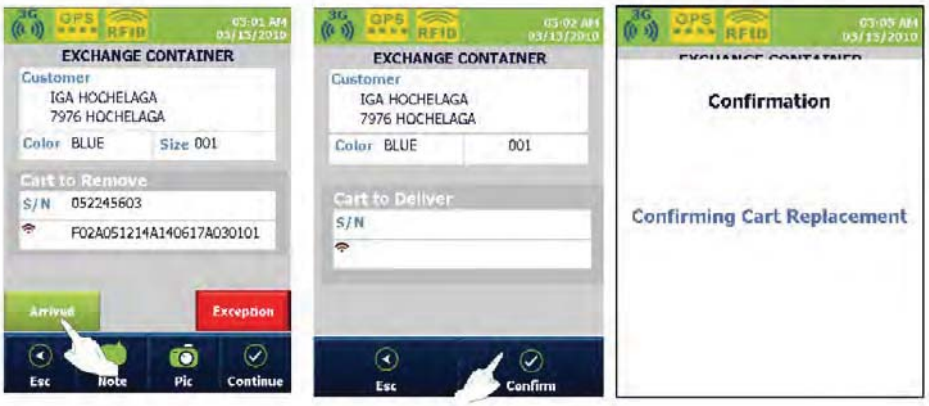


Diagram 7-025 – Handheld Cart Removal Workflow

Upon arrival at the client's location:

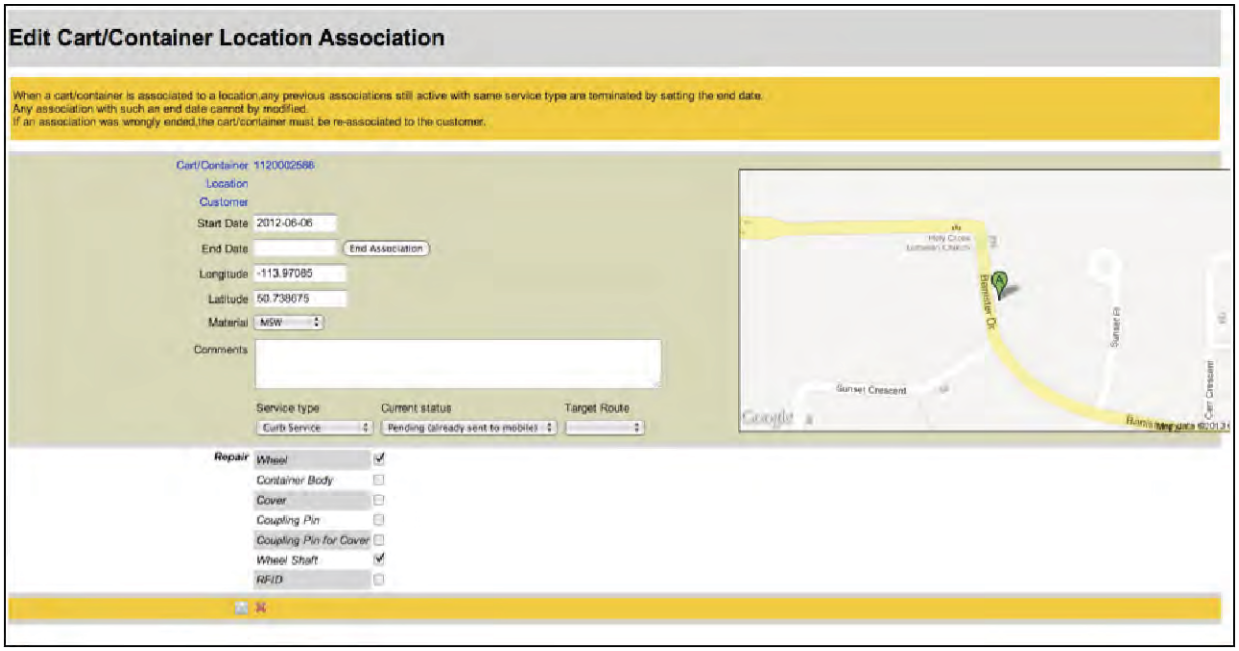
1. Press **Arrived** on the FleetLink Mobile hand-held device.
2. Press **Confirm**.

When doing maintenance, removing or delivery of a few carts, the route will be presented like a collection route and will be organized based on how it was optimized. The user can also manually sequence the route.

Container Damage Management

Users of the FleetLink RMS will be able to manage containers, planning distribution or repairs. The example below shows the cart being reported as damaged.

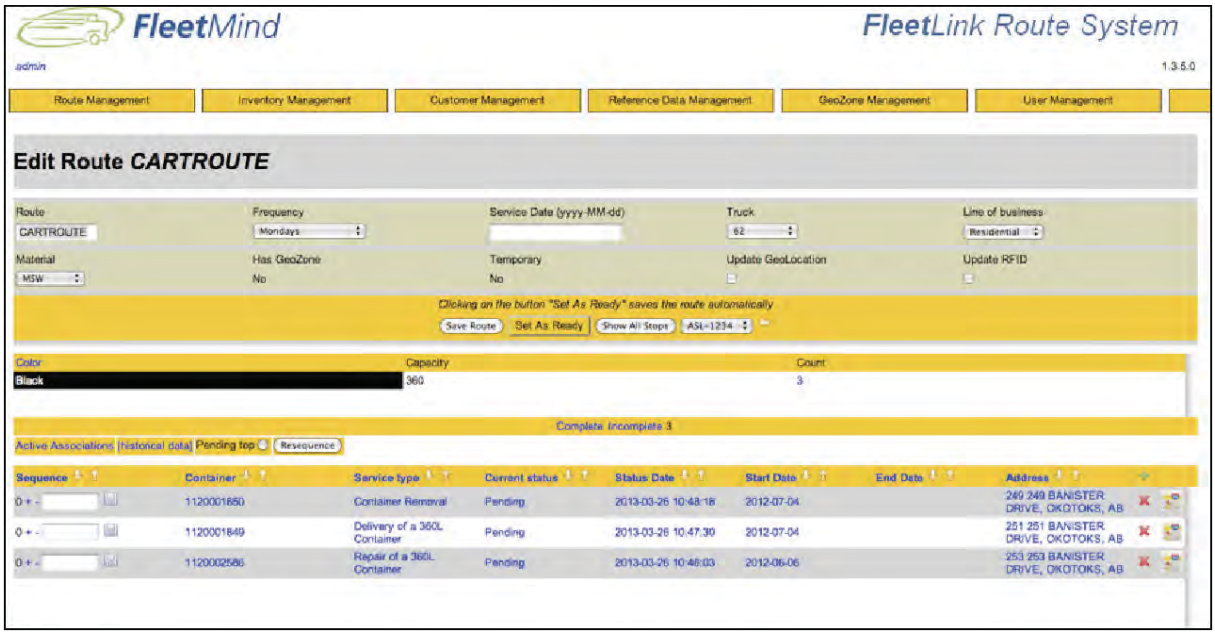
Diagram 7-026 – Damaged Cart Work Order



Cart Delivery and Maintenance Route

The FleetLink Route Management System can be used in conjunction with the handheld for delivery and repair of carts. The example below shows a route with 3 stops, one for a repair, one delivery and one removal. This route is going to be transmitted to the handheld.

Diagram 7-027 – Scheduling Cart Delivery/Repair Activities



The FleetLink Route Management System incorporates a comprehensive cart inventory system. Details of all deployed carts, and their customer associations and location, can be easily displayed. A

complete history is maintained of all actions taken against a cart, including all route servicing activities, relocations and repairs and maintenance. Serial number and/or RFID tag number associations are maintained, and used during service verifications. The screen shots below illustrate how the inventory can be searched, and what details can be associated with each cart. A bulk import feature, as well as a cart auto-generation utility allows for new cart inventory to be added.

Diagram 7-028 – RMS Cart Inventory Search

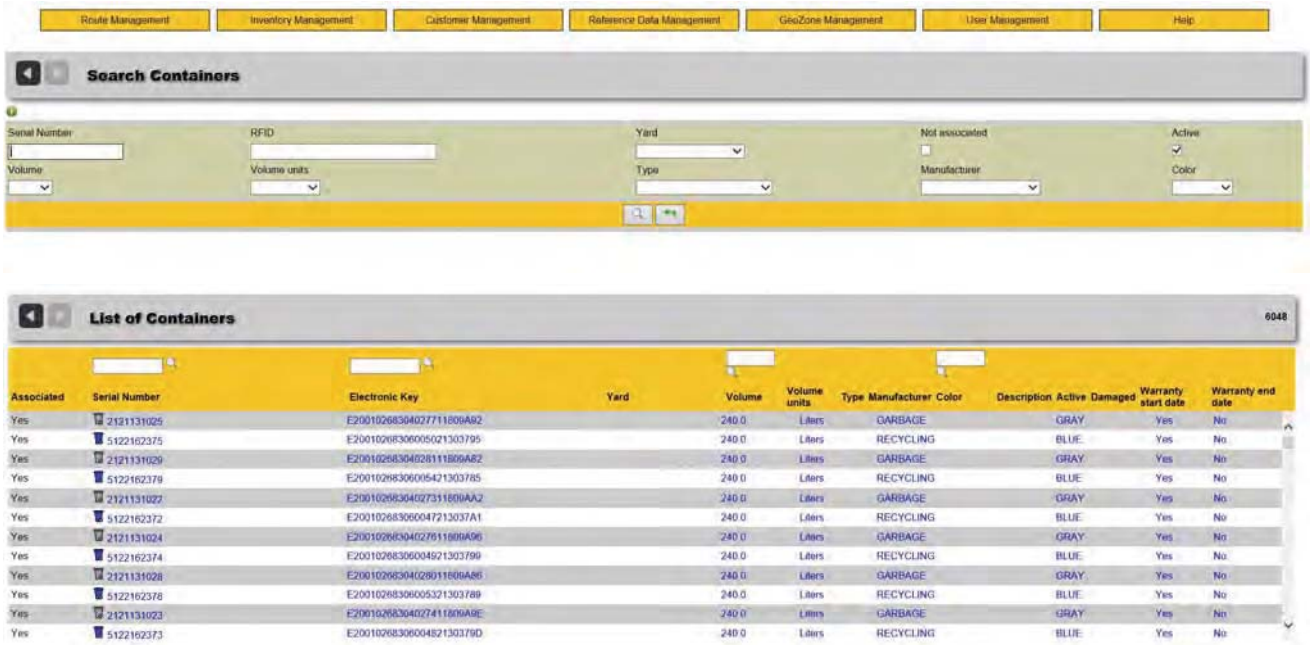


Diagram 7-029 – RMS Cart Editor

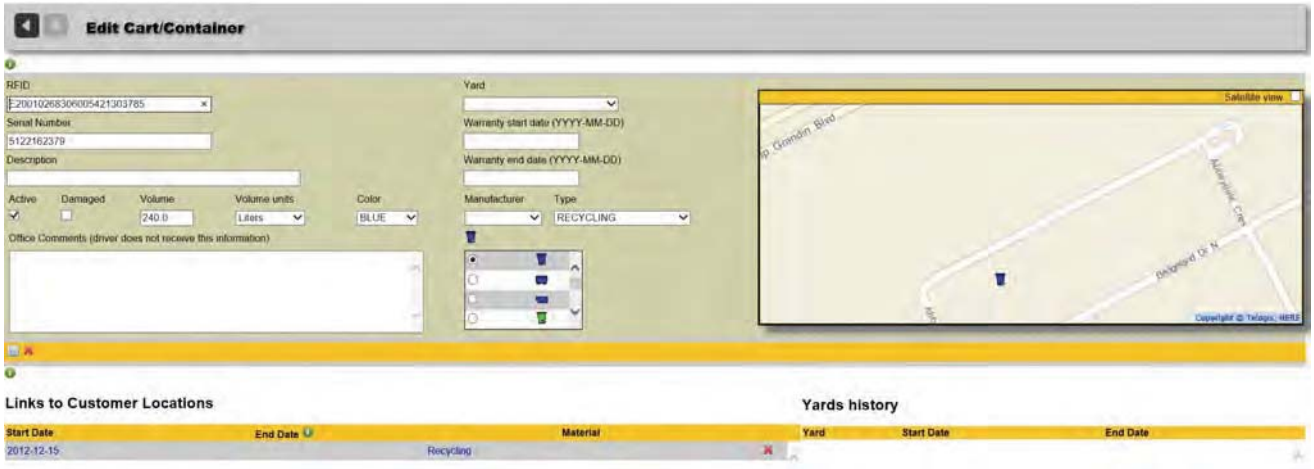


Diagram 7-030 – RMS Cart Location Association

The FleetMind Trek SSV10 OBC can be integrated with the available 4-channel Alien RFID reader, and required antennas and cabling. The RFID option can be added at any time to an SSV10 mobile. Because the reader includes 4 ports, the system can support multiple truck configurations including combos of rear-loaders / ASL, dual ASLs, dual tippers, etc. The RFID reader option can be used for all lines of business to identify the carts / bins being lifted.

FleetMind has one of the most innovative RFID software interfaces in the industry. The screen shots below detail four different collection scenarios the driver may experience on the route.

Diagram 7-031 – Processing RFID Tags

Diagram 7-032 – RFID Mismatch

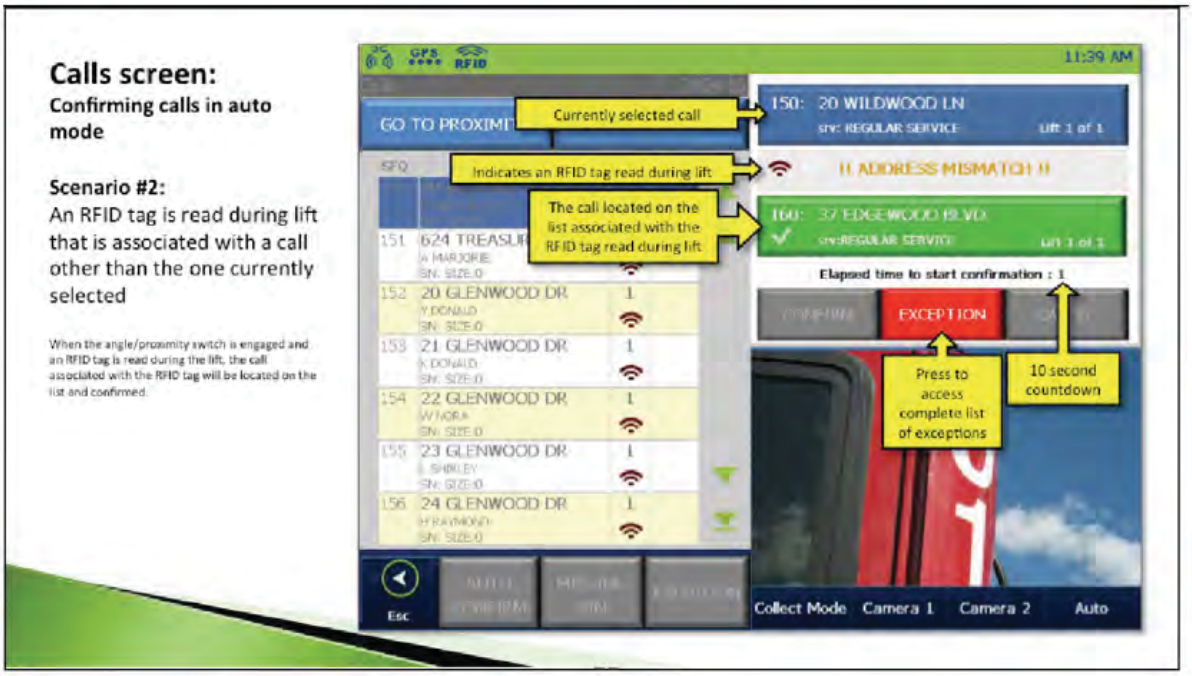


Diagram 7-033 – RFID Bin Not On Route

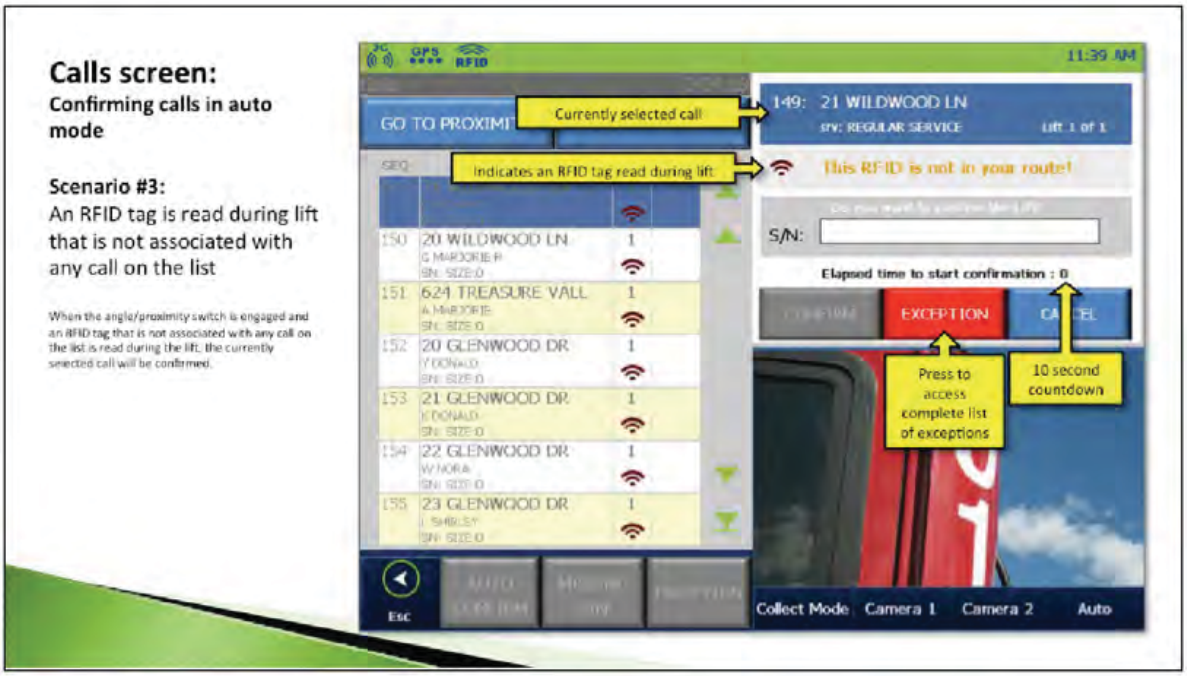
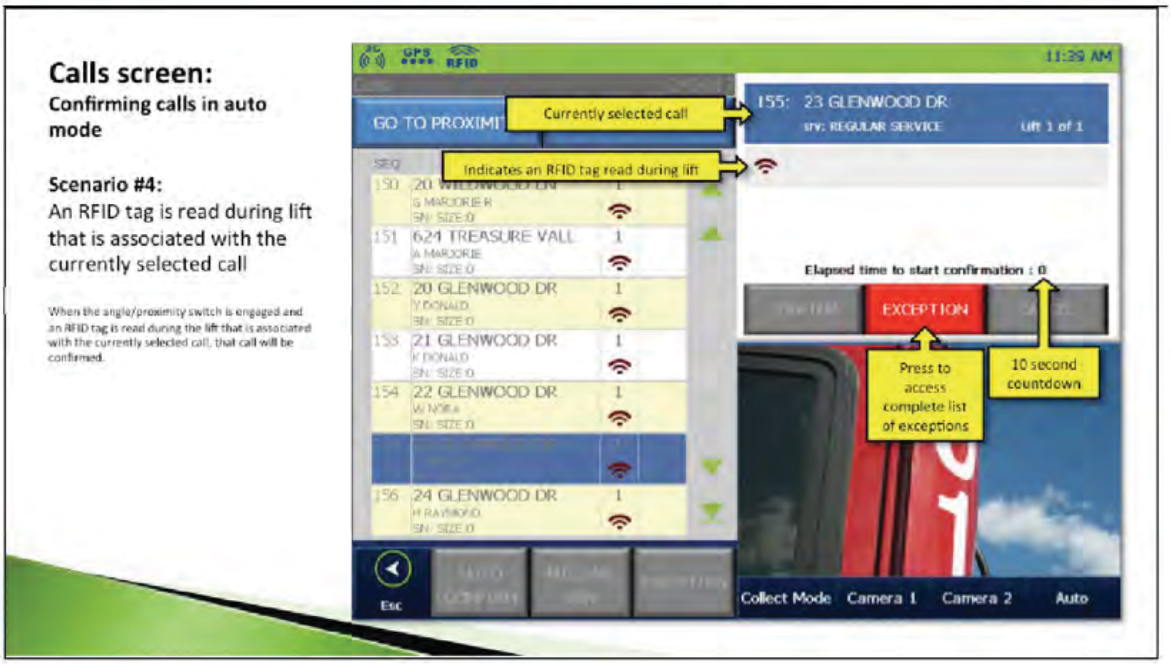


Diagram 7-034 – RFID Matched for Customer



4. Enterprise Reporting

FleetMind Solutions provides a variety of comprehensive ad hoc reports in the FleetLink FRM component. Samples of some of those reports are included below.

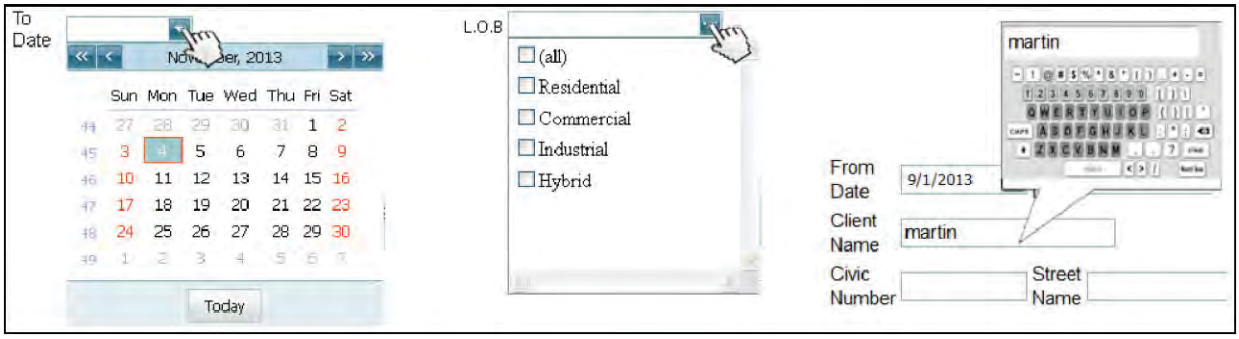
a) Standard Reports

Below are descriptions of standard reporting tools within FleetMind, however one of the benefits of the FleetMind system is the ability to create any custom report using Web Services to access the data and SQL Reports or Crystal Reports to create any custom report. In addition, the standard reports are flexible in that you can add or remove headings to create custom views. FleetMind's reports can also be exported into CSV, Excel, and PDF formats as a standard part of the system.

The FRM Enterprise Report Manager is the web interface from which you generate reports.

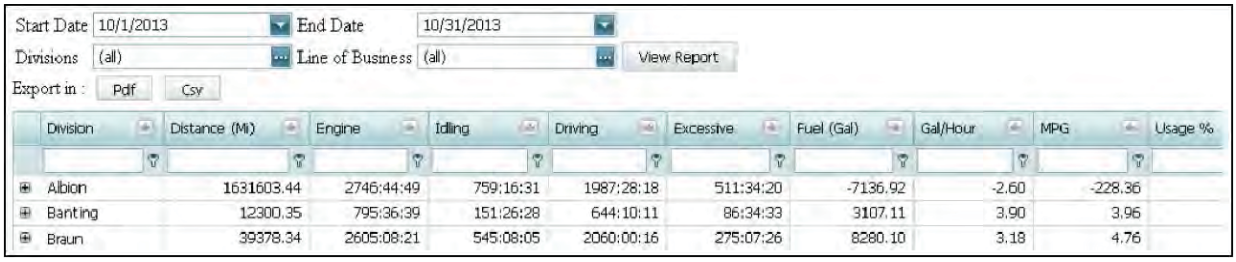
Reports display initially as a blank form, which enables you to select your report criteria using standard web elements such as date menus, pull-down menus, text fields, and check boxes.

Diagram 7-035 – FRM Report Query Tools



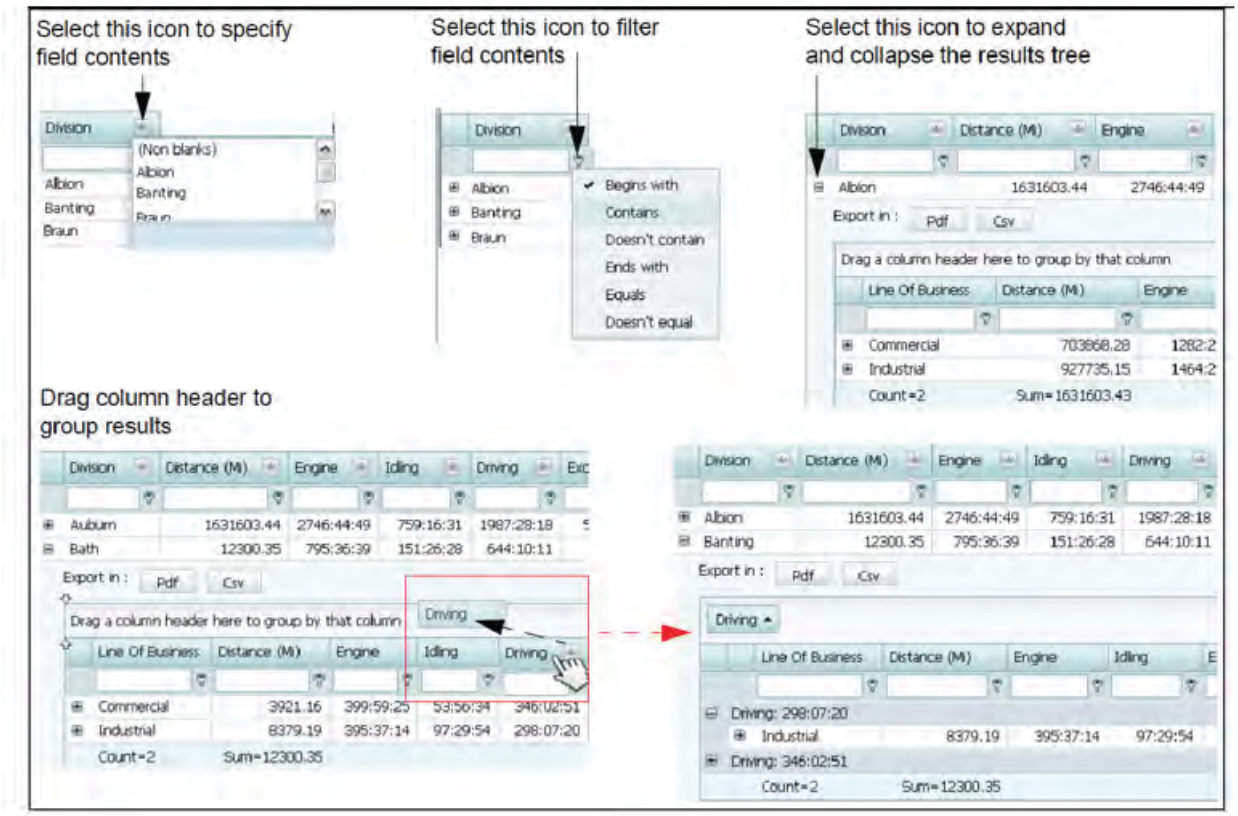
Results are displayed in a tabular format, offering numerous sorting and filtering options.

Diagram 7-036 – FRM Report Tabular Results Display



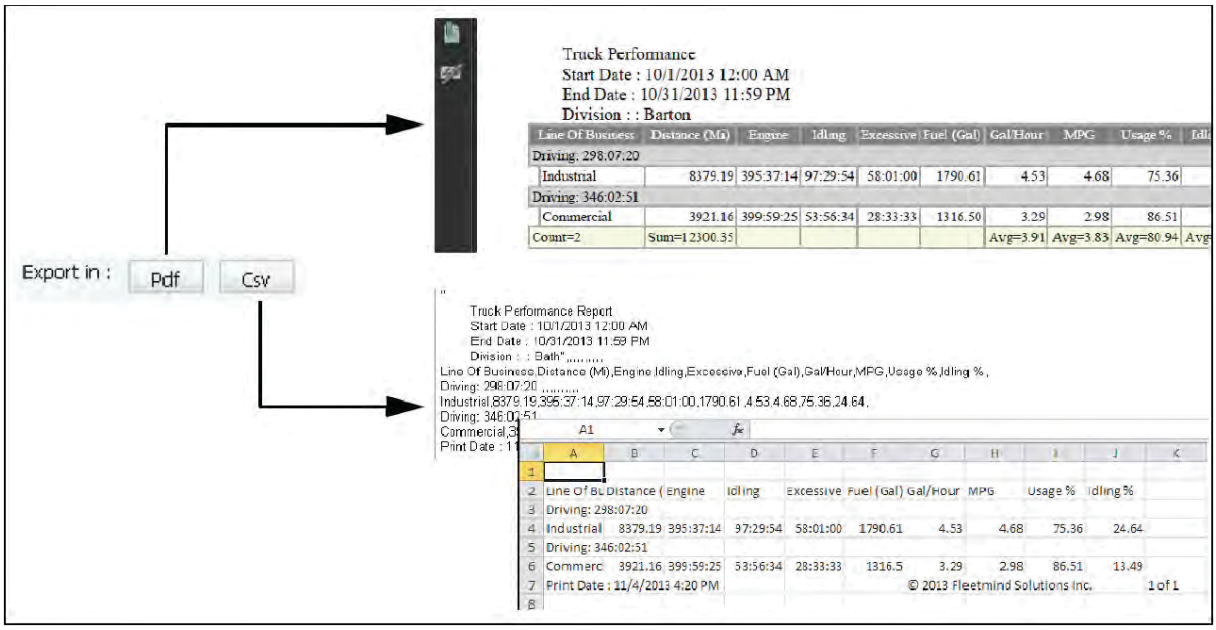
You can refine the returned results by using the filter icons in the column headers of the report:

Diagram 7-037 – FRM Report Filtering



Users can export report data to CSV, Excel, or PDF Files:

Diagram 7-038 – FRM Report Export



The FRM Dashboard provided is an Operations Performance Dashboard that provides a current view of metrics appropriate for each Line of Business (LOB); Residential, Commercial, Industrial.

The Dashboard provides a reference point to a rolling 3 months of metrics for each route with configurable corporate threshold to highlight in yellow or red instead of green. The following sequence of report diagrams shows;

- Drill-down per LOB from: Corporate to Division, Division to Route
- Route to 1 Day Summary Report for selected Date of reference

Diagram 7-039 – FRM Reports Dashboard Summary

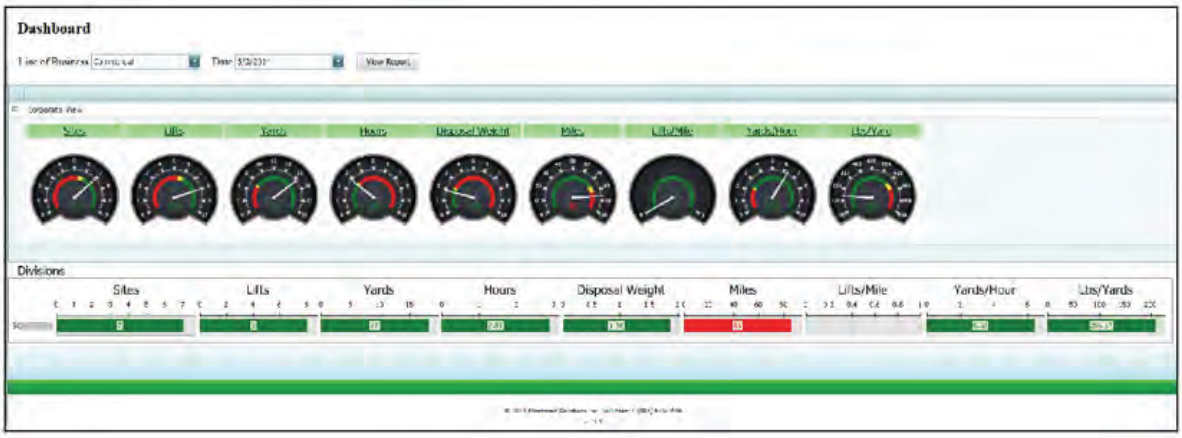


Diagram 7-040 – FRM Reports Dashboard Detail

Diagram 7-041 – FRM Reports Dashboard for Line of Business

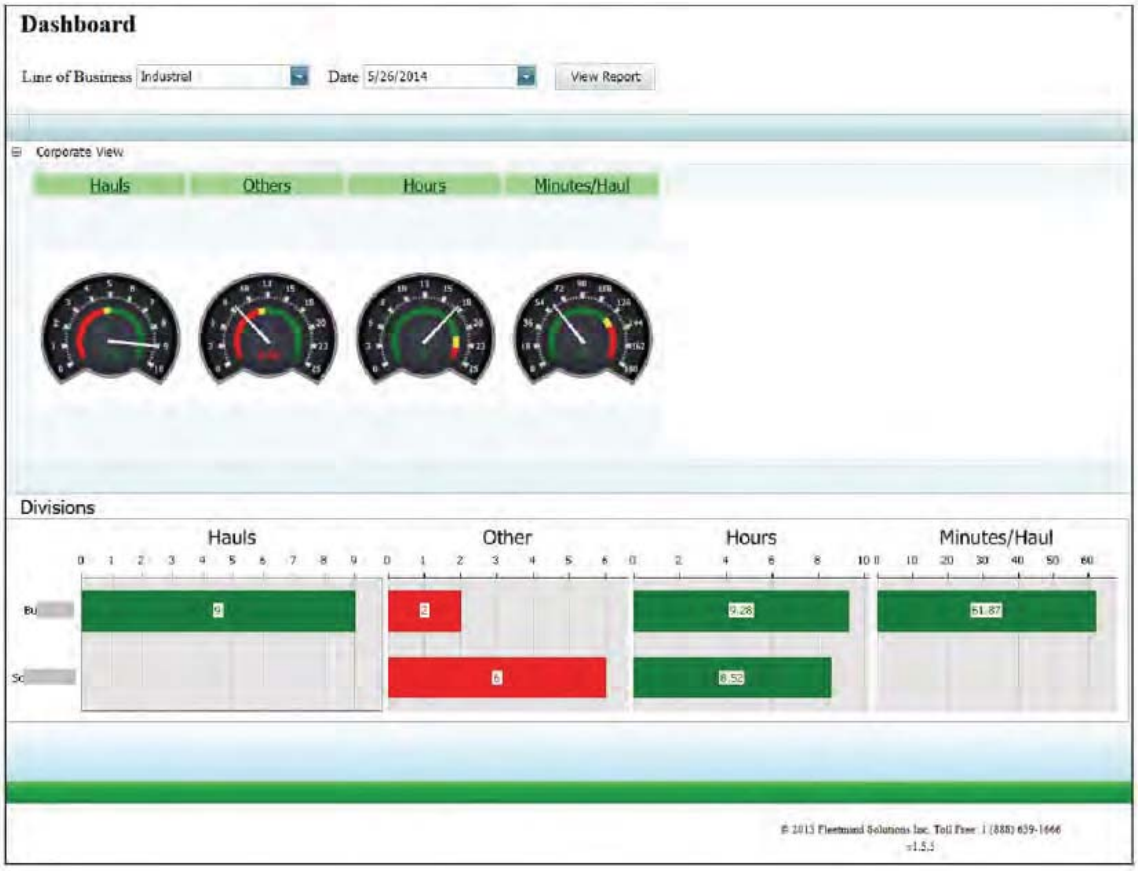
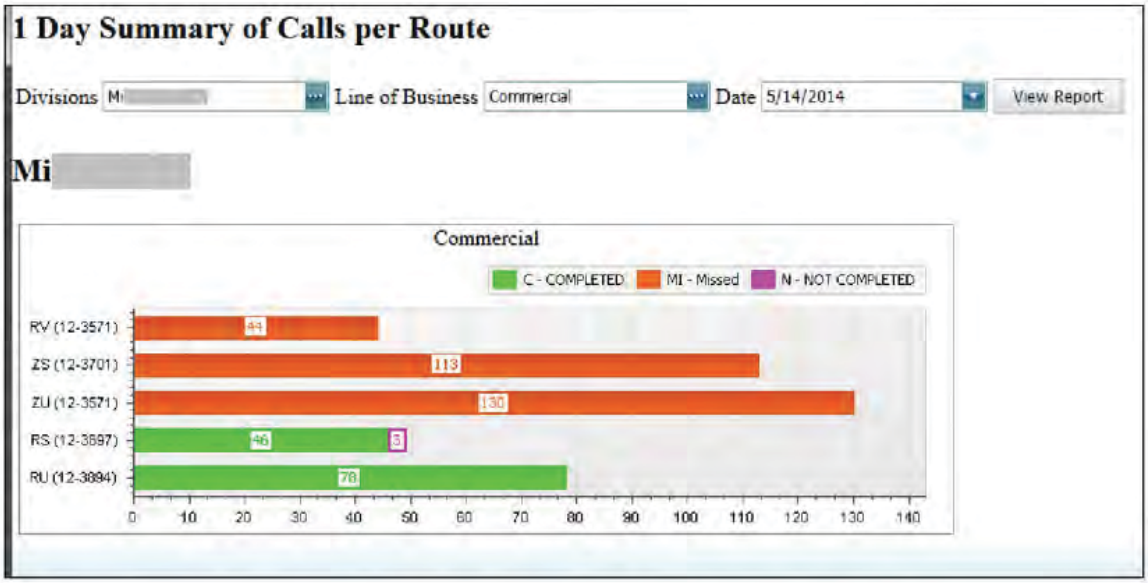


Diagram 7-042 – FRM Reports 1 Day Summary



The Service Verification report returns the following results:

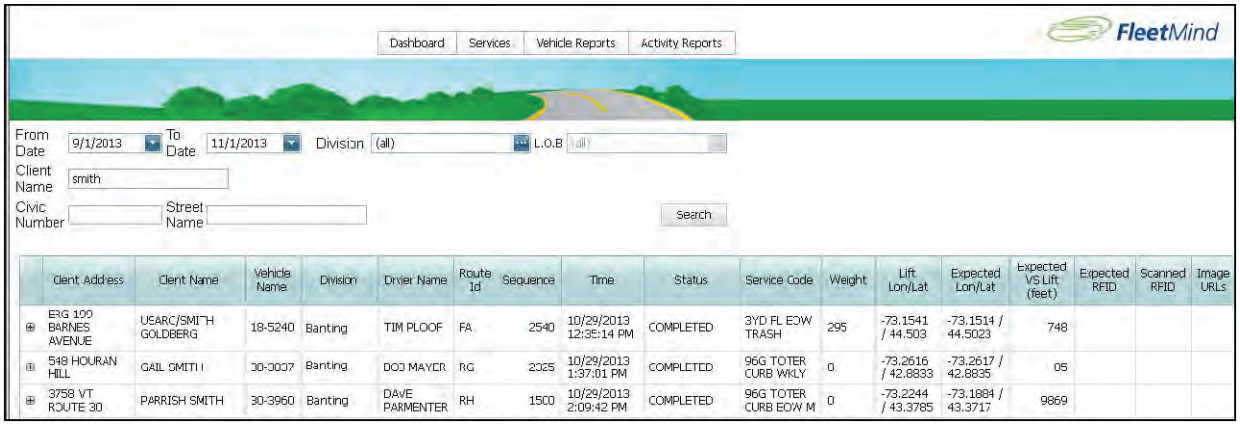
- Client Address Service code
- Client Name Weight
- Vehicle name Lift coordinates (lat./lon.)
- Division Expected coordinates (lat./lon.)
- Driver name Expected vs. Lift distance Route ID Expected RFID
- Sequence Scanned RFID Time Image URLs
- Status

Use the Service Verification report to:

- Log and view customer complaints.
- Resolve service and billing disputes.
- Analyze route sequencing and density.
- Identify long service time.

The screen shot below is a sample of the Service Verification Report. The data that populates this report comes across in real-time:

Diagram 7-043 – FRM Customer Service Verification Report



The Pictures-Notes report allows you to read driver service notes and view any associated pictures taken on route. The Pictures-Notes report returns the following results:

- Client Address
- Service Code
- Client name
- Weight
- Vehicle name
- Lift coordinates (lat./lon.)

Diagram 7-044 – FRM Pictures and Notes Report

Pictures and notes report

From Date 9/2/2013 To Date 12/5/2013 Division (all) Search

Vehicle	Division	Customer / Address	Date	Note	Image
41216	Martin Environmental	35 BRIGHTON CRT	10/10/2013 9:44 AM	BLOCKED	http://WPGACM01/images /71201_131010_TH28G_445_1_101007373492_CON_PIC.JPG
41217	Martin Environmental	398 JAMISON AVE	10/2/2013 5:01 PM		http://WPGACM01/images /41217_131002_WE22R_180_1_100217014660_CON_PIC.JPG
41217	Martin Environmental	241 WASHINGTON AVE	10/2/2013 4:59 PM		http://WPGACM01/images /41217_131002_WE22R_765_1_100216592679_CON_PIC.JPG
41217	Martin Environmental	241 WASHINGTON AVE	10/2/2013 4:59 PM		http://WPGACM01/images /41217_131002_WE22R_765_1_100216592719_CON_PIC.JPG

The Delivered Services report allows you to view all calls with a confirmation status of "complete" for a given date range. The Delivered Services report returns the following results:

- Client address
- Expected RFID
- Status Route ID
- FRM Reports User Guide Client
- Name Scanned
- RFID Service code
- Container size
- Vehicle ID Image URL
- Weight
- Sequence
- Division Note
- Lift latitude/longitude
- Service date and time
- Driver name

Diagram 7-045 – FRM Delivered Services Report

Delivered Services

From Date 9/2/2013 To Date 11/5/2013

Client Name

Civic Number Street Name ☐ With image ☐ With note Search

Export to Pdf Export to Csv

	Client Address	Client Name	Vehicle	Division	Driver Name	Route Id	Container size	Sequence	Service Date & Time	Status	Service Code	Weight	Lift Lat/Lon	Expected RFID	Scanned RFID	Image URLs	Note
⊟	332 GALE DEAN DR	332 GALE DEAN DR	71231	Martin Environmental	MARC BELL	TH29R	240	1305	10/31/2013 8:14 00 AM	COMPLETED	CURB RECYCLING	0	49 8952 / -96.9694	E200102583060040214037BE	E200102683060040214037BE		

#	Date	Customer Name	Complaint text
New No data to display			

⊞	332 GALE DEAN DR	332 GALE DEAN DR	71231	Martin Environmental	MARC BELL	TH29R	240	1303	10/31/2013 8:16 11 AM	COMPLETED	CURB RECYCLING	0	49 8952 / -96.9698	E200102583060040214037BE	E200102683060040214037BE		

The Tracking Report for Supervisors allows you to track the most recent activities of your vehicles and drivers. The Tracking Report for Supervisors report returns the following results:

- Vehicle Last recorded weight
- Last valid position
- Last logon Route
- Last disposal
- Last confirmation
- Last logoff Driver

Diagram 7-046 – FRM Tracking Report

Tracking Report for Supervisors

Eaton Environmental

Export to CSV Export to PDF Filter

Vehicle	Route #	Driver	Last Logon	Last Logoff	Last Valid Position	Last Confirmation	Last Recorded Weight	Last Disposal
41231	WE10G	DAN ROLPH	11/06/2013 06:22:14 AM		11/06/2013 01:01:50 PM			
41232	WE03R	JON WARE	11/06/2013 12:39:13 PM		11/06/2013 01:02:46 PM			
41232	WE16R	JON WARE	11/06/2013 12:39:13 PM		11/06/2013 01:02:46 PM			
41233	WE07G	STEVERANKIN	11/06/2013 06:18:05 AM		11/06/2013 01:02:04 PM			
41234	WE08R	MIKE PYLE	11/06/2013 08:34:42 AM		11/06/2013 01:01:00 PM			
41235	WE19R				11/06/2013 10:11:29 AM			
41235	WE29R				11/06/2013 10:11:29 AM			
41236	WE04BR							09/03/2013 08:55:27 AM
41236	WE15R							09/03/2013 08:55:27 AM
41236	WE16G							09/03/2013 08:55:27 AM
41237	WE09G	CHUCK ROLPH	11/06/2013 09:28:43 AM		11/06/2013 01:02:32 PM	11/06/2013 11:55:01 AM		
41238	WE21R	MARK JENKINS	11/06/2013 07:11:53 AM		11/06/2013 01:01:42 PM	11/06/2013 01:01:07 PM		
41238	WE28R	VLAD RIVA	11/06/2013 07:11:53 AM		11/06/2013 01:01:42 PM	11/06/2013 01:01:07 PM		
41239	WE09R		11/06/2013 07:01:03 AM	11/06/2013 12:11:52 PM	11/06/2013 01:03:22 PM			

Showing 1 to 14 of 73 entries

The Fuel Tax report returns the following results:

- Line of business
- Distance (km) Division
- Fuel (L) Vehicle ID
- Fuel consumption (L/100km)
- Jurisdiction

Diagram 7-047 – FRM Fuel Tax Report

Fuel Tax

Start Date 10/1/2013 End Date 10/31/2013 Martin

Divisions (all) Line of Business (all) View Report

Export in : Pdf Csv

Drag a column header here to group by that column

Line Of Business	Division	Vehicle	Jurisdiction	Distance (km)	Fuel (L)	L/100km
Residential	Martin Environmental	41201	MB	2276.20	1684.30	74.00
Residential	Martin Environmental	41202	MB	2614.90	2173.40	83.12
Residential	Martin Environmental	41203	MB	3501.00	2261.30	64.59
Residential	Martin Environmental	41204	MB	2897.90	2333.80	80.53
Residential	Martin Environmental	41205	MB	3004.80	2342.50	77.96
Residential	Martin Environmental	41206	MB	1054.00	933.10	88.53
Residential	Martin Environmental	41207	MB	2516.40	1604.80	63.77

The Driver Alarms report allows you to track events, and provides both a summary of all event instances during the report period, as well as details of each instance. It is a first-line report that provides a high-level view of how your vehicles are being handled. The Driver Alarms report provides the following information:

- Driver name
- Alarm count
- Alarm duration
- Alarm distance
- Total distance driven

Diagram 7-048 – FRM Driver Alarms Report

Driver Alarms

Start Date 10/1/2013 End Date 10/31/2013

Divisions (all) Line of Business (all) Alarm Type Hard Braking over 55 MPH, View Report

Export in : Pdf Csv

Driver	# Alarms	Duration	Dist. Alarms (Mi)	Total Dist. Driven (Mi)
-HELPER, JOSE	17	00:02:19	0.00	1632.34
ALEXANDER JR, DONALD	6	00:00:38	0.00	2427.32
DALE, LENNY	37	00:10:50	0.00	824.99

Export in : Pdf Csv

Drag a column header here to group by that column

Division	Vehicle	Name	Date	Hour	Duration	Distance
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	6:29:19 AM	00:00:06	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	6:30:20 AM	00:00:06	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	7:01:09 AM	00:00:05	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	7:04:15 AM	00:00:05	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	7:10:55 AM	00:00:06	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	7:11:26 AM	00:00:06	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	7:56:34 AM	00:00:06	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	8:01:20 AM	00:00:05	0.00
Albion	HS-4290	Speeding Over 65MPH	10/3/2013	8:01:46 AM	00:00:15	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	8:03:28 AM	00:00:05	0.00
Albion	HS-4290	Hard Braking over 55 MPH	10/3/2013	10:45:08 AM	00:00:07	0.00
Albion	HS-4290	Speeding Over 65MPH	10/3/2013	10:54:38 AM	00:01:03	0.00

The Truck Performance report offers a high-level view of overall vehicle performance. The Truck Performance report provides the following results:

- Truck name
- Engine-on time
- Excessive idling time MPG
- Driver name
- Idling time
- Fuel consumed
- Usage %
- Distance Driving time
- Fuel Consumption/hour
- Idling %

Diagram 7-049 – FRM Truck Performance Report

Truck Performance

Start Date 10/1/2013 End Date 10/31/2013

Divisions (all) Line of Business (all) View Report

Export in : Pdf Csv

Division	Distance (Mi)	Engine	Idling	Driving	Excessive	Fuel (Gal)	Gal/Hour	MPG	Usage %	Idling %
Albion	1631603.44	2746:44:49	759:16:31	1987:28:18	511:34:20	-7136.92	-2.60	-228.36	72.36	27.64
Banting	12300.35	795:36:39	151:26:28	644:10:11	86:34:33	3107.11	3.90	3.96	80.97	19.03
Braun	39378.34	2605:08:21	545:08:05	2060:00:16	275:07:26	8280.10	3.18	4.76	79.07	20.93

The Driver Performance report offers a high-level view of how drivers are handling your vehicles. The Driver Performance report provides the following results:

- Division
- Excessive idling time
- Driver name
- Fuel (gal.)
- Distance (Miles)
- Gal./hour
- Engine hrs. MPG
- Idling time
- Usage %
- Driving time
- Idling %

Diagram 7-050 – FRM Driver Performance Report

Driver Performance

Start Date 12/2/2013 End Date 12/2/2013 Divisions (all) View Report

Export in : Pdf Csv

Division	Distance (Mi)	Engine	Idling	Driving	Excessive	Fuel (Gal)	Gal/Hour	MPG	Usage %	Idling %
Albion	1553.99	114:23:36	30:30:09	83:53:27	18:10:33	485.34	4.24	3.20	73.34	26.66

Export in : Pdf Csv

Drag a column header here to group by that column

Driver Name	Distance (Mi)	Engine	Idling	Driving	Excessive	Fuel (Gal)	Gal/Hour	MPG	Usage %	Idling %
ANONYMOUS	222.26	22:18:23	05:07:02	17:11:21	02:44:29	103.08	4.62	2.16	77.06	22.94
DAVID LABONTE	164.85	10:50:39	01:22:36	09:28:03	00:10:36	57.72	5.32	2.86	87.31	12.69
ED LEBEL	141.24	08:49:46	02:39:57	06:09:49	01:41:43	34.53	3.91	4.09	69.81	30.19
GERMAN RICO	167.46	11:23:32	00:49:46	10:33:46	00:26:29	58.99	5.18	2.84	92.72	7.28
IVAN MACHICOTE	148.69	08:27:32	02:44:20	05:43:12	01:46:38	30.54	3.61	4.87	67.62	32.38
J.P. CHENE	106.81	08:20:57	02:45:02	05:35:55	01:52:54	20.82	2.49	5.13	67.06	32.94
KIMBERLY WEAVER	141.30	08:21:08	02:10:15	06:10:53	01:12:44	31.86	3.81	4.44	74.01	25.99
MARK FOUNTAINE	120.30	07:50:50	02:07:42	05:43:08	01:19:45	27.50	3.51	4.37	72.88	27.12
MICHAEL MAROTTA	108.12	08:44:03	01:51:07	06:52:56	00:48:05	37.54	4.30	2.88	78.80	21.20
RAY COBURN	155.16	10:36:25	06:54:13	03:42:12	05:26:45	60.13	5.67	2.58	34.91	65.09
ROGER STOHLBERG	77.80	08:40:21	01:58:09	06:42:12	00:40:25	22.64	2.61	3.44	77.29	22.71
Count=11	Sum=1553.99									

Banting	371.83	30:33:32	05:03:06	25:30:26	02:25:55	116.39	3.81	3.19	83.47	16.53
Braun	20976.75	80:11:44	16:16:28	63:55:16	09:09:50	255.59	3.19	81.96	79.71	20.29

The Truck Status report provides a summary of the current status of the vehicles in your fleet. The Truck Status report provides the following results:

- Truck name Route
- IP address and port number GPS
- Status (active/inactive)
- Date and time
- Terminal
- GPS total
- Driver name
- GPS failed
- ECM
- Firmware revision

Diagram 7-051 – FRM Truck Status Report

Truck Status

Division Banting View Report

Division

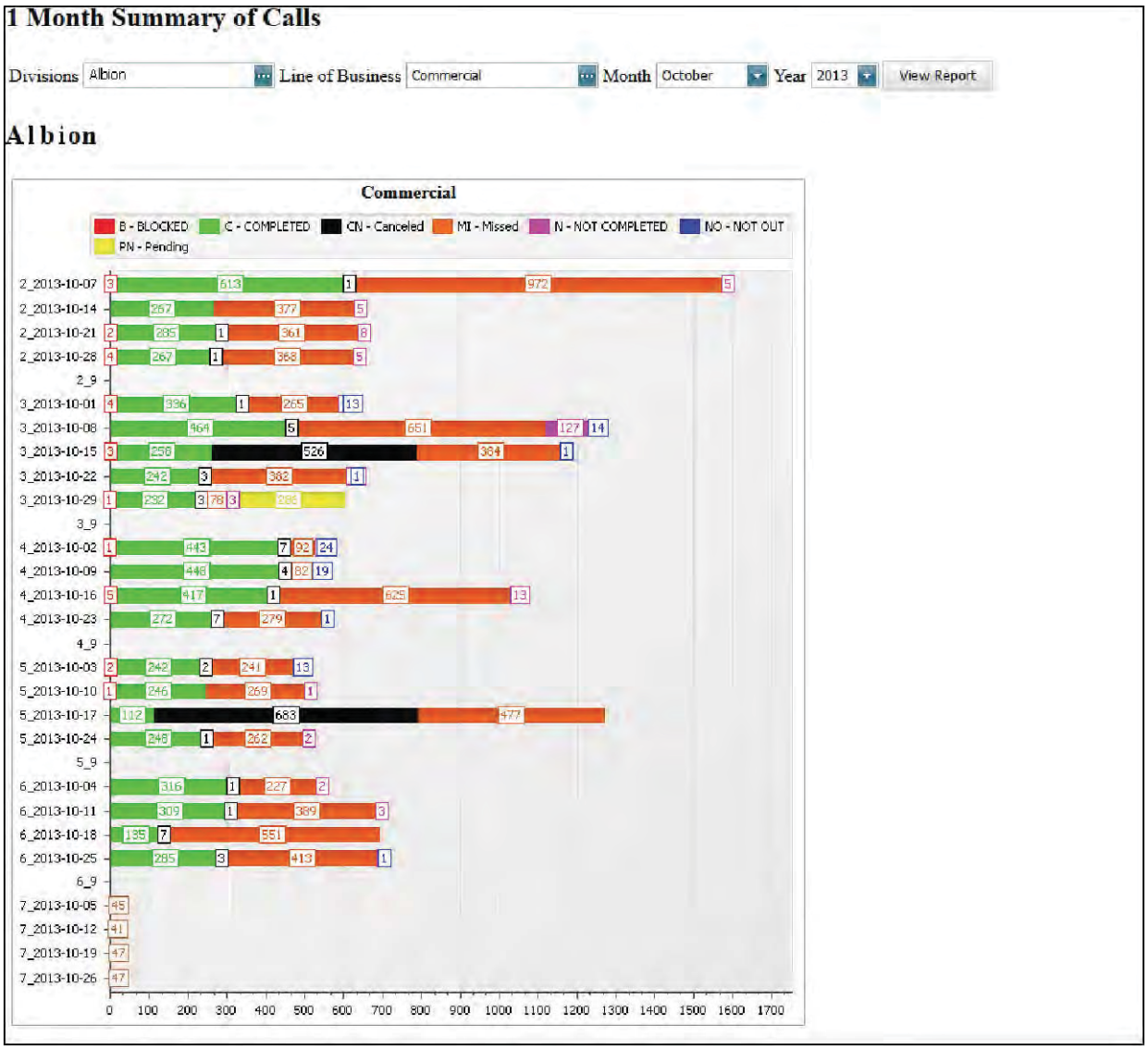
Banting

TRUCK	ACTIVE	DRIVER	ROUTE	DATE & TIME	LAST STATUS					
					FIRMWARE	IP : PORT	TERMINAL	ECM	GPS	GPSTOTAL
18-4291		DAVID CINELLI	IO	11/7/2013 10:55:49 AM	521F	75.206.225.25:34332				141
18-4297		DANIEL MARCUM	ID	11/7/2013 10:55:59 AM	521F	75.243.131.214:48402				157
18-4338		ROBERT REYNOLDS	IP	11/7/2013 10:55:38 AM	521F	75.226.119.195:33847				178
18-4346				11/7/2013 8:55:02 AM	521F	75.251.99.234:45429				20
18-4375		JOHN LEGAULT	IS	11/7/2013 10:57:04 AM	521F	75.226.103.237:55745				34
18-4436				11/5/2013 8:06:58 AM	521F	75.250.183.67:55382				17
18-4479		KEITH SAUSVILLE	IC	11/7/2013 10:55:50 AM	521F	75.213.156.191:51276				178
18-4556				11/7/2013 10:56:33 AM	521F	75.213.101.163:40217				166
18-5038		PAUL MARSHALL	FD	11/7/2013 10:55:24 AM	521F	75.213.0.46:48237				219

The One-Month Summary of Calls report displays a graphical summary of number of calls for a given month, grouped by day of the week (i.e., Monday, Tuesday) along with their respective completion status. Assuming that the same routes are being run every week this allows you to identify quickly any significant changes for a specific week. From this report, you can “drill down” to a greater level of detail in the One-Day Summary of Calls per Route report. The One-Month Summary of Calls report provides the following data:

- Blocked Calls
- Swap container
- Completed calls
- Relocate container
- Cancelled calls
- Not completed calls
- Missed calls
- Container/bin not out
- Delivery Container
- Pending calls
- Empty and return
- On hold
- Staged load
- Blocked retry
- Remove container
- Call in - work completed
- Customer no-show

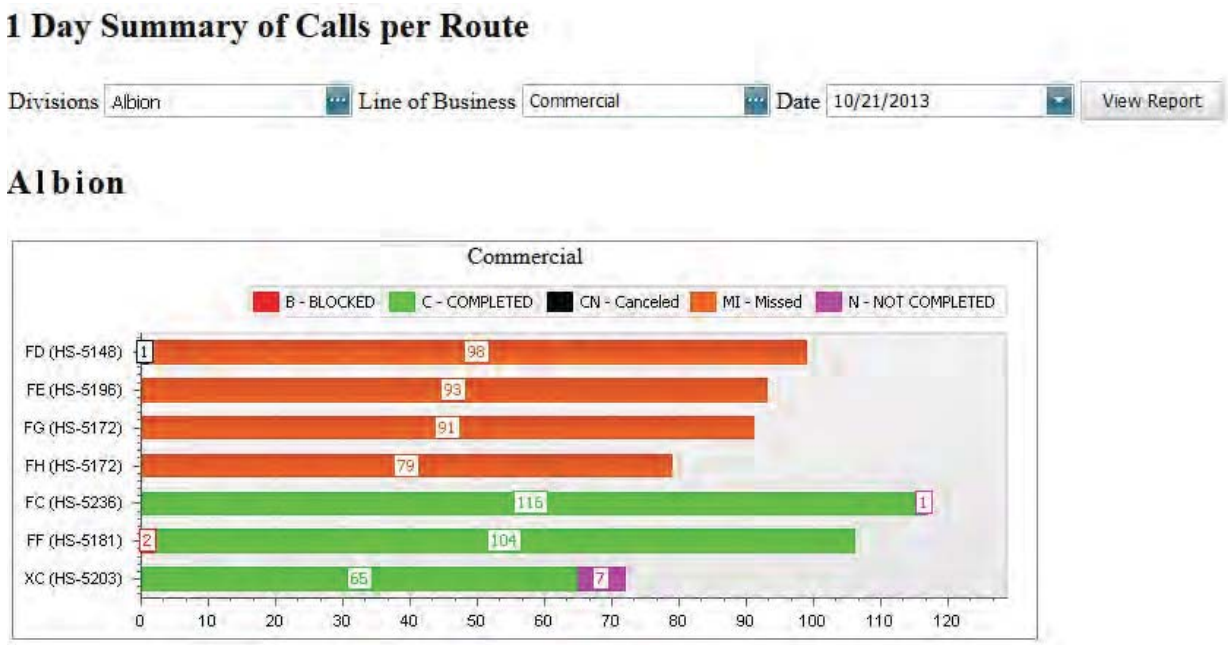
Diagram 7-052 – FRM 1 Month Summary of Calls Report



Similar to the One-Month Summary of Calls, the One-Day Summary of Calls per Route report provides a lower level view of call completion status. It displays a graphical summary of calls for a given day along with their respective completion status. From this report, you can “drill down” to a greater level of detail in the Driver Log. The One-Day Summary of Calls per Route report provides the following data:

- Vehicle ID
- Total number of calls
- Completion status

Diagram 7-053 – FRM 1 Day Summary of Calls per Route Report



The Driver Log report provides a detailed view of activities recorded via call confirmation messages and driver activity messages for a route. The report is a tabbed interface, comprising two views:

- Driver Log
- Call List

The Driver Log view provides the following data:

- Sequence
- Weight
- Start time
- Expected coordinates (LAT/LON)
- Status
- Lift coordinates (Lat/Lon)
- Duration
- Expected vs. lift (ft.)
- Xref Signed by
- Message type
- Message data
- Service Code
- RFID

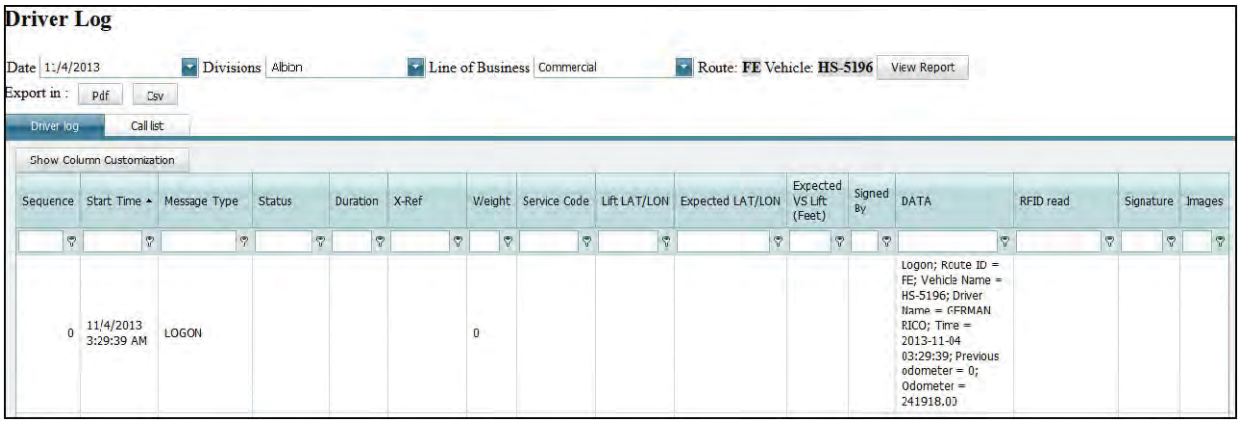
The Call List view provides the following data:

- Sequence
- Service code
- Status
- Lift ID
- Schedule Site note
- Target time
- Number of lifts
- Customer name
- RFID read

- Customer address

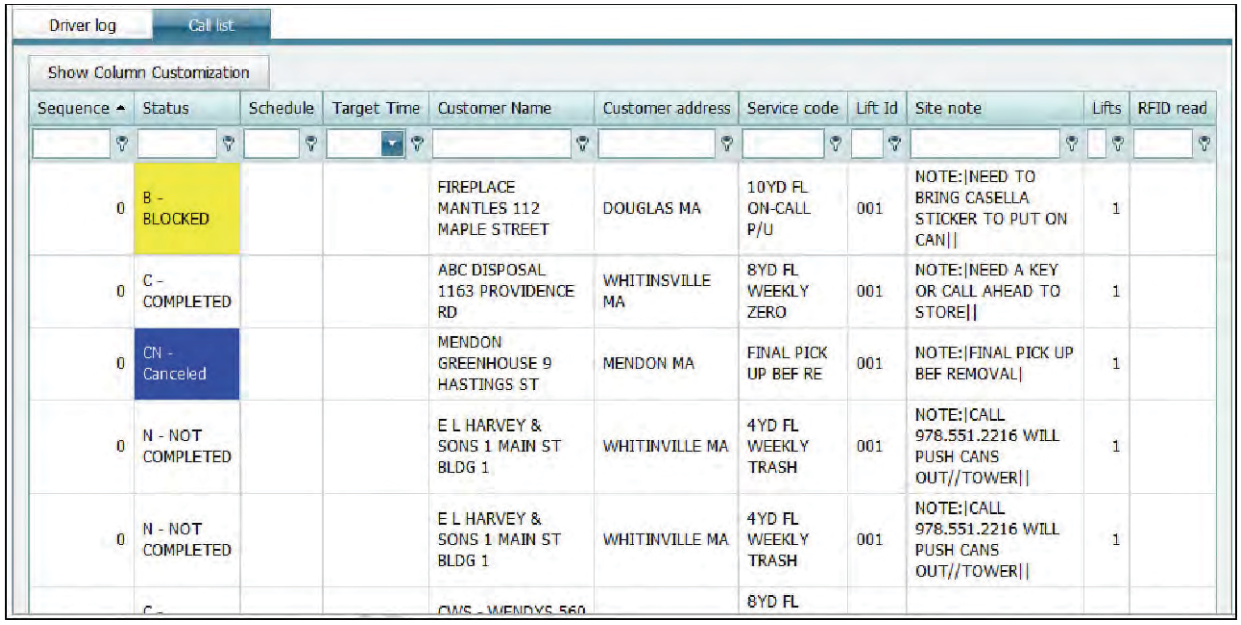
By default, the initial view shows the Driver Log tab selected.

Diagram 7-054 – FRM Driver Log Report



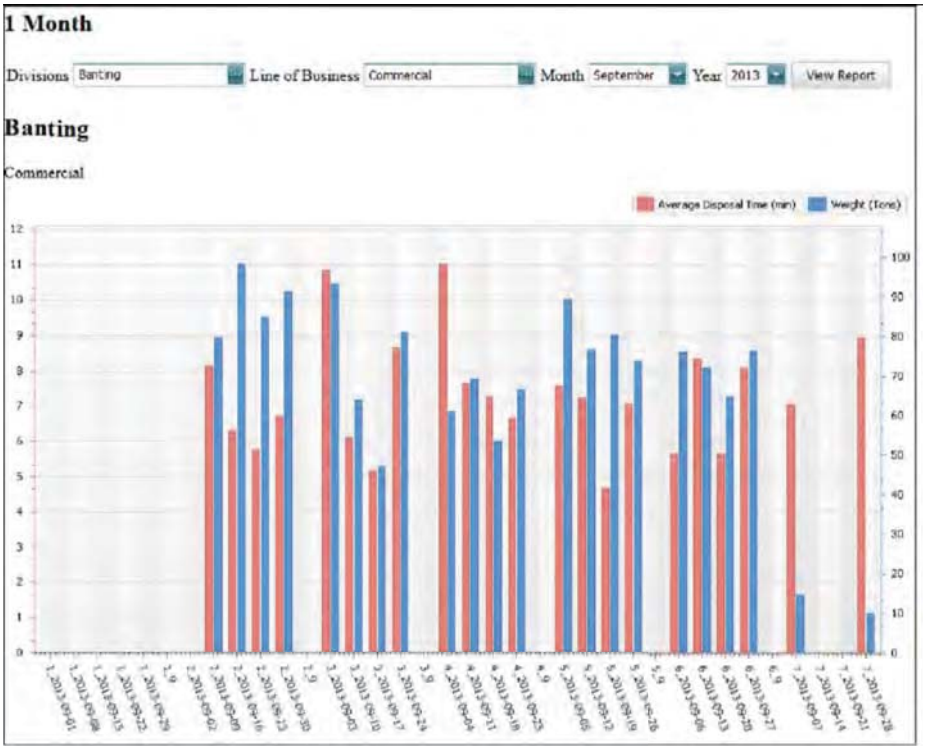
To view the call list for the route, select the Call List tab.

Diagram 7-055 – FRM Driver Log Call List Report



The Disposal Performance - 1 Month report displays a graphical summary of average disposal times and weights for a given month.

Diagram 7-056- FRM 1 Month Disposal Performance Report



The Disposal Performance 1 Day Details report allows you to view individual disposal details for each day during a selected month. The Disposal Performance 1 Day Details report provides the following data:

- Date
- Line of business Division
- Weight
- Vehicle Disposal facility
- Duration of disposal (minutes)
- Material

Diagram 7-057 – FRM 1 Day Disposal Performance Report

1 Day

Divisions Banting | Line of Business Commercial | Month November | Year 2013 | View Report

Export in : Pdf Csv

Drag a column header here to group by that column

Date	Division	Vehicle	Duration of Disposals (Min)	Line of Business	Weight (US Tons)	Facility	Material
2013-11-01	Banting	18-5240	2.40	Commercial	12.61	ALL CYCLE TRANSFER	FRONTLOAD TRASH - NW
2013-11-01	Banting	18-5240	18.25	Commercial	6.98	ALL CYCLE TRANSFER	FRONTLOAD TRASH - NW
2013-11-01	Banting	18-5243	13.45	Commercial	2.74	ALL CYCLE TRANSFER F	MIXED FIBER & COMING
2013-11-01	Banting	18-5239	8.53	Commercial	5.35	CHITTENDEN MRF OUT D	MIXED FIBER & COMING
2013-11-01	Banting	18-5239	9.12	Commercial	6.36	CHITTENDEN MRF OUT D	MIXED FIBER & COMING
2013-11-01	Banting	18-5244	0.02	Commercial	12.34	ALL CYCLE TRANSFER F	MSW & C&D
2013-11-01	Banting	18-5244	0.03	Commercial	6.12	ALL CYCLE TRANSFER F	MSW & C&D
2013-11-01	Banting	18-5243	10.42	Commercial	2.58	ALL CYCLE - ST MIKES	MSW & C&D

The Driver Score Card provides a daily view of how efficiently your drivers are using the FleetLink Mobile OBC system in the vehicles. The system awards (or deducts) points based on drivers' compliance with Key Performance Indicators (KPIs) that determine whether you are deriving the maximum benefits from your FleetLink Mobile OBC deployment.

Diagram 7-058 – FRM Driver Score Card

Driver Score Card

Date 11/15/2013 Division (all) View Report

KPI Definition

Division

Auburn

Export to : Pdf Csv

Route	Driver Name	Log On Correct Name and Route (pts)	Security Inspection (pts)	Gate Crossing (pts)	Arrival / Departure Times are Appropriate (pts)	Number Of Stops	Number Of Stops not confirmed at customer location with inaccurate service time	Stops Inaccurately Confirmed (pts)	Stops are Correctly Identified (pts)	Stops are Correctly Confirmed (pts)	All Front Load Weights Present From Loadman (pts)	Disposal Site Entered (pts)	Correct Weight Entered (pts)	Ticket Number Entered (pts)	Refueling (pts)	Log Off Correctly (pts)	Score (pts)	Comments	(Insert Comments)
XC	ALDRICH, RAFAEL	5	5	5		53	32	0	0		5	5	0	5	0	5	35		Insert Comments
HH	ALDRICH, RAFAEL	5	5	5		105	60	0	0		5	5	0	5	0	5	35		Insert Comments
FC	ALDRICH, RAFAEL	5	5	5		117	82	0	0		5	5	0	5	0	5	35		Insert Comments
FG	ALDRICH, RAFAEL	5	5	5		26	52	0	0		5	5	0	5	0	5	35		Insert Comments
FE	ALDRICH, RAFAEL	5	5	5		61	6	15	0		5	5	0	5	0	5	50		Insert Comments

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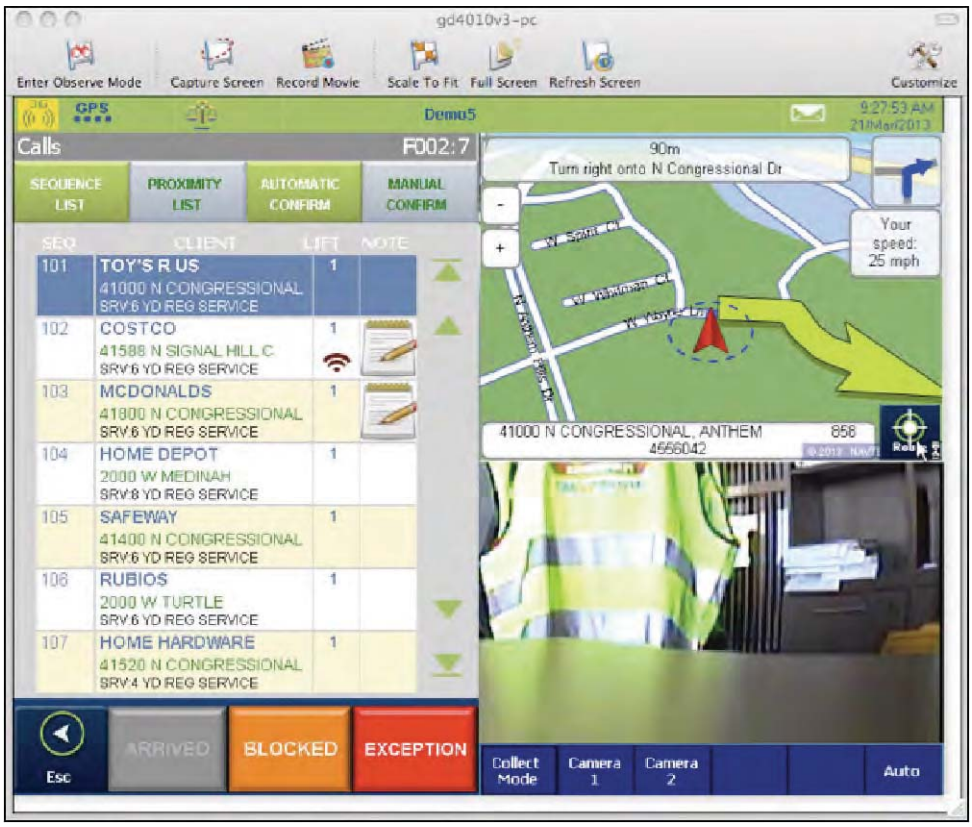
5. Trek SSV10 DVR and Optional FleetLink Lite Getac F110 Tablet OBC Features

a) Accurate Representation of Turn-by-Turn Mapping

Driving directions are provided for the selected stop on a route. The selected stop is the next stop to be serviced on a route. The system provides visual and audible directions and they are updated in real-time in case the driver uses a different route. In the event that the route needs to be run out of sequence or an area needs to be skipped temporarily (ex: traffic, accident, etc.) the driver can manually select the call he wants to run it from or use the proximity mode to find the closest call to the truck and then run from that sequence on the route. This option can also be used to resume the route when coming back from the transfer station.

Diagram 7-059 – OBC Driving Directions



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Turn-by-turn instructions to the next customer if requested by the driver:

The address included in each stop is automatically fed to the turn-by-turn directions module. The driver can activate the visual and audible directions by pressing the "go" button. The driver can cancel driver directions as well. Driver directions are offered not only to direct the driver to the next stop but can also be used for navigation to the disposal sites / transfer station.

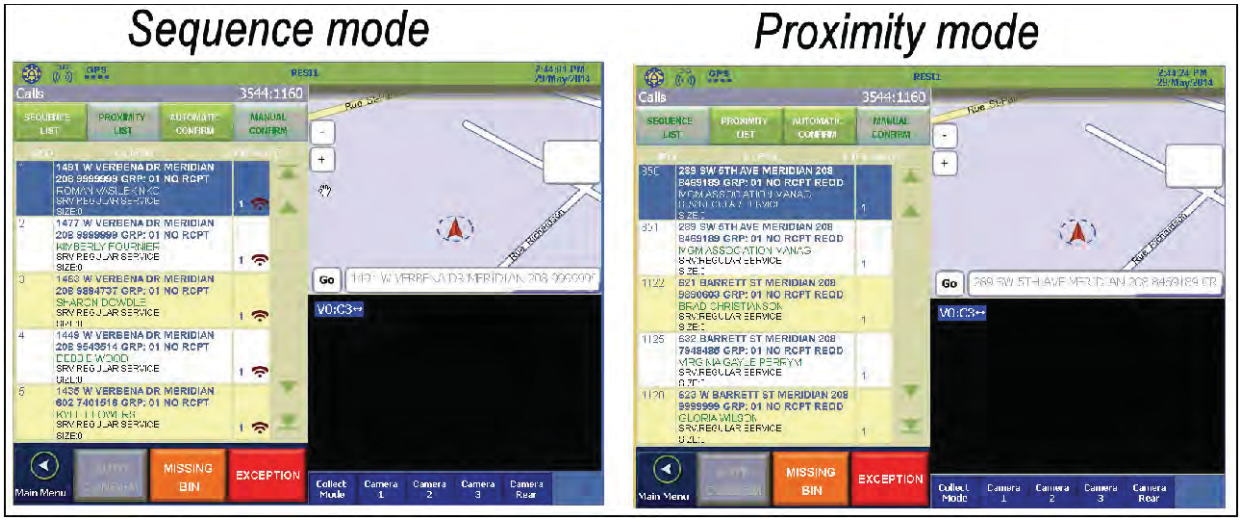
Diagram 7-060 – Initiating Turn-By-Turn Directions on OBC

Driver requested "route to follow":

The electronic route sheet downloaded to the truck is expected to contain a sequence number for each stop. The entire route is downloaded to the truck and is available to the driver even when the vehicle goes out of cellular coverage. The driver can display the stops in sequence or by proximity. In "proximity" mode, stops are presented to the driver by order of proximity to the truck's current position. The list is refreshed every 5 seconds or when a stop is confirmed.

The driver can alternate between sequence and proximity mode in order to reposition himself in the sequenced Call List when starting or resuming the route at a different point (e.g. back from disposal, traffic congestion, road construction etc.).

Diagram 7-061 – OBC Sequence Vs. Proximity Mode



b) Ability to Transfer a Route to Another Driver

The FleetMind RMS can create helper routes in several ways. One way is creating a temporary route. The other way is to remove stops from one route and move them to another route. The creation of a helper route is completed in just a few minutes and can be dispatched out to the truck immediately in real-time.

Diagram 7-062 – Transfer Route to Another Driver/Vehicle in RMS

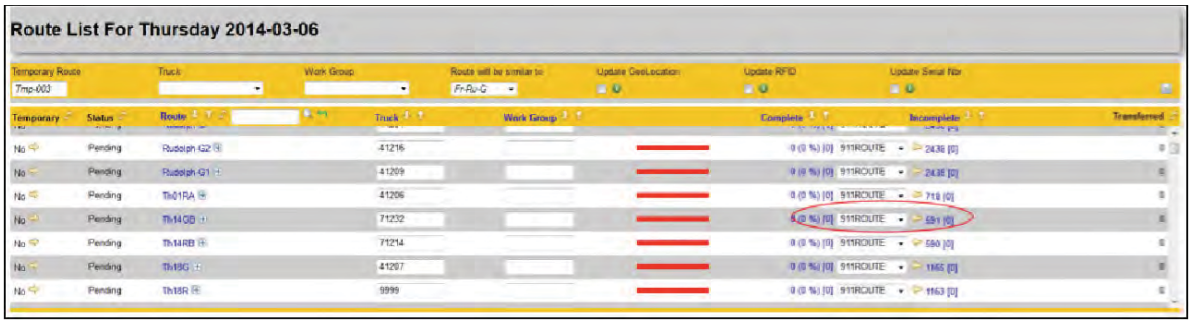


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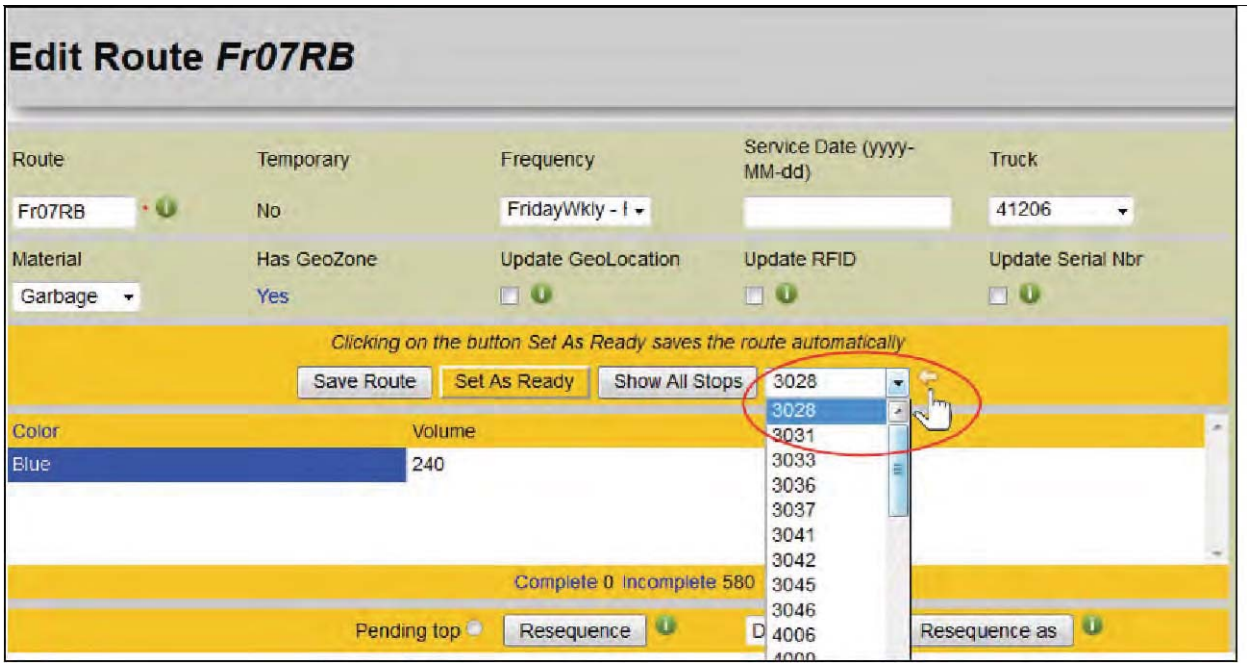
Diagram 7-063 – Editing a Route in RMS



Routes are assigned to a vehicle by dispatch and electronically available without delay to the driver. Under our current approach, routes are not assigned to drivers but rather to vehicles. It is expected that the drivers are assigned specific vehicles for the day linking them to the route indirectly.

As the driver progresses through the route, the interface presents the total number of stops and the number of stops remaining. Stops can be added to a route already dispatched to a truck or additional routes can be dispatched. Normally, additional stops are added "temporarily" to an ongoing permanent route or alternatively a temporary route can be created and dispatched. The driver will be notified that new stops have been added. Messaging can be used to notify the driver that an additional route has been dispatched. The driver would go back to the route selection panel to switch routes from the current to the new one.

The FleetMind message API supports an optional INFORMDRIVER flag for both Call Assignments (ASN) and Call Cancellations (CAN) that will notify the driver with a text message. Support of this feature is dependent on the specifics of the dispatch system being used. FleetMind can also implement this feature at the FM interface to the back office system of choice if not natively supported.

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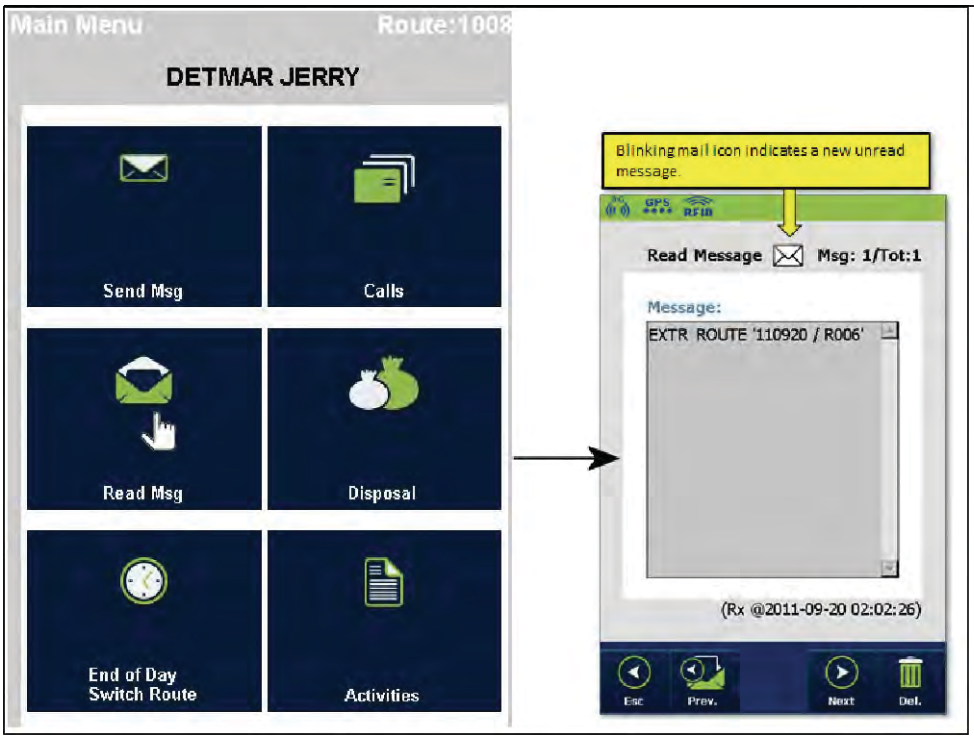
Diagram 7-064 – OBC Notification of Messages



c) 10.4" On-Board Display Screen

The proposed FleetMind Trek SSV10 DVR has a 10.4" touch screen display (See attached brochure under Tab 11 - FleetMind Attachments).

d) Two-Way Communication Between Drivers and Office Personnel

Trucks are individually addressable for text messaging purposes not drivers. The proposed on-board technology also can support custom VoIP integration, at added cost, if needed.

Messages can be sent/received either via the FleetLink Back Office system or via standard POP3 email interface where the intended distribution group for the division (e.g. emails associated with customer support for a division, emails associated with dispatch for a division). When a supervisor receives an email resulting from a driver exception he can immediately respond by replying to the text message with the standard "reply-to" field populated with the truck unique address.

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Diagram 7-065 – FleetLink Email Connector Overview

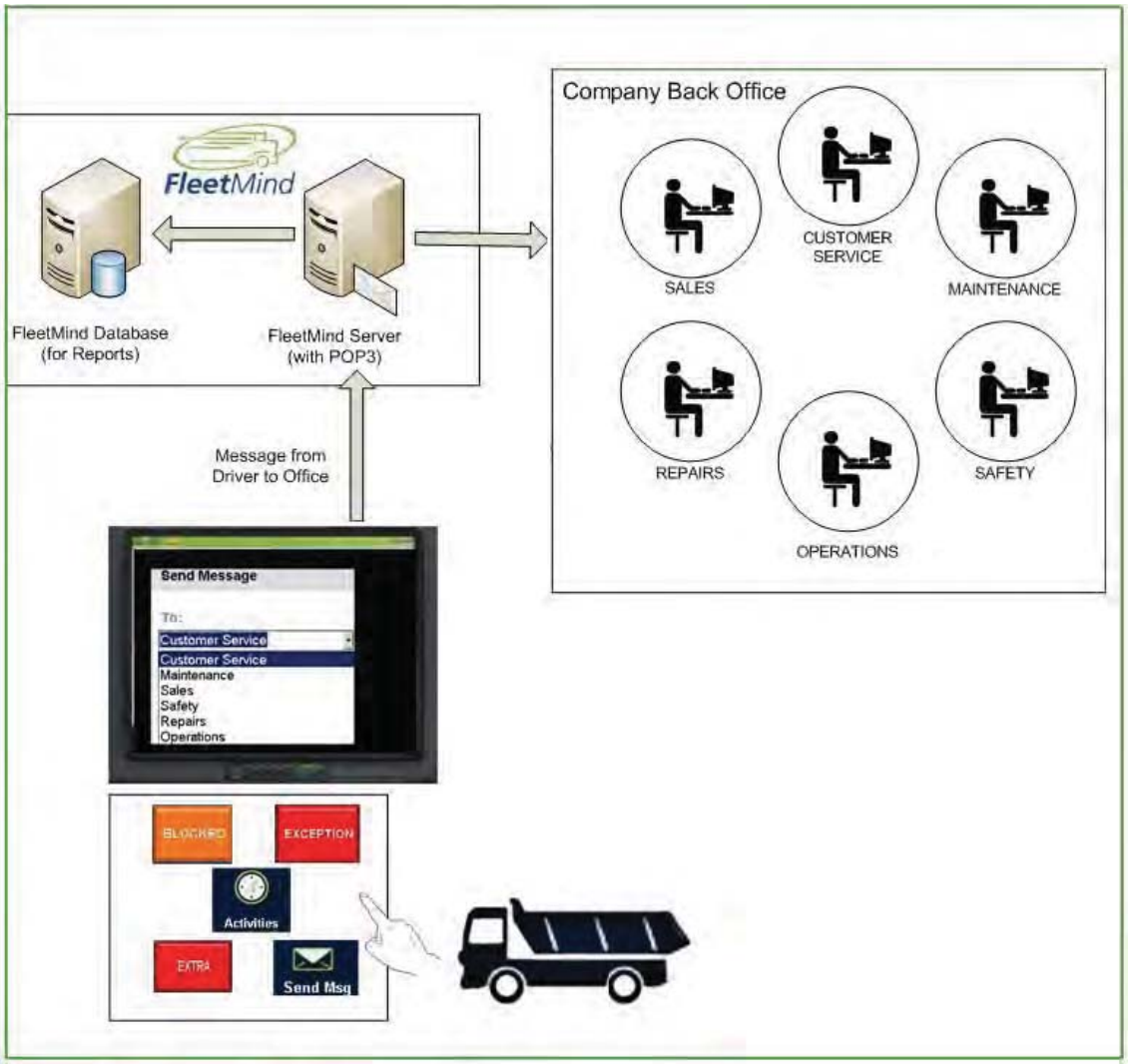

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Diagram 7-066 – FleetLink Office to Driver Messaging

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Diagram 7-067 - Driver Exception Messages

Diagram 7-068 - Driver Extras Messages

Service Event Exceptions

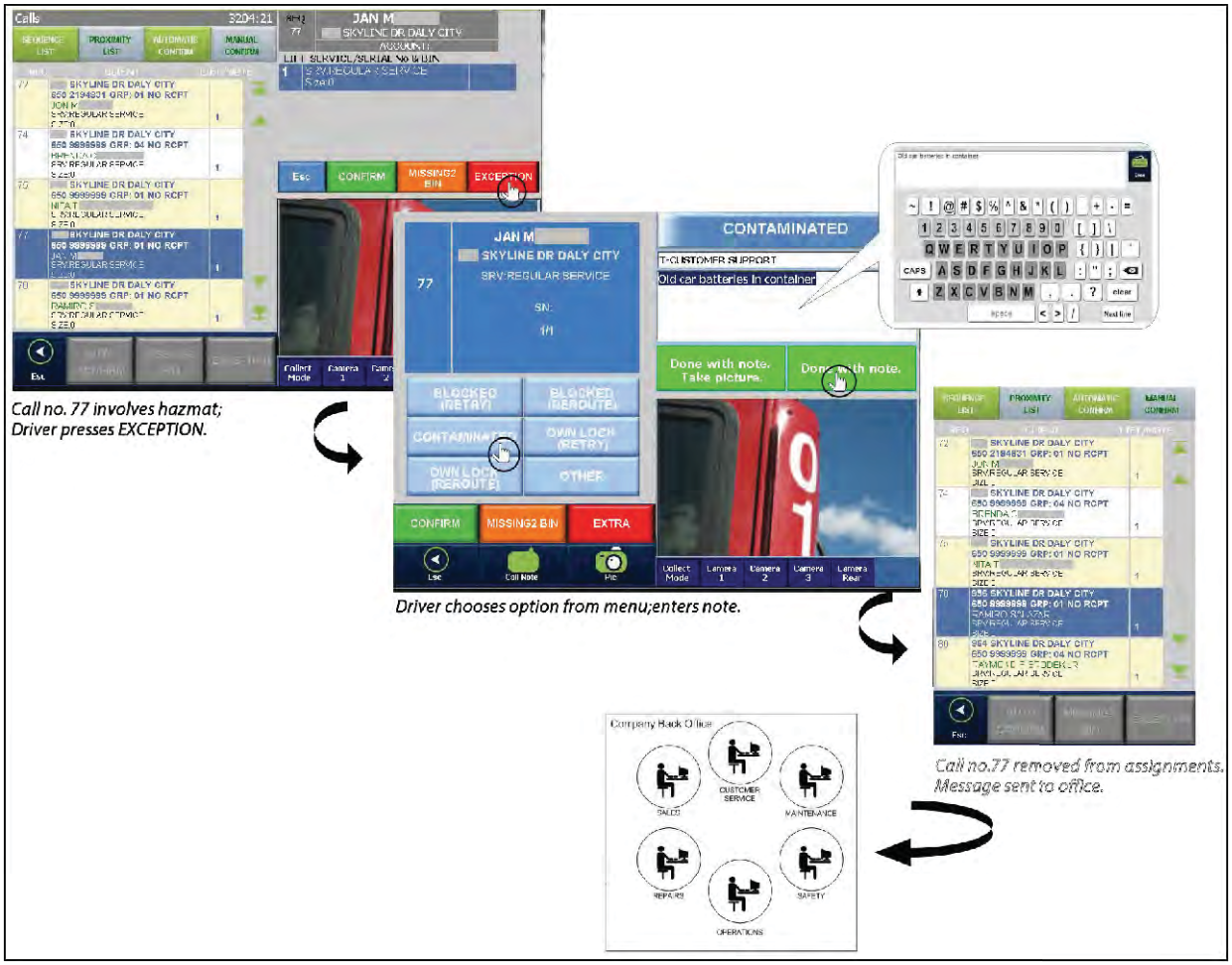
When running the route, the driver will have the ability to record service exceptions such as extras, contamination, blocked container, missing container, refused service. etc. These exceptions are normally defined in the back-office system and transmitted to the FleetMind system as a "Master List". This list can also be manipulated within the FleetMind system. The driver can document each service exception with notes and pictures.

The most common exception for each line of business is presented on the main route list interface (*Not out* for residential and *Blocked* for commercial). The system can be configured to automatically document the common exceptions with pictures taken (or videos) when the **NOT OUT** or **BLOCKED**

buttons are pressed. With the Trek SSV10 DVR platform, any camera mounted on the vehicle and connected to the system can be used (up to eight). As the driver completes a lift, the system will present a screen allowing him to record an exception. This panel is presented for a configurable length of time (in seconds). If the driver decides to record an exception, he will be presented a panel detailing the exception choices available as well as the ability to document the exception with a note and/or picture. Notes can be directed to specific departments such as maintenance, sales, dispatch etc. selectable from a pull- down menu. A list of pre-canned messages can be selected or an ad-hoc message can be recorded. For notes and messages, a distribution group can be defined in the FleetMind system to allow the note or message to be forwarded by email. Replies will be routed by the recipient to the driver using the vehicle name.

Here are some screenshot examples of service exceptions and messages:

Diagram 7-069 – Service Exception Message Types



For the residential line of business, the system can be configured to automatically detect "drive-by-not-out" exceptions. In this mode, as the truck progresses through the route, each stop is marked as "drive-by-not-out" automatically if no confirmation is recorded. This process occurs in real-time and "driven-by-not-out" messages are reported back to the server. If the same or another truck later goes back and makes a lift, the new status will be recorded and sent to the server.

e) Ability to Show Each Collection Point on the Display Screen (both in map and tabular format)

A map based driver direction platform integrated with the driver interface presents the real-time position of the truck as well as the next stop to be serviced. When operating in "Workgroup" mode (available with the FleetLink Route Management System) the driver can also see the real-time position of other members of the workgroup as well as a geozone of each route and their progress with color coded map sections.

Diagram 7-070 - Route List with Map

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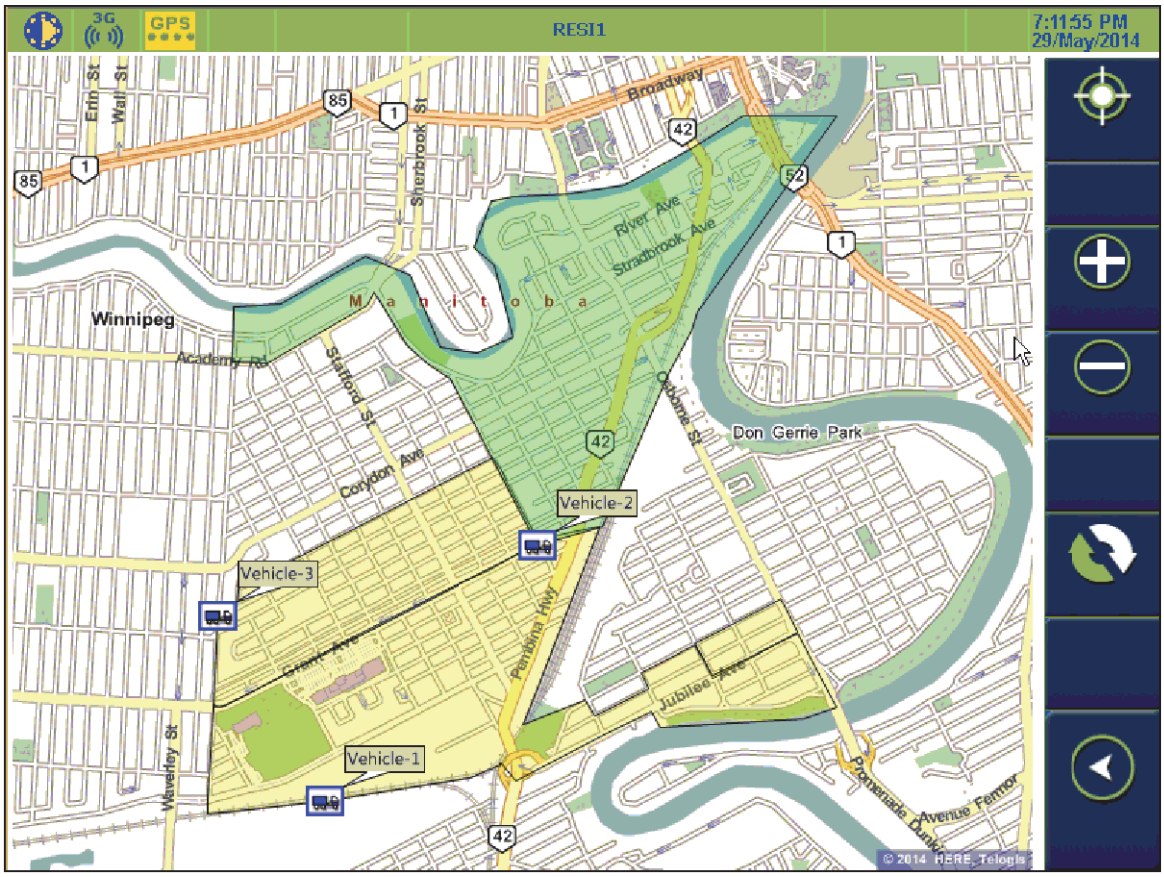
Diagram 7-071 - Workgroup View



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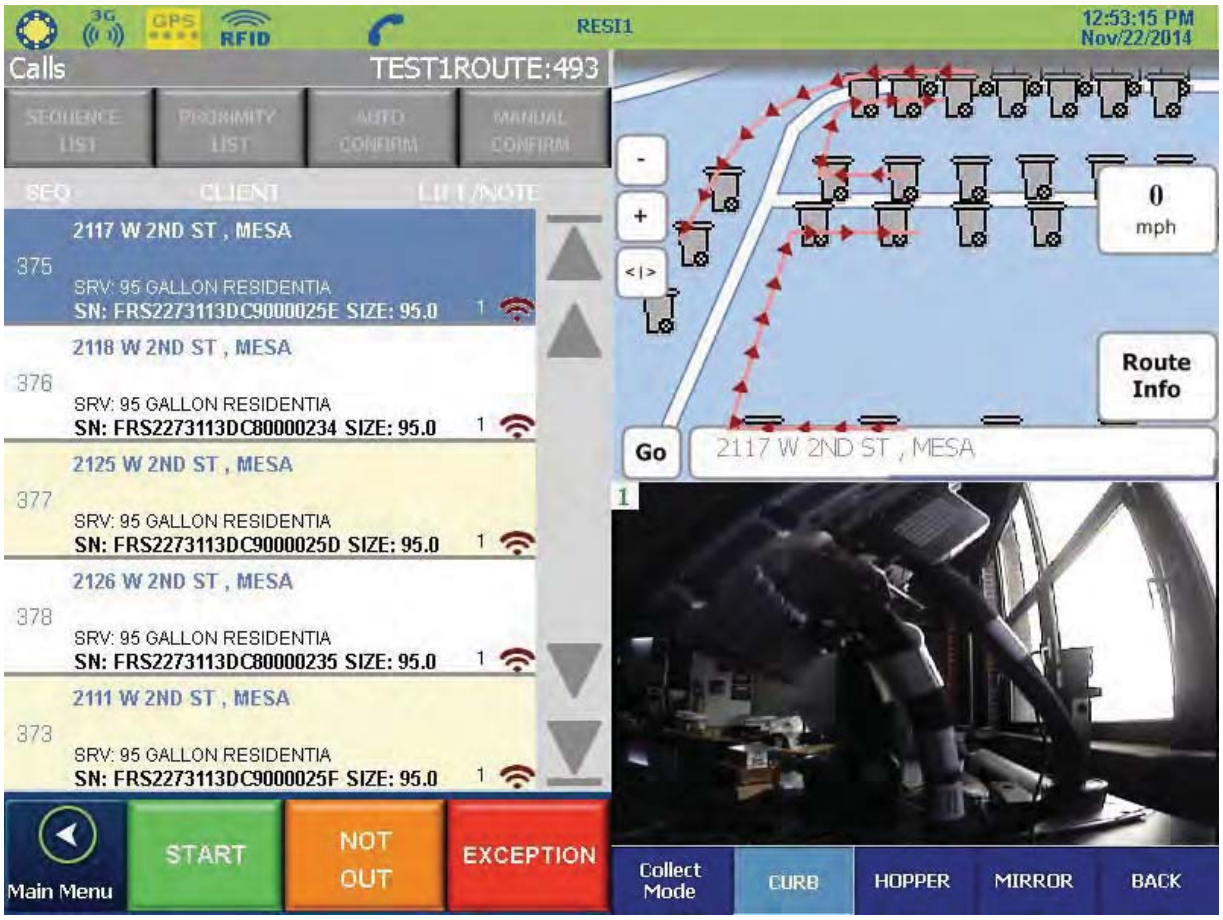
f) Ability to Upload Optimized Formatted Map Into the System

FleetMind can import Optimized data including map data displayed to the Drivers. Below are examples of the Driver views on an in-cab unit.

Standard view Driving Directions with optimized path arrows and container view.

Diagram 7-072 – Driving Map with Highlighted Route Path



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Full screen driving directions showing optimized path arrows and cart view.

Diagram 7-073 – Full Screen Driving Map on OBC

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Full screen optimized Route View with path arrows and bin view including color coded status of lifts, Grey = pending, Yellow = drive-by no-can-out. This allows the driver to see a route overview of what has been done and what is yet to be done. Completed container lifts will remove the bin from the map. Access to this map can also be given to multiple trucks so that a helper route or "workgroup" can see what needs to be completed from a zoned or gridded map view.

Diagram 7-074 – OBC Route View

g) Ability to Enter GIS Data (street centerlines – ESRI format)

FleetMind makes use in all its core enterprise components of the Telogis GeoBase GIS platform which is designed for high performance access on both mobile and server platforms, along with map data from NAVTEQ/HERE.

FleetMind has the ability to optionally convert mapping data maintained by municipalities (e.g. ArcGIS) to the Telogis GeoBase GBFS format. A primary driver for this would be to gain access to alleys that are not available in NAVTEQ/HERE data.

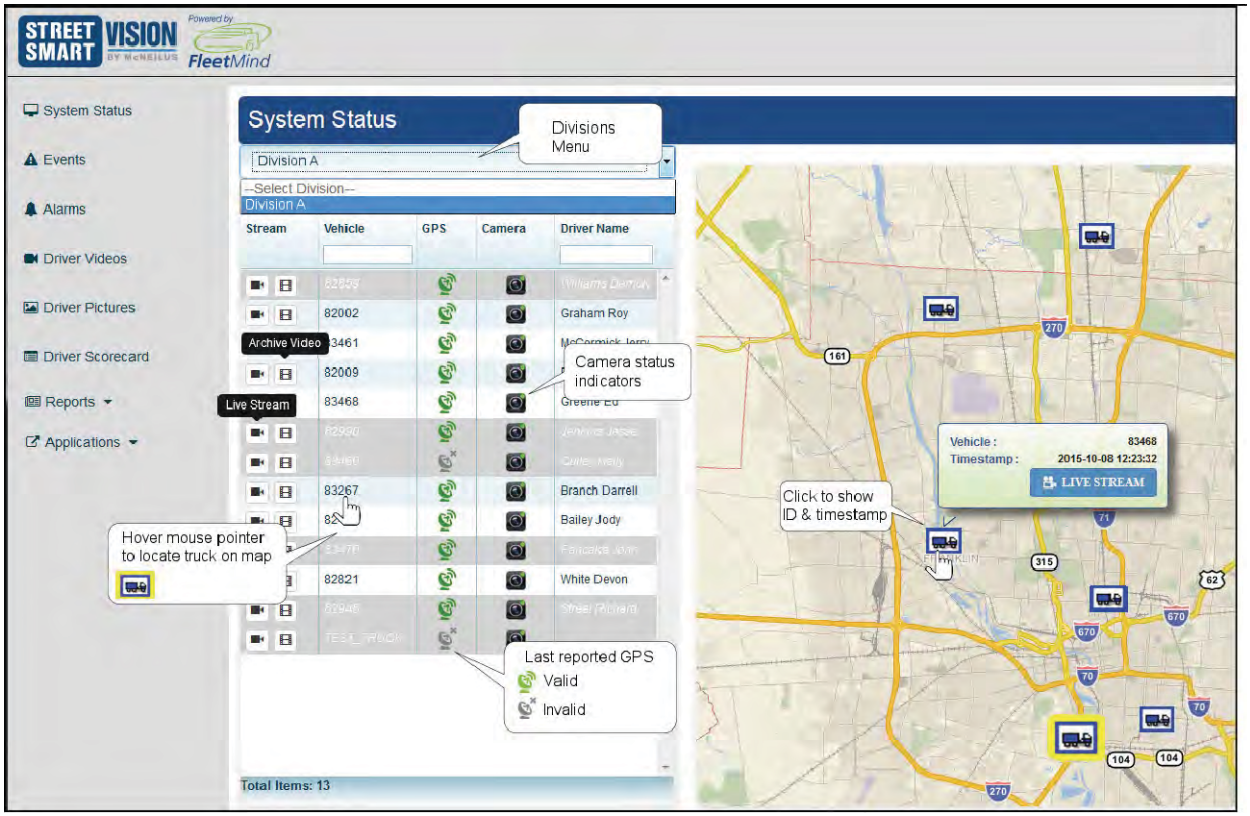
Some the differentiators for Telogis GeoBASE over Google/Bing:

- Use of truck attributes such as weight / height / width / length as input to navigation and routing that is very important for the heavy trucks used in the waste industry
- Access to parcel data to achieve more precise geocoding based on addresses (i.e. as no proportional spread of geocodes based on civic address ranges that often result in clustering)

6. StreetSmart Vision Safety Portal

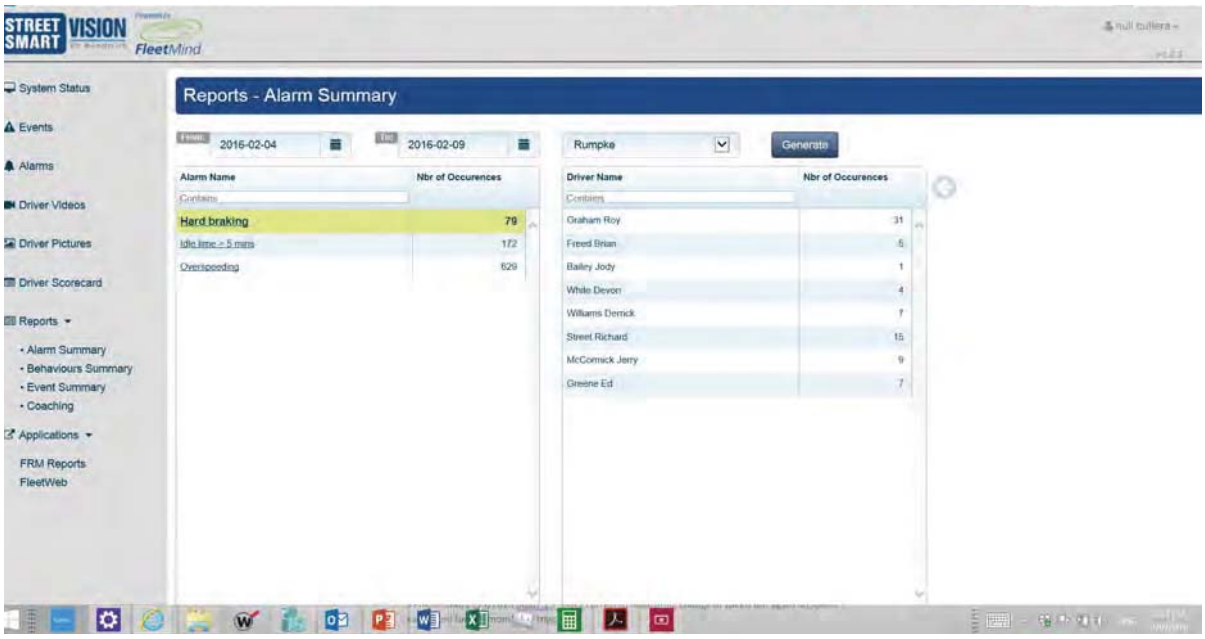
With the Trek SSV10 DVR OBC, FleetMind delivers a web-based component called the StreetSmart Vision Safety Portal. This interface offers a consolidated view of all vehicle events, alarms, videos, pictures and other exceptions that have been captured by the driver or vehicle monitoring systems. When external camera integration has been activated on the SSV10, supervisors can quickly review any picture and videos throughout the day, as well as reviewed stored DVR videos from previous days, for any vehicle equipped with this feature in the fleet. Pictures/video can either be manually captured by the driver when exceptions occur, or can be automatically captured when the vehicle monitoring system processes an event (i.e. G-force incident), or alarm (drive by not out, hard braking, etc.). Supervisors can also "live stream" into any active vehicle, and get real-time video feeds from all enabled camera angles (up to eight possible).

Diagram 7-075 – StreetSmart Vision Safety Portal Fleet Overview



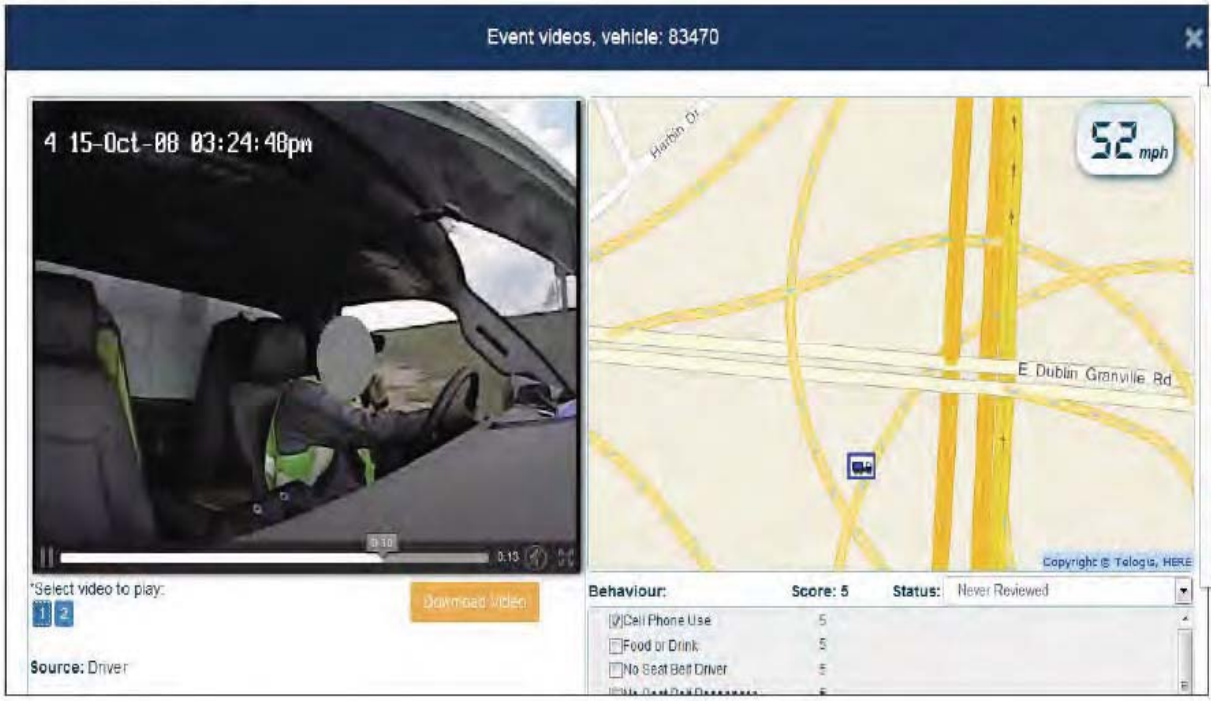
Below is an example of the Alarm Summary display. This shows all triggered vehicle alarms for each truck in the fleet. Supervisors can select each alarm type, and a breakdown by driver is presented as to how many occurrences of the particular alarm have been recorded for each driver.

Diagram 7-076 –Safety Portal Alarm Summary



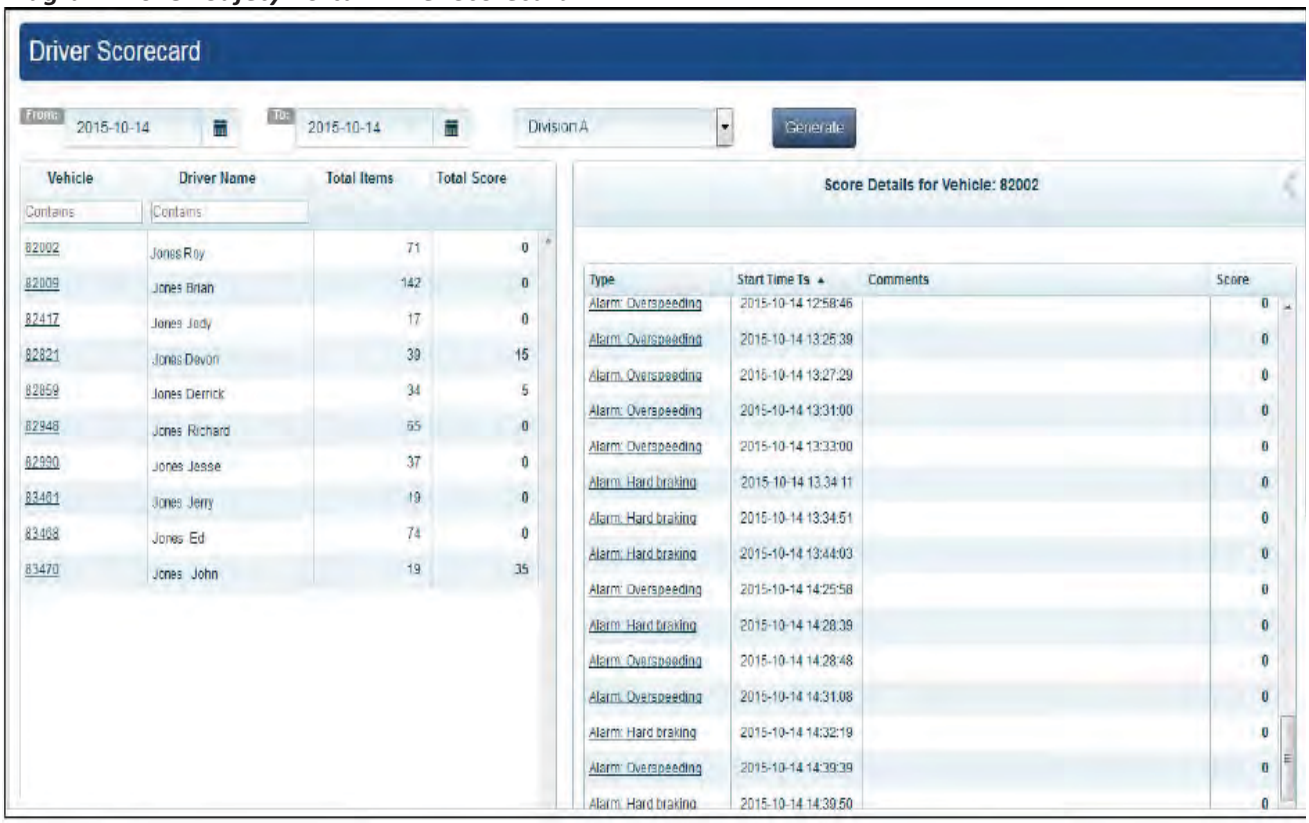
For vehicle events, the system automatically captures a video snippet from 15 seconds before the event, to 15 seconds after the event, and immediately makes this available in the Safety Portal for viewing. Below is what the event interface looks like when an item is selected (driver face has been redacted);

Diagram 7-077 –Safety Portal Event Review



The Safety Portal provides a safety scorecard system for drivers, where they can be ranked and rated based on the number of events, alarms and incidents that has been associated with them. The interface also allows Supervisors to schedule and track training associated with coaching for unsafe behaviors.

Diagram 7-078 –Safety Portal Driver Scorecard



7. Customer Case Management in RMS

The FleetLink RMS has a built-in Customer Case Management system which can be used for creating, assigning and monitoring tasks associated with customer contacts for complaints, services or other activities. Cases can be initiated from several locations in the RMS system; the customer record, the service record or the location record. The following series of screen shots illustrate how a case record is created, and maintained, in the RMS system;

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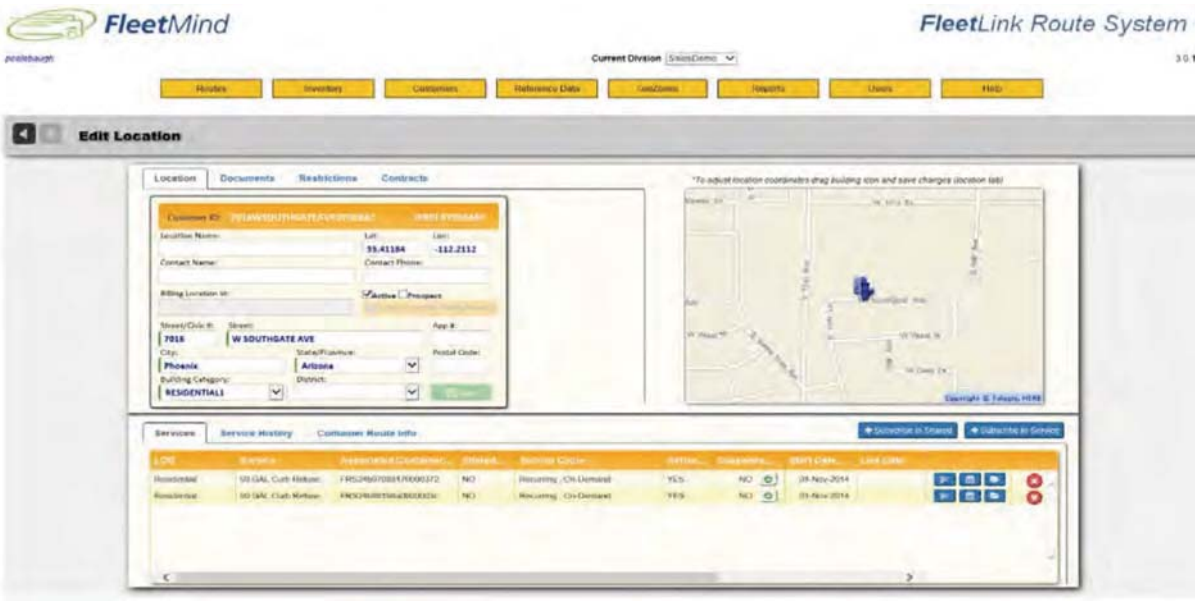
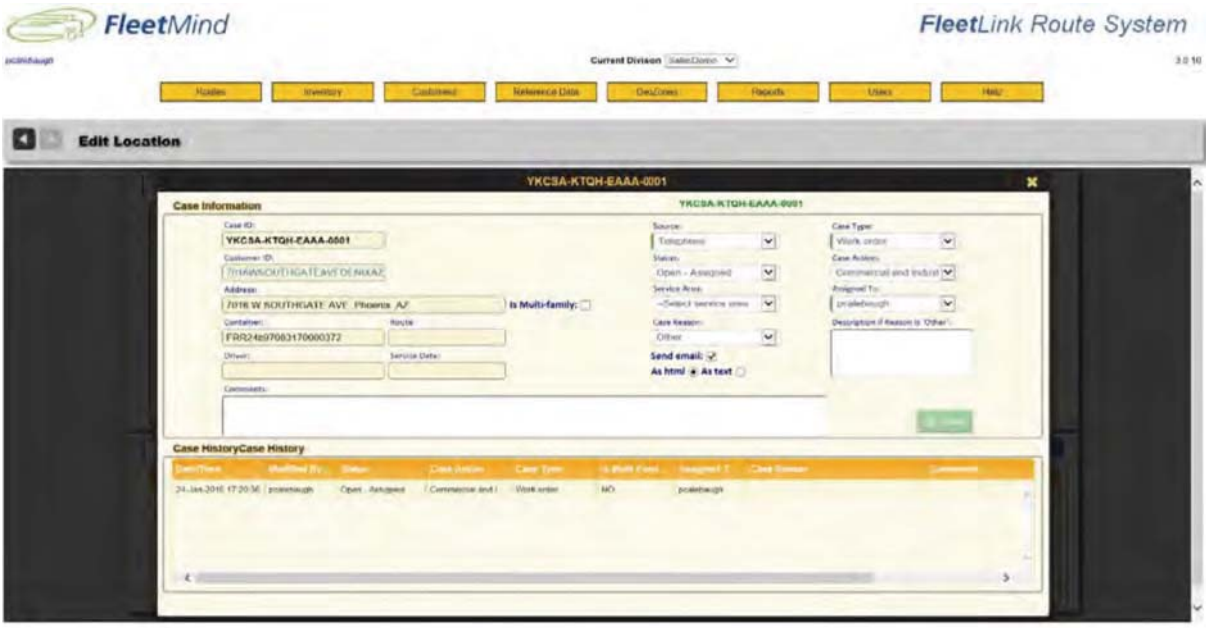
1. A case is initiated by selecting the New Customer Case icon, from one of many interfaces within RMS.

Diagram 7-079 – Initiate a Customer Case in RMS



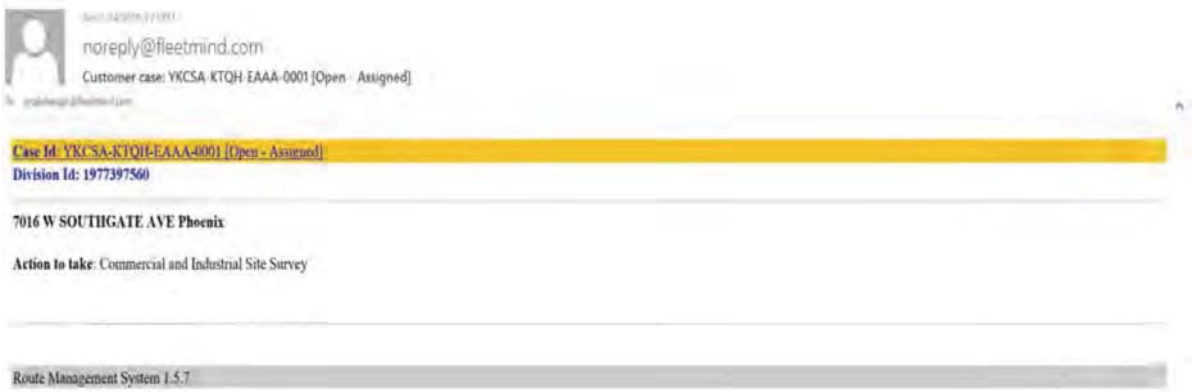
2. Details about the customer case are entered, such as; Source of the case, Status, Service Area to be assigned, Reason for case opening, Case type, Actions to be taken, Assigned staff member, Notes and comments. An email notification can be sent to the assigned resource.

Diagram 7-080 – Enter Customer Case Data, and Assignment



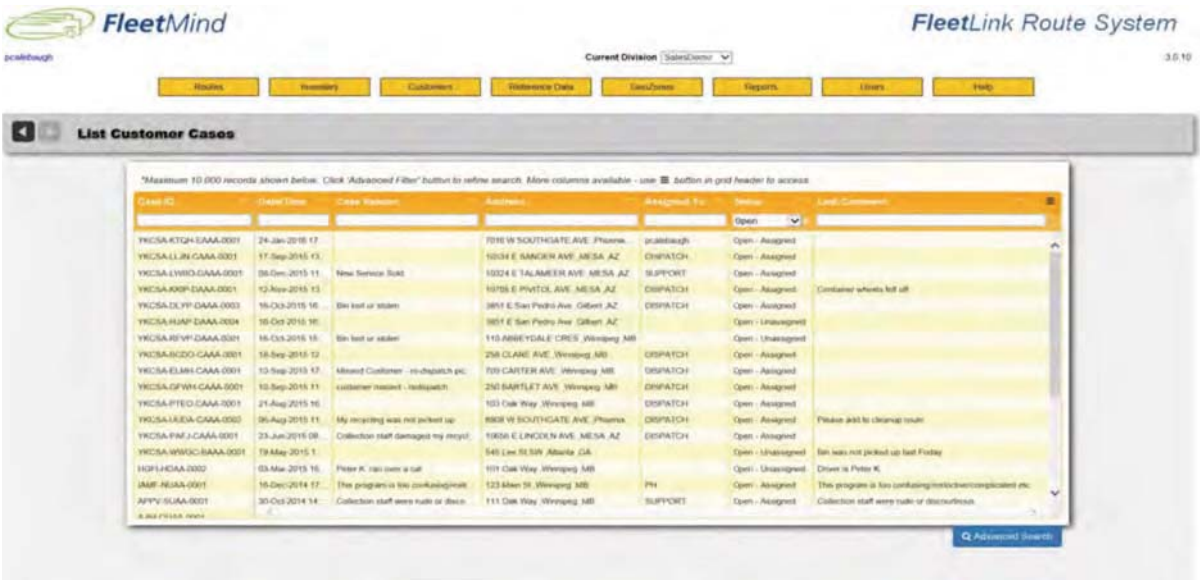
3. Assigned personnel receive notice of an opened case vial email, an example of which is shown below. A link is provided in the email to the opened case record in the RMS system. The assigned task can then be acted upon (i.e. schedule cart repair, perform an onsite survey, respond to a complaint), and the case updated with resolution comments. Cases can be re-assigned at any point to another resource if needed. Once closed, the case record is kept in history under the associated customers account in RMS.

Diagram 7-081 – Email Notice of Case Assignment



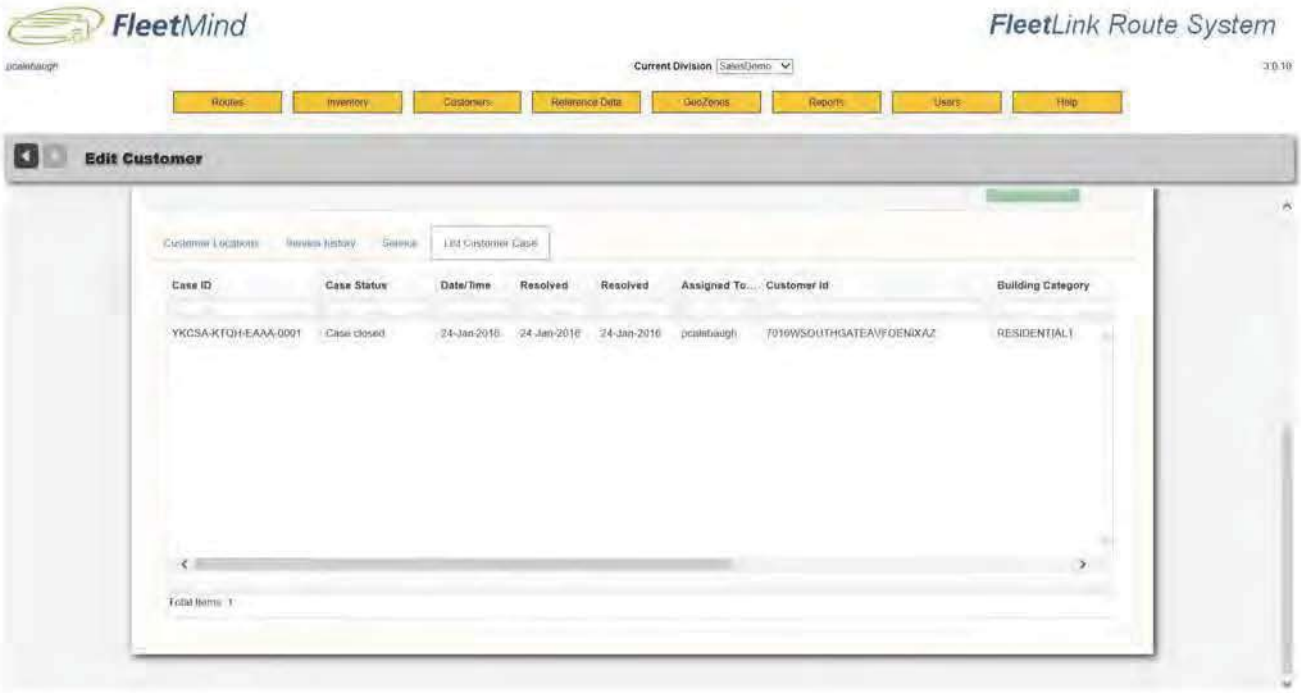
4. A dashboard within RMS shows the status of all customer cases. Cases can be sorted by Status, Assignment, Date Opened, and Case Reason. Staff can query for all records associated to a particular customer, or address, as well.

Diagram 7-082 – Dashboard List of all Cases with Status



5. When a customer service representative is reviewing a customer account in RMS, there is a tab they can select which shows all currently open and past cases.

Diagram 7-083 – List of Cases from Customer Account Record



PHASE 2 PROJECT MANAGEMENT PLAN

FLEETMIND DEPLOYMENT PROJECT FOR THE CITY OF AUSTIN VEHICLE TECHNOLOGY UPGRADE INITIATIVE

FLEETMIND SOLUTIONS INC.
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APRIL 22TH 2016

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Project Management Approach

The FleetMind Project Management approach will be one of collaboration with the City of Austin Project Team with the objective of successfully implementing the FleetMind FleetLink System within the agreed to project schedule & budget for the City to achieve their operational objectives. Phase 2 of the FleetMind System Implementation for the City of Austin will be structured in the same way as for our previous FleetMind System municipal deployments. Each phase of the project will be built around the following seven work packages per our current project methodology.

- FleetMind Project Initiation
- FleetMind Procurement and Production
- FleetMind Integration Activities
- FleetLink Server Deployment
- FleetLink Mobile Deployment in the client Fleet
- FleetMind Training on the FleetLink Products
- Go Live to Project Closure Customer Coaching

During the execution phase, the project will progress through milestones marking the end of each work package. When the project is ready to close a Milestone, closure readiness will be reviewed at the next weekly project review (refer to the Communication Plan) together with the City Project team. City of Austin decision-making stakeholders need to be present for these meetings. The Milestone decision will be documented in the meeting minutes.
These regular project reviews will also provide regular and frequent opportunities to identify and deal with any risks or issues during the course of the project.

Stemming from the many deployments FleetMind has completed over the years, the following critical success factors stand out as key successful factors for any implementation of the FleetMind Solution;

- The customer must have a strong empowered and representative project team which has the internal recognition and management support to successfully champion the introduction of the FleetLink Solution as well as the related internal business process changes within their organization,

- The timely provisioning of an accurate and complete extract of the route, asset and other associated data required per the FleetMind data requirement documentation is critical,

- The IT organization has to be involved from the project Kick Off and be part of the customer implementations project team,

- The customer staff to be trained by FleetMind have to be made available per the agreed to training schedule and for the full training session,

- It is highly recommended that from the Go Live, the customer management team measure a few selected performance KPIs based on the FleetMind provided business reports to start monitoring for the first month of operation based on the City's current performance objectives. This will clearly indicate the importance for everyone involved that to using the FleetMind system on a daily basis is imperative for the daily operations of the Waste Management organization.
  Then a few more KPIs would be monitored for another month in addition to the original. This cycle would continue until all KPIs would be monitored using the FleetLink Reporting software.

The proposed approach for the roll out of the FleetLink Computer Systems to all trucks once the Pilot is completed would be to have trucks released for Go Live over 4 phases every two weeks until the remaining 200 trucks are fully equipped and operational with the FleetLink Computer Systems. This would also allow for a phased training plan for the drivers, and the management team which would allow for a smoother deployment process. The actual sequence of truck releases would be finalized during the project Kick Off
Concerning the required user training, the final training dates are usually confirmed during the weekly Project Review Meeting together with the client project team as the project gets close to the end of the "FleetLink Server Deployment in the client Data Center" work package. The training approach proposed (refer to Training Plan section of this document) by the FleetMind Project is a mix of classroom training, hands on work and coaching. User training is always planned as close as possible to the Go Live date so the staff will retain as much knowledge as possible when they start using the new FleetLink products.
As part of the Phase 2 training strategy, FleetMind recommends that the customer identify internal Super Users, which would become internal references when it comes to any FleetMind product question or to train new employees such as new drivers without having to call upon FleetMind to do so. FleetMind would provide extra training for these Super Users.

Finally, concerning the approach to transition from a Go Live mode to normal operation mode, FleetMind would propose to manage it in the following manner:

From the City's dispatcher(s) & driver's perspective (1 - 2 weeks)

- For the drivers involved in the pilot FleetMind would recommend issuing paper routes for the first few weeks of operations in parallel with the electronic routes being dispatched to the trucks. This would allow for the drivers to get more accustomed to using the new FleetLink Mobile Computers to complete their electronic routes. Experience shows that most of the drivers get a good hang of the system after the first week of regular operations with the help of on site FleetMind coaching for the first week of the Go Live. After the first few weeks, the FM & City project teams would decide if the parallel mode could be terminated or if it needs to be extended. This process will be followed for each phase.
- As for the Supervisors/Dispatchers, they typically get used to interfacing with the FleetMind Route Management System (RMS) to manually transfer routes which have been automatically dispatched to a defective truck over to a spare trucks or any other morning route adjustments within the first week. The challenge for the Supervisors is to learn how to read the FleetMind reports to get an accurate fleet status and to remotely access the truck to take appropriate action whether a driver has not logged in correctly, not selected his route, etc. The onsite FleetMind coaching during the first week of the Go Live greatly facilitates this learning phase.

From the City's Management team perspective (2 to 3 months depending on KPIs to be managed)

- The FleetMind project Business Analyst would work with the City project team to identify a few basic performance KPIs to start monitoring for the first month of operation based on the City's current performance objectives from data provided by the FleetLink Reporting software from Go Live. This would provide management time to understand the reports they are getting from the FleetLink Reporting software. Then a few more KPIs would be monitored for another month in addition to the original. This cycle would continue until all KPIs are regularly monitored by the City Staff using the FleetLink Reporting Suite.

FleetMind Deployment Project - City of Austin

The final transition of the FleetMind Deployment Project to full operation mode would be done once the “Final Acceptance & Project Closure” milestone would be passed.

Project Scope

The scope of the City of Austin – Vehicle Technology Upgrade Project includes the planning, configuration, testing, implementing and transition of the different Fleetmind Systems to be installed in the remaining 200 trucks as well as the implementation of the entire systems design as agreed to as part of the pilot phase of the project.

The Fleetmind Systems mobile HW components to be installed during this phase is as follows (excluding spare systems);

Product Code	Product Name	Quantity
VPKG-DVR	FleetLink Virtual OBC On-Board Waste Package - DVR Flat Screen KIT	189
VPKG-RFID	RFID Reader Package	150
VPKG-ACT	Generic Actuator Switch Package	191
VPKG-MOBILE RFID - MC67	FleetLink Mobile RFID System - MC67	11
VPKG-RFID Tags	RFID Tags - To be placed on Trucks - Includes installation - Travel & Living extra	200

The scope of this project also includes provisioning of all user documentation, manuals, and training aids to be used in conjunction with the FleetLink products. FleetMind will also provision the following services during the course of the project,

Product Code	Product Name	Quantity
PS-10B	FleetMind Installation - GD4010 - (per unit) Travel & Living extra	189
PS-RFID -Install	FleetMind Installation RFID - (per unit) Travel & Living extra	150
PS-ACT-Install	FleetMind Installation - Actuator - (per unit) Travel & Living extra	191
PS-10B HH	FleetMind Installation - FleetLink Lite - (per unit) Travel & Living extra	11
VPKG- De-installation	De-Installation of existing hardware - (per truck) Travel & Living extra	117
PS-10E	FleetMind Installation Verification - Ready-For-Dispatch - Max 25 per day / 1-day minimum. (per unit) Travel & Living extra (calculated per truck)	200
PS-10X	FleetMind Installation - System Configuration	200
PS-23	PS-23- One-day on-site Training FleetMind OBC Kits installation & Troubleshooting	4
PS-33	On-Site FleetLink User Training	8
PS-25	Daily Acceptance Test Support. (per unit) Travel & Living extra (calculated per truck)	200
PS-81	Project Manager - 1 Day. Travel & Living extra	28
PS-84	Engineer Developer/Tester: Historical Data Migration Mapping: per section 4.75 of RFP FleetMind	20

Finally, the scope of this phase 2 project will included work to integrate the FleetMind environment with the City's Enterprise Service Bus, the CC&B Billing System, the 311 Customer Service System, RouteSmart/GIS or to the disposal site scale system as specified in the RFP response FleetMind provided for this mandate. The detailed requirements for this interface will need to be finalized as a deliverable from the Pilot phase of the FleetMind Deployment Project for the City of Austin Vehicle Technology Upgrade Initiative.

Project Management, Engineering, Production, Logistics project work and Training Services will be performed internally. For the FleetLink mobile computer system installation activity the Installation services for Phase II of the project are planned to be mostly outsourced to Soal Technologies contractors under Fleetmind onsite supervision.

Project Milestone List

The chart below lists the major milestones for the project. This chart includes major project milestones as defined by the City of Austin as well as some standard FleetMind Project milestones. Milestone dates will be managed within the Microsoft Project schedule for this project. The Project Lead will communicate any approved changes to these milestones or dates to the Fleetmind project team. The Project Lead shall also advise the Project Team for the City of Austin of any scheduling delays impacting the project Milestones.

Milestone	Deliverable(s)	Description of Milestone Completion Criteria	Paymen t Plan
#1 - Project Initiation Completed	- Internal Work Order created, - Project Schedule vetted by customers at Kick Off - Kick Off Meeting Minutes	1. The FleetMind Deployment Project initiated and staffed. 2. Project Kick Off was held with an agreement that the project as presented by the FleetMind Project Lead is in accordance with the mandate awarded by the City of Austin to FleetMind. Acceptance of the meeting minutes will constitute acceptance.	0%
#3 - Production & Procurement Activities Completed for 57 Kits for first Go Live	- 46 x FleetLink On Board Computer H/W kits with Actuators & RFID - 11 x MC67 w RFID Systems - SIM card/Data plan activations provided by the City	1. Client provided the required activated SIM cards for FleetMind to complete the production kits 2. The equipment to be deployed under this Go Live phase has arrived at the customer location	10%
#4 - Production & Procurement Activities Completed for 50 Kits for Second Go Live	- 50 x FleetLink On Board Computer H/W kits with Actuators & RFID - SIM card/Data plan activations provided by the City	1. Client provided the required activated SIM cards for FleetMind to complete the production kits 2. The equipment to be deployed under this Go Live phase has arrived at the customer location	10%
#5 - Production & Procurement Activities Completed for 50 Kits for Third Go Live	- 50 x FleetLink On Board Computer H/W kits with Actuators & RFID - SIM card/Data plan activations provided by the City	1. Client provided the required activated SIM cards for FleetMind to complete the production kits 2. The equipment to be deployed under this Go Live phase has arrived at the customer location	10%
#6 - Production & Procurement Activities Completed for 50 Kits for Last Go Live	50 x FleetLink On Board Computer H/W kits with Actuators & RFID (incl. 7 spare kits)	1. Client provided the required activated SIM cards for FleetMind to complete the production kits 2. The equipment to be deployed under this Go Live phase has arrived at the customer location	10%

	- SIM card/Data plan activations provided by the City		
#7 - FleetMind Hosted Server Environment Ready for Dispatch	- FM Server Environment available to FleetMind, - Final Austin resident and Route data provided to FM, - FM Server Application Suite Installed and Configured - Truck Profiles created for 207 Trucks	The Hosted FleetMind server environment deployed under the Pilot Project has been updated for the Go Live of 207 more trucks.	0%
#8 - Development & Acceptance of the Interface to CC&B & Route Smart	Development & Acceptance of the Interface to CC&B & Route Smart	After interface from the system to both CC&B and Route Smart is completed, verified, and accepted by ARR.	10%
#9 - Final configuration of reports and dashboard	Final configuration of reports and dashboard	After configuration of reports and dashboard is completed and accepted in writing by ARR.	0%
#10 – 57 FleetMind Equipped Trucks Are Ready for Dispatch for first Go Live	- Installations have been completed and trucks are ready for dispatch verification completed, - Final Installation Report - ARR Team have accepted the installation for each truck	At this point the FleetLink Mobile systems are installed on the designated trucks and can now receive any electronic routes dispatched from the FleetLink RMS.	10%
#11 – 50 FleetMind Equipped Trucks Are Ready for Dispatch for second Go Live	- Installations have been completed and trucks are ready for dispatch verification completed, - Final Installation Report - ARR Team have accepted the installation for each truck	At this point the FleetLink Mobile systems are installed on the designated trucks and can now receive any electronic routes dispatched from the FleetLink RMS.	10%
#12 – 50 FleetMind Equipped Trucks Are Ready for Dispatch for the third Go Live	- Installations have been completed and trucks are ready for dispatch verification completed, - Final Installation Report - ARR Team have accepted the installation for each truck	At this point the FleetLink Mobile systems are installed on the designated trucks and can now receive any electronic routes dispatched from the FleetLink RMS.	10%
#13 – 43 + 7 spare kits of 200 FleetMind Equipped Trucks Are Ready for Dispatch for the last Go Live	- Installations have been completed and trucks are ready for dispatch verification completed, - Final Installation Report - ARR Team have accepted the installation for each truck	At this point the FleetLink Mobile systems are installed on the designated trucks and can now receive any electronic routes dispatched from the FleetLink RMS.	10%

#14 - Develop system documentation & provide comprehensive end-user & admin training	Develop system documentation & provide comprehensive end-user & admin training	After system documentation is completely developed and end-user and admin training is delivered and accepted in writing by ARR.	0%
#15 – Entire system installed and implemented in remainder of operational fleet.	System installed and implemented in remainder of operational fleet.	After the system is installed, implemented, and accepted in writing by ARR on a per-vehicle basis (monthly payments will be made based upon actual number of completed installations).	0%
#16 - Final Acceptance & Project Closure	Complete system implementation	System implementation is completed and accepted in writing by ARR.	10%

Schedule Baseline and Work Breakdown Structure

As mentioned previously in this document, the project schedule is built around the same seven work packages FleetMind uses for all its deployment projects. The tasks stemming from the resulting planning can be described as follows;

- FleetMind Project Initiation

  Upon receiving a formal PO from the customer, an internal work order will be issued to initiate the new Deployment Project. As part of the Project Initiation a handoff meeting will be held between the responsible Sales Executive, the Sr. Director Operations and the Deployment Project Lead. During this meeting the Project Lead is informed of the final customer project contact, the particularities of the project as well as the business objectives the customer expected to achieve by introducing the FleetLink System in his fleet.

  The Project Lead then proceeds to issue a fleet survey request as a prerequisite for holding the Deployment Project Kick Off. The Project Initiation phase concludes with a Kick Off meeting which is held with the client to start the actual project execution phase. At this time the scope, project contacts, required deliverables and project schedule are reviewed to ensure that City of Austin and FleetMind project teams are in sync. During the Kick Off meeting the communication plan is also discussed to ensure good information flow between the two project teams. A weekly (or agreed upon recurrence frequency) project review would be setup to review the weekly written FleetMind project progress report, the project schedule and the outstanding project pending action items list.

- FleetMind Procurement and Production

  The Procurement and Production activities start off from the creation of the Work Order during the Project Initiation. These activities will be carried out using the same processes as for all FleetMind Deployment Projects.
  For the procurement to be completed, the on-site fleet survey activity has to have been completed in the early stages of this work breakdown by the FleetMind team.
  As for the Production, the final system configurations to be done prior to shipment require City of Austin to have provided data plan activation (including SIM cards if applicable) information from their Service Provider.

- FleetLink Interface with Third Party S/W

  Given the detailed system integration design for FleetMind integration with the city Enterprise Service Bus, the CC&B Billing System, the 311 Customer Service System, RouteSmart/GIS, to the disposal site scale system, etc will have been review, discussed and approved as part

of the Pilot Phase of the FleetMind Deployment Project for the City of Austin Vehicle Technology Upgrade Initiative, this work package will focus on the related development work as well as internal and joint testing. Customer acceptance testing will also be part of the work package.

- FleetLink Server Deployment in the client Data Center

  Given the hosted FleetLink Server environment was previously setup as part of the Pilot phase, this phase would be about updating the configuration to prepare for the deployment of the remaining 200 systems. The configuration updates would include configuring the FleetLink Route Management System and the truck S\W profiles via the Command.

  As part of this phase, the CoA project team would supply the combined route, inventory and associated data associated to these additional 200 trucks to set up the FleetLink Route Manager System.

  FleetLink Mobile Deployment in the client Fleet

  The first step is to decide the proper location for the on board computer for each truck chassis type not covered as part of the Pilot Phase This activity has an important safety implication so the active participation of the decision-making project stakeholder for the City of Austin is required to make the final positioning decision,

  This work package includes the installation, configuration and post installation verification work for the pilot truck deployment of the FleetLink Mobile systems.

  As the installations progress, a careful log of the work done is kept in the Installation and Ready for Dispatch Verification Report spreadsheet for each truck by the FleetMind Deployment Lead to ensure the completeness and quality of each truck installation. This document will also contain the result of the Deployment Lead's Ready for Dispatch Verification. This detailed report can be made available to the City as part of the weekly progress report if required.

- FleetMind Training on the FleetLink Products

  This work package includes FleetMind provisioning User Training for the FleetLink RMS, the FRM Reports and FleetWeb to the City users. FleetMind would train the drivers for the main deployment. This would be done in agreed to phases to allow for an organized Go Live of the FleetLink System. The recommendation in the planning will be to have 4 training phases to match a 4 phased Go Live approach.

  The Driver training is scheduled a close as possible to the Go Live date for maximum retention. For the FleetMind Reporting and FleetWeb user training, it will be scheduled during the Go Live week, so if actual client data cannot be used as part of the training with the Dispatcher and Management staff, then the Fleetmind trainer may use test data.

  As for the FleetMind Route Management, FleetMind would train the Dispatchers and other City staff which would be expected to use the FleetLink Route System as part of their normal work activities.

  Finally, the FRM Reporting and FleetWeb user training, would be scheduled during the second half of the Go Live week so actual client data can be used as part of the training with the Dispatcher and Management staff. FleetMind would provisioning this training to the

supervisors, Dispatchers & City Management staff which would be expected to use the FleetMind Reports as part of their normal work activities.

- Go Live to Project Closure Customer Coaching

As mentioned in the previous work package description, FleetMind would recommend a 4 phase Go Live approach to allow the City SW fleet to adjust to the "on the ground" operational changes as more and more drivers have to get used to working with their new mobile computers to run their routes. The final system System Acceptance Testing would be run at the end of the last phase of the Go Live with the presence of the City's Project Lead & the decision-making project stakeholders.

As part of this work package, FleetMind would also provide onsite coaching with the users when they are most needing of training reminders during the first few weeks of operations. Experience shows that most of the drivers get a good hang of the system after the first week of regular operations. After a two-week period, City trainers would take over the onsite driver coaching from the FleetMind staff for the rest of the deployment.
FleetMind would provide remote coaching with the City dispatchers & trainers to ensure any lingering uncertainties in using the FleetLink system are dealt with early to gain a quicker acceptance of these new tools by each user.

Schedule Management Plan

Project schedules for the FleetMind Deployment Project – City of Austin will be created using MS Project 2010 starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages, which must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once completed the project schedule is created, the project team and any resources will review it while tentatively assigned to project tasks. The project team and resources must agree to the proposed work package assignments, durations, and schedule. The project schedule is then reviewed by the FleetMind Project Sponsor, approved and base-lined prior to being presented to the City Project team. The FleetMind Project Manager will maintain the schedule as a MS Project Gantt Chart. Any proposed changes to the schedule will follow FleetMind's change control process. If established boundary controls may be exceeded, a change request will be submitted to the Project Lead. The Project Lead together with the FleetMind project team will determine the impact of the change on the schedule, cost, resources, scope, and risks. If it is determined that the impacts will exceed the boundary conditions, then the change will be forwarded to the FleetMind Project Sponsor for review and approval. The FleetMind boundary conditions are for this project will be

- Proposed change causes delay on a FleetMind deliverable,
- Proposed change cost more than 1 day of effort to the Project,
- Proposed change implies unplanned T&L costs,
- Proposed change adds new functionality to the FleetLink Mobile Software Application Suite,
- Proposed change requires modifications to the FleetLink Mobile H/W platform

If the FleetMind Project Sponsor approves the change then the Project Lead will present a quote to the City of Austin Project Team for their approval. Upon acceptance, the FleetMind Project

Lead will update the schedule and all documentation and communicate the change to all stakeholders in accordance with the Change Control Process to implement the change. Roles and responsibilities for schedule development are as follows:

The Project Lead will be responsible for facilitating work package definition, sequencing, and estimating duration and resources with the project team. The Project Lead will also create the project schedule using MS Project 2010 and validate the schedule with the project team, stakeholders, the project sponsor and the City of Austin Project Responsible. The Project Lead will obtain schedule approval from the project sponsor and baseline the schedule.

The project team is responsible for participating in work package definition, sequencing, duration, and resource estimating. The project team will also review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The project sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is base lined.

The City of Austin Project Responsible and the FleetMind project stakeholders will participate in reviews of the proposed schedule.

Deployment Project Resource Plan

Fleetmind Phase 2 Deployment Project Structure

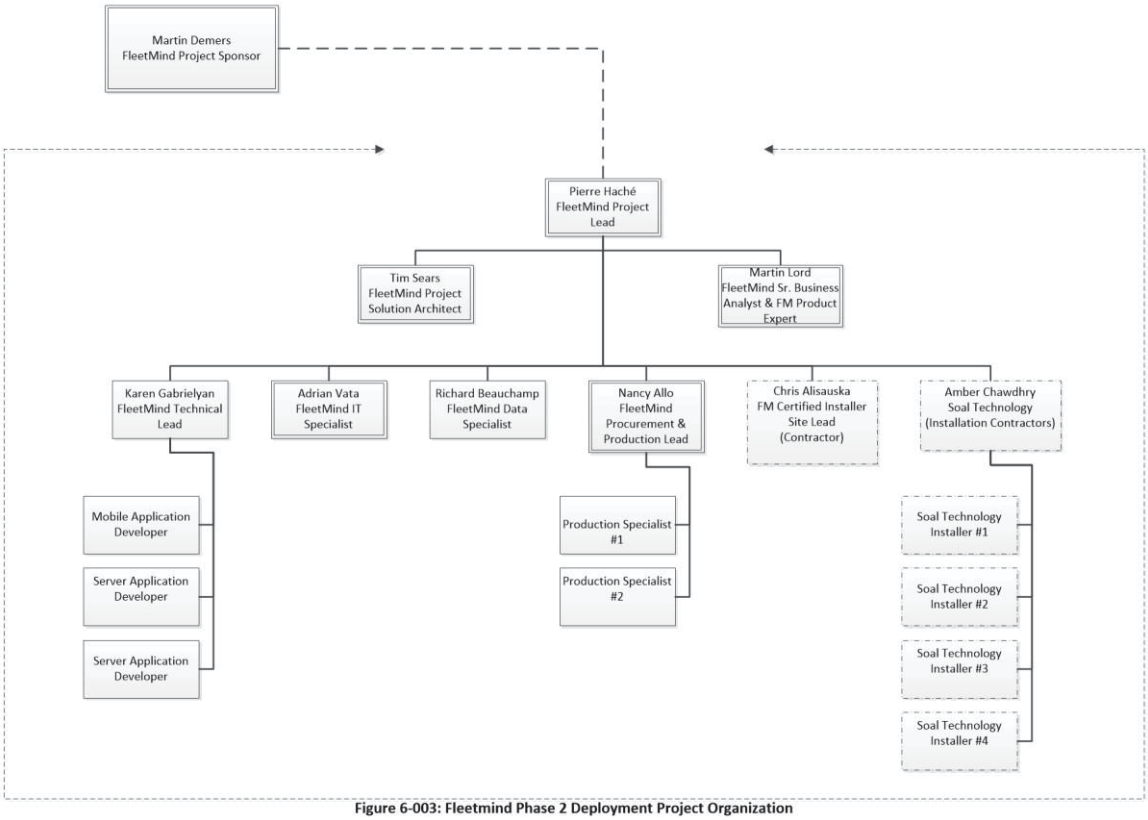


Figure 6-003: Fleetmind Phase 2 Deployment Project Organization

Project Sponsor (Martin Demers) – FleetMind's CEO will be the project sponsor for this project. The Sponsor's role is to insure that everyone adheres to the principles outlined in the FleetMind's

deployment process with diligence and quality. The sponsor is also available as an escalation point for issues that need to be addressed in priority.

Project Lead (Pierre Haché) – responsible for the successful deployment of the FleetMind Product Suite. The Project Lead is responsible for planning, creating, and/or managing all work activities, variances, tracking, reporting, communication, performance evaluations, staffing, and internal coordination with functional managers and external coordination with the City of Austin Project Team and Installation Contractor selection and mandate. The Project Lead will also provision user training as part of his responsibilities.
Will be assign to this project 40% of his time for the whole project duration

Project Solution Architect (Tim Sears) – responsible for the integrity of the overall solution and of its compliance to the customer requirements for this mandate. The Project Lead will manage the Project Solution Architect.
Will be assign to this project 20% of his time mainly spent during the integration solution development, testing and customer acceptance testing activities

Sr. Business Analyst & FleetMind Product Expert (Martin Lord) – responsible for participating in the CCB as well as contribute his knowledge to help the City of Austin Project Team integrate the FleetMind System in their daily operations. Gary can also be consulted by the City of Austin project team for other Business level discussions concerning the integration of FleetMind Systems. He may also be provisioning user training and coaching during the Go Live portion of this project. The Project Lead will manage the Sr. Business Analyst & FleetMind Product Expert.
Will be assign to this project 25% of his time mainly during the training and the Go Live phases

Project Technical Lead (Karen Gabrielyan) – responsible for overseeing of all new S/W development, S/W configuration and testing for the FleetMind Deployment Project as well as ensuring functionality is compliant with quality standards. Responsible for working with the Project Lead to create work packages, manage risk, manage schedule, identify requirements, and create reports. The Project Lead will manage the Project Technical Director.
Will be assign to this project 20% of his time mainly during the integration solution development, testing and customer acceptance testing activities

IT Specialist (Adrian Vata) – responsible for Supporting the City of Austin IT Contact to provide the right server platform and will also implement all of the FleetMind Server S/W in preparation to the deployment. The IT Specialist will also participate in the interface testing project activities. The Project Technical Director will manage the IT Specialist.
Will be assign to this project 25% of his time mainly during the training and the Go Live phases

FleetMind Installer Site Lead (Chris Alisauskas - Contractor) – responsible for overseeing of the FleetMind H/W deployment in the City of Austin truck fleet as well as ensuring the installations are done per the FleetMind Quality standards. The FleetMind Deployment Specialist will also be the on-site contact for the installation contractors hired by FleetMind for this Deployment. He will also be responsible to provision the installation and troubleshooting training to the designated fleet maintenance staff. The Project Lead will manage the Deployment Specialist.
Will be assign to this project 100% of his time during the FleetLink Mobile computer installations

Procurement & Production Lead (Nancy Allo) – responsible to purchase all required components for this project. As well, she is responsible to plan the kitting, verification and shipping of the equipment to be installed in the City of Austin fleet as well as spares.
Will be assign to this project 15% of her time during the production activities

Recommend Structure for the City of Austin Project Team

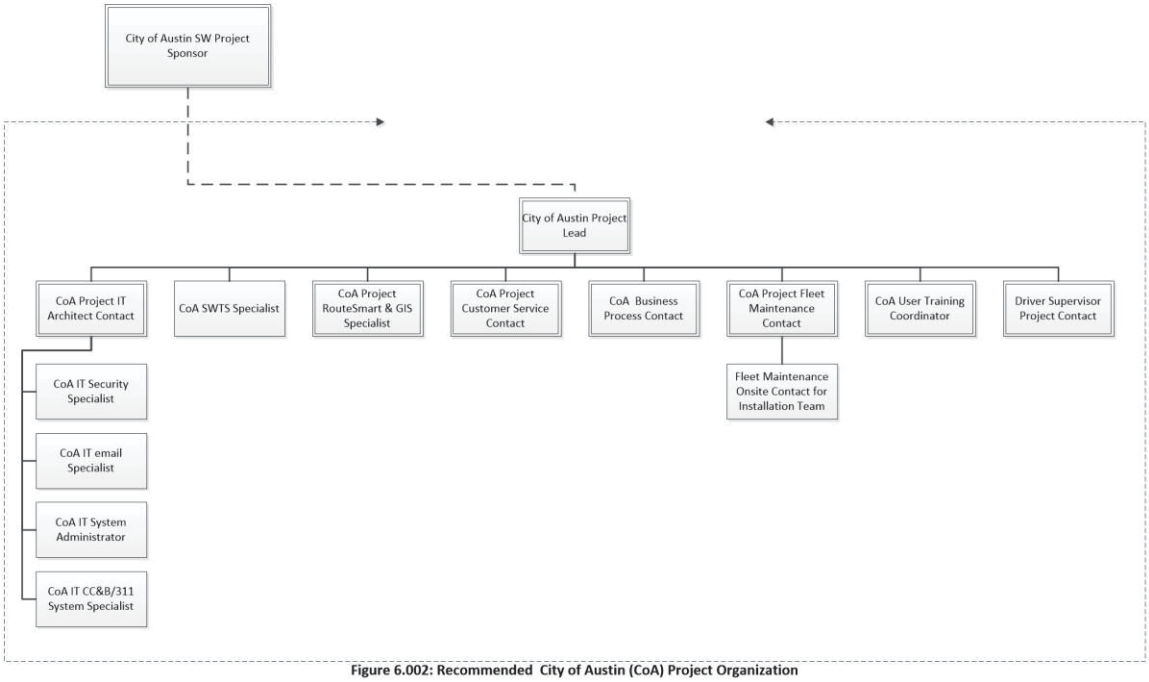


Figure 6.002: Recommended City of Austin (CoA) Project Organization

CoA Project Lead - responsible for the successful business integration of the FleetLink Product Suite within the City of Austin SW organization. The Project Lead is responsible for planning, creating, and/or managing all work activities, variances, tracking, reporting, communication, performance evaluations, staffing, and internal coordination with functional managers and external coordination with the FleetMind Project Team. The Project Lead will also provision user training as part of his responsibilities.

CoA Project IT Architect Contact – responsible to interface with FleetMind to provide technical details and security policies for the City Data Center pertinent to the implementation of the FleetMind hosted server environment as well as the interfacing between FleetMind the different Data Center nodes (CC&B, 311, RouteSmart, ADSF, email, etc.) required as part of this project. The role will also include being the technical point person to review and finalize with the FleetMind Project Team all interfacing specifications involved as part of the above mention integration work for this project. IT is expected that this person will have access to the appropriate IT Specialists as illustrated in the Recommended City of Austin Project Organization.

CoA SWTS Specialist – responsible to provide all inventory and associated data to FleetMind for the configuration of the FleetLink Route Manager System (RMS) for inventory management. This person will be involved in the manual process to keep the inventory updated with current RFID information for the carts given the full transfer of the inventory management would be planned for the Phase 2 of the Project. This person will also be expected to participate in discussions to review and finalize with the FleetMind Project Team all interfacing specifications involved as part of the above mention integration work for this project, As well as, this person will be expected to participate in the planning and execution of the migration of historical data from the SWTS system.

CoA Project RouteSmart & GIS Specialist – responsible to provide all route, inventory and associated data to FleetMind for the configuration of the FleetLink Route Manager System

(RMS). This person will be involved providing manual extracts of the route data for import in the RMS during the Pilot period given automation of this process would be planned for the Phase 2 of the Project. This person will also be expected to participate in discussions to review and finalize with the FleetMind Project Team all interfacing specifications involved as part of the above mention integration work for this project

CoA Customer Service Project Contact – responsible to provide input concerning the workings of the 311 Customer Support Team as part of the Business Reviews to be held as part of this project as well as being the voice of this team to setup training and finalizing interfacing requirement for the integration of the FleetMind System with 311.

CoA Business Processes Project Contact – has the role of process subject matter expert during the joint FleetMind/CoA Project team to review each process impacted by the introduction of the FleetMind system and to agree on how the City of Austin SW and other related departments should best adapt to the resulting changes.

CoA Fleet Maintenance Project Contact – responsible to provide all vehicle related information to FleetMind (e.g. detailed fleet survey information), ensure the FleetMind installation team has the appropriate facilities and support while on site for installations. Also needs to make sure the proper staff are on hand at the beginning of the installations to formalize equipment placement in each truck cab type based on any safety regulations or policies applicable at the City.

CoA User Training Coordinator – given the City Project Lead does not take care of the training planning, the User Training would be responsible to plan & setup the training activities in coordination with the FleetMind Project Lead.

CoA Driver Supervisor Project Contact – has the role of providing the driver perspective to any aspect of the project. Experience has shown clearly the consideration for the driver perspective is paramount to the success of any FleetMind Deployment project. As well, early supervisor involvement in the deployment process gives them the tools they need to better guide and coach their drivers through the important work process change they will be going through.

Training Plan

The FleetMind Training Plan is tailored to cater to the Drivers, the Dispatchers, the Management Staff which monitor the fleet performance and the selected maintenance staff which are expected to keep the FleetMind Mobile System operational at all time. In that light the training courses are as follows:

FleetLink Mobile Driver Training

- The driver training walk's the driver through every work panel the FleetLink Mobile SW application will be presenting to them each day. The course audience are the drivers, their supervisors and it is recommended that the dispatching staff participate as well as they often are the driver's first support person should they have any questions or issues concerning the usage of the FleetLink Mobile Computer.
- The course duration is typically 1.5 hours depending on the number of participants. Given the number of drivers to train we will want to organizes the classes around the different line of businesses so the drivers earn only what they will be using for the LOB they work in.
- The venue required to present this course is a classroom setting equipped with big screen monitor visible by all class participants so the FleetMind Training can connect to it via a client supplied preconfigured workstation, which can establish a VNC connection to a remote test environment. This will allow the Training to dynamically demonstrate the different interactions the drivers should expect to have with the on board computers.

- Each Participant will have a PowerPoint presentation document containing the screen shots as presented by the Trainer on the live system to follow the course as well as a Quick Reference Card they can use later as a reminder of key steps during their day in case they forget.

FleetMind Reports Suite

- The courses teach the participants how to use the FleetLink FRM Reports for historical reports as well as the FleetWeb real time map based reporting tool. Therefor Trainer will go through each report type the FRM reports and the FleetWeb offer.
- This course targets audience for this class is the City Supervisors & Managers, which are expected to monitor daily fleet performance KPIs, and those monitoring the longer-term performance KPIs.
- The course duration is typically 2 hours depending on the number of participants and the level of interaction the group generates with the FleetMind Trainer.
- The venue required to present this course is a classroom setting equipped with big screen monitor visible by all class participants so the FleetMind Training can connect to it via a client supplied preconfigured workstation, which has access to the City's FM Server Environment. This multimedia setup will allow the trainer to have access to actual live customer data during the Go Live phase of the Deployment Project. The use of actual fleet data and its live interpretation by the class participants is a powerful learning enabler. The participants will quickly understand how the tools being presented can practically be used as part of their daily tasks.
- The format of the course is demonstrative so there are not course PowerPoint. However, user guides are provided as part of the Deployment Project for easy reference.

FleetLink Route Manager System & Reporting Training

- The course is meant to show Dispatchers how to use the FleetLink RMS and how to accomplish all their typical dispatching tasks. As part of the course, the Trainer covers the following topics and workflows:

    - Overview of the FleetLink RMS
    - Review or the Route Reference Data
    - Creating & Assigning Routes to Trucks
    - Creating Temporary Routes to handle Statutory Holidays, Route Transfers between trucks, etc.
    - Closing Routes at the End of Day
    - Dispatching Residential, Commercial and Roll Off Assignments
    - Creating On Demand Assignments for Residential, Commercial and Roll Off
    - Using the Statuses Provided by the RMS

- The FRM Reports and FleetWeb Reports will also be presented to the Dispatchers with emphasis on the report panels they would need to use for daily monitoring and real time truck positioning purposes.
- The course duration is 6 to 8hrs depending on the number of participants and the level of interaction the group generates with the FleetMind Trainer. It should be noted that there is a lot of mentoring time planned to support the dispatcher during between Go Live and Project Closure. FleetMind does recognize the importance that the dispatchers are able to carry out their task in a timely manner even through the introduction of the new FleetLink RMS.
- The venue required to present this course is a classroom setting equipped with big screen monitor visible by all class participants so the FleetMind Training can connect to it via a client supplied preconfigured workstation, which has access to the City's FM Server Environment. A training PowerPoint is provided to the class participants and a full FleetLink RMS User Manual is delivered as part of the Deployment Project.

Installation & Troubleshooting Training

- The objective of this training is to enable the participants to understand what each H/W component of the FleetLink Mobile system or used for and how to install them. The Trainer will provide a system overview as part of the training but the focus in this course is clearly the truck related aspects of the FleetLink Mobile system.
- Based on our experience, FleetMind recommends that the target participant should be selected for his/her sincere interest to learn about and work with the computer and electrical aspects of the FleetLink System maintenance.
- The course duration is between 6 to 8hrs, as the participants will have to do at least one full installation of a FleetLink Mobile system under the supervision of the FleetMind Trainer. The venue is typically in the maintenance area with easy access the different truck chassis types, which make up the City fleet for demonstration purposes. Also, as the maintenance star is often very busy, it is important the client carefully plan the participant's course participation to ensure full participation to take full advantage of this training.

Communications Management Plan

This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project and will be updated as communication requirements change. This plan identifies and defines the roles of FleetMind and City of Austin project team members as they pertain to communications. It also includes a communications matrix, which maps the communication requirements of this project, and communication conduct for meetings and other forms of communication. A project team directory is also included to provide contact information for all stakeholders directly involved in the project.

The Project Lead will take the lead role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix below. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it, and to whom to communicate.

Communication Type	Description	Frequency	Format	Participants /	Deliverable	Owner
Weekly Status Report	Email summary of project status	Weekly	Email	City of Austin Project Lead, FM Project team and Sponsor, Stakeholders	Status Report	FleetMind Project Lead
Weekly FleetMind Internal Project Team Meeting	Meeting to review action register and progress of project activities	Weekly	In Person	FleetMind Project Team	Updated project Action Register & Timeline	FleetMind Project Lead
Weekly City of Austin / FleetMind Project Review	Meeting to review action register and progress of project activities	Weekly	Conference Call or in Person	FleetMind & City of Austin Project Teams, FM Project Stakeholders	Updated project Action Register & Timeline	FleetMind Project Lead

Project Major Milestone Reviews	Present closeout of project phases and kickoff next phase	Milestone 1 and	Conference Call or in Person	Project Sponsor & Stakeholders, FleetMind & City of Austin Project Lead	Minutes of Decision(s), Project Phase Kick Off or Closure Presentation Material	FleetMind Project Lead
Technical Reviews	Review of project requirements & technical issues requiring FM Engineering involvement	As Needed	Conference Call or in Person	As needed	Technical Document	FleetMind Technical Lead

Communications Conduct:

Meetings:
The Project Manager will distribute a meeting agenda at least 1 day prior to any scheduled meeting and all participants are expected to review the agenda prior to the meeting. Meeting minutes will be distributed no later than 24 hours after each meeting is completed.

Email:
All email pertaining to the project should be professional, free of errors, and provide brief communication. Email should be distributed to the correct project participants in accordance with the communication matrix above based on its content. All attachments should be in one of the organization's standard software suite programs and adhere to established company formats. If the email is to bring an issue forward then it should discuss what the issue is, provide a brief background on the issue, and provide a recommendation to correct the issue. The Project Lead s for the City of Austin and FleetMind projects should be included on any email pertaining to the FleetMind Deployment Project – City of Austin

Informal Communications:
While informal communication is a part of every project and is necessary for successful project completion, any issues, concerns, or updates that arise from informal discussion between team members must be communicated to the respective Project Lead s so the appropriate action may be taken.

Change Management Plan

The following steps comprise FleetMind organization change control process for all projects and will be utilized on the FleetMind Deployment Project – City of Austin:

Step #1: Identify the need for a change (Can be submitted by any authorized member be the City of Austin Project Team or FleetMind Stakeholder),
Requestor will open a change request case in the FleetMind CRM (Sales Force) or via email to the FleetMind Project Director. City of Austin project team member will be given access to the FleetMind Web Portal to access Sales Force at the onset of the project,

Step #2: Log change request in the FleetMind CRM (Sales Force) if not already done. (FleetMind Project Director),
The FleetMind Project Lead will maintain a log of all change requests for the duration of the project using the reporting feature of the Sales Force CRM application.

Step #3: Conduct an evaluation of the change (FleetMind Project Director, FleetMind Product Mgr., Project Technical Director & the Requestor). The Project Lead will conduct an evaluation of the impact of the change to cost, risk, schedule, and scope,

Step #4: Submit change request to Change Control Board (CCB) (Project Director)
The Project Lead will submit the change request and analysis to the CCB for review. The FleetMind CCB consists of the CEO & the COO.

Step #5: Change Control Board decision (CCB)
The CCB will discuss the proposed change and decide whether or not it will be approved based on all submitted information,

Step #6: Implement change (FleetMind Project Director)
If a change is approved by the CCB, the Project Lead will update and re-baseline project documentation as necessary as well as ensure any changes are communicated to the team and stakeholders. If the City of Austin Project Team requested the change, the Project Lead will communicate the results of the FleetMind CCB. If a PO is required to proceed with the change, the request will be made before proceeding with the implementation of the request change.

All change requests will be logged in Sales Force and tracked through to completion whether approved or not.

Quality Management Plan

All members of the FleetMind project team will play a role in quality management. It is imperative that the team ensures that work is completed at an adequate level of quality from individual work packages to the final project deliverable. The following are the quality roles and responsibilities for this Project:

The Project Sponsor is responsible for approving all quality standards for the FleetMind Project. The Project Sponsor will review all project tasks and deliverables to ensure compliance with established and approved quality standards. Additionally, the Project Sponsor will sign off on the final acceptance of the project deliverable prior to it being delivered to the City of Austin Project team.

The Project Lead is responsible for quality management throughout the duration of the project. The Project Lead is responsible ensuring all tasks, processes, and documents are compliant with the FleetMind quality standards. The Project Manager will work with the FleetMind Management team to establish acceptable quality standards. The Project Lead is also responsible for communicating and tracking all quality standards to the project team and stakeholders.

The remaining member of the project team, as well as the stakeholders will be responsible for assisting the Project Lead to ensure that all quality standards are met and communicate any concerns regarding quality to the Project Director.

As such, as part of the FleetMind's approach during the course of the project, FleetMind business processes and methodologies include quality verification through the work executed to deliver our deliverables to our customers.

- FleetMind custom integration development activities include a thorough review of the interfacing requirements with the customer to ensure proper understanding of each requirement before development work begins. Once the development work is completed, the solution is tested using automated unit testing combined with joint FleetMind/customer integration, use case and user acceptance testing to ensure all requirements have been met,

For the existing FleetMind Products being deployed during this project, an acceptance testing document will be jointly developed which would be designed to have a section for the pilot and a section for the final complete solution acceptance once the system is fully deployed,

- As part of the route data provisioning phase, FleetMind will review and discuss its finding based on past experience with other customers to ensure its integrity and completeness. Having correct route data is a critical success factor for a FleetMind system deployment which is why we expect a lot of time will be spend on vetting the route data with the City Project team,

- As part of the FleetMind Server configuration procedure the following verifications are done to ensure the setup is correct;
    - To verify the end-to-end communication between the server and mobile to certify its completion the FleetMind IT specialists configures a test truck based using a test FleetLink Mobile on board computer systems at FleetMind and configures test routing data in the FleetLink RMS on the newly configured server. The test route is then dispatched to test truck located to verify server to mobile communication is correctly flowing through the City's data center firewall. This procedure is also do directly with an installed FleetLink Mobile computer if available at the time of the testing,
    - To verify the reports have been properly deployed, the IT specialist will log into the application to verify correct accessibility and that the correct City of Austin mapping info is presented. Further verification is done by the FleetMind Project Lead during the first days of Go Live leading up to the System Acceptance Test to ensure the expected data is being reported on each of the available application windows,
    - To verify the FleetLink Route Management System (RMS) is properly deployed, the FleetMind data specialist for the project will do an initial customer data import and verify that the RMS is properly configured,
    - Finally, as part of the first few days of Go Live while on site, the FleetMind Project Lead will work with the different FleetMind products to ensure the configurations and functionality works as it should.

Furthermore, the above mentioned business process/activities use the following tools and templates to ensure a rigorous application of these proven FleetMind Deployment processes:

- **FleetMind Server Monitoring** – Each FleetMind Server Application Suite installation includes the Alchemy system monitoring application which manages predefined system alarms to monitor the FleetMind Server environment operations

- **Sample reference data spreadsheet** - these will be used to help City of Austin provide the existing routing & route attribute information in the right format for import into the FleetLink Route Management System,

- **FleetLink Command Center** - This tool is used by the FleetMind System Administrator (and later City of Austin' system administrator) to configure each truck defining its purpose, its name, its network configuration, hardware profile (cameras, RFID, automation hardware, scales etc…) alarming requirements, etc… to be stored in the FleetLink DB,

- **A VNC client** is part of the basic FleetLink Mobile on board computer as a tool to remotely access each truck during the installation activities and the Go Live for remote access to update S/W, change a configuration or the support drivers, which may have

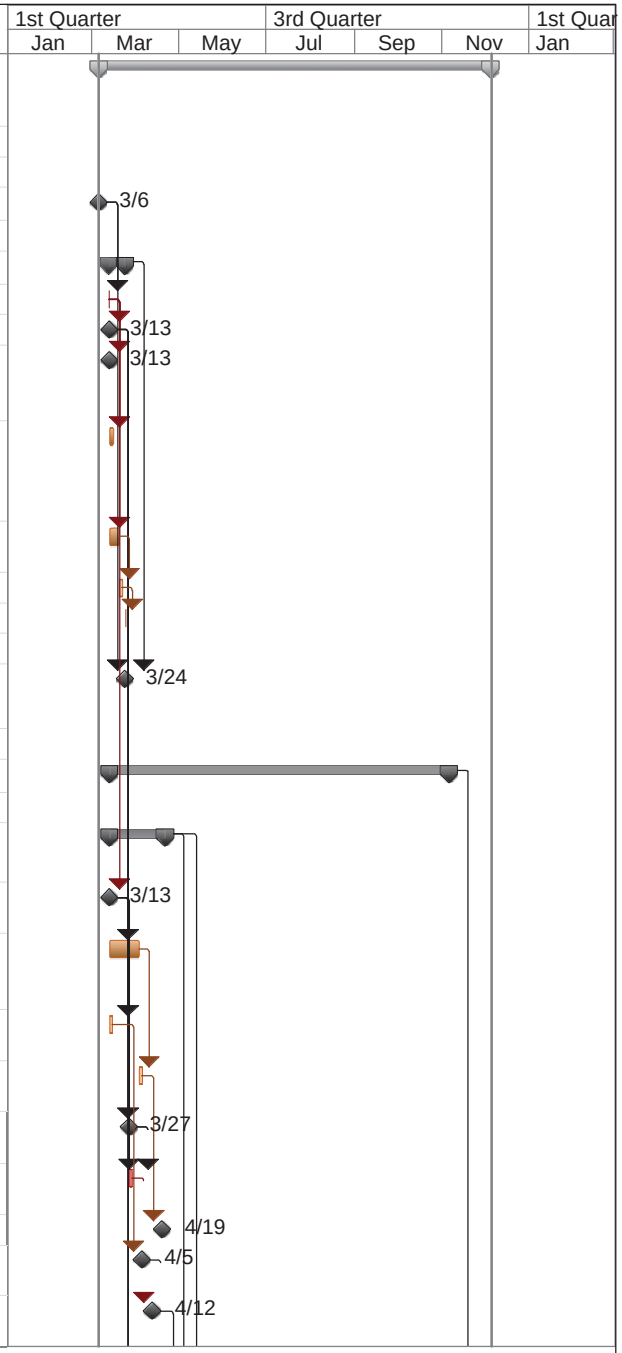
difficulties during the initial days of Go Live. City of Austin can also use this tool for the same purpose as well as for training and evaluation of the driver's performance.

- I**nstallation and Ready for Dispatch Verification Report** - this standard spreadsheet is setup for the installation team to report their progress as well as any issues stemming from the Ready for Dispatch Verification activity to the FleetMind Project Lead during the truck installation phase.

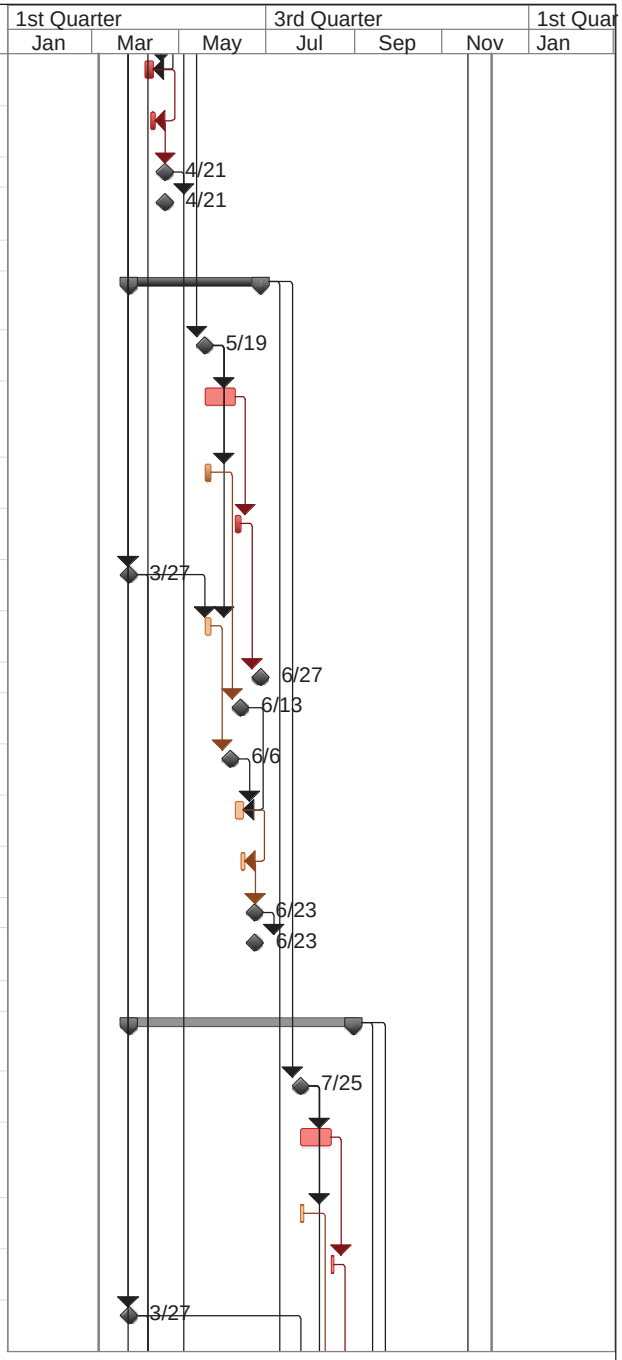
Statement of Compliance

FleetMind Solutions, Inc. is in compliance with all applicable rules and regulations of Federal, State and Local governing entities and positively affirms compliance with the terms of this solicitation.

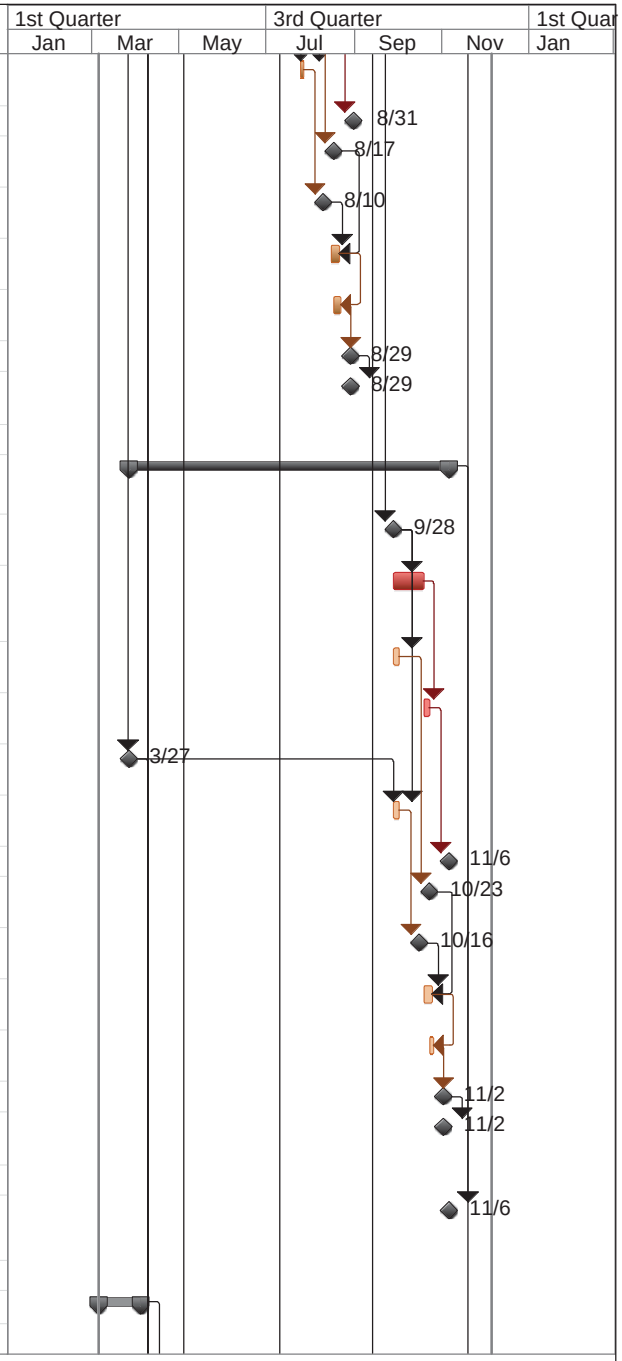
Task Name	Start	Finish	Resource Names
Tentative Phase 2 Project Plan- City of Austin RFP	**Mon 3/6/17**	**Tue 12/5/17**	
1 PO Issued by Customer	**Mon 3/6/17**	**Mon 3/6/17**	**ARR - Project Lead**
2 Project Initiation	**Mon 3/13/17**	**Fri 3/24/17**	
2.1 Create New Deployment Project WO	Mon 3/13/17	Mon 3/13/17	FM - Project Lead
2.2 Issue Request for Fleet Survey Information	Mon 3/13/17	Mon 3/13/17	FM - Project Lead
2.3 Issue Data Requirement Specifications for Customer to supply Routes, Route Reference Data & Containe/Bin Inventory	Mon 3/13/17	Mon 3/13/17	FM - Project Lead
2.4 Hand Off Meeting between Sales & Project Lead	Mon 3/13/17	Thu 3/16/17	FM - Sales Project Stakeholders[20%],FM - Project Lead[20%],FM - Project Sponsor[20%]
2.5 Update FleetMind Project Plan & Schedule for Sponsor Approval	Mon 3/13/17	Mon 3/20/17	FM - Project Lead[20%]
2.6 Create Presentation Material for the Kick Off Meeting	Mon 3/20/17	Wed 3/22/17	FM - Project Lead[20%]
2.7 Project Kick-Off Meeting at customer location	Fri 3/24/17	Fri 3/24/17	FM & ARR Project Teams
3 FM Milestone #1 - Project Setup Phase Completed	**Fri 3/24/17**	**Fri 3/24/17**	**FM - Project Lead**
4 FleetMind Procurement & Production	**Mon 3/13/17**	**Mon 11/6/17**	
4.1 Production of first 46 FLeetLink Mobile Kits with 11 Cart Delivery Kits	**Mon 3/13/17**	**Fri 4/21/17**	
4.1.1 Create Bill of Material for Production	Mon 3/13/17	Mon 3/13/17	FM - Production Specialist 1[15%]
4.1.2 Proceed with Kitting & Production Activity	Mon 3/13/17	Mon 4/3/17	FM - Production Specialist 1[60%],FM - Production Specialist 2[60%]
4.1.3 Order Components not in Stock	Mon 3/13/17	Wed 3/15/17	FM - Procurement & Production[15%]
4.1.4 IMEI and ESN information and Attach to Work Order	Mon 4/3/17	Wed 4/5/17	FM - Procurement & Production[5%]
4.1.5 Fleet Survey Information provided by Customer - 57 Trucks	Mon 3/27/17	Mon 3/27/17	ARR - Fleet Maintenance
4.1.6 Order Truck Specific Components not in Stock	Mon 3/27/17	Wed 3/29/17	FM - Procurement & Production[15%]
4.1.7 Data Plan Activated	Wed 4/19/17	Wed 4/19/17	ARR - Project Lead
4.1.8 Reception of Components (incl supplier std turn around time)	Wed 4/5/17	Wed 4/5/17	FM - Procurement & Production
4.1.9 Reception of Truck Specific Components (incl supplier std turn around time)	Wed 4/12/17	Wed 4/12/17	FM - Procurement & Production



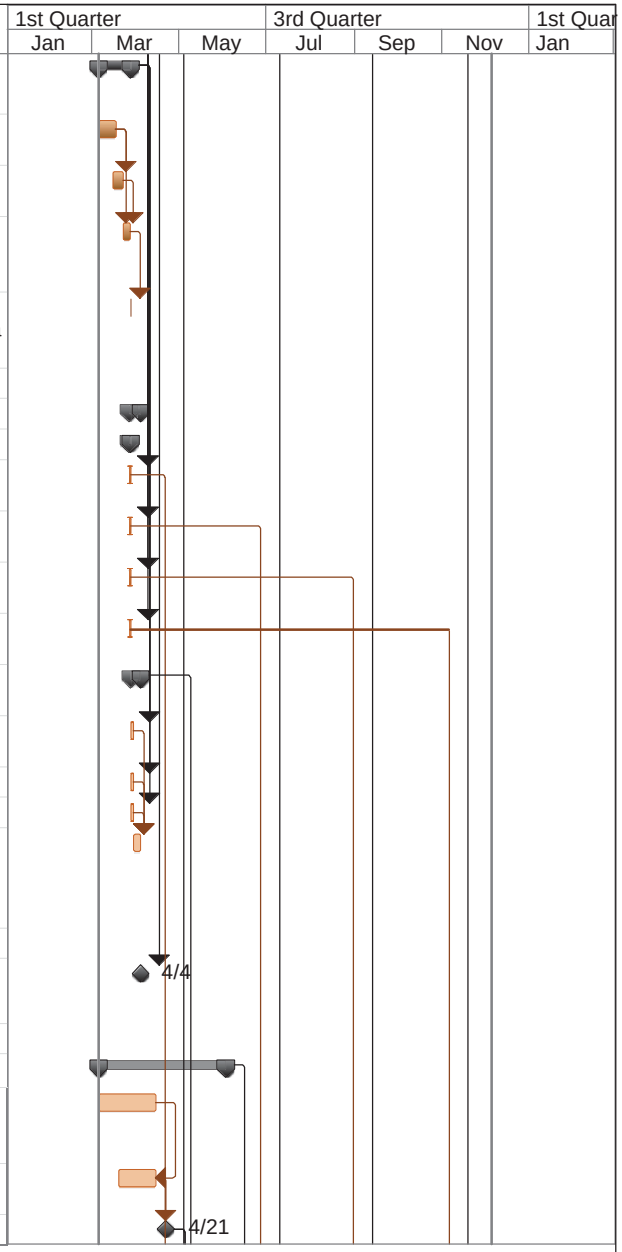
Task Name	Start	Finish	Resource Names
4.1.10 Execution of Remaining Kit Production Activities	Fri 4/7/17	Thu 4/13/17	FM - Production Specialist 1[20%]
4.1.11 Verification & Shipment of FM Onboard Computer Kits - Main shipment	Tue 4/11/17	Fri 4/14/17	FM - Procurement & Production[50%]
4.1.12 Arrival of equipment on site	Fri 4/21/17	Fri 4/21/17	ARR - Reception
4.1.13 Milestone #2 - Production & Procurement Activities Completed for 57 Kits for first Go Live	**Fri 4/21/17**	**Fri 4/21/17**	**FM & ARR Project Teams**
4.2 Production of second batch of FleetLink Mobile Kits - QTY 50	**Mon 3/27/17**	**Tue 6/27/17**	
4.2.1 Create Bill of Material for Production	Fri 5/19/17	Fri 5/19/17	FM - Production Specialist 1[15%]
4.2.2 Proceed with Kitting & Production Activity	Fri 5/19/17	Fri 6/9/17	FM - Production Specialist 1[60%],FM - Production Specialist 2[60%]
4.2.3 Order Components not in Stock	Fri 5/19/17	Tue 5/23/17	FM - Procurement & Production[15%]
4.2.4 IMEI and ESN information and Attach to Work Order	Fri 6/9/17	Tue 6/13/17	FM - Procurement & Production[5%]
4.2.5 Fleet Survey Information provided by Customer - 50 Trucks	Mon 3/27/17	Mon 3/27/17	ARR - Fleet Maintenance
4.2.6 Order Truck Specific Components not in Stock	Fri 5/19/17	Tue 5/23/17	FM - Procurement & Production[15%]
4.2.7 Data Plan Activated	Tue 6/27/17	Tue 6/27/17	ARR - Project Lead
4.2.8 Reception of Components (incl supplier std turn around time)	Tue 6/13/17	Tue 6/13/17	FM - Procurement & Production
4.2.9 Reception of Truck Specific Components (incl supplier std turn around time)	Tue 6/6/17	Tue 6/6/17	FM - Procurement & Production
4.2.10 Execution of Remaining Kit Production Activities	Fri 6/9/17	Thu 6/15/17	FM - Production Specialist 1[20%]
4.2.11 Verification & Shipment of FM Onboard Computer Kits - Main shipment	Tue 6/13/17	Fri 6/16/17	FM - Procurement & Production[50%]
4.2.12 Arrival of equipment on site	Fri 6/23/17	Fri 6/23/17	ARR - Reception
4.2.13 Milestone #3 - Production & Procurement Activities Completed for 50 Kits for Second Go	**Fri 6/23/17**	**Fri 6/23/17**	**FM & ARR Project Teams**
4.3 Production of third batch of FleetLink Mobile Kits - QTY 50	**Mon 3/27/17**	**Thu 8/31/17**	
4.3.1 Create Bill of Material for Production	Tue 7/25/17	Tue 7/25/17	FM - Production Specialist 1[15%]
4.3.2 Proceed with Kitting & Production Activity	Tue 7/25/17	Tue 8/15/17	FM - Production Specialist 1[60%],FM - Production Specialist 2[60%]
4.3.3 Order Components not in Stock	Tue 7/25/17	Thu 7/27/17	FM - Procurement & Production[15%]
4.3.4 IMEI and ESN information and Attach to Work Order	Tue 8/15/17	Thu 8/17/17	FM - Procurement & Production[5%]
4.3.5 Fleet Survey Information provided by Customer - 50 Trucks	Mon 3/27/17	Mon 3/27/17	ARR - Fleet Maintenance



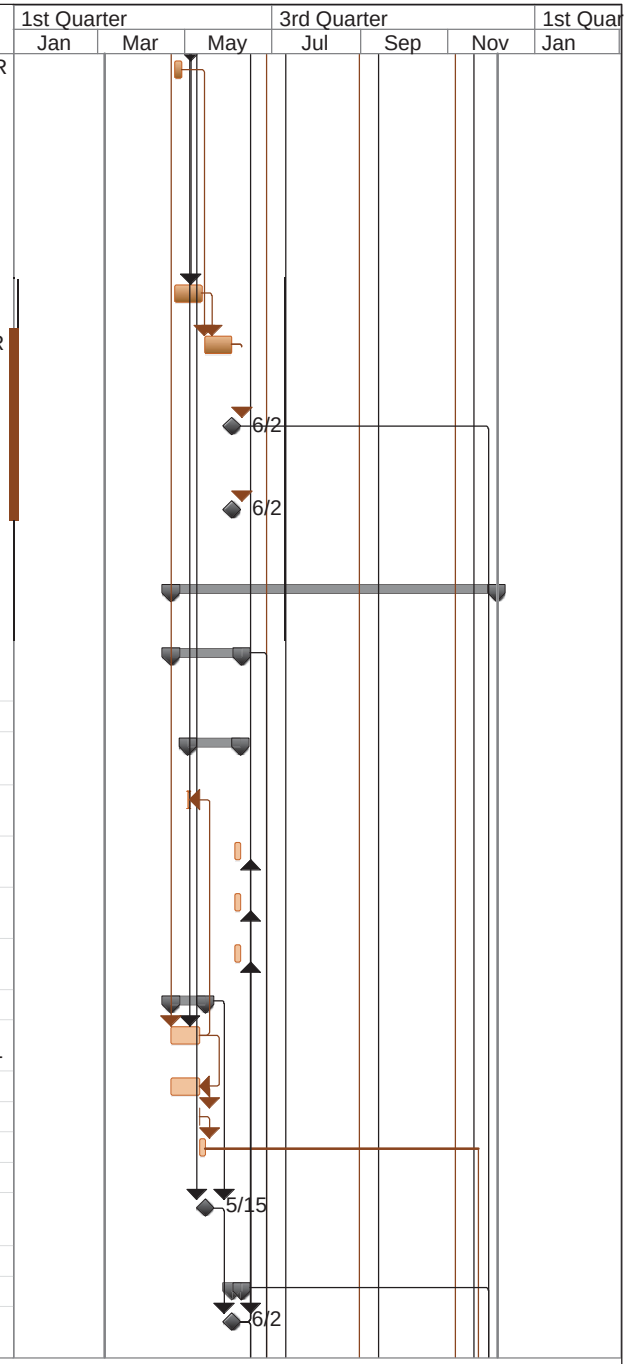
Task Name	Start	Finish	Resource Names
4.3.6 Order Truck Specific Components not in Stock	Tue 7/25/17	Thu 7/27/17	FM - Procurement & Production[15%]
4.3.7 Data Plan Activated	Thu 8/31/17	Thu 8/31/17	ARR - Project Lead
4.3.8 Reception of Components (incl supplier std turn around time)	Thu 8/17/17	Thu 8/17/17	FM - Procurement & Production
4.3.9 Reception of Truck Specific Components (incl supplier std turn around time)	Thu 8/10/17	Thu 8/10/17	FM - Procurement & Production
4.3.10 Execution of Remaining Kit Production Activities	Tue 8/15/17	Mon 8/21/17	FM - Production Specialist 1[20%]
4.3.11 Verification & Shipment of FM Onboard Computer Kits - Main shipment	Thu 8/17/17	Tue 8/22/17	FM - Procurement & Production[50%]
4.3.12 Arrival of equipment on site	Tue 8/29/17	Tue 8/29/17	ARR - Reception
4.3.13 Milestone #4 - Production & Procurement Activities Completed for 50 Kits for Second Go	**Tue 8/29/17**	**Tue 8/29/17**	**FM & ARR Project Teams**
4.4 Production of third batch of FleetLink Mobile Kits - QTY 50 (incl 7 spare kits)	**Mon 3/27/17**	**Mon 11/6/17**	
4.4.1 Create Bill of Material for Production	Thu 9/28/17	Thu 9/28/17	FM - Production Specialist 1[15%]
4.4.2 Proceed with Kitting & Production Activity	Thu 9/28/17	Thu 10/19/17	FM - Production Specialist 1[60%],FM - Production Specialist 2[60%]
4.4.3 Order Components not in Stock	Thu 9/28/17	Mon 10/2/17	FM - Procurement & Production[15%]
4.4.4 IMEI and ESN information and Attach to Work Order	Thu 10/19/17	Mon 10/23/17	FM - Procurement & Production[5%]
4.4.5 Fleet Survey Information provided by Customer - 43 Trucks	Mon 3/27/17	Mon 3/27/17	ARR - Fleet Maintenance
4.4.6 Order Truck Specific Components not in Stock	Thu 9/28/17	Mon 10/2/17	FM - Procurement & Production[15%]
4.4.7 Data Plan Activated	Mon 11/6/17	Mon 11/6/17	ARR - Project Lead
4.4.8 Reception of Components (incl supplier std turn around time)	Mon 10/23/17	Mon 10/23/17	FM - Procurement & Production
4.4.9 Reception of Truck Specific Components (incl supplier std turn around time)	Mon 10/16/17	Mon 10/16/17	FM - Procurement & Production
4.4.10 Execution of Remaining Kit Production Activities	Thu 10/19/17	Wed 10/25/17	FM - Production Specialist 1[20%]
4.4.11 Verification & Shipment of FM Onboard Computer Kits - Main shipment	Mon 10/23/17	Thu 10/26/17	FM - Procurement & Production[50%]
4.4.12 Arrival of equipment on site	Thu 11/2/17	Thu 11/2/17	ARR - Reception
4.4.13 Milestone #5 - Production & Procurement Activities Completed for 50 Kits for Last Go Live	**Thu 11/2/17**	**Thu 11/2/17**	**FM & ARR Project Teams**
5 Milestone #6 - All Production Activities Completed	**Mon 11/6/17**	**Mon 11/6/17**	**FM & ARR Project Teams**
6 FleetLink Server Deployments	**Mon 3/6/17**	**Tue 4/4/17**	



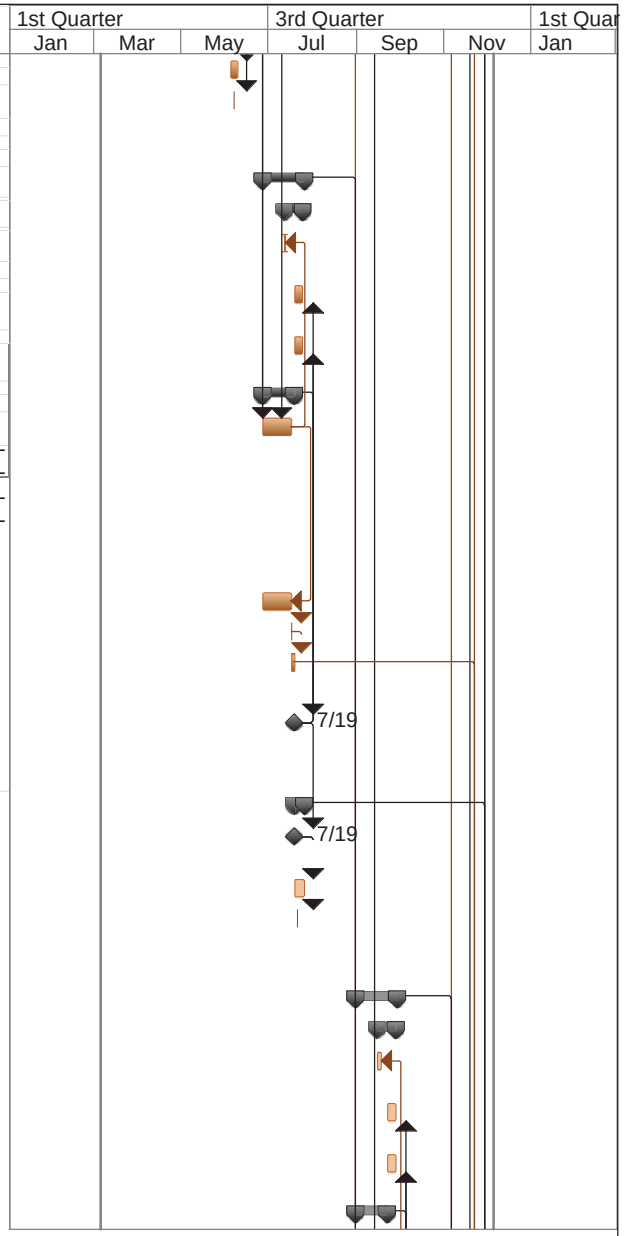
Task Name	Start	Finish	Resource Names
6.1 Combined Data Required to configure the FleetMind RMS for remaining 200 trucks	**Mon 3/6/17**	**Tue 3/28/17**	
6.1.1 Route and Route Reference Data Provided by Customer (incl Route shape files)	Mon 3/6/17	Fri 3/17/17	ARR - Route Smart & GIS[50%]
6.1.2 Validate Format & Completeness of Data provided by the Customer	Thu 3/16/17	Wed 3/22/17	FM - Data Specialist[50%]
6.1.3 Run the Route Data in the FleetLink Geocoder to convert lot centroids to curb-side geocodes location information for each route stop	Thu 3/23/17	Mon 3/27/17	FM - Data Specialist[20%]
6.1.4 Final Review & Clarification of Data Provided by the City	Tue 3/28/17	Tue 3/28/17	ARR - Project Lead,ARR - Route Smart & GIS,FM - Data Specialist,FM - Project Lead
6.2 FleetLink Server Application Installations	**Mon 3/27/17**	**Tue 4/4/17**	
6.2.1 Update of the FM Hosted Server	Mon 3/27/17	Tue 3/28/17	
6.2.1.1 Create QTY 57 Truck Profiles on the Command Center for Phase 1 Go Live	Mon 3/27/17	Tue 3/28/17	FM - IT Specialist[20%]
6.2.1.2 Create QTY 50 Truck Profiles on the Command Center for Phase 2 Go Live	Mon 3/27/17	Tue 3/28/17	FM - IT Specialist[20%]
6.2.1.3 Create QTY 50 Truck Profiles on the Command Center for Phase 3 Go Live	Mon 3/27/17	Tue 3/28/17	FM - IT Specialist[20%]
6.2.1.4 Create QTY 43 Truck Profiles on the Command Center for Last Go Live Phase	Mon 3/27/17	Tue 3/28/17	FM - IT Specialist[20%]
6.2.2 Data Importation to Configure the FleetLink RMS for Remaining 200 Trucks	Tue 3/28/17	Tue 4/4/17	
6.2.2.1 Import Route Combined Data and Associated Refrence Data	Tue 3/28/17	Thu 3/30/17	FM - Data Specialist[30%]
6.2.2.2 Import/create Route Shape files	Tue 3/28/17	Thu 3/30/17	FM - Data Specialist[30%]
6.2.2.3 Import Inventory Data	Tue 3/28/17	Thu 3/30/17	FM - Data Specialist[30%]
6.2.2.4 Verify the Integrity of all Imported Data	Thu 3/30/17	Tue 4/4/17	ARR - Route Smart & GIS[20%],ARR - SWTS Specialist[20%],FM - Data Specialist[40%]
7 Milestone #7 - Fleetmind Server(s) Ready for Dispatch	**Tue 4/4/17**	**Tue 4/4/17**	**FM & ARR Project Teams**
8 FleetMind Integration Activities	**Mon 3/6/17**	**Fri 6/2/17**	
8.1 FleetLink Product Modification/Configuration per Integration per Approved System Design Solution (incl Unit Testing)	Mon 3/6/17	Fri 4/14/17	FM - FleetLink Connector Developer[15%],FM - FleetLink Mobile
8.2 Write System Testing Plan for FleetLink Integration with City of Austin	Mon 3/20/17	Fri 4/14/17	FM - FleetLink QA Specialist[50%],FM - Solution
8.3 Approval of System Test Plan by the ARR Team	Fri 4/21/17	Fri 4/21/17	ARR - Project Team



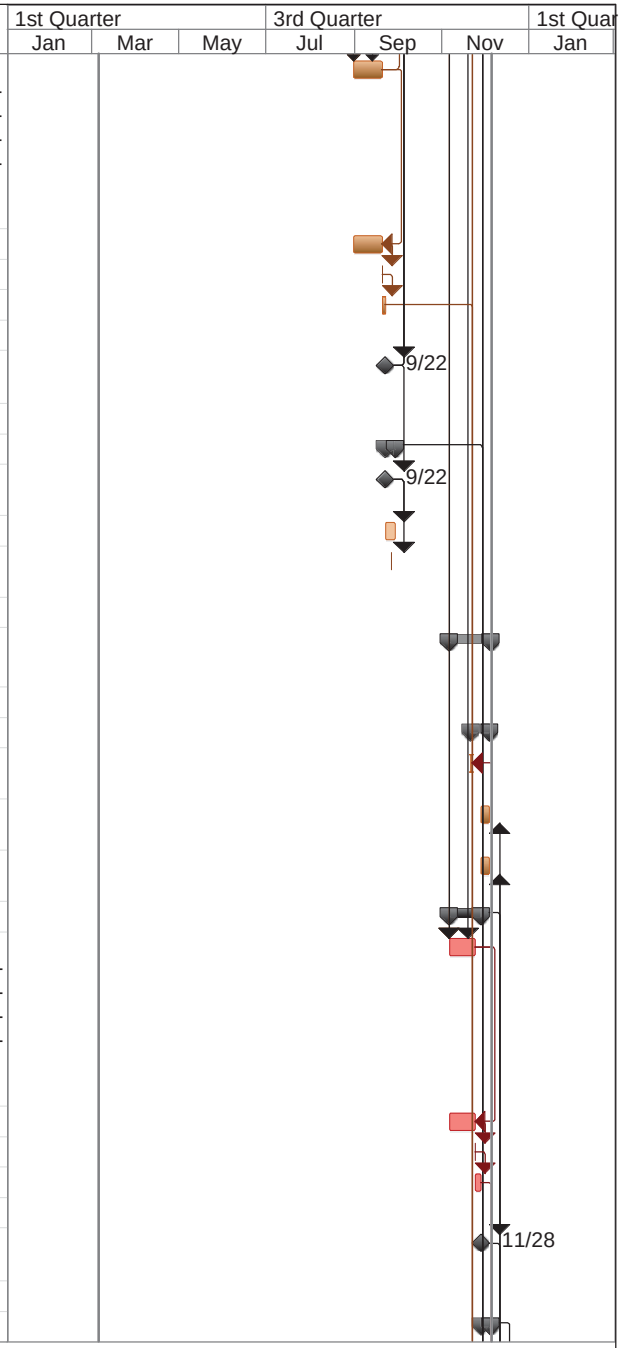
Task Name	Start	Finish	Resource Names
8.4 Configuration of the Specified System Test Environment	Mon 4/24/17	Fri 4/28/17	ARR - IT Architect [20%],ARR - IT CC&B/311 System Specialist[20%],ARR - Route Smart & GIS[20%],ARR - SWTS Specialist[20%],FM - IT Specialist[20%],FM - Sr. Business Analyst[20%],FM - Technical Lead[20%]
8.5 Internal System Testing of FleetLink Product Integration Solution	Mon 4/24/17	Fri 5/12/17	FM - FleetLink QA Specialist[40%]
8.6 Joint FM & ARR System Testing of FleetLink Product Integration Solution	Mon 5/15/17	Fri 6/2/17	ARR - IT Architect [20%],ARR - IT CC&B/311 System
8.7 Milestone #8 - Development & Acceptance of the Interface to CC&B & Route Smart	**Fri 6/2/17**	**Fri 6/2/17**	**FM & ARR Project Teams**
8.8 Milestone #9 - Final configuration of reports and dashboard	**Fri 6/2/17**	**Fri 6/2/17**	**FM & ARR Project Teams**
9 User Training and Go live for 200 trucks	**Fri 4/21/17**	**Tue 12/5/17**	
9.1 Phase 1 - 46 FleetLink Mobile Kits & 11 Cart Delivery Systems	**Fri 4/21/17**	**Fri 6/9/17**	
9.1.1 FleetMind User Training on the FleetLink Products	**Wed 5/3/17**	**Thu 6/8/17**	
9.1.1.1 Installation and Troubleshooting Training to ARR Maintenance Technicians	Wed 5/3/17	Thu 5/4/17	FM - Installer Site Lead[20%]
9.1.1.2 Qty 4 - End User, Admin and Driver Training - Mobile Computer System	Mon 6/5/17	Thu 6/8/17	FM - Project Lead[20%]
9.1.1.3 QTY 2 - Dispatcher & Route Admin Training and Coaching - FleetLink Route Manager	Mon 6/5/17	Thu 6/8/17	FM - Project Lead[10%]
9.1.1.4 QTY 2 - 311 & SWTS CSR and Coaching - FleetLink Route Manager	Mon 6/5/17	Thu 6/8/17	FM - Project Lead[40%]
9.1.2 FleetLink Mobile HW Deployment	**Fri 4/21/17**	**Mon 5/15/17**	
9.1.2.1 H\W installation of 46 mobile computer systems & 11 Cart Delivery	Fri 4/21/17	Thu 5/11/17	FM - Installer Site Lead[70%],Soal Technology -
9.1.2.2 Ready for Dispatch Verification	Fri 4/21/17	Thu 5/11/17	FM - Installer Site Lead[10%]
9.1.2.3 Issue Final Installation Report	Thu 5/11/17	Thu 5/11/17	FM - Installer Site Lead[10%]
9.1.2.4 Per Vehicle Acceptance	Thu 5/11/17	Mon 5/15/17	ARR - Fleet Maintenance
9.1.3 Milestone #10 - QTY 57 Trucks are Ready for Dispatch	**Mon 5/15/17**	**Mon 5/15/17**	**FM & ARR Project Teams**
9.1.4 FleetMind System Go Live	**Fri 6/2/17**	**Fri 6/9/17**	
9.1.4.1 Fleetmind On Site Support for the First Week of Go Live	Fri 6/2/17	Fri 6/2/17	



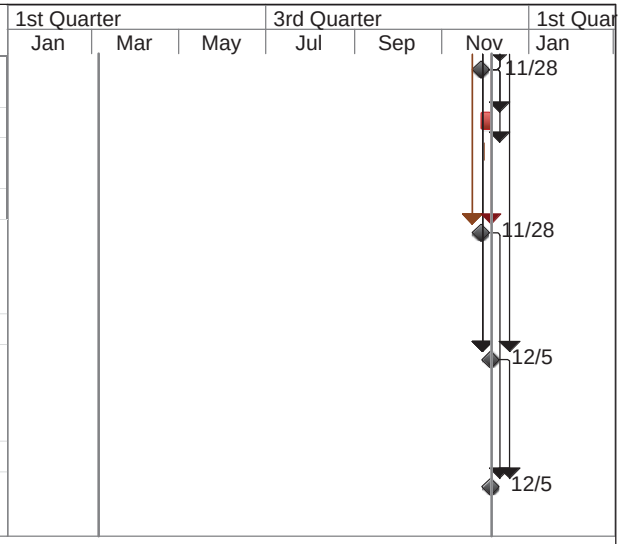
Task Name	Start	Finish	Resource Names
9.2.3 Milestone #11 - QTY 50 Trucks are Ready for Dispatch	**Wed 7/19/17**	**Wed 7/19/17**	**FM & ARR Project Teams**
9.2.4 FleetMind System Go Live	**Wed 7/19/17**	**Wed 7/26/17**	
9.1.4.2 On site FleetMind Coaching	Mon 6/5/17	Fri 6/9/17	FM - Project Lead[30%]
9.2.4.1 Fleetmind On Site Support for the First Week of Go Live	Wed 7/19/17	Wed 7/19/17	
9.1.4.3 Management & Dispatcher Training - FleetWeb & FRM Reporting Suite	Wed 6/7/17	Wed 6/7/17	FM - Project Lead
9.2.4.2 On site FleetMind Coaching	Wed 7/19/17	Wed 7/26/17	FM - Project Lead[30%]
9.2.4.3 Management & Dispatcher Training - FleetWeb & FRM Reporting Suite	Fri 7/21/17	Fri 7/21/17	FM - Project Lead
9.2 Phase 2 - 50 FleetLink Mobile Systems	**Tue 6/27/17**	**Wed 7/26/17**	
9.2.1 FleetMind Training on the FleetLink Products	**Wed 7/12/17**	**Tue 7/25/17**	
9.2.1.1 Installation and Troubleshooting Training to ARR Maintenance Technicians	Wed 7/12/17	Thu 7/13/17	FM - Installer Site Lead[20%]
9.2.1.2 Qty 4 - End User, Admin and Driver Training - Mobile Computer System	Wed 7/19/17	Tue 7/25/17	FM - Project Lead[20%]
9.2.1.3 QTY 2 - Dispatcher & Route Admin Training and Coaching - FleetLink Route Manager	Wed 7/19/17	Tue 7/25/17	FM - Project Lead[10%]
9.2.2 FleetLink Mobile Deployment in the Client Fle	**Tue 6/27/17**	**Wed 7/19/17**	
9.2.2.1 HW installation of 50 systems	Tue 6/27/17	Mon 7/17/17	FM - Installer Site Lead[70%],Soal Technology - Inst Tech 1,Soal Technology - Inst Tech 2,Soal Technology - Inst Tech 3,Soal Technology - Inst Tech 4
9.3 Phase 3 - 50 FleetLink Mobile Kits	**Thu 8/31/17**	**Fri 9/29/17**	
9.3.1 FleetMind Training on the FleetLink Products	**Fri 9/15/17**	**Thu 9/28/17**	
9.3.1.1 Installation and Troubleshooting Training to ARR Maintenance Technicians	Fri 9/15/17	Mon 9/18/17	FM - Installer Site Lead[20%]
9.3.1.2 Qty 4 - End User, Admin and Driver Training - Mobile Computer System	Fri 9/22/17	Thu 9/28/17	FM - Project Lead[20%]
9.3.1.3 QTY 2 - Dispatcher & Route Admin Training and Coaching - FleetLink Route Manager	Fri 9/22/17	Thu 9/28/17	FM - Project Lead[10%]
9.3.2 FleetLink Mobile Deployment in the Client Fle	**Thu 8/31/17**	**Fri 9/22/17**	



Task Name	Start	Finish	Resource Names
9.3.2.1 H\W installation of 50 systems	Thu 8/31/17	Wed 9/20/17	FM - Installer Site Lead[70%],Soal Technology - Inst Tech 1,Soal Technology - Inst Tech 2,Soal Technology - Inst Tech 3,Soal Technology - Inst Tech 4
9.3.2.2 Ready for Dispatch Verification	Thu 8/31/17	Wed 9/20/17	FM - Installer Site Lead[10%]
9.3.2.3 Issue Final Installation Report	Wed 9/20/17	Wed 9/20/17	FM - Installer Site Lead[10%]
9.3.2.4 Per Vehicle Acceptance	Wed 9/20/17	Fri 9/22/17	ARR - Fleet Maintenance
9.3.3 Milestone #12 - QTY 50 Trucks are Ready for Dispatch	**Fri 9/22/17**	**Fri 9/22/17**	**FM & ARR Project Teams**
9.3.4 FleetMind System Go Live	**Fri 9/22/17**	**Fri 9/29/17**	
9.3.4.1 Fleetmind On Site Support for the First Week of Go Live	Fri 9/22/17	Fri 9/22/17	
9.3.4.2 On site FleetMind Coaching	Fri 9/22/17	Fri 9/29/17	FM - Project Lead[30%]
9.3.4.3 Management & Dispatcher Training - FleetWeb & FRM Reporting Suite	Tue 9/26/17	Tue 9/26/17	FM - Project Lead
9.4 Phase 4 - 50 FleetLink Mobile Kits incl Spare Kits	**Mon 11/6/17**	**Tue 12/5/17**	
9.4.1 FleetMind Training on the FleetLink Products	**Tue 11/21/17**	**Mon 12/4/17**	
9.4.1.1 Installation and Troubleshooting Training to ARR Maintenance Technicians	Tue 11/21/17	Wed 11/22/17	FM - Installer Site Lead[20%]
9.4.1.2 Qty 4 - End User, Admin and Driver Training - Mobile Computer System	Tue 11/28/17	Mon 12/4/17	FM - Project Lead[20%]
9.4.1.3 QTY 2 - Dispatcher & Route Admin Training and Coaching - FleetLink Route Manager	Tue 11/28/17	Mon 12/4/17	FM - Project Lead[10%]
9.4.2 FleetLink Mobile Deployment in the Client Fle	**Mon 11/6/17**	**Tue 11/28/17**	
9.4.2.1 H\W installation of 50 systems	Mon 11/6/17	Fri 11/24/17	FM - Installer Site Lead[70%],Soal Technology - Inst Tech 1,Soal Technology - Inst Tech 2,Soal Technology - Inst Tech 3,Soal Technology - Inst Tech 4
9.4.2.2 Ready for Dispatch Verification	Mon 11/6/17	Fri 11/24/17	FM - Installer Site Lead[10%]
9.4.2.3 Issue Final Installation Report	Fri 11/24/17	Fri 11/24/17	FM - Installer Site Lead[10%]
9.4.2.4 Per Vehicle Acceptance	Fri 11/24/17	Tue 11/28/17	ARR - Fleet Maintenance
9.4.3 Milestone #13 - QTY 43 Trucks are Ready for Dispatch	**Tue 11/28/17**	**Tue 11/28/17**	**FM & ARR Project Teams**
9.4.4 FleetMind System Go Live	**Tue 11/28/17**	**Tue 12/5/17**	



Task Name	Start	Finish	Resource Names
9.4.4.1 Fleetmind On Site Support for the First Week of Go Live	Tue 11/28/17	Tue 11/28/17	
9.4.4.2 On site FleetMind Coaching	Tue 11/28/17	Tue 12/5/17	FM - Project Lead[30%]
9.4.4.3 Management & Dispatcher Training - FleetWeb & FRM Reporting Suite	Thu 11/30/17	Thu 11/30/17	FM - Project Lead
10 Milestone #14 - Entire system installed and implemented in remainder of operational fleet	**Tue 11/28/17**	**Tue 11/28/17**	**FM & ARR Project Teams**
11 Milestone #15 - Develop system documentation & provide comprehensive end-user & admin training	**Tue 12/5/17**	**Tue 12/5/17**	**FM & ARR Project Teams**
12 Milestone #16- Pilot Final Acceptance & Project Closure	**Tue 12/5/17**	**Tue 12/5/17**	**FM & ARR Project Teams**



PILOT PROJECT MANAGEMENT PLAN

FLEETMIND DEPLOYMENT PROJECT FOR THE CITY OF AUSTIN VEHICLE TECHNOLOGY UPGRADE INITIATIVE

FLEETMIND SOLUTIONS INC.
1751 RICHARDSON, SUITE 7.200
MONTREAL, CANADA

APRIL 22TH 2016

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Project Management Approach

The FleetMind Project Management approach will be one of collaboration with the City of Austin Project Team with the objective of successfully implementing the FleetMind FleetLink System within the agreed to project schedule & budget for the City to achieve the operational and business objectives for the Pilot. The Pilot project schedule will be structured in the same way as for our previous FleetMind System municipal deployments. The pilot schedule will be built around the following seven work packages per our current project methodology.

- FleetMind Project Initiation
- FleetMind Procurement and Production
- FleetLink Server Deployment
- FleetMind Integration Activities
- FleetLink Mobile Deployment in the client Fleet
- FleetMind Training on the FleetLink Products
- Go Live to Project Closure Customer Coaching

During the execution phase, the project will progress through milestones marking the end of each work package. When the project is ready to close a Milestone, closure readiness will be reviewed at the next weekly project review (refer to the Communication Plan) together with the City Project team. City of Austin decision-making stakeholders need to be present for these meetings. The Milestone decision will be documented in the meeting minutes.
These regular project reviews will also provide regular and frequent opportunities to identify and deal with any risks or issues during the course of the project.

Stemming from the many deployments FleetMind has completed over the years, the following critical success factors stand out as key successful factors for any implementation of the FleetMind Solution;

- The customer must have a strong empowered and representative project team which has the internal recognition and management support to successfully champion the introduction of the FleetLink Solution as well as the related internal business process changes within their organization,

- The timely provisioning of an accurate and complete extract of the route, asset and other associated data required per the FleetMind data requirement documentation is critical,

- The IT organization has to be involved from the project Kick Off and be part of the customer implementations project team,

- The customer staff to be trained by FleetMind have to be made available per the agreed to training schedule and for the full training session,

- Lastly, in the case of a pilot deployment such as this, it is crucial that the participants (specially the drivers) be selected for their ability to adapt to change, their autonomy in the face of uncertainty and their personal interest in being involved with the introduction of new technology. Also it would be important that the routes they are responsible for are routes they are used to run.
  The pilot participants also need to be informed of the pilot objectives and the role they are expected to play as part of the pilot.

Concerning the required user training, the final training dates are usually confirmed during the weekly Project Review Meeting together with the client project team as the project gets close to the end of the “FleetLink Server Deployment in the client Data Center” work package. The

training approach proposed (refer to Training Plan section of this document) by the FleetMind Project is a mix of classroom training, hands on work and coaching. User training is always planned as close as possible to the Go Live date so the staff will retain as much knowledge as possible when they start using the new FleetLink products.

Finally, for the transition from a Go Live mode to pilot operation mode, FleetMind would propose to manage it in the following manner;

From the City's dispatcher(s) & driver's perspective (1 - 2 weeks)

- For the drivers involved in the pilot FleetMind would recommend issuing paper routes for the first few weeks of operations in parallel with the electronic routes being dispatched to the trucks. This would allow for the drivers to get more accustomed to using the new FleetLink Mobile Computers to complete their electronic routes. Experience shows that most of the drivers get a good hang of the system after the first week of regular operations with the help of on site FleetMind coaching for the first week of the Go Live. After the first few weeks, the FM & City project teams would decide if the parallel mode could be terminated or if it needs to be extended. This process will be followed for each phase.
- As for the Supervisors/Dispatchers, they typically get used to interfacing with the FleetMind Route Management System (RMS) to manually transfer routes which have been automatically dispatched to a defective truck over to a spare trucks or any other morning route adjustments within the first week. The challenge for the Supervisors is to learn how to read the FleetMind reports to get an accurate fleet status and to remotely access the truck to take appropriate action whether a driver has not logged in correctly, not selected his route, etc. The onsite FleetMind coaching during the first week of the Go Live greatly facilitates this learning phase.

From the City's Management team perspective (2 to 3 months depending on KPIs to be managed)

- The FleetMind project Business Analyst would work with the City project team to identify a few basic performance KPIs to start monitoring for the first month of operation based on the City's current performance objectives from data provided by the FleetLink Reporting software from Go Live. This would provide management time to understand the reports they are getting from the FleetLink Reporting software. Then a few more KPIs would be monitored for another month in addition to the original. This cycle would continue until all KPIs are regularly monitored by the City Staff using the FleetLink Reporting Suite.

The final transition of the FleetMind Deployment Pilot Project to full operation mode would be done once the "Pilot Final Acceptance & Project Closure" milestone would be passed.

Project Scope

The first phase of the City of Austin – Vehicle Technology Upgrade Project will be a Proof of Concept Pilot. The objective of this pilot will be for FleetMind to demonstrate functionality of the automated and semi-automated collection vehicles which are used on Garbage, Recycling and Brush/Bulk routes as well as testing the functionality of the FleetLink RMS work management system.

Given the nature and objective of this initial phase, unless otherwise agreed to at the Pilot Project Kick Off, there would not be any automated integration between the FleetMind system to the

Enterprise Service Bus, the CC&B Billing System, the 311 Customer Service System, RouteSmart/GIS or to the disposal site scale system. Therefor in order to fully exercise the FleetMind Mobile computer functionality in the automatic and semi-automatic vehicles, the CoA RouteSmart & GIS Specialist would be given requirements to provide combined route data extracts in the right format from RouteSmart to FleetMind so the data could be manually imported in the RMS at an agreed upon recurrence during the pilot phase. Once setup, this process is quite simple and the City Project team could take over the updating process should they choose to do so. This would allow daily automatically dispatching of routes as well as the ability for City users to use the RMS functionality relating to route management,

Furthermore, to keep to RFID information current in the city inventory database, a recurring manual extract of the actual RFID information, as read by the trucks while servicing their routes would be provided by the FleetMind Data Specialist to the designated CoA project team member to be concatenated with the inventory data. The frequency of this exercise would need to be agreed upon to achieve pilot objectives.

Concerning the request to work jointly with the CoA project team to try to find a solution to handle carts being lost in the hopper, FleetMind would use the pilot period to work out and possibly test proposed solutions. Given that a solution is found, it would only be implemented in the phase 2 of the City of Austin – Vehicle Technology Upgrade Project.

Finally, to comply to IT security requirements for this project, FleetMind would integrate with the Active Director Federated Services (ADSF) and configure its Server to Mobile communication to use https.

FleetMind believes this deployment approach for the pilot would achieve the goal of the Pilot by being able to fully demonstrate FleetLink Mobile Computer functionalities as well as the RMS work management system.

The Fleetmind Systems mobile HW components to be installed during this phase is as follows (excluding spare systems);

Product Code	Product Name	Quantity
VPKG-DVR	FleetLink Virtual OBC On-Board Waste Package - DVR Flat Screen KIT	5
VPKG-RFID	RFID Reader Package	4
VPKG-ACT	Generic Actuator Switch Package	5
VPKG-MOBILE RFID - MC67	FleetLink Mobile RFID System - MC67	1
OHW-100 + DVR w/RFID	DVR On-Board Fleet Smart Computer Touchscreen System – Training Kit	1
VPKG-RFID Tags	RFID Tags - To be placed on Trucks - Includes installation - Travel & Living extra	6

The scope of this project also includes provisioning of all user documentation, manuals, and training aids to be used in conjunction with the FleetLink products. FleetMind will also provision the following services during the course of the project,

Product Code	Product Name	Quantity
PS-10B	FleetMind Installation - DVR - (per unit) Travel & Living extra	5
PS-RFID -Install	FleetMind Installation RFID - (per unit) Travel & Living extra	4

PS-ACT-Install	FleetMind Installation - Actuator - (per unit) Travel & Living extra	5
PS-10B HH	FleetMind Installation - FleetLink MC67Hand Held Computers - (per unit) Travel & Living extra	1
VPKG- De-installation	De-Installation of existing hardware - (per truck) Travel & Living extra	6
PS-10E	FleetMind Installation Verification - Ready-For-Dispatch - Max 25 per day / 1-day minimum. (per unit) Travel & Living extra (calculated per truck)	6
PS-10X	FleetMind Installation - System Configuration	6
PS-23	PS-23- One-day on-site Training FleetMind OBC Kits installation & Troubleshooting	1
PS-33	On-Site FleetLink User Training	2
PS-25	Daily Acceptance Test Support. (per unit) Travel & Living extra (calculated per truck)	6
PS-81	Project Manager - 1 Day. Travel & Living extra	2
PS-84	Engineer Developer/Tester: Historical Data Migration Mapping: per section 4.75 of RFP FleetMind	0

Project Management, Engineering, Production, Logistics project work and Training Services will be performed internally. The installation services for the project are planned to be partly outsourced to Soal Technologies contractors under Fleetmind Supervision.

Project Milestone List

The chart below lists the major milestones for the project. This chart includes major project milestones as defined by the City of Austin as well as some standard FleetMind Project milestones. Milestone dates will be managed within the Microsoft Project schedule for this project. The Project Lead will communicate any approved changes to these milestones or dates to the Fleetmind project team. The Project Lead shall also advise the project team for the City of Austin of any scheduling delays impacting the project Milestones.

Milestone	Deliverable(s)	Description of Milestone Completion Criteria	Payment Plan
#1 - Project Initiation Completed	- Internal Work Order created, - Project Schedule vetted by customers at Kick Off - Kick Off Meeting Minutes	1. The FleetMind Deployment Project initiated and staffed. 2. Project Kick Off was held with an agreement that the project as presented by the FleetMind Project Lead is in accordance with the mandate awarded by the City of Austin to FleetMind. Acceptance of the meeting minutes will constitute acceptance.	0%
#2 – Proof of Concept Pilot Design & Implementation	Proof of Concept Pilot Design & Implementation	After Proof of Concept Pilot is designed & Implementation Plan is presented & Accepted in writing by ARR	0%
#3 - Entire System Design and Implementation Plan	Entire System Design and Implementation Plan	After the entire system is designed and implementation plan is presented and accepted in writing by ARR.	0%
#4 - Initial cadre of ARR staff trained; S/W implemented & vehicle hardware installed on at least 5 representative vehicle types (as determined by ARR) to verify system functionality	Initial cadre of ARR staff trained; S/W implemented & vehicle hardware installed on at least 5 representative vehicle types (as determined by ARR) to verify system functionality	After cadre staff is trained, software is installed and implemented, and hardware is installed on representative vehicles and system functionality is verified and accepted in writing by ARR.	75%
6 - Pilot Final Acceptance & Project Closure	Pilot Phase testing and ARR evaluation is completed.	Pilot system test plans have been executed, identified system issues have been identified/resolved, completion of evaluation has been accepted by ARR.	25%

Schedule Baseline and Work Breakdown Structure

As mentioned previously in this document, the project schedule is built around the same seven work packages FleetMind uses for all its deployment projects. The tasks stemming from the resulting planning can be described as follows;

- FleetMind Project Initiation

  Upon receiving a formal PO from the customer, an internal work order will be issued to initiate the new Deployment Project. As part of the Project Initiation a handoff meeting will be held between the responsible Sales Executive, the Sr. Director Operations and the Deployment Project Lead. During this meeting the Project Lead is informed of the final customer project contact, the particularities of the project as well as the business objectives the customer expected to achieve by introducing the FleetLink System in his fleet.

  The Project Lead then proceeds to issue a fleet survey request as a prerequisite for holding the Deployment Project Kick Off. The Project Initiation phase concludes with a Kick Off meeting which is held with the client to start the actual project execution phase. At this time the scope, project contacts, required deliverables and project schedule are reviewed to ensure that City of Austin and FleetMind project teams are in sync. During the Kick Off meeting the communication plan is also discussed to ensure good information flow between the two project teams. A weekly (or agreed upon recurrence frequency) project review would be setup to review the weekly written FleetMind project progress report, the project schedule and the outstanding project pending action items list.

- FleetMind Procurement and Production

  The Procurement and Production activities start off from the creation of the Work Order during the Project Initiation. These activities will be carried out using the same processes as for all FleetMind Deployment Projects.
  For the procurement to be completed, the on-site fleet survey activity has to have been completed in the early stages of this work breakdown by the FleetMind team.
  As for the Production, the final system configurations to be done prior to shipment require City of Austin to have provided data plan activation (including SIM cards if applicable) information from their Service Provider.

- FleetLink Interface with Third Party S/W

  This work package will include joint business process review session with the CoA project team to ensure proper integration of the overall integration of the FleetMind Products within the city operational environment,

  Stemming from the business process reviews, the technical system design of the integration solution to be deployed in phase 2 will be delivered as part of the pilot schedule,

  Joint work activities with the city CoA team will be defined under this work package.

- FleetLink Server Deployment in the client Data Center

  In this phase of the project, FleetMind would be setting up a hosted production and test server environment in collaboration with the CoA IT Project contacts including the integration with the city's ADSF. This phase would also include the installation and configuration of all the FleetLink Server Products deliverables. The configuration activities include configuring

the FleetLink Route Management System, the truck S\W profiles via the Command Center, setting up user URLs for user access to the FleetWeb and FleetLink Reports, FleetLink Messaging as well as configuring Alchemy to manage predefined system alarms to monitor the FleetMind Server environment operations.

As part of this phase, the CoA project team would supply the combined route, inventory and associated data to set up the FleetLink Route Manager System.

FleetLink Mobile Deployment in the client Fleet

The first step is to decide the proper location for the on board computer for each truck chassis type. This activity has an important safety implication so the active participation of the decision-making project stakeholder for the City of Austin is required to make the final positioning decision,

This work package includes the installation, configuration and post installation verification work for the pilot truck deployment of the FleetLink Mobile systems. During the pilot, the City will be expected to lead the acceptance testing activities.

As the installations progress, a careful log of the work done is kept in the Installation and Ready for Dispatch Verification Report spreadsheet for each truck by the FleetMind Deployment Lead to ensure the completeness and quality of each truck installation. This document will also contain the result of the Deployment Lead's Ready for Dispatch Verification. This detailed report can be made available to the City as part of the weekly progress report if required.

- FleetMind Training on the FleetLink Products

  This work package includes FleetMind provisioning User Training for the FleetLink RMS, the FRM Reports and FleetWeb to the City users. FleetMind would train the drivers for the Pilot.

  The Driver training is scheduled a close as possible to the Go Live date for maximum retention. For the FleetMind Reporting and FleetWeb user training, it will be scheduled during the Go Live week, so if actual client data cannot be used as part of the training with the Dispatcher and Management staff, then the Fleetmind trainer may use test data.

  As for the FleetMind Route Management, FleetMind would train the Dispatchers and other City staff which would be expected to use the FleetLink Route System as part of their normal work activities.

  Finally, the FRM Reporting and FleetWeb user training, would be scheduled during the second half of the Go Live week so actual client data can be used as part of the training with the Dispatcher and Management staff. FleetMind would provisioning this training to the supervisors, Dispatchers & City Management staff which would be expected to use the FleetMind Reports as part of their normal work activities.

- Go Live to Project Closure Customer Coaching

  System Acceptance Testing is expected to be executed toward to end of the 3-month pilot period under the presence of the City's Project Lead & the decision-making project stakeholders
  In this phase FleetMind would also provide onsite coaching with the users when they are most needing of training reminders during the first few weeks of operations

Schedule Management Plan

Project schedules for the FleetMind Deployment Project – City of Austin will be created using MS Project 2010 starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages, which must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once completed the project schedule is created, the project team and any resources will review it while tentatively assigned to project tasks. The project team and resources must agree to the proposed work package assignments, durations, and schedule. The project schedule is then reviewed by the FleetMind Project Sponsor, approved and base-lined prior to being presented to the City Project team. The FleetMind Project Manager will maintain the schedule as a MS Project Gantt Chart. Any proposed changes to the schedule will follow FleetMind's change control process. If established boundary controls may be exceeded, a change request will be submitted to the Project Lead. The Project Lead together with the FleetMind project team will determine the impact of the change on the schedule, cost, resources, scope, and risks. If it is determined that the impacts will exceed the boundary conditions, then the change will be forwarded to the FleetMind Project Sponsor for review and approval. The FleetMind boundary conditions are for this project will be

- Proposed change causes delay on a FleetMind deliverable,
- Proposed change cost more than 1 day of effort to the Project,
- Proposed change implies unplanned T&L costs,
- Proposed change adds new functionality to the FleetLink Mobile Software Application Suite,
- Proposed change requires modifications to the FleetLink Mobile H/W platform

If the FleetMind Project Sponsor approves the change then the Project Lead will present a quote to the City of Austin Project Team for their approval. Upon acceptance, the FleetMind Project Lead will update the schedule and all documentation and communicate the change to all stakeholders in accordance with the Change Control Process to implement the change.
Roles and responsibilities for schedule development are as follows:

The Project Lead will be responsible for facilitating work package definition, sequencing, and estimating duration and resources with the project team. The Project Lead will also create the project schedule using MS Project 2010 and validate the schedule with the project team, stakeholders, the project sponsor and the City of Austin Project Responsible. The Project Lead will obtain schedule approval from the project sponsor and baseline the schedule.

The project team is responsible for participating in work package definition, sequencing, duration, and resource estimating. The project team will also review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The project sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is base lined.

The City of Austin Project Responsible and the FleetMind project stakeholders will participate in reviews of the proposed schedule.

Deployment Project Resource Plan

Fleetmind Deployment Pilot Project Structure

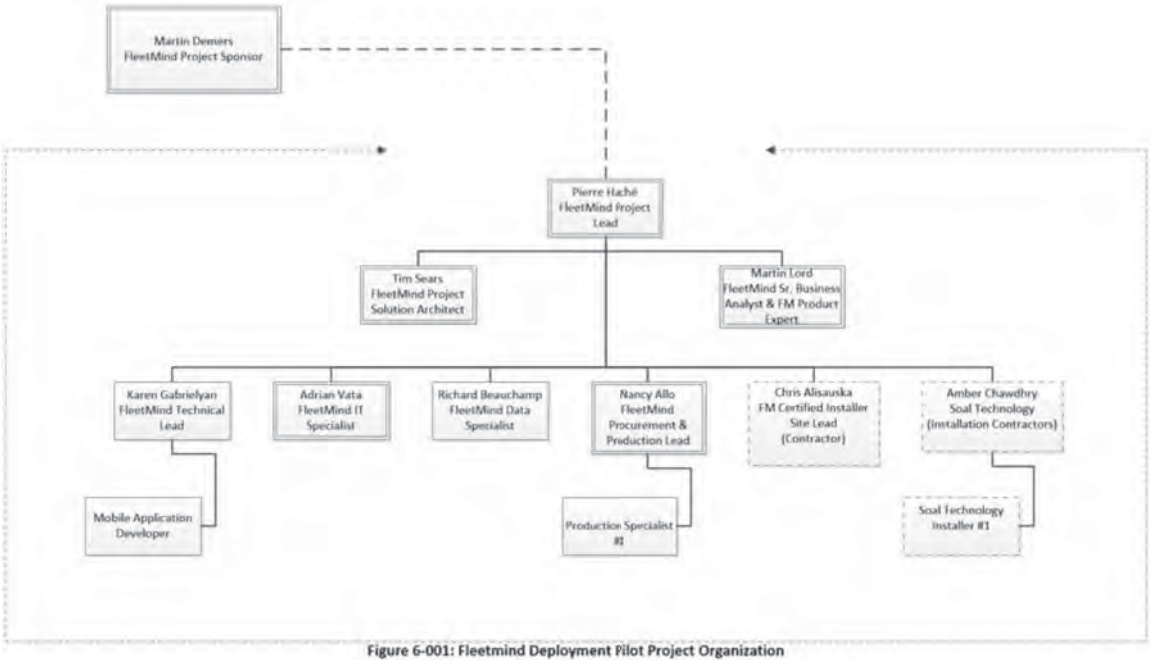


Figure 6-001: Fleetmind Deployment Pilot Project Organization

Project Sponsor (Martin Demers) – FleetMind's CEO will be the project sponsor for this project. The Sponsor's role is to insure that everyone adheres to the principles outlined in the FleetMind's deployment process with diligence and quality. The sponsor is also available as an escalation point for issues that need to be addressed in priority.
Will take part in the business process reviews & technical system design activities

Project Lead (Pierre Haché) – responsible for the successful deployment of the FleetMind Product Suite. The Project Lead is responsible for planning, creating, and/or managing all work activities, variances, tracking, reporting, communication, performance evaluations, staffing, and internal coordination with functional managers and external coordination with the City of Austin Project Team and Installation Contractor selection and mandate. The Project Lead will also provision user training as part of his responsibilities.
Will be assign to this project 40% of his time for the whole project duration

Project Solution Architect (Tim Sears) – responsible for the integrity of the overall solution and of its compliance to the customer requirements for this mandate. The Project Lead will manage the Project Solution Architect.
Will be assign to this project 20% of his time mainly spent during the business process reviews & technical system design activities of the project

Sr. Business Analyst & FleetMind Product Expert (Martin Lord) – responsible for participating in the CCB as well as contribute his knowledge to help the City of Austin Project Team integrate the FleetMind System in their daily operations. Gary can also be consulted by the City of Austin project team for other Business level discussions concerning the integration of FleetMind Systems. He may also be provisioning user training and coaching during the Go Live portion of this project. The Project Lead will manage the Sr. Business Analyst & FleetMind Product Expert.
Will be assign to this project 25% of his time mainly during the period after Go Live

FleetMind Pilot Deployment Project - City of Austin

Project Technical Lead (Karen Gabrielyan) – responsible for overseeing of all new S/W development, S/W configuration and testing for the FleetMind Deployment Project as well as ensuring functionality is compliant with quality standards. Responsible for working with the Project Lead to create work packages, manage risk, manage schedule, identify requirements, and create reports. The Project Lead will manage the Project Technical Director.
Will be assign to this project 15% of his time mainly during integration with ADSF & the technical system design activities

IT Specialist (Adrian Vata) – responsible for Supporting the City of Austin IT Contact to provide the right server platform and will also implement all of the FleetMind Server S/W in preparation to the deployment. The IT Specialist will also participate in the interface testing project activities. The Project Technical Director will manage the IT Specialist.
Will be assign to this project 40% of his time during the FleetLink Server Deployment in the client Data Center and during the period after Go Live

FleetMind Installer Site Lead (Chris Alisauskas - Contractor) – responsible for overseeing of the FleetMind H/W deployment in the City of Austin truck fleet as well as ensuring the installations are done per the FleetMind Quality standards. The FleetMind Deployment Specialist will also be the on-site contact for the installation contractors hired by FleetMind for this Deployment. He will also be responsible to provision the installation and troubleshooting training to the designated fleet maintenance staff. The Project Lead will manage the Deployment Specialist.
Will be assign to this project 100% of his time during the FleetLink Mobile computer installations

Procurement & Production Lead (Nancy Allo) – responsible to purchase all required components for this project. As well, she is responsible to plan the kitting, verification and shipping of the equipment to be installed in the City of Austin fleet as well as spares.
Will be assign to this project 15% of her time during the production activities

Recommend Structure for the City of Austin Pilot Project Team

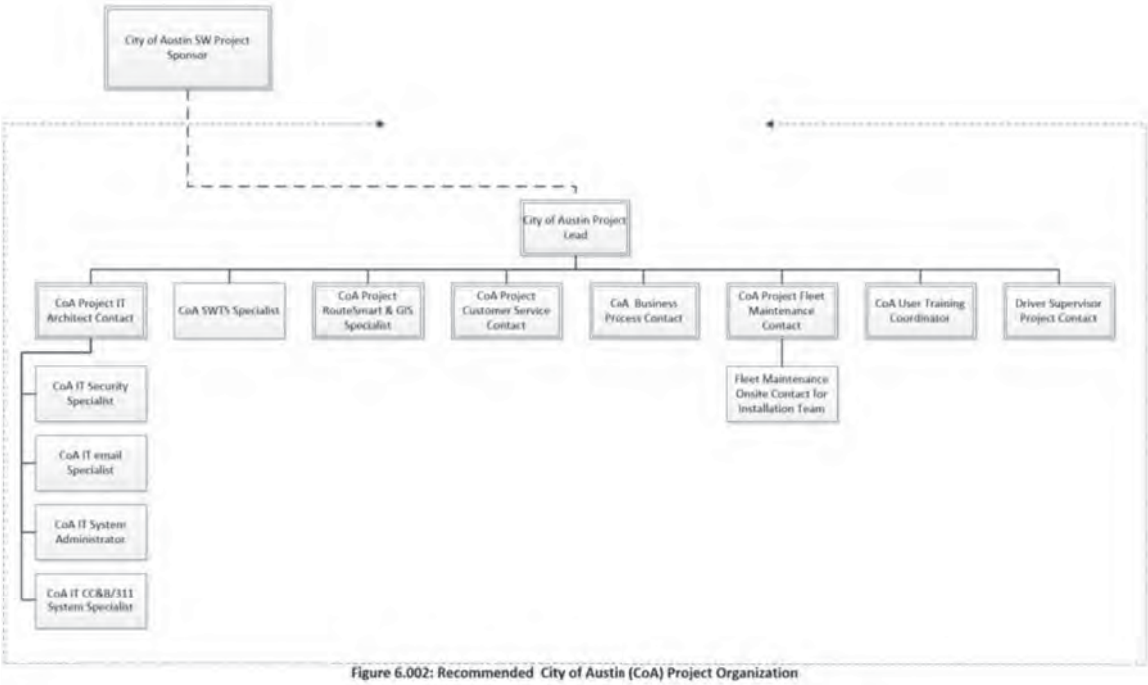


Figure 6.002: Recommended City of Austin (CoA) Project Organization

CoA Project Lead - responsible for the successful business integration of the FleetLink Product Suite within the City of Austin SW organization. The Project Lead is responsible for planning, creating, and/or managing all work activities, variances, tracking, reporting, communication, performance evaluations, staffing, and internal coordination with functional managers and external coordination with the FleetMind Project Team. The Project Lead will also provision user training as part of his responsibilities.

CoA Project IT Architect Contact – responsible to interface with FleetMind to provide technical details and security policies for the City Data Center pertinent to the implementation of the FleetMind hosted server environment as well as the interfacing between FleetMind the different Data Center nodes (CC&B, 311, RouteSmart, ADSF, email, etc.) required as part of this project. The role will also include being the technical point person to review and finalize with the FleetMind Project Team all interfacing specifications involved as part of the above mention integration work for this project. IT is expected that this person will have access to the appropriate IT Specialists as illustrated in the Recommended City of Austin Project Organization.

CoA SWTS Specialist – responsible to provide all inventory and associated data to FleetMind for the configuration of the FleetLink Route Manager System (RMS) for inventory management. This person will be involved in the manual process to keep the inventory updated with current RFID information for the carts given the full transfer of the inventory management would be planned for the Phase 2 of the Project. This person will also be expected to participate in discussions to review and finalize with the FleetMind Project Team all interfacing specifications involved as part of the above mention integration work for this project, As well as, this person will be expected to participate in the planning and execution of the migration of historical data from the SWTS system.

CoA Project RouteSmart & GIS Specialist – responsible to provide all route, inventory and associated data to FleetMind for the configuration of the FleetLink Route Manager System

(RMS). This person will be involved providing manual extracts of the route data for import in the RMS during the Pilot period given automation of this process would be planned for the Phase 2 of the Project. This person will also be expected to participate in discussions to review and finalize with the FleetMind Project Team all interfacing specifications involved as part of the above mention integration work for this project

CoA Customer Service Project Contact – responsible to provide input concerning the workings of the 311 Customer Support Team as part of the Business Reviews to be held as part of this project as well as being the voice of this team to setup training and finalizing interfacing requirement for the integration of the FleetMind System with 311.

CoA Business Processes Project Contact – has the role of process subject matter expert during the joint FleetMind/CoA Project team to review each process impacted by the introduction of the FleetMind system and to agree on how the City of Austin SW and other related departments should best adapt to the resulting changes.

CoA Fleet Maintenance Project Contact – responsible to provide all vehicle related information to FleetMind (e.g. detailed fleet survey information), ensure the FleetMind installation team has the appropriate facilities and support while on site for installations. Also needs to make sure the proper staff are on hand at the beginning of the installations to formalize equipment placement in each truck cab type based on any safety regulations or policies applicable at the City.

CoA User Training Coordinator – given the City Project Lead does not take care of the training planning, the User Training would be responsible to plan & setup the training activities in coordination with the FleetMind Project Lead.

CoA Driver Supervisor Project Contact – has the role of providing the driver perspective to any aspect of the project. Experience has shown clearly the consideration for the driver perspective is paramount to the success of any FleetMind Deployment project. As well, early supervisor involvement in the deployment process gives them the tools they need to better guide and coach their drivers through the important work process change they will be going through.

Training Plan

The FleetMind Training Plan is tailored to cater to the Drivers, the Dispatchers, the Management Staff which monitor the fleet performance and the selected maintenance staff which are expected to keep the FleetMind Mobile System operational at all time. In that light the training courses are as follows:

FleetLink Mobile Driver Training

- The driver training walk's the driver through every work panel the FleetLink Mobile SW application will be presenting to them each day. The course audience are the drivers, their supervisors and it is recommended that the dispatching staff participate as well as they often are the driver's first support person should they have any questions or issues concerning the usage of the FleetLink Mobile Computer.
- The course duration is typically 1.5 hours depending on the number of participants. Given the number of drivers to train we will want to organizes the classes around the different line of businesses so the drivers earn only what they will be using for the LOB they work in.
- The venue required to present this course is a classroom setting equipped with big screen monitor visible by all class participants so the FleetMind Training can connect to it via a client supplied preconfigured workstation, which can establish a VNC connection to a remote test environment. This will allow the Training to dynamically demonstrate the different interactions the drivers should expect to have with the on board computers.

- Each Participant will have a PowerPoint presentation document containing the screen shots as presented by the Trainer on the live system to follow the course as well as a Quick Reference Card they can use later as a reminder of key steps during their day in case they forget.

FleetMind Reports Suite

- The courses teach the participants how to use the FleetLink FRM Reports for historical reports as well as the FleetWeb real time map based reporting tool. Therefor Trainer will go through each report type the FRM reports and the FleetWeb offer.
- This course targets audience for this class is the City Supervisors & Managers, which are expected to monitor daily fleet performance KPIs, and those monitoring the longer-term performance KPIs.
- The course duration is typically 2 hours depending on the number of participants and the level of interaction the group generates with the FleetMind Trainer.
- The venue required to present this course is a classroom setting equipped with big screen monitor visible by all class participants so the FleetMind Training can connect to it via a client supplied preconfigured workstation, which has access to the City's FM Server Environment. This multimedia setup will allow the trainer to have access to actual live customer data during the Go Live phase of the Deployment Project. The use of actual fleet data and its live interpretation by the class participants is a powerful learning enabler. The participants will quickly understand how the tools being presented can practically be used as part of their daily tasks.
- The format of the course is demonstrative so there are not course PowerPoint. However, user guides are provided as part of the Deployment Project for easy reference.

FleetLink Route Manager System & Reporting Training

- The course is meant to show Dispatchers how to use the FleetLink RMS and how to accomplish all their typical dispatching tasks. As part of the course, the Trainer covers the following topics and workflows:

    - Overview of the FleetLink RMS
    - Review or the Route Reference Data
    - Creating & Assigning Routes to Trucks
    - Creating Temporary Routes to handle Statutory Holidays, Route Transfers between trucks, etc.
    - Closing Routes at the End of Day
    - Dispatching Residential, Commercial and Roll Off Assignments
    - Creating On Demand Assignments for Residential, Commercial and Roll Off
    - Using the Statuses Provided by the RMS

- The FRM Reports and FleetWeb Reports will also be presented to the Dispatchers with emphasis on the report panels they would need to use for daily monitoring and real time truck positioning purposes.
- The course duration is 6 to 8hrs depending on the number of participants and the level of interaction the group generates with the FleetMind Trainer. It should be noted that there is a lot of mentoring time planned to support the dispatcher during between Go Live and Project Closure. FleetMind does recognize the importance that the dispatchers are able to carry out their task in a timely manner even through the introduction of the new

FleetLink RMS.

- The venue required to present this course is a classroom setting equipped with big screen monitor visible by all class participants so the FleetMind Training can connect to it via a client supplied preconfigured workstation, which has access to the City's FM Server Environment. A training PowerPoint is provided to the class participants and a full FleetLink RMS User Manual is delivered as part of the Deployment Project.

Installation & Troubleshooting Training

- The objective of this training is to enable the participants to understand what each H/W component of the FleetLink Mobile system or used for and how to install them. The Trainer will provide a system overview as part of the training but the focus in this course is clearly the truck related aspects of the FleetLink Mobile system.
- Based on our experience, FleetMind recommends that the target participant should be selected for his/her sincere interest to learn about and work with the computer and electrical aspects of the FleetLink System maintenance.
- The course duration is between 6 to 8hrs, as the participants will have to do at least one full installation of a FleetLink Mobile system under the supervision of the FleetMind Trainer. The venue is typically in the maintenance area with easy access the different truck chassis types, which make up the City fleet for demonstration purposes. Also, as the maintenance star is often very busy, it is important the client carefully plan the participant's course participation to ensure full participation to take full advantage of this training.

Communications Management Plan

This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project and will be updated as communication requirements change. This plan identifies and defines the roles of FleetMind and City of Austin project team members as they pertain to communications. It also includes a communications matrix, which maps the communication requirements of this project, and communication conduct for meetings and other forms of communication. A project team directory is also included to provide contact information for all stakeholders directly involved in the project.

The Project Lead will take the lead role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix below. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it, and to whom to communicate.

Communication Type	Description	Frequency	Format	Participants/ Distribution	Deliverable	Owner
Weekly Status Report	Email summary of project status	Weekly	Email	City of Austin Project Lead, FM Project team and Sponsor, Stakeholders	Status Report	FleetMind Project Lead
Weekly FleetMind Internal Project Team Meeting	Meeting to review action register and progress of project activities	Weekly	In Person	FleetMind Project Team	Updated project Action Register & Timeline	FleetMind Project Lead

Weekly City of Austin / FleetMind Project Review	Meeting to review action register and progress of project activities	Weekly	Conference Call or in Person	FleetMind & City of Austin Project Teams, FM Project Stakeholders	Updated project Action Register & Timeline	FleetMind Project Lead
Project Major Milestone Reviews	Present closeout of project phases and kickoff next phase	Milestone 1 and	Conference Call or in Person	Project Sponsor & Stakeholders, FleetMind & City of Austin Project Lead	Minutes of Decision(s), Project Phase Kick Off or Closure Presentation Material	FleetMind Project Lead
Technical Reviews	Review of project requirements & technical issues requiring FM Engineering involvement	As Needed	Conference Call or in Person	As needed	Technical Document	FleetMind Technical Lead

Communications Conduct:

Meetings:
The Project Manager will distribute a meeting agenda at least 1 day prior to any scheduled meeting and all participants are expected to review the agenda prior to the meeting. Meeting minutes will be distributed no later than 24 hours after each meeting is completed.

Email:
All email pertaining to the project should be professional, free of errors, and provide brief communication. Email should be distributed to the correct project participants in accordance with the communication matrix above based on its content. All attachments should be in one of the organization's standard software suite programs and adhere to established company formats. If the email is to bring an issue forward then it should discuss what the issue is, provide a brief background on the issue, and provide a recommendation to correct the issue. The Project Leads for the City of Austin and FleetMind projects should be included on any email pertaining to the FleetMind Deployment Project – City of Austin

Informal Communications:
While informal communication is a part of every project and is necessary for successful project completion, any issues, concerns, or updates that arise from informal discussion between team members must be communicated to the respective Project Leads so the appropriate action may be taken.

Change Management Plan

The following steps comprise FleetMind organization change control process for all projects and will be utilized on the FleetMind Deployment Project – City of Austin:

> **Step #1:** Identify the need for a change (Can be submitted by any authorized member be the City of Austin Project Team or FleetMind Stakeholder),
> Requestor will open a change request case in the FleetMind CRM (Sales Force) or via email to the FleetMind Project Lead. City of Austin project team member will be given access to the FleetMind Web Portal to access Sales Force at the onset of the project,
>
> **Step #2:** Log change request in the FleetMind CRM (Sales Force) if not already done. (FleetMind Project Lead),

The FleetMind Project Lead will maintain a log of all change requests for the duration of the project using the reporting feature of the Sales Force CRM application.

Step #3: Conduct an evaluation of the change (FleetMind Project Lead, FleetMind Product Mgr., Project Technical Director & the Requestor). The Project Lead will conduct an evaluation of the impact of the change to cost, risk, schedule, and scope,

Step #4: Submit change request to Change Control Board (CCB) (Project Lead)
The Project Lead will submit the change request and analysis to the CCB for review. The FleetMind CCB consists of the CEO & the COO.

Step #5: Change Control Board decision (CCB)
The CCB will discuss the proposed change and decide whether or not it will be approved based on all submitted information,

Step #6: Implement change (FleetMind Project Lead)
If a change is approved by the CCB, the Project Lead will update and re-baseline project documentation as necessary as well as ensure any changes are communicated to the team and stakeholders. If the City of Austin Project Team requested the change, the Project Lead will communicate the results of the FleetMind CCB. If a PO is required to proceed with the change, the request will be made before proceeding with the implementation of the request change.

All change requests will be logged in Sales Force and tracked through to completion whether approved or not.

Quality Management Plan

All members of the FleetMind project team will play a role in quality management. It is imperative that the team ensures that work is completed at an adequate level of quality from individual work packages to the final project deliverable. The following are the quality roles and responsibilities for this Project:

The Project Sponsor is responsible for approving all quality standards for the FleetMind Project. The Project Sponsor will review all project tasks and deliverables to ensure compliance with established and approved quality standards. Additionally, the Project Sponsor will sign off on the final acceptance of the project deliverable prior to it being delivered to the City of Austin Project team.

The Project Lead is responsible for quality management throughout the duration of the project. The Project Lead is responsible ensuring all tasks, processes, and documents are compliant with the FleetMind quality standards. The Project Manager will work with the FleetMind Management team to establish acceptable quality standards. The Project Lead is also responsible for communicating and tracking all quality standards to the project team and stakeholders.

The remaining member of the project team, as well as the stakeholders will be responsible for assisting the Project Lead to ensure that all quality standards are met and communicate any concerns regarding quality to the Project Lead.

As such, as part of the FleetMind's approach during the course of the project, FleetMind business processes and methodologies include quality verification through the work executed to deliver our deliverables to our customers.

- Any FleetMind custom integration development activities include a thorough review of the interfacing requirements with the customer to ensure proper understanding of each requirement before development work begins. Once the development work is completed,

the solution is tested using automated unit testing combined with joint FleetMind/customer integration, use case and user acceptance testing to ensure all requirements have been met,
For the existing FleetMind Products being deployed during this project, an acceptance testing document will be jointly developed which would be designed to have a section for the pilot and a section for the final complete solution acceptance once the system is fully deployed,

- As part of the route data provisioning phase, FleetMind will review and discuss its finding based on past experience with other customers to ensure its integrity and completeness. Having correct route data is a critical success factor for a FleetMind system deployment which is why we expect a lot of time will be spend on vetting the route data with the City Project team,

- As part of the FleetMind Server configuration procedure the following verifications are done to ensure the setup is correct;
    - To verify the end-to-end communication between the server and mobile to certify its completion the FleetMind IT specialists configures a test truck based using a test FleetLink Mobile on board computer systems at FleetMind and configures test routing data in the FleetLink RMS on the newly configured server. The test route is then dispatched to test truck located to verify server to mobile communication is correctly flowing through the City's data center firewall. This procedure is also do directly with an installed FleetLink Mobile computer if available at the time of the testing,
    - To verify the reports have been properly deployed, the IT specialist will log into the application to verify correct accessibility and that the correct City of Austin mapping info is presented. Further verification is done by the FleetMind Project Lead during the first days of Go Live leading up to the System Acceptance Test to ensure the expected data is being reported on each of the available application windows,
    - To verify the FleetLink Route Management System (RMS) is properly deployed, the FleetMind data specialist for the project will do an initial customer data import and verify that the RMS is properly configured,
    - Finally, as part of the first few days of Go Live while on site, the FleetMind Project Lead will work with the different FleetMind products to ensure the configurations and functionality works as it should.

Furthermore, the above mentioned business process/activities use the following tools and templates to ensure a rigorous application of these proven FleetMind Deployment processes:

- **FleetMind Server Monitoring** – Each FleetMind Server Application Suite installation includes the Alchemy system monitoring application which manages predefined system alarms to monitor the FleetMind Server environment operations

- **Sample reference data spreadsheet** - these will be used to help City of Austin provide the existing routing & route attribute information in the right format for import into the FleetLink Route Management System,

- **FleetLink Command Center** - This tool is used by the FleetMind System Administrator (and later City of Austin' system administrator) to configure each truck defining its purpose, its name, its network configuration, hardware profile (cameras, RFID, automation hardware, scales etc…) alarming requirements, etc… to be stored in the FleetLink DB,

- **A VNC client** is part of the basic FleetLink Mobile on board computer as a tool to remotely access each truck during the installation activities and the Go Live for remote access to update S/W, change a configuration or the support drivers, which may have difficulties during the initial days of Go Live. City of Austin can also use this tool for the same purpose as well as for training and evaluation of the driver's performance.

- I**nstallation and Ready for Dispatch Verification Report** - this standard spreadsheet is setup for the installation team to report their progress as well as any issues stemming from the Ready for Dispatch Verification activity to the FleetMind Project Lead during the truck installation phase.

Proposed Acceptance Plan / Criteria

GPS/AVL Requirements

A. Obtains accurate position/location information of vehicles
B. Collects GPS/AVL location data at least every 15 seconds
C. Capability of archiving and retrieving historical mapping, travel paths, and activity of vehicles.
D. Transfer of data via cellular network
E. Data transfer
F. GPS/AVL data can be obtained via web-based interface
G. Creation and monitoring of vehicle location within a user defined or designated area (geo-fencing)
H. Ability to establish geo-fenced areas for arrival/departure
I. Vehicle identification (different symbol types)

Data Collection

A. Location (latitude, longitude)
B. Speed
C. Direction
D. Idling (set durations)
E. The GPS/AVL system or equivalent shall collect equipment usage data (telemetry events) including and not limited to:
    1) Ignition on/off
    2) PTO
    3) Arm movements (up and down)
    4) g-force events

Technical Requirements

Data Collection.

A. The GPS/AVL accuracy should be less than 5 meters.
B. The GPS/AVL system shall collect data for each vehicle
C. Integration of ESRI formatted maps (.shp, etc.)
D. Handheld units should demonstrate same capabilities
E. All route activity should be stored at the mobile unit in the event of a loss of network connectivity for upload when connectivity is restored.

Reporting

A. Must provide standard reports

B. Reports from FleetMind must be accurate.
C. Provide calculations for data in reports.
D. Must be able to create custom reports
E. Reports should be exportable in pdf and csv formats
F. The system is capable of archiving and retrieving historical data of vehicle activity.
G. All route activity information shall be available "real time" to customer service staff and provide those staff the ability to answer, reconcile, and verify customer inquiries with real-time information.
H. The system shall track and report on route exception and policy exception information such as excessive idling, speeding, and unauthorized route activities.
I. The vehicle mobile units shall provide for the entry of notes allowing the driver to note other route information, such as safety concerns or route improvements.

SWS RFID Reader Requirement

RFID Reader Requirements

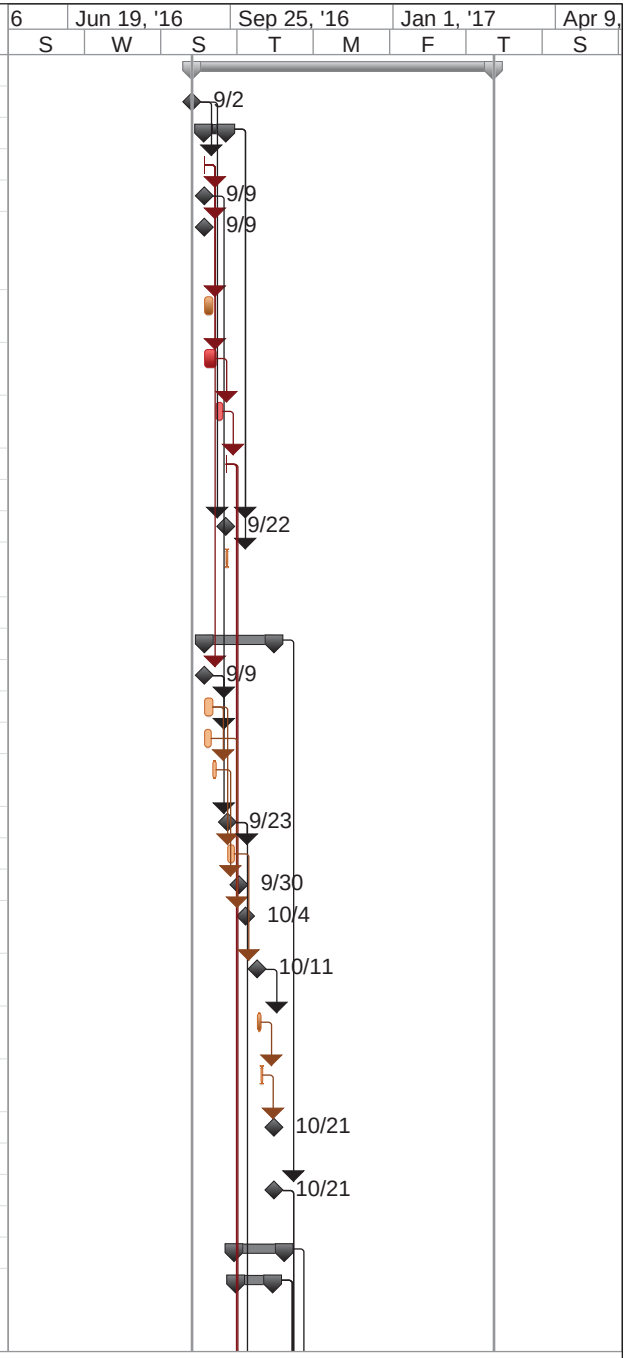
A. Data must have accurate coordinates within 5 meters
B. Readers should read both active RFID tags
C. The readers should collect the coordinates of carts (lat/long)

SWS RouteSmart Routing Integration

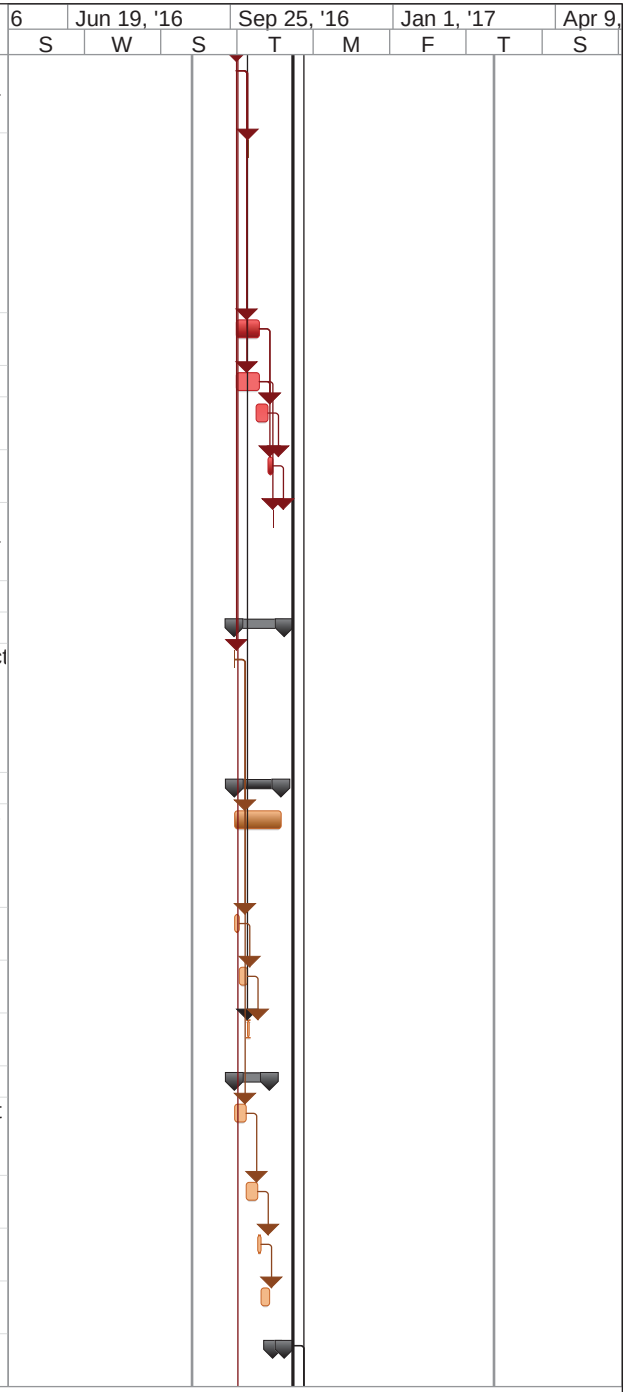
Routing Integration Requirements

A. Accurate representation of turn by turn mapping
B. Ability to transfer a route to another driver
C. Two-way communication between drivers and office personnel
D. Ability to show each collection point on the display screen both in map and tabular format
E. Ability to upload a RouteSmart formatted map into the system
F. Ability to enter City of Raleigh GIS data (street centerlines – ESRI format)
G. Ability to import or create route, yard and disposal site geofences.
H. The on dash units shall display customer information including, at a minimum location, address and service level.
I. The system shall provide a "button" system that allows the driver to enter exception information such as contamination, blocked cart, etc
J. The system can effectively share routes with other drivers in the instance of vehicle breakdowns or "help routes".
K. The vehicle mobile units shall record each customer pickup as they occur. Mobile units must provide manual and automatic detection and recording, depending on which method of collection is used

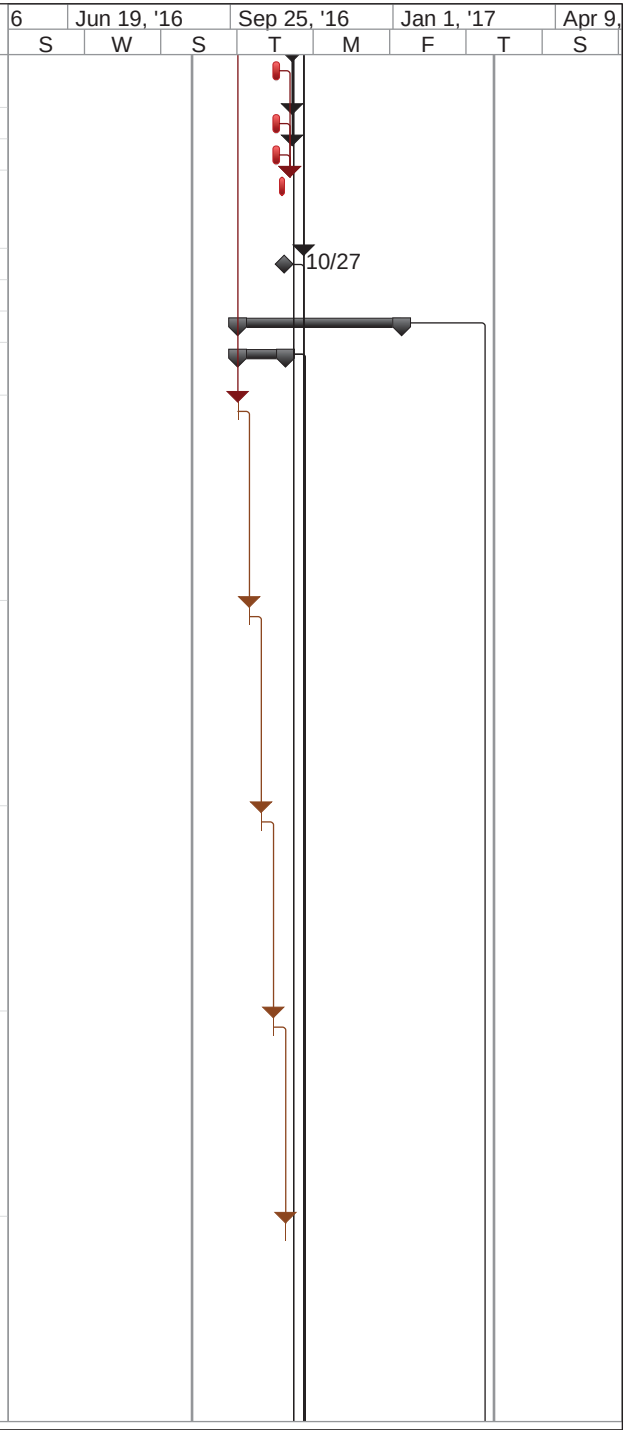
ID	Task Name	Start	Finish	Resource Names
0	Tentative Project Plan- City of Austin RFP	Fri 9/2/16	Thu 3/2/17	
1	1 PO Issued by Customer	Fri 9/2/16	Fri 9/2/16	ARR - Project Lead
2	2 Project Initiation	Fri 9/9/16	Thu 9/22/16	
3	2.1 Create New Deployment Project WO	Fri 9/9/16	Fri 9/9/16	FM - Project Lead
4	2.2 Issue Request for Fleet Survey Information	Fri 9/9/16	Fri 9/9/16	
5	2.3 Issue Data Requirement Specifications for Customer to supply Routes, Route Reference Data & Containe/Bin Inventory	Fri 9/9/16	Fri 9/9/16	FM - Project Lead
6	2.4 Hand Off Meeting between Sales & Project Lead	Fri 9/9/16	Wed 9/14/16	
7	2.5 Update FleetMind Project Plan & Schedule for Sponsor Approval	Fri 9/9/16	Fri 9/16/16	FM - Project Lead[20%]
8	2.6 Create Presentation Material for the Kick Off Meeting	Fri 9/16/16	Tue 9/20/16	FM - Project Lead[20%]
9	2.7 Project Kick-Off Meeting at customer location	Thu 9/22/16	Thu 9/22/16	FM & ARR Project Teams
10				
11	**3 FM Milestone - Project Setup Phase Completed**	**Thu 9/22/16**	**Thu 9/22/16**	
12	**4 ARR Milestone - Proof of Concept Pilot Design & Implementation**	**Thu 9/22/16**	**Fri 9/23/16**	
13				
14	5 FleetMind Procurement & Production	Fri 9/9/16	Fri 10/21/16	
15	5.1 Create Bill of Material for Production	Fri 9/9/16	Fri 9/9/16	FM - Production Specialist 1[15%]
16	5.2 Proceed with Kitting & Production Activity	Fri 9/9/16	Wed 9/14/16	FM - Production Specialist 1[60%]
17	5.3 Order Components not in Stock	Fri 9/9/16	Tue 9/13/16	FM - Procurement & Production[15%]
18	5.4 IMEI and ESN information and Attach to Work Order	Wed 9/14/16	Fri 9/16/16	FM - Procurement & Production[5%]
19	5.5 Fleet Survey Information provided by Customer	Fri 9/23/16	Fri 9/23/16	ARR - Fleet Maintenance
20	5.6 Order Truck Specific Components not in Stock	Fri 9/23/16	Tue 9/27/16	FM - Procurement & Production[15%]
21	5.7 Data Plan SIM Card provided by ARR	Fri 9/30/16	Fri 9/30/16	ARR - Project Lead
22	5.8 Reception of Components (incl supplier std turn around time)	Tue 10/4/16	Tue 10/4/16	FM - Procurement & Production
23	5.9 Reception of Truck Specific Components (incl supplier std turn around time)	Tue 10/11/16	Tue 10/11/16	FM - Procurement & Production
24	5.10 Execution of Remaining Kit Production Activities	Tue 10/11/16	Thu 10/13/16	FM - Production Specialist 1[20%]
25	5.11 Verification & Shipment of FM Onboard Computer Kits - Main shipment	Thu 10/13/16	Fri 10/14/16	FM - Procurement & Production[50%]
26	5.12 Arrival of equipment on site	Fri 10/21/16	Fri 10/21/16	ARR - Reception
27				
28	**6 Milestone 3 - All Production Activities Completed**	**Fri 10/21/16**	**Fri 10/21/16**	
29				
30	7 FleetLink Server Deployments	Tue 9/27/16	Thu 10/27/16	
31	7.1 Combined Data Required to configure the FleetMind RMS	Wed 9/28/16	Thu 10/20/16	



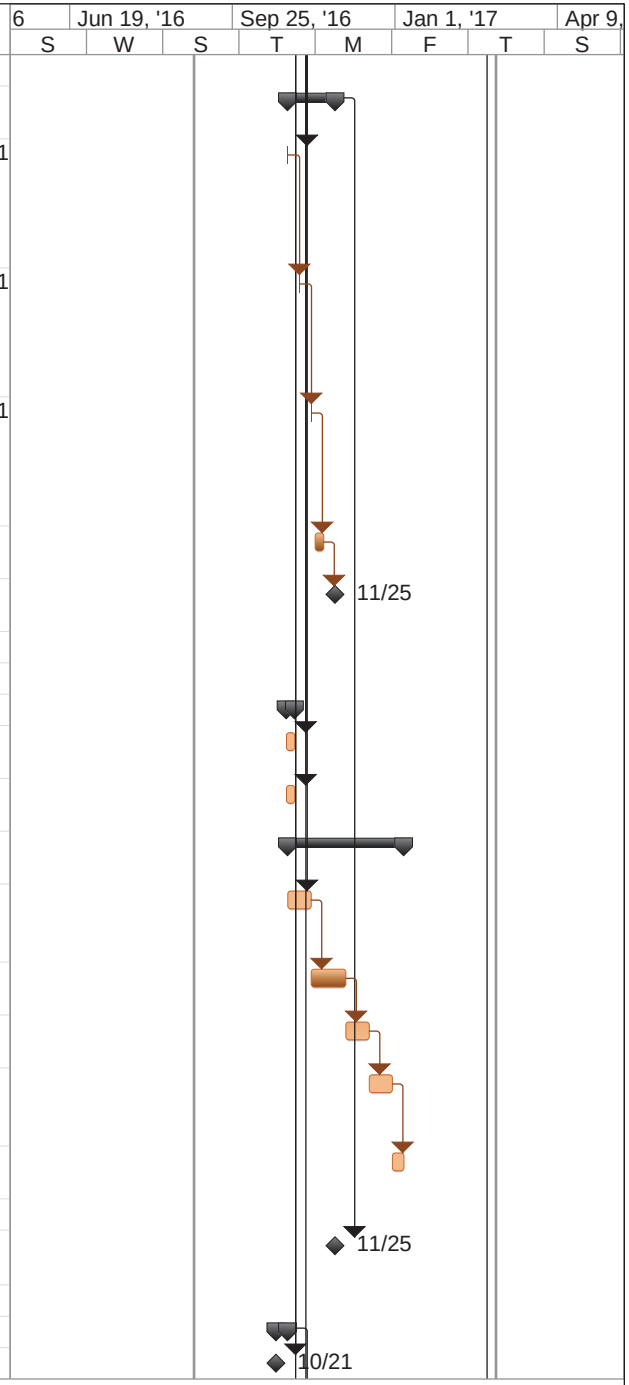
ID	Task Name	Start	Finish	Resource Names
32	7.1.1 Review Data Requirement Specifications	Wed 9/28/16	Wed 9/28/16	ARR - Project Lead,ARR - Route Smart & GIS,FM - Data Specialist,FM - Project Lead
33	7.1.2 More in depth discussions on the Service definition & Service exceptions (if required)	Wed 10/5/16	Wed 10/5/16	ARR - Customer Service Specialist,ARR - Project Lead,ARR - Route Smart & GIS,ARR - Supervisors/Trainers,ARR - SWTS Specialist,FM - Data Specialist,FM - Project Lead,FM - Solution Architect,FM - Sr. Business Analyst
34	7.1.3 Route and Route Reference Data Provided by Customer (incl Route shape files)	Wed 9/28/16	Wed 10/12/16	ARR - Route Smart & GIS[50%]
35	7.1.4 Provide Inventory Combined Data	Wed 9/28/16	Wed 10/12/16	ARR - SWTS Specialist[50%]
36	7.1.5 Validate Format & Completeness of Data provided by the Customer	Mon 10/10/16	Mon 10/17/16	FM - Data Specialist[50%]
37	7.1.6 Run the Route Data in the FleetLink Geocoder to convert lot centroids to curb-side	Mon 10/17/16	Thu 10/20/16	FM - Data Specialist[20%]
38	7.1.7 Final Review & Clarification of Data Provided by the City	Thu 10/20/16	Thu 10/20/16	ARR - Project Lead,ARR - Route Smart & GIS,FM - Data Specialist,FM - Project Lead
39				
40	7.2 FleetLink Server Application Installations	Tue 9/27/16	Thu 10/27/16	
41	7.2.1 Meeting to go through the City IT security / server IT requirements	Tue 9/27/16	Tue 9/27/16	ARR - Project Team ,ARR - IT Architect ,ARR - IT email Specialist,ARR - IT Security Specialist,FM - IT Specialist,FM - Project Lead,FM - Solution Architect
42	7.2.2 Creation of basic FM Hosted Server	Tue 9/27/16	Tue 10/25/16	
43	7.2.2.1 Setup interface with the city ADSF	Tue 9/27/16	Tue 10/25/16	ARR - IT Security Specialist[20%],FM - IT Specialist[20%],FM - Technical Lead[20%],FM - Solution Architect[20%]
44	7.2.2.2 Provide FM Cloud Server(s) Environment	Tue 9/27/16	Fri 9/30/16	FM - IT Specialist[20%]
45	7.2.2.3 Implementation of FleetLink Server Suite & Route Manager System	Fri 9/30/16	Wed 10/5/16	FM - IT Specialist[40%]
46	7.2.2.4 Create Truck Profiles on the Command Center	Wed 10/5/16	Thu 10/6/16	FM - IT Specialist[5%]
47	7.2.3 Configure Messaging	Tue 9/27/16	Tue 10/18/16	
48	7.2.3.1 Provide RC distribution list for Messaging	Tue 9/27/16	Tue 10/4/16	ARR - Project Team [10%],ARR - Fleet Maintenance[10%],ARR - Supervisors/Trainers[10%]
49	7.2.3.2 Setup Distribution List in email and provide MX Record	Tue 10/4/16	Tue 10/11/16	ARR - IT email Specialist[10%]
50	7.2.3.3 Setup mapping between the FleetMind Messaging and City email system	Tue 10/11/16	Thu 10/13/16	FM - IT Specialist[15%]
51	7.2.3.4 Joint testing of the Massaging functionality	Thu 10/13/16	Tue 10/18/16	ARR - IT email Specialist[20%],FM - IT Specialist[20%]
52	7.2.4 Data Importation to configure the FleetLink RMS	Thu 10/20/16	Thu 10/27/16	



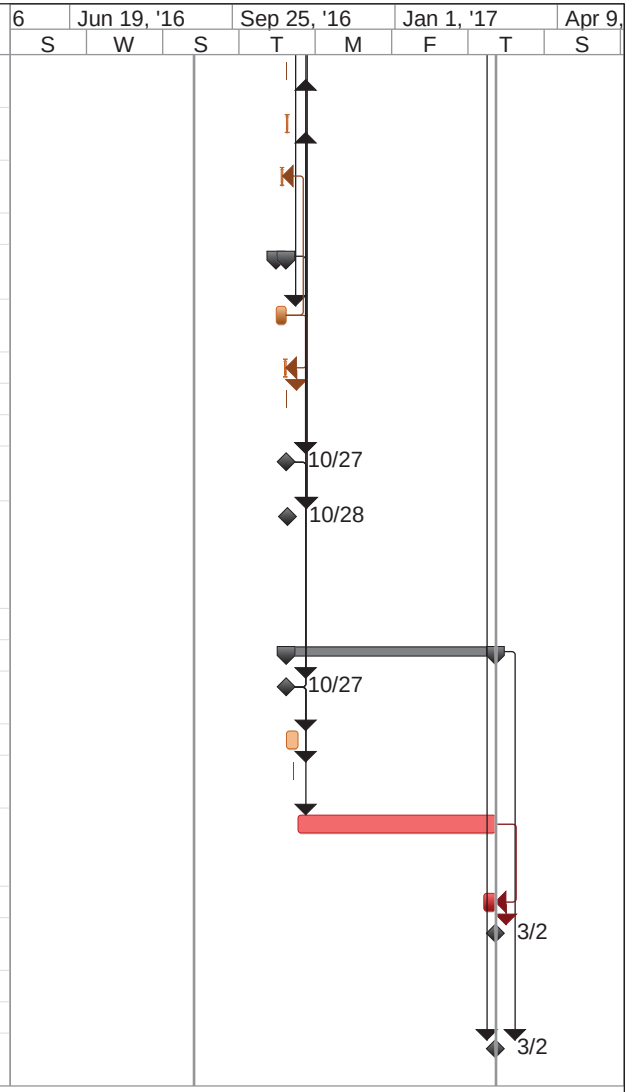
ID	Task Name	Start	Finish	Resource Names
53	7.2.4.1 Import Route Combined Data and Associated Refrence Data	Thu 10/20/16	Mon 10/24/16	FM - Data Specialist[30%]
54	7.2.4.2 Import/create Route Shape files	Thu 10/20/16	Mon 10/24/16	FM - Data Specialist[30%]
55	7.2.4.3 Import Inventory Data	Thu 10/20/16	Mon 10/24/16	FM - Data Specialist[30%]
56	7.2.4.4 Verify the Integrity of all Imported Data	Mon 10/24/16	Thu 10/27/16	ARR - Route Smart & GIS[20%],ARR - SWTS Specialist[20%],FM - Data Specialist[40%]
57	**8 Milestone 4 - Fleetmind Server(s) Ready for Dispa**	**Thu 10/27/16**	**Thu 10/27/16**	
58				
59	**9 FleetMind Integration Activities**	**Thu 9/29/16**	**Fri 1/6/17**	
60	9.1 Integration of FleetMind Solution in City SW Business Processes	Thu 9/29/16	Fri 10/28/16	
61	9.1.1 Workshop #1 - Integration of FleetMind Solution in City Business Processes	Thu 9/29/16	Thu 9/29/16	ARR - Customer Service Specialist,ARR - Project Lead,ARR - Route Smart & GIS,ARR - Supervisors/Trainers,ARR - SWTS Specialist,FM - Project Lead,FM - Project Sponsor,FM - Sr. Business Analyst,ARR - Business Process Specialist
62	9.1.2 Workshop #2 - Integration of FleetMind Solution in City Business Processes	Thu 10/6/16	Thu 10/6/16	ARR - Customer Service Specialist,ARR - Project Lead,ARR - Route Smart & GIS,ARR - Supervisors/Trainers,ARR - SWTS Specialist,FM - Project Lead,FM - Project Sponsor,FM - Sr. Business Analyst,ARR - Business Process Specialist
63	9.1.3 Workshop #3 - Integration of FleetMind Solution in City Business Processes	Thu 10/13/16	Thu 10/13/16	ARR - Customer Service Specialist,ARR - Project Lead,ARR - Route Smart & GIS,ARR - Supervisors/Trainers,ARR - SWTS Specialist,FM - Project Lead,FM - Project Sponsor,FM - Sr. Business Analyst,ARR - Business Process Specialist
64	9.1.4 Workshop #4 - Integration of FleetMind Solution in City Business Processes	Fri 10/21/16	Fri 10/21/16	ARR - Customer Service Specialist,ARR - Project Lead,ARR - Route Smart & GIS,ARR - Supervisors/Trainers,ARR - SWTS Specialist,FM - Project Lead,FM - Project Sponsor,FM - Sr. Business Analyst,ARR - Business Process Specialist
65	9.1.5 Workshop #5 - Integration of FleetMind Solution in City Business Processes	Fri 10/28/16	Fri 10/28/16	ARR - Customer Service Specialist,ARR - Project Lead,ARR - Route Smart & GIS,ARR - Supervisors/Trainers,ARR - SWTS Specialist,FM - Project Lead,FM - Project Sponsor,FM - Sr. Business Analyst,ARR - Business Process Specialist



ID	Task Name	Start	Finish	Resource Names
66				
67	9.2 System Design of the FleetMind Integration Solution	Fri 10/28/16	Fri 11/25/16	
68	9.2.1 Workshop #1 - Integration of FleetMind products with RouteSmart/GIS and CC&B	Fri 10/28/16	Fri 10/28/16	ARR - IT Architect ,ARR - IT CC&B/311 System Specialist,ARR - Project Lead,ARR - SWTS Specialist,FM - Project Lead,FM - Solution Architect,FM - Technical Lead
69	9.2.2 Workshop #2 - Integration of FleetMind products with 311 Customer Service Cases/Work Orders	Fri 11/4/16	Fri 11/4/16	ARR - IT Architect ,ARR - IT CC&B/311 System Specialist,ARR - Project Lead,ARR - SWTS Specialist,FM - Project Lead,FM - Solution Architect,FM - Technical Lead
70	9.2.3 Workshop #3 - Integration of FleetMind products with Scale and SWTS Web Portal	Fri 11/11/16	Fri 11/11/16	ARR - IT Architect ,ARR - IT CC&B/311 System Specialist,ARR - Project Lead,ARR - SWTS Specialist,FM - Project Lead,FM - Solution Architect,FM - Technical Lead
71	9.2.4 Document the Final FleetMind System Design from result of design workshops	Mon 11/14/16	Fri 11/18/16	FM - Solution Architect[30%],FM - Technical Lead[30%]
72	9.2.5 Final Approval of the FleetMind Integration System Design	Fri 11/25/16	Fri 11/25/16	ARR - Project Team
73				
74				
75	9.3 Temporary manual data export/import Process	Thu 10/27/16	Tue 11/1/16	
76	9.3.1 Document a joint manual procedure to keep RouteSmart route data current in the RMS	Thu 10/27/16	Tue 11/1/16	ARR - Route Smart & GIS[20%],FM - Data Specialist[20%]
77	9.3.2 Document a joint manual procedure to keep the SWTS inventory current with RMS	Thu 10/27/16	Tue 11/1/16	ARR - SWTS Specialist[20%],FM - Data Specialist[20%]
78	9.4 Research Activities to Propose Solution for Carts Lost in Hopper	Fri 10/28/16	Fri 1/6/17	
79	9.4.1 Analysis of possible solutions	Fri 10/28/16	Fri 11/11/16	ARR - IT Architect ,ARR - Supervisors/Trainers,FM - Solution Architect,FM - Technical Lead
80	9.4.2 FleetLink Mobile Development Work for beta testing of possible solutions	Fri 11/11/16	Fri 12/2/16	FM - FleetLink Mobile Developer[40%]
81	9.4.3 FleetLink Connector work to allow beta testing of possible solutions	Fri 12/2/16	Fri 12/16/16	FM - FleetLink Connector Developer[20%]
82	9.4.4 Field trial of beta designs	Fri 12/16/16	Fri 12/30/16	ARR - Project Team [10%],FM - Installer Site Lead[20%],FM - Solution Architect[10%]
83	9.4.5 Analysis of the Field Trial Results for Decision on Next Step	Fri 12/30/16	Fri 1/6/17	ARR - Project Lead[10%]
84				
85	**10 ARR Milestone - Entire System Design and Implementation Plan**	**Fri 11/25/16**	**Fri 11/25/16**	
86				
87	**11 FleetMind Training on the FleetLink Products**	**Fri 10/21/16**	**Fri 10/28/16**	
88	11.1 Fleetmind Documentation Deliverables	Fri 10/21/16	Fri 10/21/16	FM - Project Lead



ID	Task Name	Start	Finish	Resource Names
89	11.2 End User, Admin and 6 Road Trial Driver Training - On Board Computer Application	Thu 10/27/16	Thu 10/27/16	FM - Project Lead
90	11.3 Dispatcher & Admin Training and Coaching - FleetLink Route Manager	Thu 10/27/16	Fri 10/28/16	FM - Project Lead
91	11.4 Installation and Troubleshooting Training to ARR Maintenance Technicians	Mon 10/24/16	Tue 10/25/16	FM - Installer Site Lead[20%]
92				
93	**12 FleetLink Mobile Deployment in the Client Fleet**	**Fri 10/21/16**	**Thu 10/27/16**	
94	12.1 H\W installation of 6 systems	Fri 10/21/16	Thu 10/27/16	FM - Installer Site Lead[70%],Soal Technology - Inst Tech 1
95	12.2 Ready for Dispatch Verification	Wed 10/26/16	Thu 10/27/16	FM - Installer Site Lead[10%]
96	12.3 Issue Final Installation Report	Thu 10/27/16	Thu 10/27/16	FM - Installer Site Lead[10%]
97				
98	**13 Milestone 6 - All 6 FleetMind Equipped Trucks are Ready or Dispatch**	**Thu 10/27/16**	**Thu 10/27/16**	
99	**14 ARR Milestone - Initial cadre of ARR staff trained; S/W implemented & vehicle hardware installed on at least 5 representative vehicle types (as determined by ARR) to verify system**	**Fri 10/28/16**	**Fri 10/28/16**	
100				
101	**15 FleetMind System Go Live**	**Thu 10/27/16**	**Thu 3/2/17**	
102	15.1 Fleetmind On Site Support for the First Week of Go Live	Thu 10/27/16	Thu 10/27/16	
103	15.2 On site FleetMind Coaching	Thu 10/27/16	Thu 11/3/16	FM - Project Lead[80%]
104	15.3 Management & Dispatcher Training - FleetWeb & FRM Reporting Suite	Mon 10/31/16	Mon 10/31/16	FM - Project Lead
105	15.4 Remote Coaching & Support for the Pilot Duration	Thu 11/3/16	Thu 3/2/17	FM - IT Specialist[5%],FM - Project Lead[5%],FM - Sr. Business Analyst[5%]
106	15.5 Customer Acceptance Testing	Thu 2/23/17	Thu 3/2/17	FM & ARR Project Teams
107	15.6 GO NO Go Decision to move forward with Phase II of deployment	Thu 3/2/17	Thu 3/2/17	FM & ARR Project Teams
108				
109				
110	**16 Milestone 7 - Pilot Final Acceptance & Project Closure**	Thu 3/2/17	Thu 3/2/17	



Tab 11 – FleetMind Attachments

FleetMind has included the following additional information on products proposed;

FleetMind Municipal Waste Solution Overview Brochures

- 360 degree Brochure, Municipal Waste Highlights, Green Fleet
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-360-4pager.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-municipal-waste.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-green.pdf

FleetLink Mobile Device Information, ECM Connectivity

- FleetLink Trek SSV10 DVR – Proposed Vehicle Mobile for All Vehicles Except Bin Delivery
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2016/02/FleetMind-SmartTruckTechBrochure.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2016/02/FleetMind-StreetSmart-Vision-10-Smart-Truck.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-ecm.pdf

- FleetLink Lite Getac F110 Tablet - Alternative Tablet Vehicle Mobile (optional, if needed)
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-fleetlink-lite.pdf
  - Getac Website: http://us.getac.com/tablets/F110/specs.html

- FleetLink Motorola (Zebra) MC67 PDA – Proposed Handheld Mobile for Cart Delivery, with optional Zebra RFID5500 Sled, for Bin Delivery Trucks
  - Motorola (Zebra) Website: https://www.zebra.com/us/en/products/mobile-computers/handheld/mc67-mobile-computer-series.html
  - Motorola (Zebra) Website: https://www.zebra.com/us/en/products/rfid/rfid-handhelds/rfd5500.html

- FleetLink Mobile Device Mounting Hardware Options
  - Stage 1 - Mounting the Equipment

- PCTEL External GPS Antenna
  - PCTEL Website: http://www.stepglobal.com/pdfs/ANTENNAS%20(B)%20Housed%20GPS%20Antennas%20(B)/3978D_HR_DH.pdf

RFID Reader Hardware

- Alien 9680 RFID Reader
  - Alien Website: http://www.alientechnology.com/products/readers/commercial-4-port/

FleetLink Mobile Cart Delivery System

- FleetMind Cart Delivery
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-cart.pdf

FleetMind Back Office Products

- FleetLink RMS Route Management System, Automated Service Verification
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-fleetlink-rs.pdf
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-asv.pdf

- FleetLink FRM Enterprise Reporting System, Safety
  - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-

dashboard.pdf
    - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2015/12/fleet-safety.pdf

- FleetLink FleetWeb Tracking System
    - FleetMind Website: http://www.fleetmind.com/wp-content/uploads/2016/02/FleetMind-fleetlink-track-20160106.pdf

FleetMind Azure Hosting Environment

- FleetMind Windows Azure Hosting Overview (FleetMind Hosting Option)

FleetMind Internal Hosting Environment Requirements

- FleetMind Back Office System Requirements for In-house Hosting ***(Confidential)***
    - FleetMind 2015 IT Platform Requirements

FleetMind Conceptual System Diagrams

- FleetMind Proposed Conceptual Diagram of City of Austin Environment (larger version)
    - Pilot Phase Diagram
    - Production Phase Diagram

Get the 360° view of driver and truck activity

FleetMind is the technology leader for fleet management solutions

With thousands of installed systems, FleetMind is field proven to increase customer density, reduce costs, confirm service performance and increase revenue with the only fully integrated Waste-specific fleet management solution supporting all major back-office systems.

Let us show you how we:

Enable the *FleetSmart* truck with our *new interactive command center* that provides a single point of interface for the driver, truck, back office and all communications.

Ensure real-time and **fully automated service verification** through RFID technologies.

Deliver driver direction through integrated turn-by-turn capabilities for increased productivity.

On board computing with a difference

Roll-off, front load, or residential – your operation will benefit from FleetMind's comprehensive solution designed specifically for the Waste Industry.

Eliminate the waste from your business

In the competitive world of Waste Management and Recycling, time is money and every second counts. Every keystroke matters and driver time wasted on paperwork can be hazardous to your profitability.

With the continuing pressure to reduce costs and improve productivity, tracking your fleet and drivers is becoming increasingly important to your business's long-term profitability. FleetMind's solutions let you streamline your operations with accurate reporting capabilities to identify cost-saving opportunities and increase route profitability.

Highlights

- **Expand** the functionality and benefits of existing back office software (dispatch, billing, accounting, etc.)
- **Download** and **upload** information between office and vehicles - automatically
- **Improve** outbound planning and route profitability
- **Reduce** paperwork, phone wait times, and communication costs
- **Deliver** real-time status updates to customers
- **Receive** comprehensive reports covering daily driver and vehicle activities
- **Identify** potential fuel and vehicle maintenance savings
- **Track** your fleet in real-time or view routes followed on previous days with FleetMap
- **Enable** informed fleet and operations decisions with FleetMind's powerful and flexible reporting capabilities

The FleetMind experience

Take control of your fleet with the ***FleetSmart*** interactive command center that functions as the central component of our totally integrated mobile system.

This versatile on-board computer features a high quality touch screen display, real-time video and audio functionality, flexible interfaces that ensure easy interaction with the control system, and a lightweight design that can withstand the toughest environments.

FleetMind puts you in your driver's seat

FleetMind takes the management of your drivers, routes, landfills and transfer stations out to your drivers and vehicles. Track the locations of lifts, automatically associate lifts with customers, and observe it all with system-managed time stamps. Your drivers can easily log the precise activities that account for the full day, as they happen, with the easy-to-use Fleetlink Driver Display Terminal. Soft-Pak, PC-Scale Tower, Info-Pro, Core Computing or TRUX customers enjoy end-of-day paperless driver logs that immediately update real route cost and profitability - by day, week and month - for every customer.

All daily operations are managed cleanly from inside your back-office system. Routes are pushed to vehicles using the identical dispatch screens you use today, and routes at the end of day are updated automatically. Our back-office interface eliminates waste—from your daily operations—allowing you to manage, not with dots on a map, but with real results.

Key benefits

360° View

Get ***FleetSmart*** with complete visibility into driver and truck activity.

- Provides a single point of interface between the driver, truck, back office and all communications
- Integrates multiple video and audio feeds in real-time
- Ensures flexible and easy interfaces with the vehicle's control system

Fully Automated Service Verification

RFID technologies ensure real-time and fully automated service verification.

- Automatically select the customer being serviced when a container is lifted
- Verify accuracy of containers being serviced against driver run sheets
- Identify containers that have been moved, stolen or relocated

Optimized Driver Direction

Delivers integrated turn-by-turn capabilities for increased productivity.

- Automatically provides driving directions to the next stop based on run sheet data - no driver input required!
- Driver may select next stop manually when running the route out of sequence; the system automatically calculates the route
- Provides a graphical view of the calls to the driver

Driver Productivity

Fleetlink driver terminal is designed for drivers – Intuitive and requiring minimum keystrokes.

- Eliminate paperwork by interfacing with your current dispatch system and providing paperless run sheet information in the vehicle
- Automatically record lift events and lift weights with a single keystroke
- Automate the entry and completion of disposal tickets, exchanges, returns, deliveries, and removals
- Eliminate phone wait times

Driver Mobility

Handheld devices give your drivers flexibility, convenience, and portability.

- Windows CE-based handheld computers combine with on-board computers to provide your drivers with enhanced functionality and mobility
- Drivers can collect information while out of the cab, such as scanning package information, capturing signatures, and entering data

Easy Integration

Driver application created for fast integration with existing customer dispatch systems.

- Automate dispatcher and driver communications for pickup, delivery, disposal process, and all driver activities
- Open SQL database designed for easy data access and export by other applications
- Advanced in-house enterprise integration expertise with systems such as Soft-Pak, PCScale Tower, TRUX, and Core Computing

Easy Fleet Maintenance

Control costs by monitoring vehicle maintenance and fuel data.

- Perform remote management and functionality updates
- Download and upload information automatically between vehicles and the terminal
- Quickly locate any vehicle and view it on the map

Automatic Data Gathering and Tracking

Collect and transfer driver and vehicle information to maximize productivity.

- All data and events are geo-coded (GPS) with a maximum of position reports to increase precision as required
- Third-generation OBC with modular design enables the capture of numerous types of data
- ECM connection with a large number of sensor interfaces meets the most demanding of applications
- Cost-free in-yard wireless communication

Convenience of Communication

FleetMind delivers flexible communications choices, lowest recurring costs, and integrated remote monitoring.

- "Always on" wireless technology – no more cables, keys, or data cart
- Cost-effective real-time and batch wireless networks are supported, including short range, cellular, and satellite networks
- Deal directly with wireless service providers to benefit from market-driven competitive pricing and gain leverage for other services
- Real-time messaging that encourages ongoing timely communication with no per-message charges
- Free wireless communication while vehicles are in the yard
- Combine multiple cellular and satellite options for optimal nationwide coverage at the lowest possible cost.

Flexible Report Center

Fleet reports allow you to evaluate overall operational efficiency by collecting relevant and actionable information.

- A powerful and flexible report center allows you to:
  - Log time and location for breaks, customer stops, refueling and more
  - Report the exact route each vehicle took for any day
  - Verify payroll information such as overtime
  - Record detailed events during accident situations
- Choose from preformatted reports or export data to create your own

"*Using FleetMind's on-board computer and driver terminal solution coupled with our Soft-Pak back-office system has brought tremendous benefits. When I discovered that my drivers could take pictures and capture signatures with the new FleetMind handheld unit, I wanted to be the first to try it. I gave them an order right away. I could see how this will help our operations be more efficient, especially on routes that take us into alleys in Toronto's downtown core where we are often blocked and can't service the customers. Now we can show them why in real-time. This brings us one step closer to achieving our mandate of reducing the amount of paper we produce.*"

Mary Molony
CFO, **U-Pak**

"*Bottle necks in getting service data from the field into our i-Pak back office system led to the stretching of our roll off billing over several days. These delays can directly affect cash flows especially with disposal costs being an integral part of the billing. We wanted to improve the billing timeline. FleetMind has allowed us to reduce our administrative staffing by one full body and upgraded our accuracy and productivity.*"

Jack Fiori
Vice President
California Waste Recovery Systems

"*FleetMind has streamlined the entire operation, eliminating 1000's of pages of route books daily, made recording extra's simple with just a few keystrokes live in the field and provided real time GPS allowing dispatch to know where every route is at anytime during the day. Our drivers immediately adapted to the system and have become comfortable relying on it over their old route books. FleetMind customer service and support is there for us 24/7 always receptive to our unique needs and are always on the forefront with new ideas.*"

Rich Kuehn
Operations Manager
Western Oregon Waste

About FleetMind

FleetMind Solutions, Inc. is the technology leader for fleet management solutions. FleetMind was founded in 1996 by bringing together leading-edge computer systems expertise for harsh, real-world environments with breakthrough research and development in telematics for heavy trucks. FleetMind designs, manufactures, and markets wireless enabled on-board computers and driver terminals that extend the reach of our customer's enterprise back-office systems all the way to the truck and driver. Our solutions have allowed some of the largest transportation and Waste Management fleets in North America to link their drivers and vehicles to business operations in real-time, delivering proven business results and a true competitive edge. FleetMind puts YOU in your driver's seat. For more information, visit us at **www.FleetMind.com**.

FleetMind

FleetMind Solutions Inc.

Putting YOU in your driver's seat

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5 Reasons Why You Should Consider a FleetMind Fleet Management Solution:

1. Responsible Oversight

Program measurement and management oversight are critical to municipal waste organizations. From recycling credit programs to fleet safety, municipal waste and recycling managers need to have a complete view of all fleet, equipment and driver activity. FleetMind tracks drivers, vehicles, routes, containers, incentive programs - and more - to proactively monitor your performance and activities in real-time.

- Powerful and flexible Report Center
- Identify potential vehicle maintenance savings
- Enforce policies such as idle and speed regulations
- Detailed tracking of incentives and recycling credits programs

2. Shared Services Management

If your municipality shares waste and recycling services with neighboring communities, FleetMind's solution will track and verify all services and billing. For any district or county authority structure, FleetMind will provide all stakeholders with real-time access to relevant results and information.

- Accurate calculation of participation and "set-out" rates
- More efficient use of the truck assets
- Optimized routing
- Easy management of recycling incentives

3. Safety

FleetMind provides key capabilities to make it easier for municipalities to implement and monitor fleet safety initiatives. FleetMind's fleet management solution provides managers with real-time visibility into driver activity and behavior. All departments have access to centralized fleet safety data for a completely transparent representation of your fleet's safety performance.

- Centralized fleet safety data
- Monitor driver speeds
- Detailed event records
- Ability to set alarm criteria

4. Sustainability

Green fleets are focused on reducing fuel consumption, mileage and exhaust emissions, and on driving more safely and efficiently. A must for every municipality! FleetMind helps you eliminate unnecessary emissions and reduce costs to benefit your bottom-line.

- Improved fuel consumption management
- Reduced overall mileage
- Reduced emissions
- Driver monitoring and education

5. Automated Service Verification

Municipalities place the highest value on ensuring accurate service delivery and a problem-free customer experience. To help them achieve this, FleetMind provides a comprehensive cart delivery and management system that uses RFID technologies for fully automated service verification. RFID tags associate each garbage can or cart with a specific customer address. Drivers can quickly verify cart details by scanning these with handheld devices.

- Improve customer service
- Ensure accurate billing
- Verify recycling credits
- Track waste and recycling assets

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better business results

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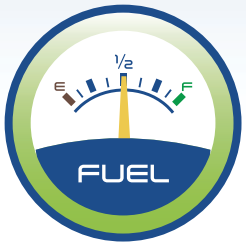
Helping you "GREEN" your fleet

Green fleet management - good for the environment and your bottom line

FleetMind

Green fleets are focused on reducing fuel consumption, mileage and exhaust emissions, and on driving more safely and efficiently. If your fleet is not managed effectively, you can generate not only unnecessary emissions, but also excess costs to negatively impact your bottom-line. The FleetMind solution provides tools to support leaner and greener fleets as follows:

1
Improved fuel consumption management



2
Reduced overall mileage

3
Driver monitoring and education

Improved fuel consumption management

Fuel costs account for a major portion of the total fleet operating cost and will vary according to vehicle type, driving style and mileage, so managing your fuel consumption is a critical part of green fleet management. FleetMind can help reduce fuel consumption - and your carbon footprint - as follows:

FleetMind's onboard Driver Direction lets you optimize each truck's routes to reduce time spent on the road and the number of engine hours per day. The ultimate fuel saving is achieved by having a truck generate more or similar revenues in less time. Specifically, you can:

- Increase density so it takes less time (and therefore fuel) to service customers.
- Optimize your routes to use less fuel and driving time.

FleetMind lets you reduce the amount of fuel burned by the engine as it is being used by:

- Using alarms to monitor and reduce idling.
- Identifying aggressive driving patterns through alarms (progressive shifting). You can, for example, compare RPMs with the vehicle's speed. Going from 0 to 30 KM/hour can be done in a fuel efficient or aggressive manner.
- Identifying vehicle maintenance problems. For example, if two vehicles of the same type with the same engine are used for the same task, but show different fuel economy, this can be either a driver issue or a truck issue. If it is a truck issue, fleet managers can go back to the manufacturer to have the truck 'tuned' to ensure consistent and optimal fuel performance.
- Collecting the ECM codes (engine malfunction) so that engines can be repaired before problems escalate. A healthy engine burns less fuel.

Reduced overall mileage

FleetMind's Driver Direction capabilities automatically provide driving directions to the truck's next stop based on run sheet data - no driver input is required. It further provides a graphical view of the calls to the driver, and will automatically re-calculate the route when a driver selects an out-of-sequence manual stop. This ensures that each route is optimized for time and distance, thereby reducing overall mileage.

FleetMind's Driver Direction is designed to provide features similar to those of a GPS-equipped car – specifically, textual and audible driving directions to a driver. However, the FleetMind solution differs from the typical GPS approach in that subsequent locations do not need to be entered by the driver. Ongoing route locations and directions are based on the driver's schedule and provided automatically. These could be the next stop in a predetermined sequence, or a driver-selected stop should he elect to run his route out of sequence. This ensures that both the driver's time and the truck's usage are used as efficiently as possible.

Driver monitoring and education

Driver behavior is fundamental to ensuring high levels of fleet efficiency.

Your drivers must be made aware of efficient driving techniques, either by increasing awareness or with ongoing driver training. Even the most fuel-efficient vehicles will perform poorly with an inefficient driver behind the wheel. Real-time monitoring of driver behavior and driving patterns allows fleet managers to influence and educate drivers on more fuel and emissions-friendly driving approaches.

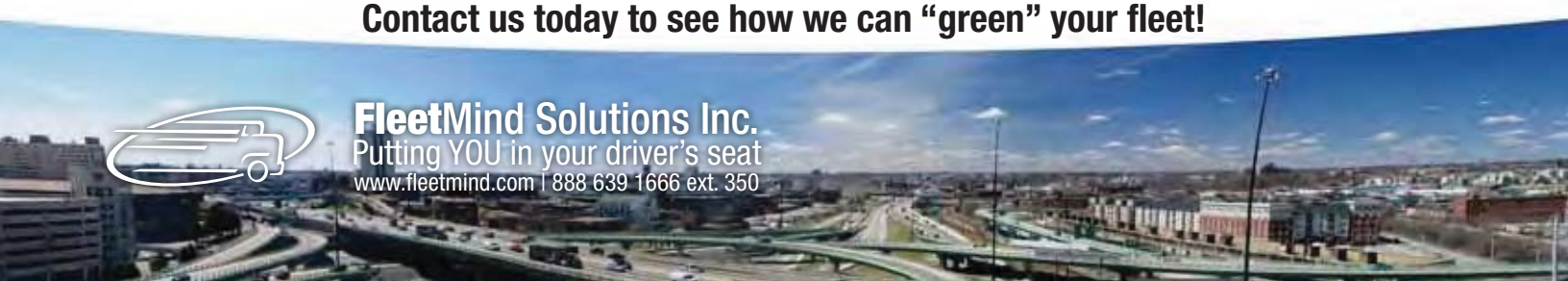
FleetMind's fleet management solution provides managers with real-time visibility into driver activity and behaviour. All departments have access to centralized fleet driving data for a completely transparent representation of a driver's performance.

FleetMap delivers a real-time map view of individual vehicles' positions relative to towns, cities, highways and streets. Managers can select from a number of layers which determine the level of detail and plot the vehicle's position according to reported events. Using FleetMap, managers can further reconstruct the route taken by a driver on any given day, and view alarm criteria, such as exceeding a specified speed limit. Managers can also identify drivers that are deviating from assigned routes or making unscheduled side trips (meeting for lunch, taking the wrong route etc.) which can lead to unnecessary fuel consumption.

FleetMap lets fleet managers:

- Track drivers with precise geo-coding (GPS) of all data and events
- Determine how their vehicles are being handled
- Determine which drivers generated alarms and where these were generated
- Monitor driver speed in relation to speed limits
- Plot locations of alarm occurrences

Contact us today to see how we can "green" your fleet!



Smart Truck Technologies

FleetMind provides the waste industry's top-ranked onboard fleet management "Smart Truck" systems to improve fleet safety, sustainability, efficiencies, maintenance and customer service.

- Improved Efficiencies
- Reduced Fuel Consumption
- Optimized Safety
- Enhanced Customer Service

Industry Leader

FleetMind's technology is derived from over 15 years and millions of dollars invested in developing the industry's best and most advanced fleet solutions specifically designed for waste and recycling environments. FleetMind solutions have been successfully installed in many thousands of vehicles across North America. Our products have allowed the industry's top waste and recycling fleets to link their drivers and vehicles to business operations in real-time to ensure improved productivity, safety, sustainability, profitability and customer service.

Smarter Waste Collection Fleets

FleetMind delivers the waste industry's leading "Smart Truck" solution – onboard computing (OBC) solutions that capture and store electronic control module (ECM) and other vehicular data to provide accurate performance reporting and real-time alerts. These provide unprecedented real-time information to drivers and dispatchers about a truck's load-weight, route status, service completion, vehicular telemetry, driver activities and more, and further manage a wide range of inputs from a vehicle's on-board systems (such as cameras, scales, RFID readers, tire pressure and fuel monitoring). The result is a truck with total visibility into route progress, greater driver accountability, improved customer service, optimized safety and vastly improved fuel efficiencies.

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Fleet management solutions for safer, greener and more productive fleets

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FleetMind Products & Services Include:

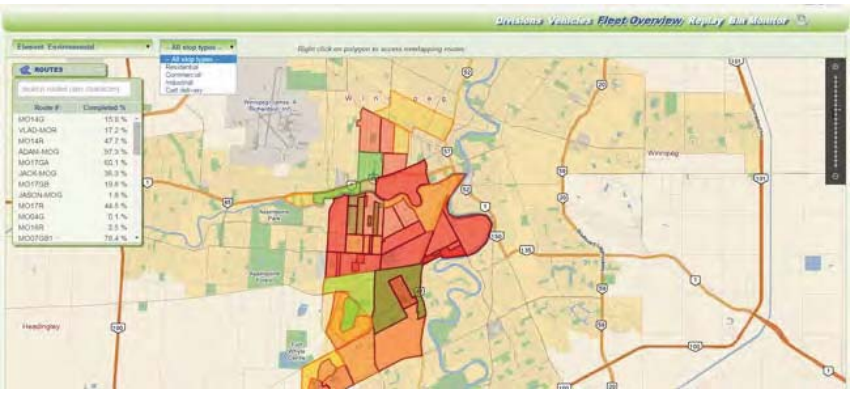
FleetLink Mobile Products

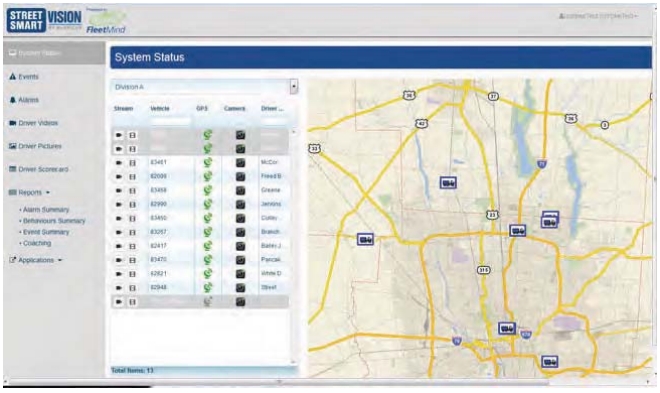
FleetMind provides industry-specific FleetLink mobile hardware solutions to automate the data recording of operations,

including: vehicle information from GPS, ECM electronic control module; and service information from drivers, cameras, scales, and RFID. All hardware is integrated with FleetLink back-office software and includes in-cab flat/smart screen and hand-held devices that are field-tested to withstand the toughest waste collection environments.

FleetLink Back-office Products

FleetMind's FleetLink Back-office software solutions work with FleetLink Mobile hardware products to improve operations, increase profitability, provide complete fleet visibility and help ensure a problem-free customer experience. They include solutions for managing communications, interfacing to 3rd party software, analyzing data, managing and optimizing routes, tracking individual trucks, and much, much more.





FleetMind Services

FleetMind Services cover installation, driver training, business consulting, project management and much more! We know that every customer has unique requirements and objectives. Our various services and training programs will help ensure that each deployment is successful from getting the system installed to getting your team to use it effectively!

FleetMind Contact:

Tel: 888.639.1666
Email: info@fleetmind.com
www.fleetmind.com

STREET SMART VISION BY McNEILUS

Powered by FleetMind

The industry's first smart truck

Solid waste managers face increasing pressures to deliver collection services that are more responsive, environmentally-friendly and safe. To do so, refuse trucks need to be smarter by integrating technology to collect and communicate important data regarding routes, drivers, customers and vehicle systems. With Street Smart Vision 10 by McNeilus, and powered by FleetMind, solid waste collection organizations can be assured of a 360-degree view for completely transparent fleet operations.

The FleetMind Mobile On-Board Computer and DVR Platform for Street Smart Vision 10 enables an extensive list of software features. In addition to providing a complete Smart Truck solution, McNeilus will install, service and support the system through its expanding network of service centers location across North America.

Customers will benefit from:

- Improved fleet operational performance
- Seamless integration with top billing and maintenance software
- Complete visibility into truck and driver behavior
- Optimized routing
- Reduced maintenance costs and fuel consumption
- Improved safety and diagnostics

One Truck - One Platform - Total Solution

StreetSmart Vision provides a single hardware platform that enables different software options. It also offers interfaces to third party dispatch, billing, maintenance and other applications. Choose from the following options:

StreetSmart Vision

GPS Tracking
Live Streaming Video
DVR (recording and playback)
Reports
Telemetry Data and Alarms

StreetSmart Vision +

Route Management Software
Driver Directions
CNG Fuel Management
Smart Phone App
Remote Truck System Diagnostics

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Specifications:

- On-Board Computer Platform with integrated 8 channel DVR
- Built for harsh environments with broad operational temperature range
- Ability to pair with a 10.4” touch monitor or drive an existing display
- ECM connectivity for real-time telemetry
- Wi-Fi, BT and 4G wireless connectivity
- Multiple generic I/O ports
- Comprehensive alarm monitoring and event recording capabilities
- Ability to capture snapshots, video snippets and continuous recording from up to 8 truck mounted cameras including analog, IP wired or wireless
- Ready for Route Management Software and Service Verification
- Ready for Real-Time Vehicle Diagnostics including remote access
- Ready for Chassis, Body, Fork or Tipper Scale integration
- Ready for Lane Departure Detection Warning System
- Ready for Frontal Collision Avoidance System
- Ready for Pedestrian Detection System
- Central Command Center for Automated Software Deployment and Configuration
- Comprehensive back-end Route Management and Dispatch platform
- Extensive Operational Reports, Dashboards and Web-based Geomatic platform
- Integrates with RFID reader

Component	FleetLink DVR
Operating System	Windows 8 Standard Embedded
CPU	ATOM E3827 Dual Core 1.75 GHz
Memory	4 GB
Video Hardware Encoder	Stretch S7 (H.264, MJPEG, up to D1 with 30 FPS
Internal SDD	16 GB
Other Storage	256 GB SDD
WWAN	Multi-Network 4G LTE
WiFi	YES
BT	YES
CANBUS J1939	Dual
J1708	Yes
OBDII	Yes
GPS	Yes
DIO	4 DI 2 DO
Serial Ports	3
USB Ports	3
GB Ethernet Ports	2
VGA Output Port	YES (up to 2560x1600 resolution)
Analog Video Inputs	8
Wake-Up	Ignition, Alarm, SMS/Call, G-Sensor
Operating Range	-30 C to + 70 C
Shock / Vibration	MIL STD 810G
Display	Remote
Display Size	10.4 in (8 in optional) single cable
Display Resolution	1024 x 768
Touch Screen	YES
Light Sensor	YES
Speaker	2 x 2W built-in

FleetMind Solutions, Inc. is the award-winning technology leader for fleet management solutions. FleetMind’s technology is derived from over 10 years and millions of dollars invested in developing the industry’s best and most advanced fleet solutions specifically designed for waste and recycling environments. FleetMind solutions have been successfully installed in thousands of vehicles across North America. Our products have allowed the industry’s largest waste and recycling fleets to link their drivers and vehicles to business operations in real-time to ensure improved productivity, safety, sustainability, profitability and customer service.

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Link your mobile assets to your fleet management operations

Tap into valuable truck data to improve performance and reduce costs

FleetMind combines its onboard computer (OBC) with mobile communications capabilities to capture and store electronic control module (ECM) and other vehicular data to provide accurate performance reporting and real-time alerts. This information is essential toward improving fleet performance and reducing costs.

To gain the best insights for fleet operations improvements – you need to collect information from multiple locations on a vehicle. FleetMind's fleet management solution digs deeper to collect data from sensors connected directly to the OBC from key vehicle points such as the contact key, brakes, lift switch and power take-off (PTO).

The FleetMind system further links vehicle and sensor data with GPS information that is also sourced from the OBC. Not only can you monitor a vehicle's performance and function, you can also link this information to its physical location. This is particularly valuable in accident reporting situations.

For example, if a driver is involved in an accident, the FleetMind system can provide a detailed and accurate report to verify truck and driver activity. Alarms for issues such as over-speeding, hard-braking and idling are also geo-coded for location-based reference.

A sampling of the real-time data collected by the FleetMind fleet management system includes:

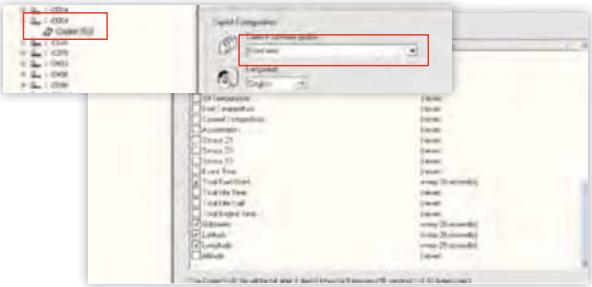
- Vehicle speeds
- Hard braking events
- Idling times
- Oil Pressure
- Engine Hours
- PTO

Benefits:

- Reduces fuel consumption
- Reduces route times
- Reduces maintenance costs
- Supports fleet's regulatory compliance
- Eliminates manual logging and processes
- Provides automatic updates into maintenance systems
- Provides up-to-date and accurate data
- Automatic logging of data saves hours of time
- Real-time reporting speeds up ability to respond
- Improves due diligence capabilities
- Immediately flags alarms for quick intervention

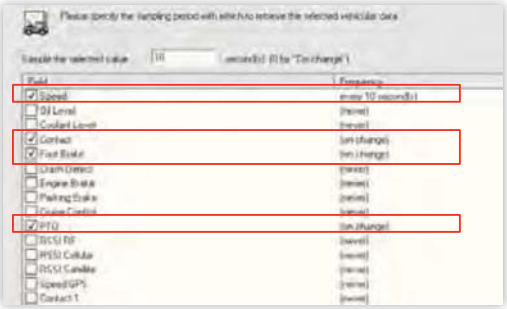
How it works

FleetMind collects ECM and sensor data via a J1708 connection to its onboard computer. Working with sensors and vehicle equipment, it broadcasts a variety of data from the brakes, automated arm switch, onboard scales and more. Each vehicle can have its own acquisition profile letting you select the data to be collected. All collected data is stored into a SQL server database where you can either use the reports provided with the system or build your own reports with the report designer of your choice. This allows you to combine the FleetMind data with any other corporate data for a comprehensive view toward improving performance and reducing costs.



Acquisition profiles:

Vehicle data is collected based on acquisition profile criteria which define what is collected and the frequency at which it is saved in the FleetMind database. Data is captured every time the ECM or sensors publish it and stored according to the profile. This data is then available for reporting and real-time vehicle alarms. Profiles can be created based on vehicle type (i.e. roll off, front load), geographical area and more. A profile can also be associated to one or multiple trucks.



Setting alarms

Alarms are defined by a user and associated to a profile so they can be used by a group of trucks. Any data collected via the acquisition profile can be used to create an alarm. Alarms are generated as soon as the data is collected from the ECM or sensors, and conditions are evaluated every second for greater accuracy.

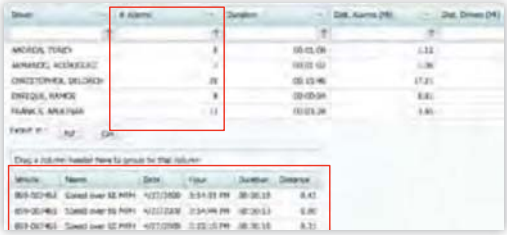
Presenting alarms

Alarms can be presented in a number of ways – they can inform drivers in the cab when a condition occurs, send the data in real-time to the dispatch system for immediate action, and/or transfer the data to the server for reporting. These can be sent individually or simultaneously to all designated recipients.

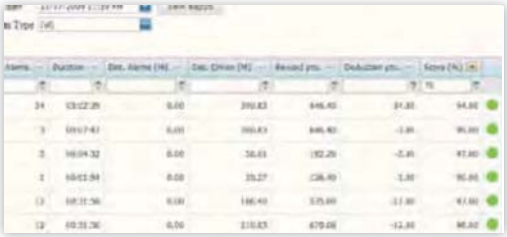
The FleetMind Reporting Portal

The FleetMind reporting portal provides multiple levels of information across driver and vehicle performance. For example:

Alarm reports



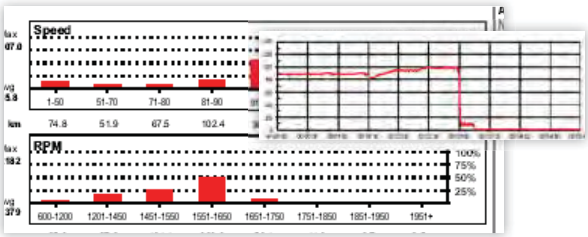
Driver scoring



Fuel efficiency

Truck performance

Vehicle Profile & Accident Graphs Reports



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FleetLink *Lite*

All-in-one OBC platform

Delivering essential fleet management functionality

FleetLink *Lite* is an all-in-one onboard computing (OBC) solution that delivers essential fleet management functionality in an affordable package. It includes FleetMind's award-winning core capabilities with real-time vehicle telemetry through the truck's CANBUS, integration with the back office and a fully integrated industrial grade platform. FleetLink *Lite* is a new generation all-in-one 7" mobile OBC terminal with touch screen that features a compact design for waste and recycling environments.

With its Intel® ATOM Z510PT based platform , FleetLink *Lite* is a high performing system loaded with GB ethernet, CAN interface, multiple wireless technologies and a Windows 7 operating system. Its sturdy die casting and ruggedized chassis ensures uninterrupted functionality in a wide range of temperatures. FleetLink *Lite* is also suitable for harsh environments that are subject to shock and vibration.

Why use FleetLink *Lite*?

Not all waste and recycling applications require a broad range of features such as multi-camera integration, video recording and processing, and high transaction rates. FleetLink *Lite* is ideal for those who want to focus on the essentials for their entire fleet or for trucks within the fleet that do not need the full blown FleetLink system. With FleetLink *Lite* you can still improve productivity and profitability with important elements such as electronic run sheets, service verification, real-time vehicle tracking, reporting and alarms. FleetLink *Lite* has been designed to address essential fleet management requirements in a compact and affordable package. FleetLink *Lite* can also connect easily to onboard scales and will integrate readily with your existing back-office system. It can be deployed in parallel with other FleetLink products and is compatible with legacy FleetLink installations.

Features:

- 7" WVGA LCD with 5 programmable hot keys
- Windows 7 Embedded (W7ES) operating system
- 2 GB RAM, 16 GB CF and support for MicroSD
- Integrated J1939 and J1708 interface
- Integrated Digital I/O
- Integrated Analog camera input
- Integrated EVDO/HSDPA, BT and WiFi with GPS receiver
- Integrated communication options: RS-232 and GB Ethernet
- Fanless and ruggedized aluminum chassis
- Operating temperature range from -22F to 140F

Benefits:

- Designed for drivers
- Intuitive and easy to use
- Improved communications capabilities
- Real-time accessibility
- Go paperless!

FINALIST THE GOLDEN BRIDGE AWARDS BEST 2012 BUSINESS WORLD

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Getac

F110

FULLY RUGGED 11.6" TABLET

Large 11.6" LumiBond® 2.0 sunlight readable display
5th generation Intel® Core™ processor
Dual hot-swappable battery design
Optional integrated 4G LTE broadband wireless
802.11ac next generation WiFi
Optional 1D/2D imager barcode reader
Intel HD graphics 5500
MIL-STD 810G and IP65 certified
Industry-leading bumper-to-bumper warranty

5th Gen Intel Core Processor.

With the latest Intel Core i5 or Intel Core i7 processor, the F110 rugged tablet was designed for speed and efficiency. Clocking in at up to 2.6GHz and with Turbo Boost speeds up to 3.2GHz, the F110 has the power needed for the most demanding tasks.

Large 11.6" Display.

The F110 features a large 11.6" display utilizes our revolutionary LumiBond 2.0 technology to achieve a display that is more readable, and offers better contrast and more crisp colors than any other rugged laptop display. The 11.6" widescreen display is ideally suited providing plenty of real estate to run Windows and your apps on.

Dual Hot-Swappable Batteries.

The F110's unique, hot-swappable dual-battery design allows for potentially infinite, uninterrupted battery life. This enables you to remove one of the two rechargeable batteries and replace it with a fresh battery without ever shutting down apps or your Windows OS.

Blazing Fast Wireless.

With new multi-carrier 4G LTE, you can easily switch carriers without changing hardware.[1] The F110 also now supports the next generation 802.11ac WiFi for up to three times faster throughput.

Designed to Capture.

With a built-in front HD webcam, an optional rear 8MP auto focus camera and an optional top 1D/2D imager bar code reader, the F110 is the ideal solution for capturing data.

Bumper-to-Bumper Warranty.

Accidents happen. Only Getac offers bumper-to-bumper coverage standard on every F110 rugged tablet.

PRODUCT SPEC SHEET
MC67 MOBILE COMPUTER

MC67 MOBILE COMPUTER

REDEFINE PRODUCTIVITY FOR YOUR FIELD WORKFORCE

GIVE YOUR FIELD WORKFORCE THE TOOLS THEY NEED TO WORK FASTER AND SMARTER THAN EVER BEFORE WITH THE MC67 FROM ZEBRA

What can workers do with the MC67? Everything they need to get the job done. Choose the operating system that best supports your mobility strategy ' Windows® Embedded Handheld 6.5 or Android™ Jelly Bean (4.1) ' to instantly access the wealth of information in your business systems to increase task efficiency and accuracy. Send a video clip of a piece of equipment in need of repair to get on-the-spot guidance from an in-house expert or equipment manufacturer. Snap a high-resolution picture to document condition. Scan a bar code to quickly and accurately track parts as they are used. Capture an important document. Call a customer to update the arrival time window. Check and respond to email. And if you currently use the MC65, backward compatibility with most of the MC55/MC65 accessories you already own allows you to cost-effectively upgrade to the latest mobile computing technology. So whether your mobile workers are fixing equipment, picking up or delivering shipments, taking customer orders, inspecting buildings or restaurants, issuing citations or collecting competitive information, give them all the latest tools to get more done and done right ' all in one super rugged device that loves life in the field.

High-speed cellular and Wi-Fi wireless connections

4G HSPA+, 802.11a/b/g/n, Bluetooth 2.1 EDR and best-in-class GPS brings your workers the best voice, data and peripheral connections available.

Our most rugged compact mobile computer

Whatever your employees dish out, the MC67 can take it. You can drop it on concrete, drop it in water, use it in the heat, cold, rain, snow and more.

A brilliant display for easy reading

The 3.5 in. resistive display is exceptionally bright for easy reading, even in bright sunlight, with the power efficiency required to maximize battery cycle times.

Advanced scanning technology

No matter what type of bar code your workers need to scan, the MC67 can capture it. Scan 1-D and 2-D bar codes at laser speed ' even if the codes are dirty, damaged or poorly printed. With multiple scan engine options, you can tailor the MC67 to provide the best performance on the types of bar codes in use in your enterprise.

Crystal clear voice

With Dual-Microphone Noise Cancellation technology, background noise is greatly reduced ' all anyone will ever hear is you.

The power you need to support virtually any application

Workers enjoy best-in-class performance with plenty of room for multiple apps, photos, databases and more with the dual core 1 GHz processor and the most memory in this class.

ZEBRA

THE MC67 IS AT HOME IN...

Transportation and Logistics

- Pick-up and delivery
- Fleet management
- Vehicle tracking and maintenance
- Baggage and cargo tracking

Field Service and Sales

- Service automation
- Inventory management
- Logistics optimization
- Sales order entry/CRM
- Inspections/ maintenance

DSD/Route Accounting

- Automated ordering
- Inventory reconciliation
- Delivery tracking
- Full service vending
- Competitive surveys
- Shelf space analysis
- Route optimization

Government and Public Safety

- eCitation/ticketing
- First Responder accountability
- Inspections/ maintenance
- Code enforcement

Rich photographic intelligence
A picture is worth a thousand words, so we included a high-resolution auto-focus 8 MP camera with external flash that allows workers to document the condition of deliveries, assets and more in virtually all lighting conditions.

Android fortified for the enterprise
Extensions (Mx) from Zebra transforms Android from a consumer operating system (OS) to a true enterprise- class OS with additional features that improve security, device management and support for advanced enterprise data capture.

A device with the intelligence to manage itself
Integrated sensors automatically power the MC67 down when it is not in use and adjust screen brightness based on lighting.

Future proof applications with RhoMobile Suite
All MC67 models support the option to run applications built with RhoMobile Suite, which enables the creation of cross-platform apps that can run on iOS, Android, Windows Mobile and the operating systems of the future.

REDEFINE FIELD WORKFORCE PRODUCTIVITY WITH THE RUGGED MC67

For more information, visit **www.zebra.com/mc67** or access our global contact directory at **www.zebra.com/contact**

SPECIFICATIONS CHART

PHYSICAL CHARACTERISTICS

Dimensions	6.38 in. L x 3.03 in. W x 1.32 in. D 162.2 mm L x 77 mm W x 33.5 mm D
Weight	13.5 oz./385 g (with rechargeable 3600mAh Lithium Ion battery)
Display	3.5 in. color VGA display, touch, 640 x 480 portrait
Touchpanel	Glass analog resistive touch
Backlight	LED backlight
Power	PowerPrecision 3600 mAh Li-Ion rechargeable battery
Backup Battery	Ni-MH battery (rechargeable) 15mAh 3.6V nominal (not user-accessible or replaceable)
Expansion Slot	Micro SD card slot (supports up to 32GB)
Communication	Interface: USB 2.0 high speed (host and client)
Notification	Audible tone plus multi-color LEDs
Keypad Options	*WEHH*: Numeric, QWERTY, AZERTY, QWERTZ, PIM, DSD *Android*: Numeric, QWERTY and DSD
Audio	Dual microphone support with noise cancellation; vibrate alert;

INTERACTIVE SENSOR TECHNOLOGY (IST) CONT.

Light Sensor	Ambient light sensor auto adjusts display backlight brightness
Digital Compass	Navigational aid for users on foot

DATA CAPTURE

Options	*WEHH and Android models:* 2-D SE4500-SR imager + 8 MP Camera *WEHH only:* 2-D SE4500-SR imager 2-D SE4500-DL imager + 8 MP Camera 2-D SE4500-DL imager 2-D SE4500-DPM/HD + 8 MP camera
Data Types	1-D/2-D bar codes, photographs, video, signatures and documents *(NOTE: only WEHH supports document capture.)*

WIRELESS VOICE AND DATA COMMUNICATIONS

WWAN	Radio: 4G HSPA+; Frequency band: UMTS/HSDPA and HSUPA ' 850, 900, 1900 and 2100 MHz; GSM/EDGE: 850, 900, 1800 and 1900 MHz

	speaker; Bluetooth headset

PERFORMANCE CHARACTERISTICS

CPU	Dual core 1GHz OMAP 4 processor
Operating System	Choice of Windows Embedded Handheld 6.5 Professional or Android 4.1
Memory	*WEHH*: 512 MB RAM/2 GB Flash, 1GB RAM/ 8 GB Flash; *Android*: 1 GB RAM/8 GB Flash

USER ENVIRONMENT

Operating Temp.	-4° F to 122° F/-20° C to 50° C
Storage Temp.	-40° F to 158° F/-40° C to 70° C
Humidity	5 to 95% non-condensing
Drop Specification	ltiple 8 ft./2.4 m drops per MIL-STD 810G at room temperature; 6 ft./ 1.8 m per MIL-STD 810G across the operating temperature range
Tumble Specification	2,000 1.6 ft/0.5 meter tumbles; meets and exceeds IEC tumble specifications
Sealing	IP65 and IP67 per IEC specification
Vibration	4g's PK Sine (5Hz to 2KHz); 0.04g2/Hz Random (20Hz to 2KHz); 60 minute duration per axis, 3 axes
Thermal Shock	-40° F to 158° F/-40° C to 70° C rapid transition
ESD	± 15kv Air discharge, ± 8kv direct discharge, ± 8kv indirect discharge

VOICE AND AUDIO

High-quality speakerphone; wireless (Bluetooth) headset support; handset/speakerphone modes

INTERACTIVE SENSOR TECHNOLOGY (IST)

Motion Sensor	3-axis accelerometer senses motion for dynamic screen orientation and power management
WLAN	Push-to-Talk (PTT) ready; VoIP ready

WIRELESS LAN VOICE AND DATA COMMUNICATIONS

Radio	Tri-mode IEEE® 802.11a/b/g/n
Security	WPA2 (Personal or Enterprise); 802.1x; EAP-TLS; TTLS (CHAP, MS-CHAP, MS-CHAPv2, PAP or MD5); PEAP (TLS, MSCHAPv2, EAP-GTC); LEAP, EAP-FAST (TLS, MS-CHAPv2, EAP-GTC), CCX v4
Data Rates	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 and up to 72.2 Mbps
Voice Communication	VoIP ready, Wi-Fi'¢-certified, IEEE 802.11a/b/g/n direct sequence wireless LAN, Wi-Fi Multimedia'¢ (WMM and WMM-PS) Zebra Voice Quality Manager (VQM)

INTEGRATED GPS

Integrated standalone and Assisted-GPS (A-GPS): SUPL 1.0

WIRELESS PAN VOICE AND DATA COMMUNICATIONS

Bluetooth Class II, v2.1 with Enhanced Data Rate (EDR)

PERIPHERALS AND ACCESSORIES

Visit www.zebra.com/mc67 for a complete list of accessories

REGULATORY

Visit www.zebra.com/mc67 for regulatory information

WARRANTY

Subject to the terms of Zebra's hardware warranty statement, the MC67 is warranted against defects in workmanship and materials for a period of 1 (one) year from the date of shipment. For complete warranty statement, go to: http://www.zebra.com/warranty

SERVICES AND SUPPORT

Minimize downtime with fast repair and expert support provided through Service from the Start with Comprehensive Coverage. Have Zebra manage your devices according to your specific needs with our Mobility Lifecycle Management solution.

ALR-9680

Commercial 4-Port RFID Reader

Rapidly deploy RFID with the Alien® ALR-9680 commercial UHF reader with enterprise class 4-port flexibility and Alien reader "intelligence"

- Feature-rich Alien Reader Protocol
- 4 mono-static reader ports
- POE eliminates cost of AC power drop
- EPC Gen 2 dense reader interoperable
- Slim form-factor for installation in height-restricted places
- Manageable and upgradable

Benefit	Enabled By:	What does this mean to me?
Ease of use Low set-up and running cost	• Four antenna port flexibility • Alien Reader Protocol • Smart reader/autonomous mode • Alien Reader Control Architecture & Ruby • Power-over-Ethernet (PoE) • Remote firmware management	• Easy to set up and deploy • No additional costly controllers • Less maintenance and overhead • Minimizes network infrastructure • Works in areas with no power
Robust yet fits narrow vertical locations	• Robust metal chassis • 1¼" tall • All cables on single side	Usable in: • Physically restricted locations • Locations with limited cabling

Simple, Low-Profile, Gen 2 RFID Solution

With Power-Over Ethernet (POE) and out-of-the-box software that is compatible with other Alien readers, the ALR-9680 is a simple, low profile solution that enables users to start reading tags and developing solutions immediately.

Easy Integration

The ALR-9680 communicates via the easy-to-use Alien Reader Protocol with key RFID platform support including Microsoft® BizTalk RFID, OatSystems, Oracle®, Xterprise and others.

A well-documented SDK featuring .NET, Java and Ruby libraries enables development of custom interfaces to control the reader if desired. The user-friendly Alien RFID Gateway software enables solution development immediately.

Low System Costs

The cost of installing AC power can sometimes rival that of the reader. The ALR-9680's POE capability allows power to be delivered over properly-equipped local area networks, eliminating expensive AC wiring installation. A POE power injector is provided to supply power if POE is not available. The combination of this capability with up to 4 antenna significantly reduces the cost and complexity of installing an RFID read point.

Developer Kits

Developer Kits come complete with all the essentials to get started:

- ALR-9680 reader
- A circular polarized antenna
- Software Developers Kit (SDK) (via download)
- Universal power supply
- RS-232 cable
- Ethernet cable
- Sample tags
- Convenient carrying case

FleetMind Cart Delivery and Management System for Automated Garbage Collection

FleetMind

Enables process of automatic garbage pickup confirmation for individual customers and carts

The FleetMind cart management system provides Waste and Recycling firms with the most advanced solution for automated garbage collection and the management of individual carts and customers.

Using RFID tags, each garbage can or cart can be associated with a specific customer address. Drivers can quickly verify cart specifics by scanning these with handheld devices. Inventory management capabilities can update backend databases in real-time on service or replacement and repair requirements. With added GPS capabilities , fleet operations personnel now have real-time visibility into truck location and activity, can verify service accuracy, and can quickly identify carts that have been moved or stolen, or require servicing. Individual customer information - from damaged carts to insufficient cart capacity – is easily captured into a centralized database. This further ensures immediate and accurate information for billing processes.

The FleetMind cart management system enables the following processes:

- Carts are associated to each customer with RFID tags and GPS geo-coding positioning.
- The information thus captured is fed back to the back office/ dispatch system.
- The back office dispatches a designated customer route to a truck.
- The truck implements the route and the lifts are confirmed automatically when the FleetLink on-board system reads and recognizes the garbage cans collected from their RFID tags, thereby automating the service verification process.
- For exceptions, the driver can send messages to the back office to advise Sales of new customers not indicated on the route, or Maintenance of any carts needing repair.
- After each stop, the confirmation data is sent immediately to the back office allowing customer service representatives to respond to customer inquiries or complaints with real-time data.
- Repairs and replacement data can be dispatched to the cart delivery handheld for Maintenance to repair and replace carts as needed with a “maintenance route”.

FleetMind’s cart delivery and management system:

- Updates delivery specifics and associated billing information in real-time
- Enables process improvements and cost savings through automatic asset tracking
- Delivers passive Gen 2 RFID assuring best performance for the lowest cost of ownership
- Ensures 100 percent visibility into cart or container usage
- Requires no operator intervention
- Features a vibrant ecosystem of standards-based software, tag and reader products to ensure flexibility and broad utility for customers

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Putting YOU in your driver’s seat
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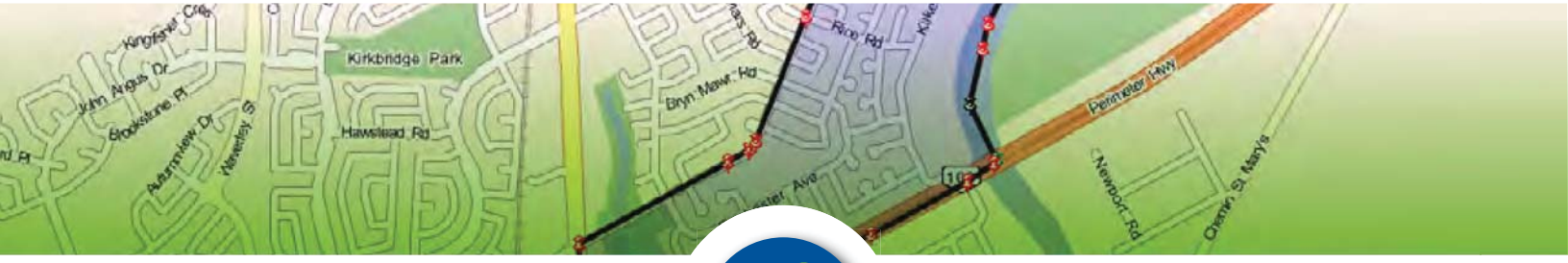

FleetLink Route System

FleetMind's FleetLink Route System is a web-based route management solution that adds an unprecedented new level of support and insight to dispatch operations for industrial, residential and commercial waste collection services, and for residential cart delivery and maintenance.

Together with FleetLink Mobile real-time fleet tracking and turn-by-turn driver directions, FleetLink Route System takes the guesswork out of managing routes to make sure that vehicles actually implement designated routes to minimize the distance, amount of fuel used and amount of time required to complete assignments. The result is total visibility into route progress, greater driver accountability, better customer service and vastly improved fuel efficiencies.

FleetLink Route System can be deployed as a stand-alone dispatch solution or integrated with existing back-office systems to manage routing activities. Additionally, all required data in comma-separated-value (CSV) files can be easily imported into management databases for speedy integration and use.

Features:

FleetLink Route System lets you conduct the following activities with vastly improved accuracy and efficiency:

- Maintain cart inventories
- Manage cart assignments and status
- Manage roll-off dispatch for industrial services
- Monitor all trucks and drivers required to provide the services
- Create and maintain routes that will be used to deliver services
- Import route data from a CSV file
- Generate routes based on GeoZone screens
- Create add-ons, extras, and on-demand tasks
- Assign optimized routes to trucks and drivers
- Initiate the wireless delivery of electronic route sheets to the FleetLink Mobile system
- Support normal dispatch operations such as re-assigning service stops to different trucks
- Export data to support reporting and analysis

Benefits:

FleetLink Route System delivers the following key benefits:

- Reduced fuel consumption
- Increased productivity and profitability
- Improved service delivery
- Improved vehicle utilization
- Decreased travel time
- Happier customers

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Fleet management solutions for safer, greener and more productive fleets

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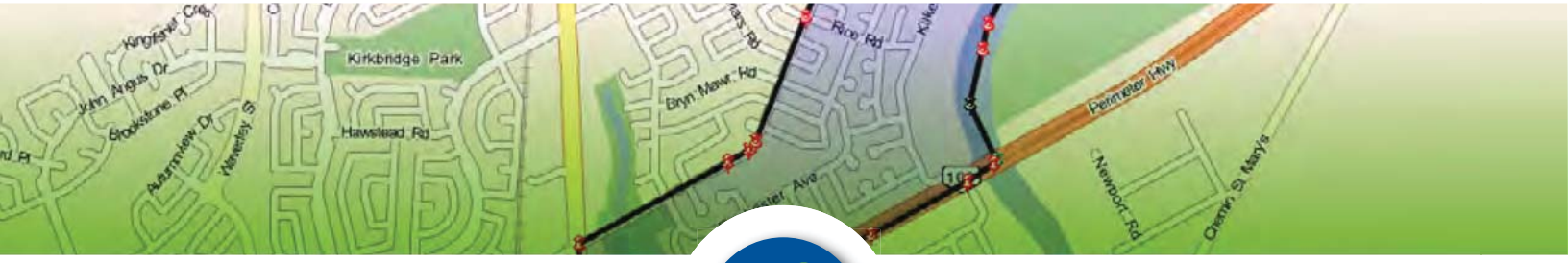

FleetLink Route System

Imported CSV data:

- Route stops
- Carts/containers
- Combined data
- Customer data
- Reference data
- GeoZones

Route assignments

Company Operations back-office systems

FleetLink Mobile WasteApp

FleetMind Solutions, Inc. is the award-winning technology leader for fleet management solutions. FleetMind's technology is derived from over 10 years and millions of dollars invested in developing the industry's best and most advanced fleet solutions specifically designed for waste and recycling environments. FleetMind solutions have been successfully installed in thousands of vehicles across North America. Our products have allowed the industry's largest waste and recycling fleets to link their drivers and vehicles to business operations in real-time to ensure improved productivity, safety, sustainability, profitability and customer service.

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Automated Service Verification

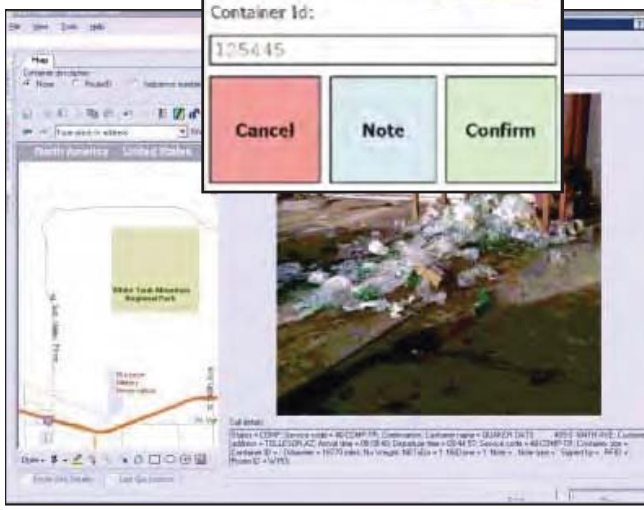
Dramatically improve customer service and efficiencies

FleetMind

Improve customer service
Heighten accountability
Ensure accurate billing
Verify recycling credits
Monitor driver and truck activity
Track waste and recycling assets

Inefficient service verification is a critical issue for waste and recycling firms. FleetMind's fleet management solution ensures real-time and fully automated service verification to track individual container and customer activity.

FleetMind takes service verification to a whole new level with the integration of RFID technologies to enable fully automated service verification. Using RFID tags, each garbage can or cart can be associated with a specific customer address. Drivers can quickly verify cart details by scanning these with handheld devices. Inventory management capabilities can update backend databases in real-time on service or replacement and repair requirements.



Fleet operations personnel now have immediate visibility into customer activity:

- Automatically select the customer being serviced when a container is lifted
- Verify accuracy of containers being serviced against driver run sheets
- Identify containers that have been moved, stolen or relocated

The result – significantly improved customer service efficiencies!

California Waste Recovery Systems

California Waste Recovery Systems (Cal-Waste) is a privately owned, full service waste removal company providing commercial, industrial and residential collection services in Northern California.

The Problem

Customer Service Delays: Cal-Waste wanted to be able to quickly react to customer service requests for immediate service with detailed information about the call.

The Solution

The FleetMind onboard computer, FleetLink reporting system, and the interactive real-time FleetMap solution.

The Results

Within one year:

- Increased Operational Efficiencies: Reduced time for customer service reps to input a work request, and provide that precise order (special instructions, details, contact name/number) to the driver on his screen the next day.
- Service Verification: When a call comes in that requires immediate attention, Cal-Waste is now able to dispatch the entire work order to the driver task to ensure the promised service.

Western Oregon Waste

Western Oregon Waste (WOW) provides commercial, industrial and residential waste removal services to the McMinnville, Astoria and Warrenton areas of Oregon.

The Problem

Inefficient Service Verification: WOW needed a better way to verify service, track a vehicle's real-time location and identify reasons for missed service.

The Solution

The FleetMind solution was installed for all locations and fully integrated with WOW's Soft-Pak back office system.

The Results

- Improved Service Efficiencies: Customer service efficiencies increased with real-time service verification, and credits and write offs decreased accordingly.
- Improved Operations: Operations was able to dispatch daily calls and extras for roll-off and commercial business in real-time. This significantly cut down on missed call distribution within operations and kept the quality of service high.

U-Pak Disposals

U-Pak Disposals is a leading recycling services provider in the Greater Toronto and Southern Ontario area.

The Problem

- Inefficient Service Verification: U-Pak needed a more reliable way to confirm service completion and for customer service staff to have real-time access to data for issues resolution.
- Lack of Truck/Driver Visibility: U-Pak needed a real-time view into truck locations, progress and call times.

The Solution

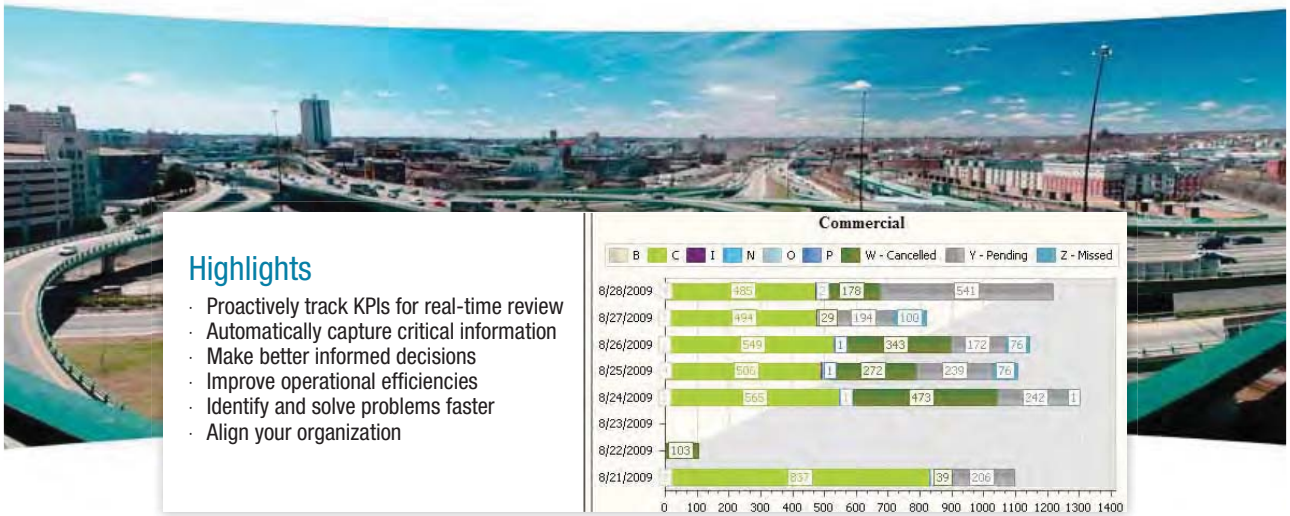
The FleetMind on-board computer and driver terminal solutions.

The Results

- U-Pak has achieved the following benefits from the FleetMind system.
- 80% reduction in data entry times (from 10 minutes per route in roll off to less than 2 minutes) with real-time direct entry from the driver.
- Customer service efficiencies increased for dealing with missed calls.
- Decreased credits and write offs due to real-time service verification.
- Accurate service times for operations and pricing evaluations.
- Overall reductions in time for driver check in, dispatching and service verification.
- Cost reductions on maintenance and verification of driver usage of the rolling stock.
- Achievement of top grade fleet status for insurance purposes.

Fleet Management Dashboard & Reporting

A bird's eye view into your entire fleet operations



Highlights

- Proactively track KPIs for real-time review
- Automatically capture critical information
- Make better informed decisions
- Improve operational efficiencies
- Identify and solve problems faster
- Align your organization

Overview

Waste fleet operations are all about maximum efficiencies.

To improve efficiencies, you need a detailed understanding of what's going on. This usually means hours spent poring over countless reports and data to identify trends and anomalies for better decision-making. Often the process is simply too time-consuming to undertake effectively, so the required monitoring and analysis is not done thereby creating a negative impact on the business over time. While big companies have the resources to conduct research and analysis, smaller companies typically don't.

With the FleetMind Dashboard, this information is proactively tracked and presented to you for immediate review, regardless of your company size. You no longer have to pull the data from multiple sources, analyze it and extrapolate key findings – the FleetMind system tracks and distils the information you need and displays it on the Dashboard in real-time.

The Dashboard let you specify your desired key performance indicators (KPIs) and set thresholds that are positive, cautionary or negative to automatically highlight key results. All your critical information is provided on a single screen for quick and easy monitoring – green is an acceptable threshold, yellow is cautionary, and red is negative. From excess speed to customer stop time to idle times – you can easily track virtually every aspect of daily fleet and driver activity to understand the problems and respond effectively.

For example, if your goal is to shave 30 minutes from every route per day, you no longer need to follow up information from manual or other disparate sources. You can now set the Dashboard to proactively track time sensitive KPIs to flag problem areas and let you to address these toward achieving your time reduction goal. The dashboard will also help you track regulatory and safety related KPIs.

Description

FleetMind's fleet management dashboard provides you with a single-view interface into your fleet operations and performance. You can easily track key performance indicators (KPIs) and flag any potential problem areas. Your FleetMind Dashboard and FleetLink Reports let you check on fleet and driver activity and trends at a glance. You can view everything from weekly or monthly high-level trends, or track detailed and individual performance data.

The FleetMind Dashboard works seamlessly with FleetLink Reports to monitor the KPIs that are important to your business. These can be:

- **Driver related** – such as excess speeds, hard braking, break times, delayed starts, idle times
- **Customer related** – such as service times, average yards per lift, average lbs per yards
- **Route related** – such as drive time between stops, time to first stop, number of stops

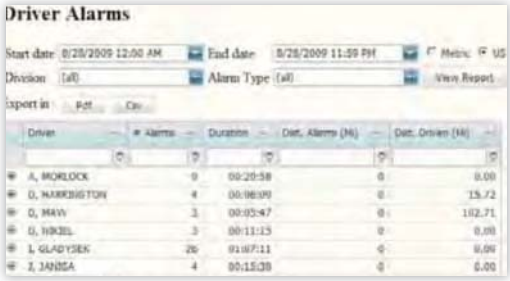
FleetLink Reports include the following:

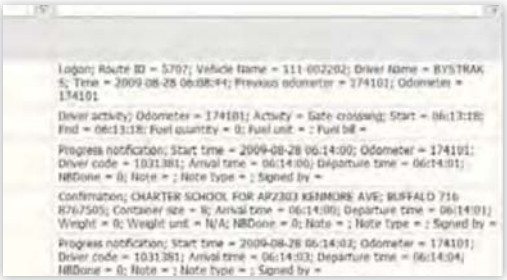
Fleet reports that allow you to evaluate overall operational efficiency:

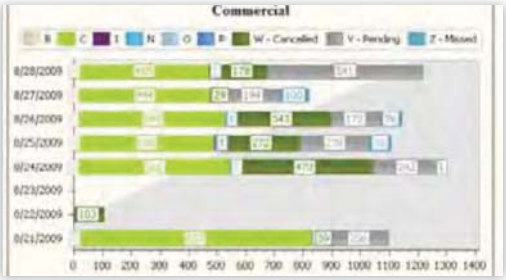
- Driver activity
- Driver performance
- Driver scoring
- Fuel consumption
- Fleet performance

Vehicle reports that allow you to monitor vehicle usage:

- Accidents
- Accident graph
- Alarms
- Fuel tax
- Vehicle usage







Driver	Division	Distance (Mi)	Engine	Idling	Driving	Excessive	Fuel (Gal)	Gal/Hour	MPG	Usage %
BOLDEN, ALONZO	111-Kenmore-RO	23.05	02:44:12	01:13:44	01:30:28	00:17:22	5.79	2.11	3.98	55
GERALD J, ZIENTARA		411.10	01:35:07	00:56:01	00:39:06	00:07:00	148.73	93.82	2.76	41
J, LLOYD	111-Kenmore-FL	197.22	10:28:37	02:35:26	07:53:11	00:18:00	60.42	5.77	3.26	75
M, KABEL	111-Kenmore-FL	144.34	08:45:23	02:12:51	06:32:32	00:25:00	43.98	5.02	3.28	74
M, KESSLER		175.91	10:11:58	02:36:23	07:35:35	00:37:00	36.56	3.58	4.81	74
	111-									

Why you need reports and dashboards

With continuing pressures to reduce costs and improve productivity, tracking your fleet and drivers is becoming increasingly important to your business's long-term profitability. Fleet and driver statistics can provide a new level of insight into your fleet's operational efficiency and assist in identifying those areas where you can reduce costs or improve productivity. Because many of the statistics provided by FleetLink Reports are produced according to your desired settings and configuration, you will obtain the most relevant and actionable information possible – all presented through the central fleet management dashboard.

With Fleetlink's flexible Report Center, you can:

- Log time and location for breaks, customer stops, refuelling and more
- Report the exact route each vehicle took for any day
- Verify payroll information such as overtime
- Record detailed events during accident situations
- Choose from preformatted reports or export data to create your own

How it will improve your business

The benefits of FleetLink Reports and the FleetMind Dashboard are wide-ranging:

- You have a vastly improved ability to make decisions - a visual presentation of performance measures lets you identify trends in driver behaviour, track vehicles and service performance, and measure efficiencies.
- You can better align your organization – by working from a universal set of metrics and a single view into these, all internal functions can track organizational goals and performance.
- You increase operational efficiencies – you save time over running multiple reports, gain total visibility into all information, better manage routes and drivers, and can respond faster to customer service issues.
- You can deal with problems faster – by being able to detect and identify problem areas, you can better manage exceptions, deal with driver or vehicle issues, and ensure route efficiencies.

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Fleet Safety Initiatives

Fleet safety is about reducing risk and reinforcing safe driving behaviour. With the potential threat of fatalities, serious injury, the direct and indirect cost of collisions, increased insurance premiums, employer liabilities and legal impacts – safety initiatives have become a critical concern for fleet managers and their senior executives.

FleetMind's Safety Management Highlights:

- Provides fleet managers with real-time visibility into driver activity and behaviour.
- All departments have access to centralized fleet safety performance data for a completely transparent representation of your fleet's safety performance.
- Tracks individual driver behaviour patterns, weighs and scores data, and alerts managers as per company-specified parameters.
- Organizes data into real-time reports that can be displayed on a single, organization-wide system for all safety data, policies, objectives, and initiatives.
- Ensures automated processes for tracking, management, and notification across multiple departments or locations.
- Can be customized according to each company's needs, criteria and policies.

FleetMind Makes it Easy to Manage Fleet Safety

FleetMind's fleet management solution provides key capabilities to make it easy for fleet managers to implement and monitor fleet safety initiatives. Automatic and real-time access to driver scoring results provides the information required to give constructive feedback to drivers, reward safe driving behaviour and provide requisite coaching for any unsafe activity. Driver activity can be montored easily and immediately, and accurate data can be readily captured to deal with any driving incidents.

On board comp FleetMind's Solution – Driver Scoring and Monitoring

Of all the standard fleet safety components, driver monitoring and the ability to easily score driver behaviour are of utmost importance. Fleet managers that have limited or no visibility into their drivers' behaviour, cannot address or mitigate the issues, and cannot deal effectively with at-risk drivers. This lack of visibility directly impacts their risk factors, safety records and operating costs.

Real-time driver scoring provides fleet managers with a score based on specific corporate criteria, such as for example maximum speed limits. All drivers are subject to speeding occasionally, however at-risk behaviour such as repeated speeding and hard-braking violations need to be tracked and flagged automatically. A scoring report can rank drivers to ascertain those that require additional safety training or are at highest risk for safety violations. Good drivers can be identified and rewarded accordingly. Driver scoring data is presented in immediate and user-friendly formats, making it easy for managers to access the required information anytime. Driving patterns can be identified for both behaviour and location.

FleetMind's fleet management solution provides critical visibility into truck and driver activity as follows:

Fleet Mapping

FleetMap delivers a real-time map view of your vehicles' positions relative to towns, cities, highways and streets. You can select from a number of layers which determine the level of detail and plot the vehicle's position according to reported events. Using FleetMap, you can reconstruct the route taken by a driver on any given day, verify any deviations or unscheduled side trips, and view alarm criteria, such as exceeding a specified speed limit. FleetMap lets you:

- Track drivers- all data and events are geo-coded (GPS) with a maximum of position reports to increase precision as required
- Determine how your vehicles are being handled
- Determine which drivers generated alarms and where
- Monitor driver speed in relation to speed limits
- Plot locations of alarm occurrences

Reports & Alarms

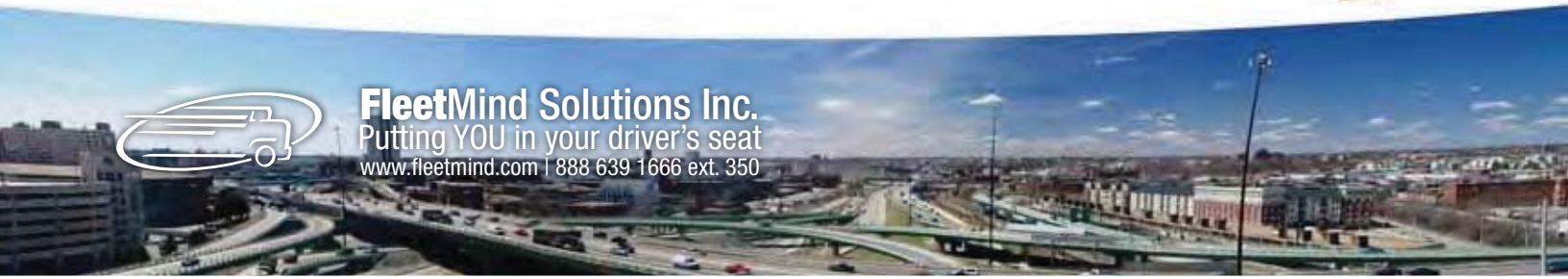
Fleet Reports allow you to evaluate overall fleet and driver activity by collecting relevant and actionable information. A powerful and flexible report center lets you:

- Graphically view route progress and status in real time
- Report the exact route each vehicle took for any day
- Record detailed events during accident situations
- Proactively monitor various Key Performance Metrics (KPM) with customizable deviation thresholds that automate supervisory alarms
- Choose from pre-formatted reports or export data to automatically create your own fleet reports for driver activity, driver performance and driver scoring
- Map overall driving patterns and alert managers in real-time

FleetMind Solution Accident Investigation

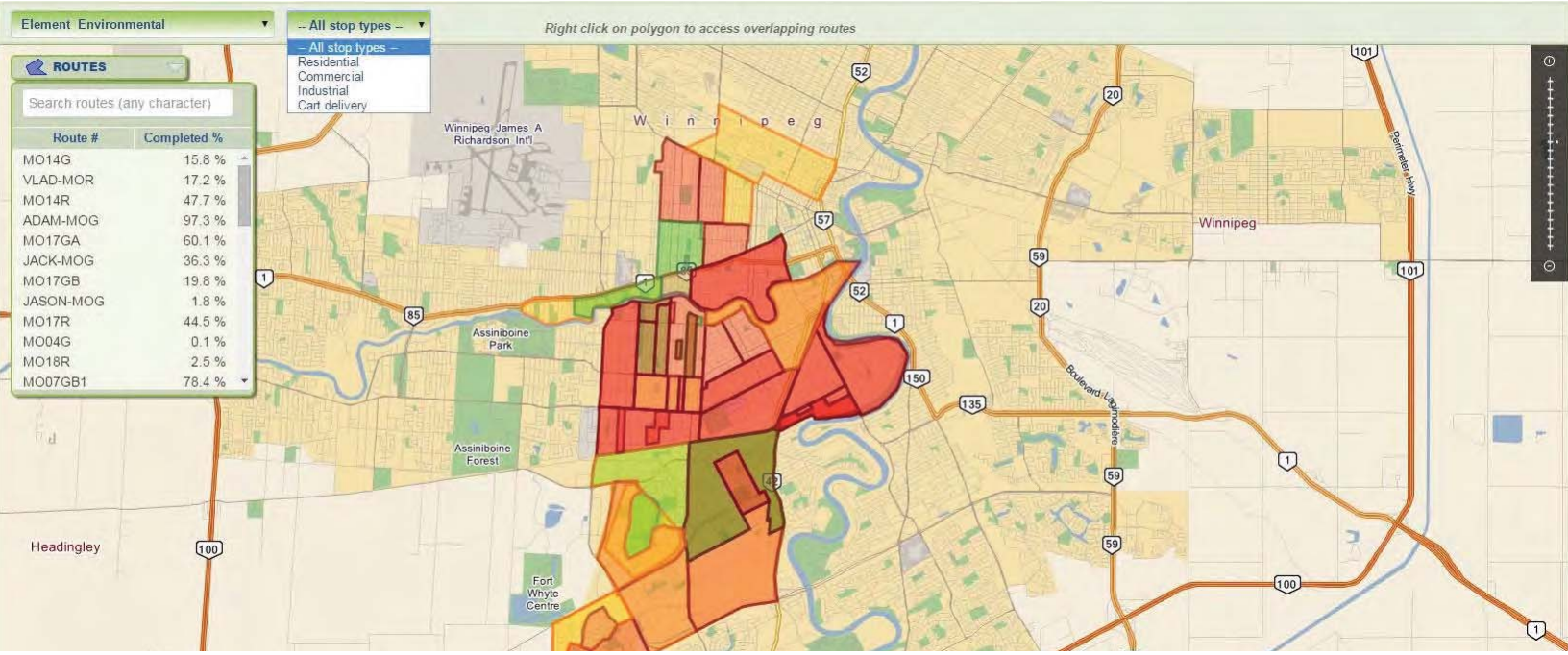
When accidents or driving incidents occur – and they will - it is essential to have accurate information to deal with these appropriately. The FleetMind solution lets drivers record detailed information with the simple press of a button that captures essential data about any driving incidents. In addition to tracking driver activity and reports, Vehicle Reports allow you to monitor vehicle usage, including the following reports:

- Accident
- Accident graph
- Alarm
- Cruise control monitoring
- Vehicle usage graph



FleetLink Track System

Part of the FleetMind back-office suite, the FleetLink Track System is a Web portal that delivers a real-time and historical views into your fleet, driver and collection services activity. You gain an intuitive back-office view into what's going on for each route, truck and driver. FleetLink Track is accessible using common browsers like Chrome, Firefox, Internet Explorer.



Fleet overview

With FleetLink Track you can track:

- Vehicle activity and alarms
- Route progress
- Speed limits
- Alarms and incidents
- Vehicle stops
- Driver activities
- Driver notes and photos

Benefits:

- Know how your vehicles are being handled
- Identify non-productive time in seconds
- Determine which drivers generated alarms and where
- Plot locations of alarm occurrences
- Respond quickly to any customer service issues
- Access all your fleet's activities by divisions
- Supervise real-time route progress
- Check overall route completion status
- Replay selected vehicles' activities
- View individual bin status

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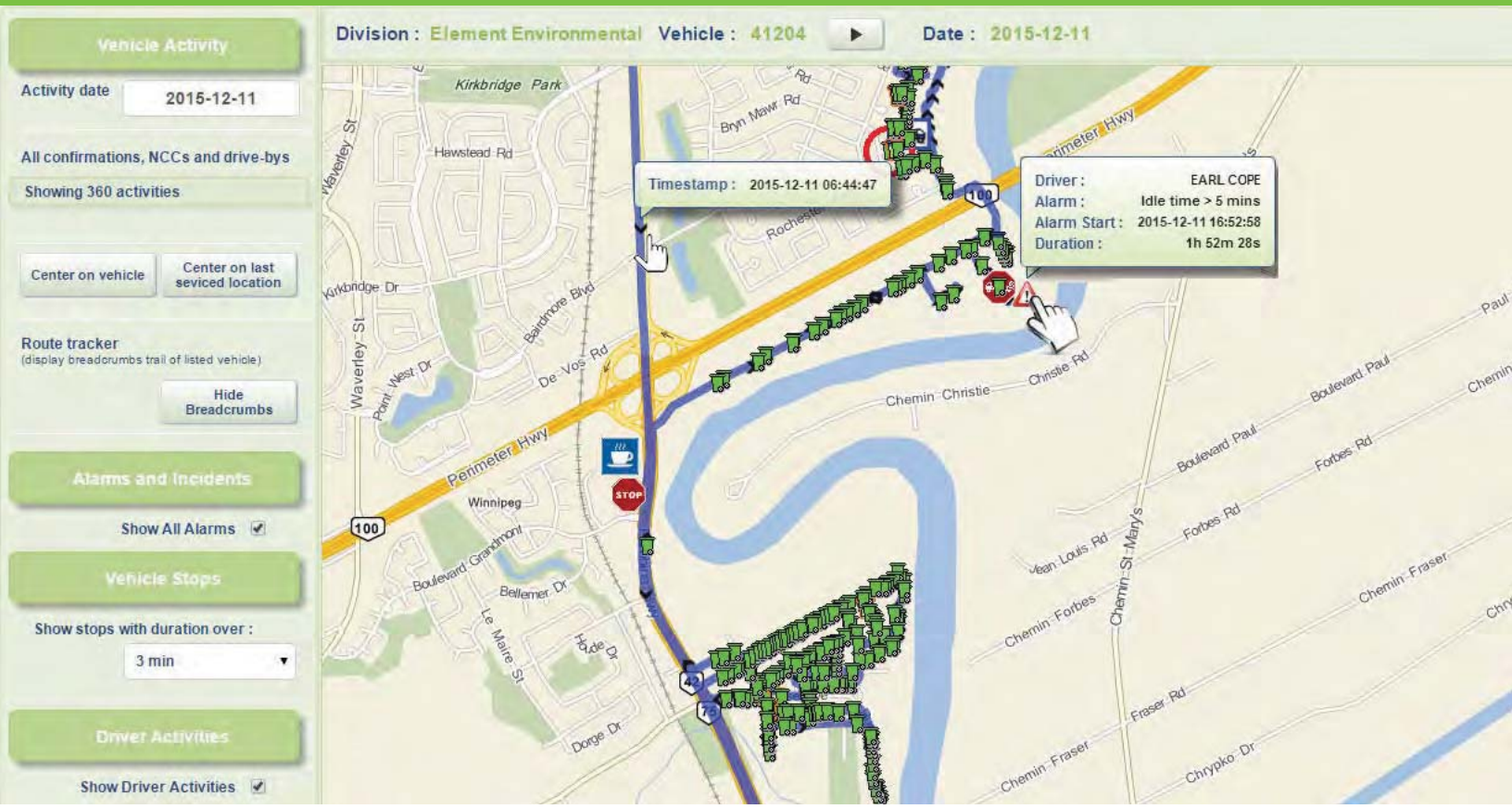
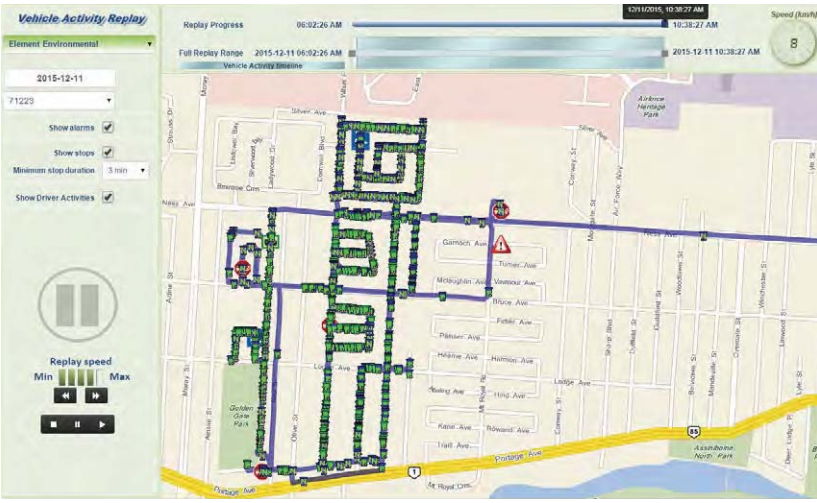


Vehicle View

Route View



Replay Mode

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Windows Azure™ Security Overview

By Charlie Kaufman and Ramanathan Venkatapathy

Abstract

Windows Azure, as an application hosting platform, must provide *confidentiality*, *integrity*, and *availability* of customer data. It must also provide transparent *accountability* to allow customers and their agents to track administration of services, by themselves and by Microsoft.

This document describes the array of controls implemented within Windows Azure, so customers can determine if these capabilities and controls are suitable for their unique requirements. The overview begins with a technical examination of the security functionality available from both the customer's and Microsoft operations' perspectives - including identity and access management driven by Windows Live ID and extended through mutual SSL authentication; layered environment and component isolation; virtual machine state maintenance and configuration integrity; and triply redundant storage to minimize the impact of hardware failures. Additional coverage is provided to how monitoring, logging, and reporting within Windows Azure supports accountability within customers' cloud environments.

Extending the technical discussion, this document also covers the people and processes that help make Windows Azure more secure, including integration of Microsoft's globally recognized SDL principles during Windows Azure development; controls around operations personnel and administrative mechanisms; and physical security features such as customer-selectable geo-location, datacenter facilities access, and redundant power.

The document closes with a brief discussion of compliance, which continues to have ongoing impact on IT organizations. While responsibility for compliance with laws, regulations, and industry requirements remains with Windows Azure customers, Microsoft's commitment to providing fundamental security capabilities and an expanding range of tools and options to meet customers' specific challenges is essential to Microsoft's own success, and key to our customers' success with Windows Azure.

August, 2010

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1 Introduction

Windows Azure™ is a cloud services operating system that serves as the development, service hosting and service management environment for the Windows Azure platform. Windows Azure provides developers with on-demand compute and storage to host, scale, and manage web applications on the Internet through Microsoft® datacenters.

With Windows Azure, Microsoft hosts data and programs belonging to customers. Windows Azure must therefore address information security challenges above and beyond traditional on- or off-premises IT scenarios. This document describes the array of controls Windows Azure customers can use to achieve their required level of security, and determine if the capabilities and controls are suitable for their unique requirements.

1.1 Audience and Scope

The intended audience for this whitepaper includes:

- Developers interested in creating applications that run on Windows Azure
- Technical decision makers (TDMs) considering Windows Azure to support new or existing services

The focal point of this whitepaper is the Windows Azure "operating system as an online service" platform component, and does not provide detailed coverage of any of the related Windows Azure platform components such as Microsoft SQL Azure, AppFabric, or Microsoft Codename "Dallas."

The discussion is focused around Windows Azure's security features and functionality. Although a minimal level of general information is provided, readers are assumed to be familiar with Windows Azure basic concepts as described in other references provided by Microsoft. Links to further information are provided in the "References & Further Reading" section at the end of this document.

A Glossary is also included at the end of this document that defines terms highlighted in **bold** as they are introduced.

1.2 Security Model Basics

Before delving deeper into the technical nature of Windows Azure's security features, this section provides a brief overview of its security model. Again, this overview assumes readers are familiar with basic Windows Azure concepts, and focuses primarily on security-related items.

1.2.1 Customer View: Compute, Storage, and Service Management

Windows Azure is designed to abstract much of the infrastructure that typically underlies applications (servers, operating systems, web & database software, and so on) so that

developers can focus on building applications. This section provides a brief overview of what a typical customer "sees" when approaching Windows Azure.

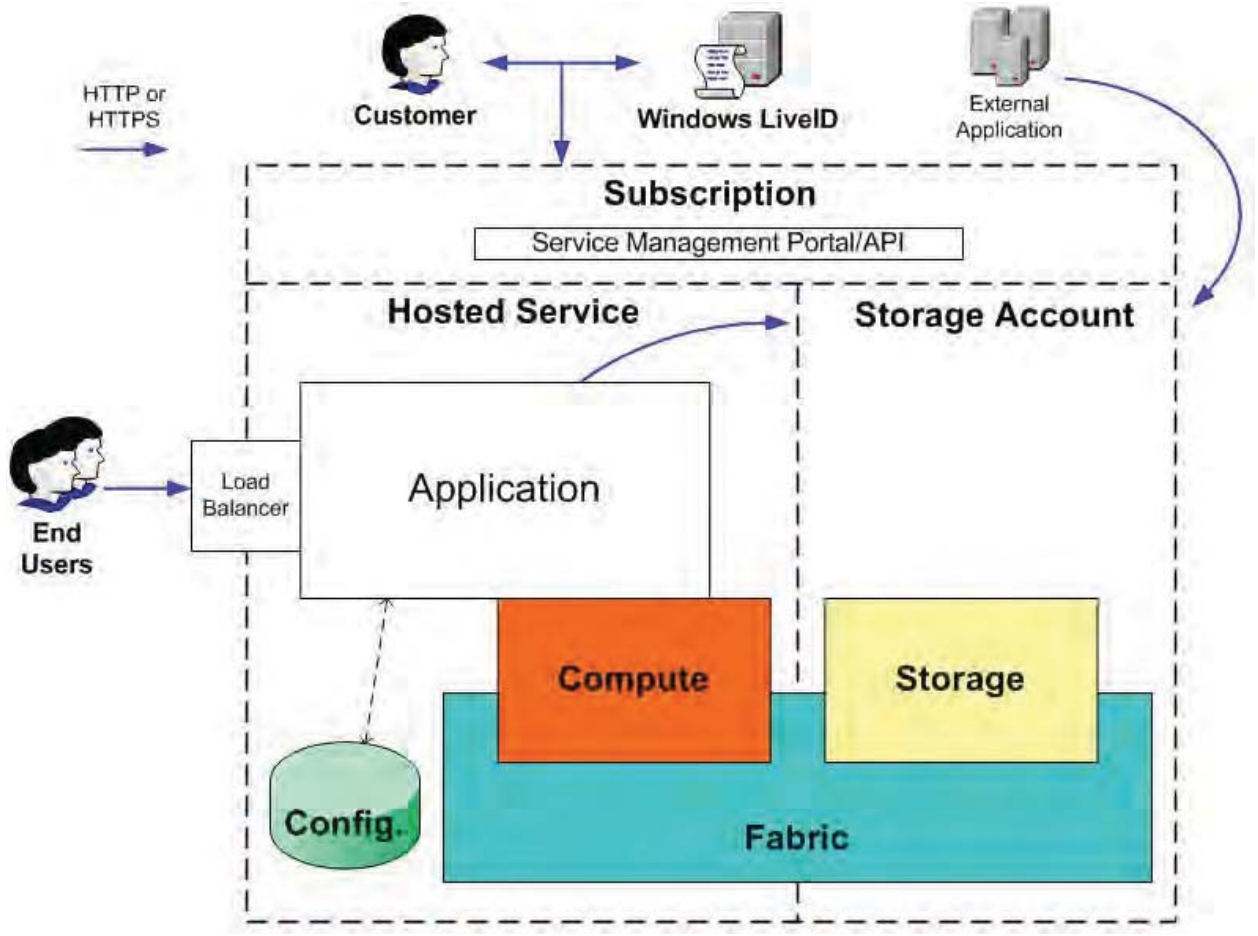


Figure 1: Simplified overview of key Windows Azure components.

As shown in Figure 1, Windows Azure provides two primary functions: cloud-based compute and storage, upon which customers build and manage applications and their associated configurations. Customers manage applications and storage through a **subscription**. A Subscription is created typically by associating new or existing credentials with a credit card number on the Subscription portal web site. Subsequent access to the Subscription is controlled by a Windows Live ID (https://login.live.com). Windows Live ID is one of the longest-running Internet authentication services available, and thus provides a rigorously tested gatekeeper for Windows Azure.

A subscription can include zero or more **Hosted Services** and zero or more Storage Accounts. A Hosted Service contains one or more deployments. A deployment contains one or more **roles**. A role has one or more instances. Storage Accounts contain blobs, tables, and queues. The Windows Azure drive is a special kind of blob. Access control for Hosted Services and Storage Accounts is governed by the subscription. The ability to authenticate with the Live ID associated

with the subscription grants full control to all of the Hosted Services and Storage Accounts within that subscription.

Customers upload developed applications and manage their Hosted Services and Storage Accounts through the **Windows Azure Portal** web site or programmatically through the Service Management API (SMAPI). Customers access the Windows Azure Portal through a web browser or access SMAPI through standalone command line tools, either programmatically or using Visual Studio.

SMAPI authentication is based on a user-generated public/private key pair and self-signed certificate registered through the Windows Azure Portal. The certificate is then used to authenticate subsequent access to SMAPI. SMAPI queues requests to the Windows Azure Fabric, which then provisions, initializes, and manages the required application. Customers can monitor and manage their applications via the Portal or programmatically through SMAPI using the same authentication mechanism.

Access to Windows Azure storage is governed by a storage account key (SAK) that is associated with each Storage Account. Storage account keys can be reset via the Windows Azure Portal or SMAPI.[1]

The compute and storage capabilities are further comprised of the fundamental functional units of Windows Azure. Figure 2 provides a more granular view, exposing these fundamental units and illustrating their relationships to the previously described components. All of the components described so far are summarized below:

- Hosted Services contain deployments, roles, and **role instances**
- Storage Accounts contain blobs, tables, queues, and drives

Each of these entities is defined in the Glossary, and further details about them can be found in general references on Windows Azure. They are introduced here briefly to facilitate further discussion of Windows Azure's security functionality in the remainder of the document.

The primary Windows Azure "subjects," "objects," and authentication mechanisms are summarized in Table 1.

[1] There are additional access control mechanisms exposed by Storage Accounts which are described in more detail in Section 7 of this document.

Table 1 - A summary of Windows Azure authentication mechanisms.

Subjects	Objects	Authentication Mechanism
Customers	Subscription (Compute & Storage)	Windows Live ID
Developers & Operators	Windows Azure Portal/API	Live ID (Windows Azure Portal) or Self-signed certificate (SMAPI)
Role Instances	Storage	Storage account key
External Applications	Storage	Storage account key
External Applications	Applications	Customer–defined

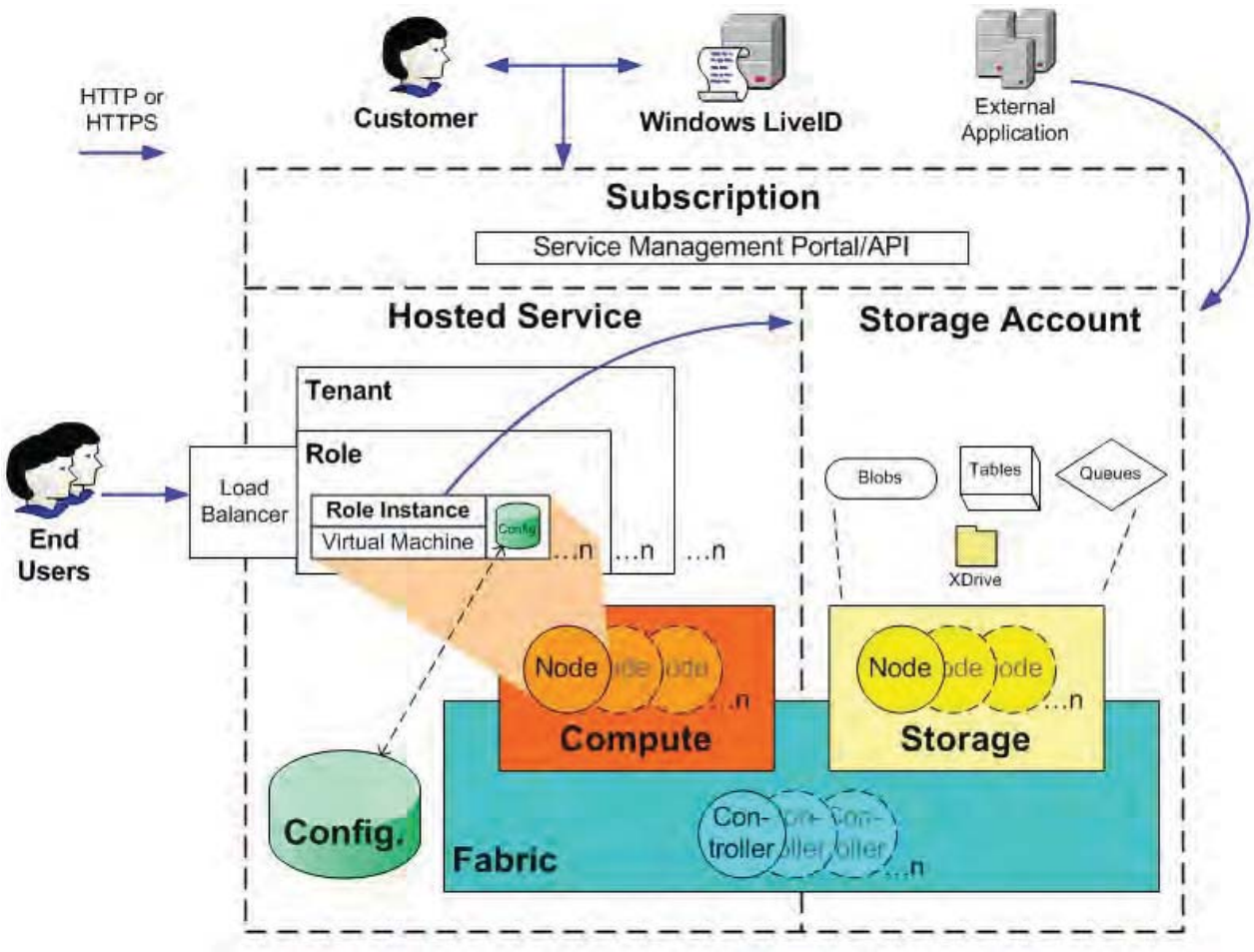


Figure 2: More granular illustration of Windows Azure components and relationships.

1.2.2 Windows Azure View: Fabric

Having described the high-level Windows Azure components manageable by customers, we'll now delve a bit deeper into the Fabric that underlies the basic compute and storage capabilities of Windows Azure. Although customers control aspects of the Fabric via defined management

interfaces as noted previously, the primary purpose of Windows Azure is to abstract management of this virtual infrastructure so that it simply appears as a consistent, scalable set of resources for customers. Put more simply, developers don't explicitly manage this virtual infrastructure – Microsoft does. This section introduces some of the basic components of the Windows Azure Fabric that Microsoft manages directly.

Based on the number of role instances specified by customers, Windows Azure creates a virtual machine (VM) for each role instance, then runs the role in those VMs. These VMs in turn run on a **hypervisor** that's specifically designed for use in the cloud (the **Windows Azure Hypervisor**). One VM is special: it runs a hardened operating system called the **root OS** that hosts a **fabric agent (FA)**. FAs are used in turn to manage **guest agents (GA)** within **guest OSes** on customer VMs. FAs also manage storage nodes. The collection of Windows Azure hypervisor, root OS/FA, and customer VMs/GAs comprises a **compute node**.

FAs are managed by a **fabric controller (FC)**, which exists outside of compute and storage nodes (compute and storage **clusters** are managed by separate FCs). If a customer updates their application's **configuration file** while it's running, the FC communicates with the FA, which then contacts GAs, which notifies the application of the configuration change. In the event of a hardware failure, the FC will automatically find available hardware and restart the VM there.

2 Cloud Security Design

Fundamentally, Windows Azure must provide *confidentiality*, *integrity*, and *availability* of customer data, just like any other application hosting platform. It must also provide transparent *accountability* to allow customers and their agents to track administration of applications and infrastructure, by themselves and by Microsoft. Drawing on the basic components and relationships described so far, this section will illustrate how Windows Azure provides these classical dimensions of information security.

2.1 Confidentiality

Confidentiality ensures that a customer's data is only accessible by authorized entities. Windows Azure provides confidentiality via the following mechanisms:

- Identity and Access Management - Ensures that only properly authenticated entities are allowed access.
- Isolation - Minimizes interaction with data by keeping appropriate containers logically or physically separate.
- Encryption - Used internally within Windows Azure for protecting control channels and is provided optionally for customers who need rigorous data protection capabilities.

More detail about how each of these data protection mechanisms is implemented in Windows Azure follows.

2.1.1 Identity and Access Management

The strongest security controls available are no protection against an attacker who gains unauthorized access to credentials or keys. Thus, credential and key management are critical components of the security design and implementation of Windows Azure.

All of the primary identities and authentication mechanisms have been introduced previously, and are summarized in Table 1. This section provides further details around vital elements including APIs, application privilege levels, key distribution, and authentication credentials for trusted subsystems like the fabric controller.

2.1.1.1 SMAPI Authentication

The Service Management API (SMAPI) provides web services via the **Representational State Transfer (REST)** protocol and is intended for use by Windows Azure tools provided to customer developers. The protocol runs over SSL and is authenticated with a certificate and private key generated by the customer. This certificate does not chain back to a trusted root certificate authority (CA). Rather, it is self-signed and its fingerprint is associated with the subscription via the Windows Azure Portal. As long as the customer maintains control of the private key and the Live ID used to create the account, this mechanism provides a high degree of assurance that only the customers' authorized representatives can access specific aspects of the service.

2.1.1.2 Least Privilege Customer Software

Running applications with "least privilege" is widely regarded as an information security best practice. To align with the principle of least privilege, customers are not granted administrative access to their VMs, and customer software in Windows Azure is restricted to running under a low-privilege account by default (in future versions, customers may select different privilege models at their option). This reduces the potential impact and increases the necessary sophistication of any attack, requiring privilege elevation in addition to other exploits. It also protects the customer's service from attack by its own end users.

2.1.1.3 SSL Mutual Authentication for Internal Control Traffic

All communications between Windows Azure internal components are protected with SSL. In most cases, the SSL certificates are self-signed. Exceptions are for any certificates for connections that could be accessed from outside the Windows Azure network (including the storage service), and for the fabric controllers.

Fabric controllers have certificates issued by a Microsoft CA that chains back to a trusted root CA. This allows FC public keys to be rolled over easily. Additionally, FC public keys are used by

Microsoft developer tools so that when developers submit new application images, they are encrypted with a FC public key in order to protect any embedded secrets.

2.1.1.4 Certificate and Private Key Management

To lower the risk of exposing certificates and private keys to developers and administrators, they are installed via a separate mechanism than the code that uses them. Certificates and private keys are uploaded via SMAPI or the Windows Azure Portal as **PKCS12** (PFX) files protected in transit by SSL. Those PKCS12 files may be password protected, but if so, the password must be included in the same message. SMAPI removes the password protection (if necessary) and encrypts the entire PKCS12 blob using SMAPI's public key and stores it in a secret store on the FC, along with a short certificate name and the public key as metadata.

The configuration data associated with any role within the same subscription specifies the certificates that should be made available to the role. When a role is instantiated on a VM, the FC retrieves the appropriate certificate, decrypts the PKCS12 blob, re-encrypts it using the FA's public transport key, and sends it to the FA on the node. The FA on the node sends it to the GA in the VM that is instantiating the role, and then the GA decrypts it and installs it in the operating system certificate store with a flag indicating that the private key can be used but not exported. After installation, all temporary copies of the certificates and keys are destroyed; if reinstallation is required, the certificates must be repackaged by the FC.

2.1.1.5 Hardware Device Credentials Used by the FC

In addition to application keys, the FC must maintain a set of credentials (keys and/or passwords) used to authenticate itself to various hardware devices under its control. The system used for transporting, persisting, and using these credentials is designed to make it unnecessary for Windows Azure developers, administrators, and backup services/personnel to be exposed to secret information. Encryption based on the FC's master identity public key is used at FC setup and FC reconfiguration time to transfer the credentials used to access networking hardware devices, remote power switches on the racks that are used to power cycle individual nodes, and other systems. The FC maintains these secrets in its internal replicated data store (still encrypted with its master identity public key). Credentials are retrieved and decrypted by the FC when it needs them.

2.1.1.6 Access Control in Windows Azure Storage

As discussed earlier, Windows Azure Storage has a simple access control model. Each Windows Azure subscription can create one or more Storage Accounts. Each Storage Account has a single secret key that is used to control access to all data in that Storage Account. This supports the typical scenario where storage is associated with applications and those applications have full control over their associated data. A more sophisticated access control model can be achieved by creating a custom application "front end" to the storage, giving the application the storage

key, and letting the application authenticate remote users and even authorize individual storage requests.

Two mechanisms support generalized access control scenarios. A portion of the data in a storage account can be marked as *publicly readable*, in which case requests to read that data are allowed without a shared key signature. The primary use of this feature is to access non-sensitive data such as web page images.

The other mechanism is called a *Shared Access Signature (SAS)*, where a process, knowing a given storage account key (SAK), can create a query template and sign it with the SAK. That signed URL can be given to another process which can then fill in the details of the query and make the request of the storage service. Authentication is still based on a signature created using the SAK, but it is sent to the storage server by a third party. Such delegations can be limited in terms of validity time, permission set and what portions of the Storage Account are accessible.

A Shared Access Signature may also reference a *Container-Level Access Policy*, which substitutes in the URL for some number of parameters (such as validity time or permission set). Those parameters are instead dictated by the named access policy, which is stored within Windows Azure Storage. Because a Container-Level Access Policy can be modified or revoked at any time, it provides greater flexibility and control over the permissions that are granted.

To support periodically changing SAKs without any breaks in service, a Storage Account can have two secret keys associated with it at the same time (where either key gives full access to all of the data). The sequence for changing the secret key is to add the new one as authorized to the storage service, then change the key used by all applications accessing the service, and finally remove the old key so that it will no longer be authorized. Changing the set of authorized storage keys associated with an account is done via SMAPI or the Windows Azure Portal using the subscription credentials.

2.1.2 Isolation

Beyond authenticating access to data, simply keeping different data appropriately segregated provides well-recognized protection. Windows Azure provides isolation at a number of levels, as discussed below.

2.1.2.1 Isolation of Hypervisor, Root OS, and Guest VMs

A critical boundary is the isolation of the root VM from the guest VMs and the guest VMs from one another, managed by the hypervisor and the root OS. The hypervisor/root OS pairing leverages Microsoft's decades of operating system security experience, as well as more recent learning from Microsoft's Hyper-V, to provide strong isolation of guest VMs.

2.1.2.2 Isolation of Fabric Controllers

As the central orchestrator of much the Windows Azure Fabric, significant controls are in place to mitigate threats to fabric controllers, especially from potentially compromised FAs within customer applications. Communication from FC to FA is unidirectional – the FA implements an SSL-protected service that is accessed from the FC and replies to requests only. It cannot initiate connections to the FC or other privileged internal nodes. The FC strongly parses all responses as though they were untrusted communications.

In addition, the FCs and devices incapable of implementing SSL are on separate VLANs, which limits exposure of their authentication interfaces to a compromised node that hosts VMs.

2.1.2.3 Packet Filtering

The hypervisor and the root OS provide network packet filters that assure that the untrusted VMs cannot generate spoofed traffic, cannot receive traffic not addressed to them, cannot direct traffic to protected infrastructure endpoints, and cannot send or receive inappropriate broadcast traffic.

Storage nodes run only Windows Azure-provided code and configuration, and access control is thus narrowly tailored to permit legitimate customer, application, and administrative access only.

Customer access to VMs is limited by packet filtering at edge load balancers and at the root OS. In particular, remote debugging, remote Terminal Services, or remote access to VM file shares is not permitted by default; Microsoft plans to permit customers to enable these protocols as an explicit option in the future. Microsoft allows customers to specify whether any connections are accepted from the Internet and from role instances within the *same* application.

Connections between role instances of *different* applications are considered to be Internet connections. Connectivity rules are cumulative; for example, if role instances A and B belong to different applications, A can open a connection to B only if A can open connections to the Internet and B can accept connections from the Internet.

The fabric controller translates the list of roles into a list of role instances, and from that to a list of IP addresses. This list of IP addresses is used by the FA to program the packet filters to only allow intra-application communication to those IP addresses. Roles are allowed to initiate communication to Internet addresses. This enables them to communicate with the Internet and send traffic to any other role with visibility from the Internet via their **VIPs**).

2.1.2.4 VLAN Isolation

VLANs are used to isolate the FCs and other devices. VLANs partition a network such that no communication is possible between VLANs without passing through a router, which prevents a compromised node from faking traffic from outside its VLAN except to other nodes on its VLAN, and it also cannot eavesdrop on traffic that is not to or from its VLANs.

There are three VLANs in each cluster:

- The main VLAN – interconnects untrusted customer nodes
- The FC VLAN – contains trusted FCs and supporting systems
- The device VLAN – contains trusted network and other infrastructure devices

Communication is permitted from the FC VLAN to the main VLAN, but cannot be initiated from the main VLAN to the FC VLAN. Communication is also blocked from the main VLAN to the device VLAN. This assures that even if a node running customer code is compromised, it cannot attack nodes on either the FC or device VLANs.).

2.1.2.5 Isolation of Customer Access

The systems managing access to customer environments (the Windows Azure Portal, SMAPI, and so on) are isolated within a Windows Azure application operated by Microsoft. This logically separates customer access infrastructure from customer applications and storage.

2.1.3 Encryption

Encryption of data in storage and in transit can be used by customers within Windows Azure to align with best practices for ensuring confidentiality and integrity of data. As noted previously, critical internal communications are protected using SSL encryption. At the customer's option, the Windows Azure SDK extends the core .NET libraries to allow developers to integrate the .NET Cryptographic Service Providers (CSPs) within Windows Azure. Developers familiar with .NET CSPs can easily implement encryption, hashing, and key management functionality for stored or transmitted data. For example, using the .NET CSPs, Windows Azure developers can easily access:

- Recognized encryption algorithms like AES that have years of real-world exposure and testing, avoiding the classic mistake of attempting to "roll your own crypto" for applications.
- A full array of cryptographic hash functionality including MD5 and SHA-2 to verify data correctness, create and validate digital signatures, and create non-identifiable tokens in place of sensitive data.
- The RNGCryptoServiceProvider class to generate random numbers sufficient to seed the high level of entropy required for strong cryptography.
- Straightforward key management methods that enable simple manipulation of custom encryption keys within Windows Azure Storage.

For more detailed descriptions of how to leverage cryptographic capabilities provided by Windows Azure, please see "References & Further Reading" at the end of this document.

2.1.4 Deletion of Data

Where appropriate, confidentiality should persist beyond the useful lifecycle of data. Windows Azure's Storage subsystem makes customer data unavailable once delete operations are called. All storage operations including delete are designed to be instantly consistent. Successful execution of a delete operation removes all references to the associated data item and it cannot be accessed via the storage APIs. All copies of the deleted data item are then garbage collected. The physical bits are overwritten when the associated storage block is reused for storing other data, as is typical with standard computer hard drives. Section 4.4.3 discusses disposal of physical media.

2.2 Integrity

Customers seeking to outsource their data compute and storage workloads to Windows Azure obviously expect it to be protected from unauthorized changes. Microsoft's cloud operating system provides this in a number of ways.

The primary mechanism of integrity protection for customer data lies within the Fabric VM design itself. Each VM is connected to three local Virtual Hard Drives (VHDs):

- The D: drive contains one of several versions of the Guest OS, kept up-to-date with relevant patches, selectable by the customer.
- The E: drive contains an image constructed by the FC based on the package provided by the customer.
- The C: drive contains configuration information, paging files, and other storage.

The D: and E: virtual drives are effectively read-only because their ACLs are set to disallow write access from customer processes. Since the operating system may need to update those read-only volumes, they are implemented as VHDs with delta files. The initial VHDs for all role instances in an application generally start out identical. The delta drive for the D: drive is discarded any time Windows Azure patches the VHD containing the OS. The delta drive for the E: drive is discarded any time the VHD is updated with a new application image. This design strictly preserves the integrity of the underlying operating system and customer applications.

Another primary integrity control is of course the configuration file, which is stored on the read/write C: drive. The customer provides a single configuration file specifying the connectivity requirements of all roles in the application. The FC takes the subset of that configuration file appropriate for each role and places it in the C: drive for each role instance. If the customer updates the configuration file while the role instances are running, the fabric controller (FC) – through the fabric agent (FA) – contacts the guest agent (GA) running in the VM's guest OS and instruct it to update the configuration file on the C: drive. It can then signal the customer's application to re-read the configuration file. The contents of the C: drive are not discarded for this event, which means that the C: drive appears to the customer's application to be stable

storage.[2] Only authorized customers accessing their Hosted Services via the Windows Azure Portal or SMAPI (as described earlier) can change the configuration file. So, by the inherent design of Windows Azure, the integrity of the customer configuration is protected, maintained, and persisted constantly during an application's lifetime.

As for Windows Azure Storage, integrity is dictated by applications using the simple access control model described earlier. Each Storage Account has two storage account keys that are used to control access to all data in that Storage Account, and thus access to the storage keys provide full control over the associated data.

Finally, the integrity of the Fabric itself is carefully managed from bootstrap through operation. As noted earlier, the root OS that runs on VM hosting nodes within the Fabric is a hardened operating system. After a compute node is booted, it starts the fabric agent (FA) and awaits connections and commands from the fabric controller. The FC connects to the newly booted node using SSL, authenticating bi-directionally via SSL as described previously. FC communication with FAs is via one-way push, making it difficult to attack those higher in the chain of command because they cannot make requests of directly to those components. Combined with the many mechanisms described above, these features help maintain the Fabric in a pristine state for customers.

2.3 Availability

One of the main advantages provided by cloud platforms is robust availability based on extensive redundancy achieved with virtualization technology. Windows Azure provides numerous levels of redundancy to provide maximum availability of customers' data.

Data is replicated within Windows Azure to three separate nodes within the Fabric to minimize the impact of hardware failures.

Customers can leverage the geographically distributed nature of the Windows Azure infrastructure by creating a second Storage Account to provide hot-failover capability. In such a scenario, customers may create custom roles to replicate and synchronize data between Microsoft facilities. Customers may also write customized roles to extract data from storage for offsite private backups.

The guest agents (GAs) on every VM monitor the health of the VM. If the GA fails to respond, the FC reboots the VM. In the future, customers can optionally choose to run more sophisticated health monitoring processes adapted to a customized continuity/recovery policy. In case of hardware failure, the FC moves the role instance to a new hardware node and reprograms the network configuration for the service role instances to restore the service to full availability.

[2] All three drives will revert to their initial states if the role instance is ever moved to a different physical machine; thus, customer applications should only cache data to the C: drive as a performance optimization.

As noted earlier, each VM has a D: drive containing customer-selectable versions of the Guest OS. The customer can either manually move from one build of the Guest OS to another or choose to let Microsoft move their applications as new builds are released. This system maximizes availability throughout regular maintenance events with minimal customer interaction.

FCs adhere to similar principles of high availability through redundancy and automatic failover that are used for a customer's services, resulting in continuous availability of FC manageability capabilities. During an upgrade of the Windows Azure platform or a customer's service software, FCs utilize a logical partition called a*n update domain* to change a portion of a given service's role instances at a given time while the remaining instances continue to serve requests. FCs are also aware of potential hardware and network points of failure through specification of *fault domains*. For any service that has more than one role instance, Windows Azure ensures that these instances are deployed across multiple update and fault domains (unless specified otherwise by the customer) in order to maintain full availability of the service through updates and isolated network hardware failures.

2.4 Accountability

Because cloud computing platforms are effectively an outsourced computing environment, they have to be able to *demonstrate* safe operation to customers and their designated agents on a regular basis. Windows Azure implements multiple levels of monitoring, logging, and reporting to provide this visibility to customers. Primarily, the **monitoring agent (MA)** gathers monitoring and diagnostic log information from many places including the FC and the root OS and writes it to log files. It eventually pushes a digested subset of the information into a pre-configured Windows Azure Storage Account. In addition, the **Monitoring Data analysis Service (MDS)** is a freestanding service that reads various monitoring and diagnostic log data and summarizes/digests the information, writing it to an integrated log.

3 Security in the Development Lifecycle

Microsoft employs widely recognized tools and techniques to provide security assurance within Windows Azure's development processes and around the design and implementation of the service itself.

Windows Azure fully integrates Microsoft's Security Development Lifecycle (SDL) guidelines, recognized worldwide as a model for software security assurance programs (more information on SDL can be found in "References & Further Reading").

In particular, Microsoft scrutinizes places where data from a less-trusted component is parsed by a more trusted component. For example:

- When the Windows Azure hypervisor and root OS processes requests for disk I/O and network I/O from customer controlled VMs.
- When Windows Azure portal and SMAPI processes requests coming over the network from sources controlled by customers.
- When the fabric controller (FC) parses customer configuration data passed via SMAPI.

In addition to careful design and implementation, these components are developed using managed programming languages like C# that reduce the likelihood of well-known memory manipulation exploits, and are subjected to extensive testing of the interfaces before the Fabric is switched to production mode. Microsoft continues these practices when upgrading or modifying code that handles external requests.

Microsoft's SDL guidance is also promoted extensively to customers of Windows Azure, since the security of applications hosted on Windows Azure depends a great deal on the customers' development processes. A companion to this document, *Security Best Practices For Developing Windows Azure Applications*, is also available on microsoft.com (see "References & Further Reading").

Assuming both Microsoft and customers follow SDL, there still remains a remote probability of compromise between development and deployment to Windows Azure. As discussed previously, customers provision applications directly via SMAPI, which uses certificate authentication, and HTTPS-protected channels for code transfer, among other controls.

4 Service Operations

The people and processes that operate Windows Azure are perhaps the most important security feature of the platform. This section describes features of Microsoft's datacenter infrastructure that help enhance and maintain security, continuity, and privacy.

4.1 Microsoft Operations Personnel

Windows Azure developers and administrators have, by design, been given sufficient privileges to carry out their assigned duties to operate and evolve the service. As noted throughout this document, Microsoft deploys combinations of preventive, detective and reactive controls including the following mechanisms to help protect against unauthorized developer and/or administrative activity:

- Tight access control to sensitive data
- Combinations of controls that greatly enhance independent detection of malicious activity
- Multiple levels of monitoring, logging, and reporting

Additionally, Microsoft conducts background verification checks of certain operations personnel, and limits access to applications, systems, and network infrastructure in proportion to the level of background verification.

Microsoft operations personnel follow a formal process when they are required to access a customer's account or related information, and this is only done at the customer's request.

4.2 Security Response

Microsoft security vulnerabilities can be reported to the Microsoft Security Response Center (http://www.microsoft.com/security/msrc/default.aspx) or via email to secure@microsoft.com. Microsoft follows a consistent process to assess and respond to vulnerabilities and incidents reported via the standard facilities.

4.3 Network Administration

The networking hardware that connects all of the Windows Azure components is clearly a critical component of the platform. This section describes some of the security measures employed by the service at this layer.

As noted previously, the Windows Azure internal network is isolated by strong filtering of traffic to and from other networks. This provides a "backplane" for internal network traffic that is high-speed and at low risk from malicious activity generally.

The configuration and administration of network devices such as switches, routers, and load balancers is performed only by authorized Microsoft operations personnel, and generally only at major changes (such as when the data center itself is reconfigured). The virtualization provided by the Windows Azure Fabric makes such changes practically invisible to customers.

Furthermore, any hardware that does not implement adequate communications security features (such as SSL) is administered over a separate LAN that is isolated from nodes that are exposed to the Internet, or customer access.

4.3.1 Remote Administration of Fabric Controllers

Fabric controllers have an RPC-accessible API that accepts commands from SMAPI, and from Windows Azure administrators. Policy-level decisions are enforced by SMAPI at the level of the application, which will only generate requests concerning a customer's own resources based on the authenticated identity of the customer. FCs make finer-grained access control decisions, befitting of their role as the low-level central provisioning and management facility.

Connections to FCs are via SSL where the client is authenticated with a client certificate, and the certificate fingerprint determines if a caller has the appropriate access level to make a given request.

4.4 Physical Security

A system cannot be more secure than the physical platform on which it runs. Windows Azure runs in geographically distributed Microsoft facilities, sharing space and utilities with other Microsoft Online Services. Each facility is designed to run 24 x 7 and employs various measures to help protect operations from power failure, physical intrusion, and network outages. These data centers comply with industry standards for physical security and reliability and they are managed, monitored, and administered by Microsoft operations personnel. They are designed for "lights out" operation. Further details of Windows Azure's physical security are discussed below.

4.4.1 Facilities Access

Microsoft uses industry standard access mechanisms to protect Windows Azure's physical infrastructure and datacenter facilities. Access is limited to a very small number of operations personnel, who must regularly change their administrative access credentials. Datacenter access, and the authority to approve data center access, is controlled by Microsoft operations personnel in alignment with local data center security practices.

4.4.2 Power Redundancy and Failover

Each datacenter facility has a minimum of two sources of electrical power, including a power generation capability for extended off-grid operation. Environmental controls are self-contained and remain operational as long as the facility and contained systems remain online.

Physical security controls are designed to "fail closed" during power outages or other environmental incidents. In case of fire or situations that could threaten life safety, the facilities are designed to allow egress without remaining exposed.

4.4.3 Media Disposal

Upon systems end-of-life, Microsoft operational personnel follow rigorous data handling procedures and hardware disposal processes.

5 Compliance

The importance of business and regulatory compliance has increased dramatically with the proliferation of global standards including ISO 27001, Safe Harbor and many others. In many cases, failure to comply with these standards can have a dramatic impact on organizations, up to and including catastrophic financial penalties and damage to reputation.

Any of the previously discussed threats can have an impact on compliance, but there are also threats that are directly related to failure to adhere to recognized practices, provide representation of compliance to independent auditors, support e-discovery, and otherwise facilitate reasonable efforts by customers to verify alignment with regulatory, legal, and

contractual requirements. Microsoft provides customers with the information they need to decide whether it is possible to comply with the laws and regulations to which they are subject within the context of Windows Azure and the tools to demonstrate that compliance when it is possible. Some of the ways Windows Azure assists customers with compliance are discussed below.

5.1 Customer-Selectable Geo-location

One of the key challenges inherent to Windows Azure is balancing compliance requirements against one of the key economic drivers behind cloud services: segmenting customer data and processing across multiple systems, geographies, and regulatory jurisdictions. Windows Azure addresses this challenge in a very simple way: customers choose where their data is stored. Data in Windows Azure is stored in Microsoft datacenters around the world based on the geo-location properties specified by the customer using the Windows Azure Portal. This provides a convenient way to minimize compliance risk by actively selecting the geographic locations in which regulated data will reside.

5.2 Compliance Controls

At the level of discrete controls, this document has illustrated Windows Azure's alignment with recognized compliance practices in many dimensions. To review some of these key security features that enable compliance:

Table 2: Compliance enabling features

Domain	Relevant Sections	Overview
Access control	1.2	Windows Azure provides numerous access control capabilities to protect against unauthorized administrative or end-user access.
Encryption	2.1.3	Encryption of data in storage and in transit can be defined by customers within Windows Azure to align with best practices for ensuring confidentiality and integrity of data.
Availability	2.3, 4.4	Customers can write customized roles to provide backups. Windows Azure's physical infrastructure is housed in managed geo-redundant facilities.
Privacy	2.1.4	Windows Azure Storage is designed to ensure customer-deleted data is faithfully and consistently erased.

5.3 ISO 27001 Certification

Trusted third-party certification provides a well-established mechanism for demonstrating protection of customer data without giving excessive access to teams of independent auditors that may threaten the integrity of the overall platform. Windows Azure operates in the Microsoft Global Foundation Services (GFS) infrastructure, portions of which are ISO27001-certified. ISO27001 is recognized worldwide as one of the premiere international information security management standards. Windows Azure is in the process of evaluating further industry certifications.

In addition to the internationally recognized ISO27001 standard, Microsoft Corporation is a signatory to Safe Harbor and is committed to fulfill all of its obligations under the Safe Harbor Framework.

While responsibility for compliance with laws, regulations, and industry requirements remains with Windows Azure customers, Microsoft remains committed to helping customers achieve compliance through the features described above.

6 References & Further Reading

The following resources are available to provide more general information about Windows Azure and related Microsoft services, as well as specific items referenced in the main text:

- Windows Azure Home – general information and links to further resources about Windows Azure; http://www.microsoft.com/windowsazure/
- Windows Azure Developer Center – main repository for developer guidance and information; http://msdn.microsoft.com/en-us/windowsazure/default.aspx
- Security Best Practices For Developing Windows Azure Applications – http://download.microsoft.com/download/7/3/E/73E4EE93-559F-4D0F-A6FC-7FEC5F1542D1/SecurityBestPracticesWindowsAzureApps.docx
- Crypto Services and Data Security in Windows Azure – http://msdn.microsoft.com/en-us/magazine/ee291586.aspx
- Microsoft's Security Development Lifecycle -- SDL is Microsoft's security assurance process that is employed during the development of Windows Azure; www.microsoft.com/security/sdl/
- Microsoft's Global Foundation Services Security – the group accountable for delivering the trustworthy, available online operations environment that underlies Windows Azure; http://www.globalfoundationservices.com/security/
- Microsoft GFS' ISO 27001 certification – http://www.bsigroup.com/en/Assessment-and-certification-services/Client-directory/CertificateClient-Directory-Search-Results/?pg=1&licencenumber=IS+533913&searchkey=companyXeqXMicrosoft
- Microsoft Security Response Center -- Microsoft security vulnerabilities, including issues with Windows Azure, can be reported to http://www.microsoft.com/security/msrc/default.aspx or via email to secure@microsoft.com.

6.1 Disclaimer

This document is provided "as-is." Information and views expressed in this document, including URL and other Internet Web site references, may change without notice. You bear the risk of using it.

Some examples depicted herein are provided for illustration only and are fictitious. No real association or connection is intended or should be inferred.

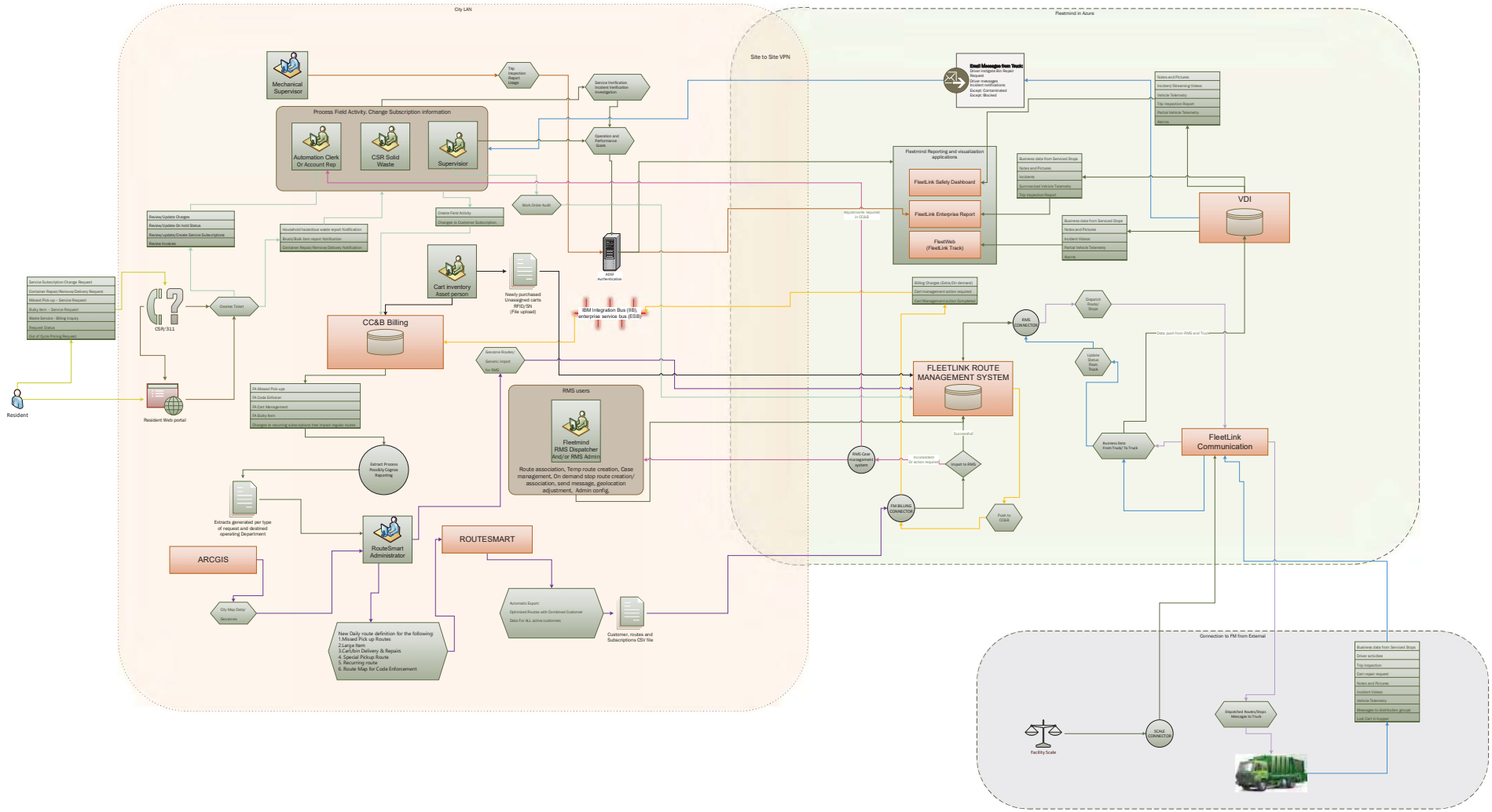
This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal, reference purposes.

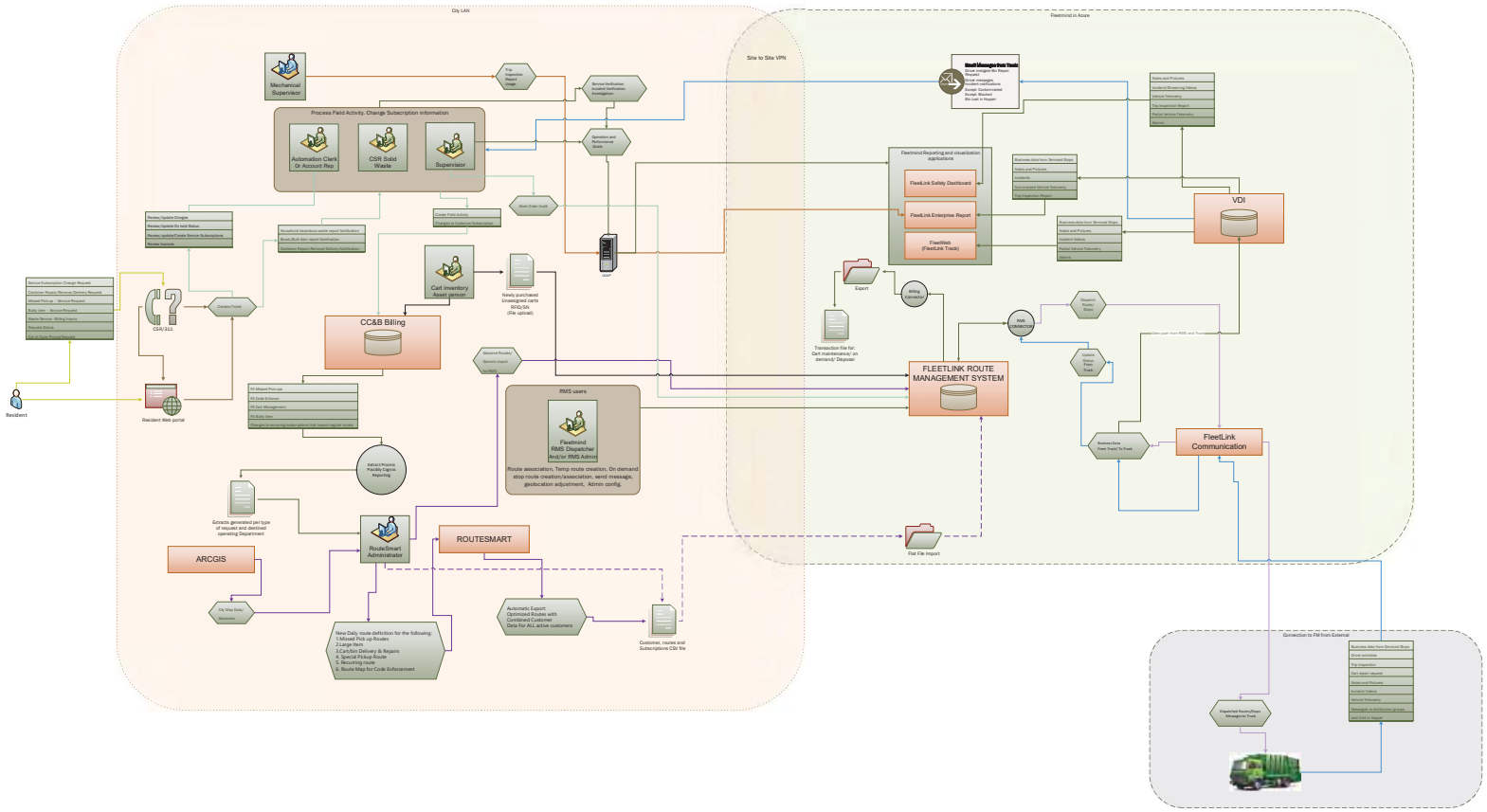
7 Glossary

Term	Definition
application	A collection of roles that, when instantiated on VMs, provide a Hosted Service.
cluster	A collection of hardware modules under the control of a single fabric controller.
compute node	The collection of hypervisor, root OS/FA, and customer VMs/GAs comprises a compute node.
configuration file	The customer provides a single configuration file specifying the connectivity requirements of all roles in the application. The FC takes the subset of that configuration file appropriate for each role and places it in the C: drive for each role instance/VM. If the customer updates the configuration file while the role instances are running, the Fabric instructs all VMs to update their configuration files, and then signals the customer's application to reread the configuration file.
customer	In the context of this document, the customer is the party who is buying resources on Windows Azure from Microsoft for the purpose of running some application. The term customer includes internal Microsoft groups who deploy their applications to Windows Azure.
end user	End users are the people who access services deployed on the Windows Azure Fabric. They could be employees or customers of customers (as defined above). They generally access these services over the Internet (except for the case where the end user is a different Windows Azure customer, in which case requests may come from within the Windows Azure Fabric but are treated as coming from the Internet). End users are by design not trusted by the Windows Azure infrastructure or by our default customer configuration, and so the infrastructure provides mechanisms to protect against end users and for our customers to secure their services against them.
FA (fabric agent)	A component of the root OS that opens an SSL port that accepts incoming connections and requests from the fabric controller and performs local configuration actions on the node including creation and deletion of VMs and updates to the locally stored OS images and itself.
FC (fabric controller)	The software that executes the algorithms to manage and provision physical hardware, allocate disk resources, CPU resources, RAM, and VMs to customers, deploy application and OS images to nodes, and program the packet filters to control connectivity within a Fabric. It also participates in the node initialization process by serving the OS images for remote network boot via Intel's Preboot eXecution Environment (PXE) framework.
hosted service	A customer-defined, cloud-based service hosted by Windows Azure on behalf of Microsoft's customers.
GA (guest agent)	A Windows Azure-provided agent that runs within the Guest VM and provides services like role health measurement and the installation of certificates and private keys. This agent communicates with the outside world through a private connection to the FA in the root partition. While GAs are provided by Windows

	Azure, they run within security context of a application, and are thus considered application code within the Windows Azure security model.
guest OS	An operating system tested for compatibility with Windows Azure that runs on a VM on behalf of a customer. Each Guest OS is designed to be generally compatible with a specific release of Windows Server.
hypervisor	The software component used to isolate all customer code that runs in Windows Azure. It runs directly over the hardware and divides a node into a variable number of VMs. Together with the root OS, it enforces constraints on outside communications and divides resources.
load balancer	A hardware networking device that accepts Internet traffic coming into Windows Azure and forwards it to an appropriate IP address and port within the Fabric. In the common case where there are several different machines or VMs that can handle a given request, the load balancer allocates the connections in a way that balances the load among them. The load balancer's routing tables must be updated as VMs are created, deleted, and moved from one piece of hardware to another.
MA (monitoring agent)	An agent that runs in many places including the FC and the Root OS and gathers monitoring and diagnostic log information and writes it to log files. It eventually pushes a digested subset of the information into a pre-configured Windows Azure Storage Account.
MDS (monitoring data analysis service)	A freestanding service that reads various monitoring and diagnostic log data and summarizes/digests the information, writing it to an integrated log.
packet filter	A network policy enforcement mechanism implemented by the root partition of a node that enforces IP connectivity restrictions within the Windows Azure Fabric.
PKCS12	One of the Public-Key Cryptography Standards (PKCS), published by RSA Laboratories, which defines a file format commonly used to store X.509 private keys with accompanying public key certificates, protected with a password-based symmetric key.
REST (representational state transfer)	An RPC protocol running over SOAP used for many interactions within the Windows Azure Fabric and with Windows Azure customer development environments.
role	A process within an application that is comprised of two or more identical role instances distributed across multiple nodes to provide scalability and fault tolerance. Every Hosted Service has at least one role, and most have two or three. Complex services could have many roles. The term "role" is also sometimes used to refer to the collection of code and configuration settings that define the role's behavior and are used to instantiate single-node role instances.
role instance	A process running in a virtual machine implementing one single instance of a role's portion of a Hosted Service. For scalability and availability, there are typically several instances of a given role running at a time. If a particular Hosted Service is not running at some particular time, then there would not be any role instances for any of its roles. The term "role instance" is also sometimes used to

	refer to the entire VM instance that hosts a single role instance. Role instances typically correspond one-to-one with internal/NAT'd Windows Azure IP addresses.
root OS	A hardened operating system that runs in the first VM on a compute node, and hosts the fabric agent. This reduced-footprint operating system includes only those components necessary to host VMs. This is done both to improve performance and to reduce attack surface.
SMAPI (service management API)	The Hosted Service that implements the programmatically accessible API to Windows Azure customer developers. Windows Azure developers access SMAPI using the REST protocol running over SSL-authenticated with a certificate provisioned using the Windows Azure Portal.
subscription	A Windows Azure account set up by a customer to aggregate the billing associated with a collection of Hosted Services and Storage accounts.
VHD (virtual hard disk)	An image file that stores operating systems, customer software, and temporary state in a unitary format that mirrors a single computer hard disk.
VIP (virtual IP address)	An externally visible IP address through which clients communicate with services hosted on Windows Azure. The VIP is implemented by load balancers, which allocate communications to specific endpoints (primarily, roles).
VM (virtual machine)	A software-only computer emulation running within a virtual memory manager (VMM, or hypervisor) that behaves as if it is a physical computer.
Windows Azure hypervisor	(see *Hypervisor*)
Windows Azure Portal	Customers manage Hosted Services and Storage Accounts through the Windows Azure Portal web site.
Windows Azure Drive	Windows Azure Drive provides a durable NTFS volume for Windows Azure VM instances to mount and use. The Windows Azure Drive is actually a blob, where all writes to the drive are made durable to the Storage Account's blob. If the VM with the mounted drive fails over, then the drive still exists as a blob and it can be remounted elsewhere without loss of data. The octets in an Windows Azure Drive are typically formatted like an NTFS image on a physical disk, and Windows Azure VMs can mount them as disks and access them as file systems. The Windows Azure code aggressively caches the data from the Windows Azure Drive on its local disk to avoid a substantial performance penalty for reads. While Storage blobs, tables, and queues are designed to be open and updated by multiple independent VMs, a Windows Azure Drive can only be mounted read-write by a single VM, but snapshots of Drives can be mounted read-only by any number of VMs - , making it more difficult to update for distributed replicated processes. Windows Azure Drives exist primarily for compatibility with applications that are designed to natively access NTFS volumes, and to simplify durable migration of state for single-master roles.


City LAN
Fleetmind in Azure
Site to Site VPN
Mechanical Supervisor
Trip Inspection Report Usage
Service Verification Incident Verification Investigation
Process Field Activity, Change Subscription information
Automation Clerk Or Account Rep
CSR Solid Waste
Supervisior
Operation and Performance Goals
Work Order Audit
Create Field Activity
Changes to Customer Subscription
Review/Update Charges
Review/Update On hold Status
Review/update/Create Service Subscriptions
Review Invoices
Household hazardous waste report Notification
Bulky/Bulk item report Notification
Container Repair/Remove/Delivery Notification
Service Subscription Change Request
Container Repair/Remove/Delivery Request
Missed Pick-up – Service Request
Bulky item – Service Request
Waste Service - Billing Inquiry
Request Status
Out of Cycle Pricing Request
CSR/311
Creates Ticket
Resident
Resident Web portal
Cart inventory Asset person
Newly purchased Unassigned carts RFID/QN (File upload)
AD5/ Authentication
IBM Integration Bus (IIB), enterprise service bus (ESB)
CC&B Billing
Geozone Routes/ Generic import for RMS
PA Missed Pick-ups
PA Code Enforcer
PA Cart Management
PA Bulky item
Changes to recurring subscriptions that impact regular routes
Extract Process Possibly Cognos Reporting
Extracts generated per type of request and destined operating Department
ARCGIS
RouteSmart Administrator
ROUTESMART
City Map Data/ Geozones
New Daily route definition for the following
1.Missed Pick up Routes
2.Large Item
3.Cart/bin Delivery & Repairs
4. Special Pickup Route
5. Recurring route
6. Route Map for Code Enforcement
Automatic Export:
Optimized Routes with Combined Customer
Data For ALL active customers
Customer, routes and Subscriptions CSV file
RMS users
Fleetmind RMS Dispatcher And/or RMS Admin
Route association, Temp route creation, Case management, On demand stop route creation/ association, send message, geolocation adjustment, Admin config.
Email Messages from Truck:
Driver initiate Bin Repair Request
Driver messages
Incident notifications
Except: Contaminated
Except: Blocked
Fleetmind Reporting and visualization applications
FleetLink Safety Dashboard
FleetLink Enterprise Report
FleetWeb (FleetLink Track)
Business data from Serviced Stops
Notes and Pictures
Incidents
Summarized Vehicle Telemetry
Trip Inspection Report
Notes and Pictures
Incidents/ Streaming Videos
Vehicle Telemetry
Trip Inspection Report
Partial Vehicle Telemetry
Alarms
VDI
Business data from Serviced Stops
Notes and Pictures
Incident Videos
Partial Vehicle Telemetry
Alarms
Adjustments required in CC&B
Billing Charges (Extra,On demand)
Cart management action required
Cart Management action Completed
RMS CONNECTION
Dispatch Route/ Stops
Data push from RMS and Truck
Update Status from Truck
FLEETLINK ROUTE MANAGEMENT SYSTEM
Successfull
Incomplete/ Or action required
Import to RMS
RMS Case management system
FM BILLING CONNECTION
Push to CC&B
Business Data From Truck/ To Truck
FleetLink Communication
Connection to FM from External
Facility Scale
SCALE CONNECTOR
Dispatched Routes/Stops Messages to Truck
Business data from Serviced Stops
Driver activities
Trip Inspection
Cart repair request
Notes and Pictures
Incident Videos
Vehicle Telemetry
Messages to distribution groups
Lost Cart in Hopper


City LAN
Fleetmind in Azure
Site to Site VPN
Mechanical Supervisor
Trip inspection Report Usage
Service Verification Incident Verification Investigation
Process Field Activity, Change Subscription information
Automation Clerk Or Account Rep
CSR Solid Waste
Supervisor
Operation and Performance Goals
Work Order Audit
Review/Update Charges
Review/Update Do hold Status
Review/update Cart Service Subscriptions
Review Invoices
Household hazardous waste report Notification
Bruly/Bulk item report Notification
Customer Repair/Remove/Delivery Notification
Create Field Activity
Changes to Customer Subscription
Cart inventory Asset person
Newly purchased Unassigned carts RFID/S/N (File upload)
LDAP
Service Subscription Change Request
Customer Repair/Remove/Delivery Request
Missed Pick up – Service Request
Bulky Item – Service Request
Waste Service - Billing Inquiry
Request Status
Out of Cycle Pickup Request
CSR/ 311
Create Ticket
Resident
Resident Web portal
CC&B Billing
Service Routes
Generic import
RMS users
Fleetmind RMS Dispatcher And/or RMS Admin
Route association, Temp route creation, On demand stop route creation/association, send message, geolocation adjustment, Admin config.
#1-Missed Pick-ups
#2-Code Enforcer
#3-Cart Management
#4-Bulky Item
Changes to recurring home stops that impact regular routes
Extract Process Possibly Capture Reporting
Extracts generated per type of request and destined operating Department
RouteSmart Administrator
ROUTESMART
ARCGIS
City Map Data Services
New Daily route definition for the following: 1.Missed Pick up Routes 2.Large Item 3.Cart/bin Delivery & Repairs 4. Special Pickup Route 5. Recurring route 6. Route Map for Code Enforcement
Automatic Export: Optimized Routes with Combined Customer Data For ALL active customers
Customer, routes and Subscriptions CSV file
Fleetmind Reporting and visualization applications
FleetLink Safety Dashboard
FleetLink Enterprise Report
FleetMab (FleetLink Track)
Business data from Serviced Stops
Notes and Pictures
Incidents
Automated Vehicle Telemetry
Trip Inspection Report
Business data from Serviced Stops
Notes and Pictures
Incident Videos
Vehicle Telemetry
Alerts
VDI
Export
Billing Connector
Transaction file for: Cart maintenance/ on demand/ Disposal
RMS CONNECTOR
Dispatch Route Stops
Update Status From Truck
FLEETLINK ROUTE MANAGEMENT SYSTEM
Data push from RMS and Truck sensors
Business Data from Truck/ To Truck
FleetLink Communication
Flat File Import
Connection to FM from External
Business data from Serviced Stops
Driver activities
Trip inspection
Cart repair request
Notes and Pictures
Incident Videos
Vehicle Telemetry
Messages to distribution groups
Out Cart in hopper
Dispatched Routes/Stops Messages to Truck

Appendix A

IFB – MBE/WBE COMPLIANCE PLAN

All sections (I-VII) must be completed and submitted prior to the due date in the solicitation documents

Section I — Project Identification and Goals

Project Name	Austin Resource Recovery Vehicle Fleet Technology Upgrade
Solicitation Number	RFP 5600 PAX0129

Project Goals or Subgoals	
MBE	2.41 %
African American	N/A %
Hispanic	N/A %
Asian/Native American	N/A %
WBE	2.70 %

Section II — Bidder Company Information

Name of Company	FleetMind Solutions, Inc.
Vendor Code	V00000913814
Address	1751 Richardson Suite 7200
City, State Zip	Montreal Quebec CANADA H3K 1G6
Phone	888-639-1666 ext 4411
Fax & E-Mail	888-639-1666
Name of Contact Person	Martin Demers
Is your company registered on Vendor Connection?	Yes [X] No [ ] *If yes, provide Vendor ID #:* V00000913814 If No, please note: All vendors and subcontractors/consultants must register with COA's Vendor Connect prior to award. See Link for registration information at https://www.ci.austin.tx.us/financeonline/finance/index.cfm
Is your company COA M/WBE certified?	Yes [ ] No [X] *If yes, please indicate:* MBE [ ] WBE [ ] MBE/WBE Joint Venture [ ]

I certify that the information included in this *Compliance Plan* **is true and complete to the best of my knowledge and belief. I further understand and agree that this** *Compliance Plan* **shall become a part of my contract with the City of Austin.**

Martin Demers, CEO

Name and Title of Authorized Representative

Signature

4/25/2016
Date

For SMBR Use Only:

I have reviewed this compliance plan and found that the Proposer HAS [✓] *or* HAS NOT [ ] *complied as per the City Code Chapter 2-9D.*

Reviewing Counselor

Date 5/12/16

I have reviewed this compliance plan and Concur [✓] *or* Do Not Concur [ ] *with recommendation.*

Director/Assistant Director

Date 5/19/16

Section III — Compliance Plan Summary

Note:
- **Fill in all the blanks.**
- **For project participation numbers use an EXACT number. DO NOT USE: approximate, plus or minus (+ -), up to, to be determined (TBD), < >, or any other qualifying language.**
- **Compliance plans not complying with these requirements shall be rejected as non-responsive.**

Total Base Bid (if applicable): **$ 3.923, 363.81**

Goals: Proposed Participation		
MBE	$ 97,907.00	2.50%
WBE	$ 0	0 ~~2.70%~~
Non-Certified	$	--%

Subgoals: Proposed Participation		
African American	$	--%
Hispanic	$	--%
Native/Asian American	$	--%
WBE	$	--%
Non-Certified	$	--%

Bidder's own participation in base bid (less any amount subcontracted):

Amount: $3,825,456.81 Percentage 97.50%

Are the stated goals or subgoals of the solicitation met? *(If no, attach documentation of Good Faith Efforts)*

Yes ☐ No [X]

For SMBR Use Only:

Verified Goals OR Subgoals:

MBE 2.50 % WBE 0.00 %

African-American_____%; Hispanic_____%; Native/Asian American_____%; WBE_____

Section IV — Disclosure of MBE and WBE Participation
Duplicate As Needed

Note:

- Fill in all blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of MBE/WBE Certified Firms as registered with Vendor Connection.
- Select either MBE or WBE for dually certified firms to indicate which certification will count towards the MBE or WBE goal.
- Contact SMBR to request an availability list of certified Firms for additional scopes of work that were not included on the original availability list.

Name of MBE/WBE Certified Firm	Soal Technologies, LLC
City of Austin Certified	MBE [X] WBE [ ] Gender/Ethnic: M/Asian
Vendor Code	VS0000034209
Address/ City / State / Zip	8801 Research Blvd #104 Austin TX 78758
Contact Person & Phone #	Amber Chawdhry 512-270-6700
Fax & Email Address	achawdhry@soaltech.com
Amount of Subcontract	$ 97,907.00 2.50 %
Commodity codes/describe services	91829/92031 Computer software consulting/installation

Section V — Disclosure of Non-Certified Subcontractors
Duplicate As Needed

Note:

- Fill in all blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of Non-Certified Subcontractors as registered with the City of Austin.

Are Goals Met? **Yes** ☐ **No** ☒ **If no, state reason(s) below and attach documentation:**

Certified MBE selected and MBE goal met for installation subcontracting. No certified WBE responded to outreach for installation services. Bidder software is developed in-house; the software coding and systems are proprietary, confidential intellectual property of Bidder. As a result, certified and non-certified MBE/WBE responses offering computer software consulting services for this proposal could not be considered. Bidder conducted outreach to non-certified MBE/WBE by contacting seven minority publications, receiving two publishing offers, and resulting in one paid advertisement especially seeking non certified WBE participation. No WBE or MBE responded to community advertising nor social media (Twitter) Supporting documents for enclosed with proposal.

Subcontractor	
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Amount of Subcontract	$ %
Commodity codes/describe services	
Reason MBE/WBE not used	

Section VI — Disclosure of Second-Level Subcontractors
Duplicate as Needed

Note:

- Fill in all the blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of Second-Level Subcontractors as registered with the City of Austin.

Second-Level Subcontractor	
City of Austin Certified?	No ☐ MBE ☐ WBE ☐ Gender/Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Amount of Second-Level Subcontract	$ %
Commodity codes/describe services	
First-Level Subcontractor	

Section VII — Disclosure of Primary and Alternate Trucking Subcontractors
Duplicate as Needed

Note:

- Fill in all the blanks.
- Compliance plans not complying with these requirements shall be rejected as non-responsive.
- Fill in names of Primary and Alternate Trucking Subcontractors as registered with the City of Austin.

Primary Trucking Subcontractor	
City of Austin Certified?	No ☐ MBE ☐ WBE ☐ Gender/Ethnicity:
Vendor Code	
Address/ City / State / Zip	
Contact Person & Phone #	
Fax & Email Address	
Amount of Subcontract	$ %
Commodity codes/describe services	

Section VIII — MBE/WBE Compliance Plan Check List

The MBE/WBE *Compliance Plan* must be completed and submitted by the time specified in the solicitation documents. If the goals or subgoals were not achieved, Good Faith Efforts documentation must be submitted with the MBE/WBE *Compliance Plan*. All questions in Section VIII **must** be completed and submitted with the *Compliance Plan* if goals or subgoals are not met.

1. Were written notices sent to all MBE/WBEs from the Significant Local Business Presence (SLBP) availability list at least seven (7) business days prior to the submission of this Compliance Plan? Yes [X] No [ ]
2. Were two separate methods used to contact all MBE/WBEs from the SLBP availability list at least seven (7) business days prior to the submission of this Compliance Plan? Please list the two methods used to contact MBE/WBEs. (i.e. fax, email, mail, and/or phone) Yes [X] No [ ]

   List Methods: email and US postal service

3. Were steps taken to follow up with interested MBE/WBEs? Yes [X] No [ ]
4. Were advertisements placed with a local publication? (i.e. newspaper, minority or women organizations, or electronic/social media)? If yes, please attach. Yes [X] No [ ]
5. Were written notices sent to Minority or Women organizations? If yes, please attach. Yes [X] No [ ]
6. Were additional elements of work identified to achieve the goals or subgoals? Yes [X] No [ ]

   If yes, please explain: extension cable and wiring sourcing
7. Was SMBR contacted for assistance? Yes [X] No [ ]

If yes, complete following:

Contact Person: Laura Moreno

Date of Contact: March 15, 2016

Summary of Request: To locate MBE or WBE firms that might resell Verizon cellular

8. Were Minority or Women organizations contacted for assistance? Yes [X] No [ ]

If yes, complete following:

Organization(s): A complete list of contacts sent email attached

Date of Contact: 3/21/2016

Summary of Request: Requested organizations publish notice of subcontracting

9. Is the following documentation attached to support good faith effort requirements to achieve goals or subgoals? *(Documentation is not limited to this list.)*

Copy of written solicitation sent to MBE/WBEs in SLBP area	Yes [X]	No [ ]
Two separate methods of notices sent to MBE/WBEs in SLBP area (fax transmittals, Emails, and/or phone log).	Yes [X]	No [ ]
Copy of advertisements	Yes [X]	No [ ]
Copy of notices sent to Minority and Women organizations	Yes [X]	No [ ]
Documentation that demonstrates efforts made to reach agreements with the MBE/WBE's who responded to Bidder's written notice? (i.e. copy of bids/proposals.		
Spreadsheet breakdown of MBE/WBE's considered for follow-up emails/phone	Yes [X]	No [ ]
Logs and/or correspondence between Bidder and interested MBE/WBEs		

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY
CERTIFICATION OF FILING

Certificate Number:
2017-179198

Date Filed:
03/16/2017

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

Seon Systems Sales Inc. DBA Fleetmind Solution
Montreal Quebec Canada

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

City of Austin

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

MA 5600 NA170000050
Vehicle Fleet Technical Upgrade - Fleet Management solution

4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. [X]

6 AFFIDAVIT

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

Commissaire à l'assermentation Leslye Picard 210102 Pour le Québec

Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said MARTIN DEMERS, this the 16th day of March, 20 17, to certify which, witness my hand and seal of office.

Signature of officer administering oath	Printed name of officer administering oath	Title of officer administering oath
	LESLYE PICARD	COMMISSAIRE A L'ASSERMENTATION

Commissaire à l'assermentation Leslye Picard 210102 Pour le Québec

Understanding Québec's Occupational Health and Safety Plan

CSST

Prevention,
I'm working at it !

Understanding Québec's Occupational Health and Safety Plan

Introduction . . . . . .

Prevention: why and how to take action in the workplace . . . . . .

What do you do in the event of an industrial accident or occupational disease? . . . . . .

Two fundamental rights of victims of employment injuries . . . . . .

Other compensation and recourses . . . . . .

A made-to-measure insurance plan . . . . . .

Some definitions . . . . . .

Useful addresses . . . . . .

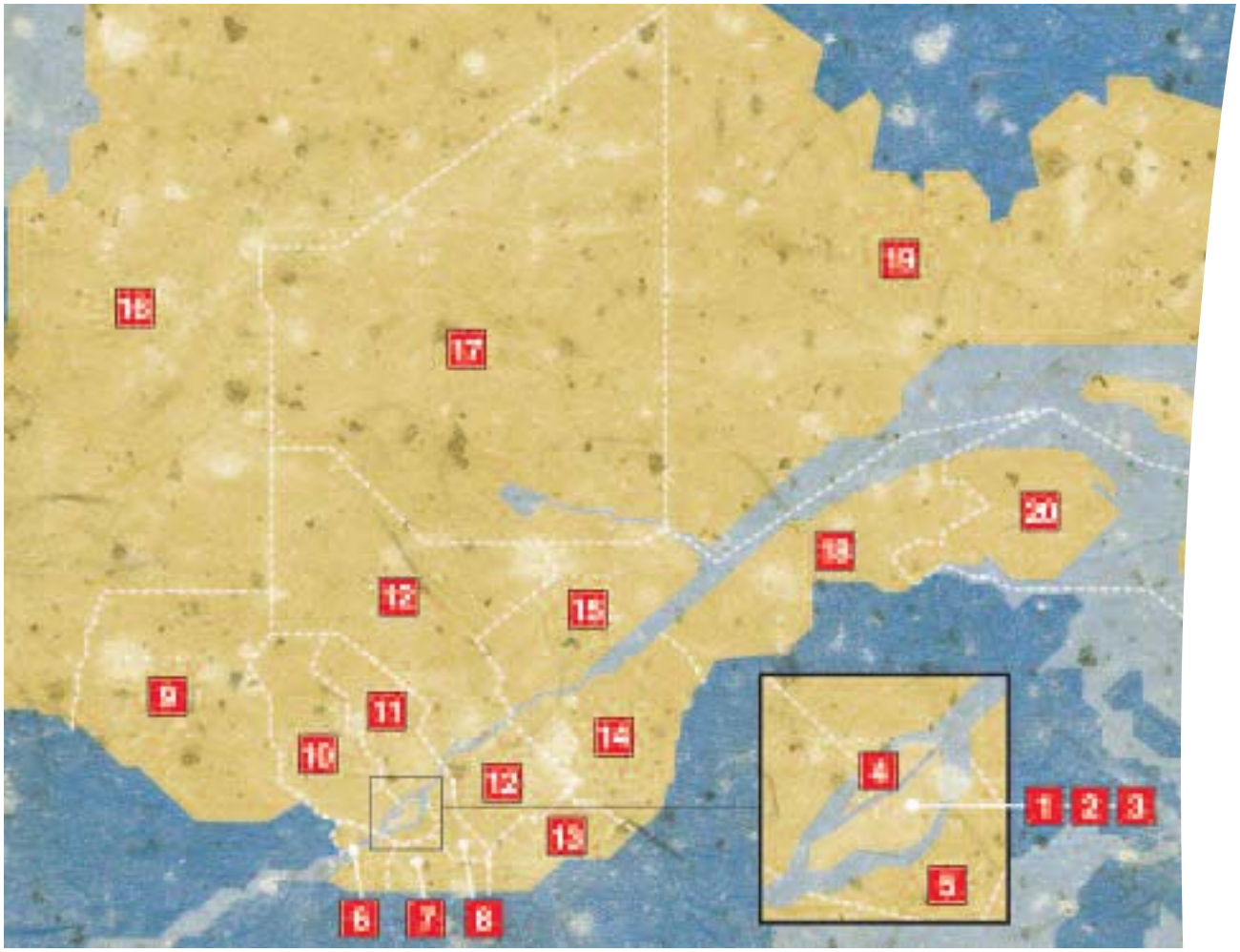
The role of the CSST

The CSST: an organization with joint representation

The CSST and its partners

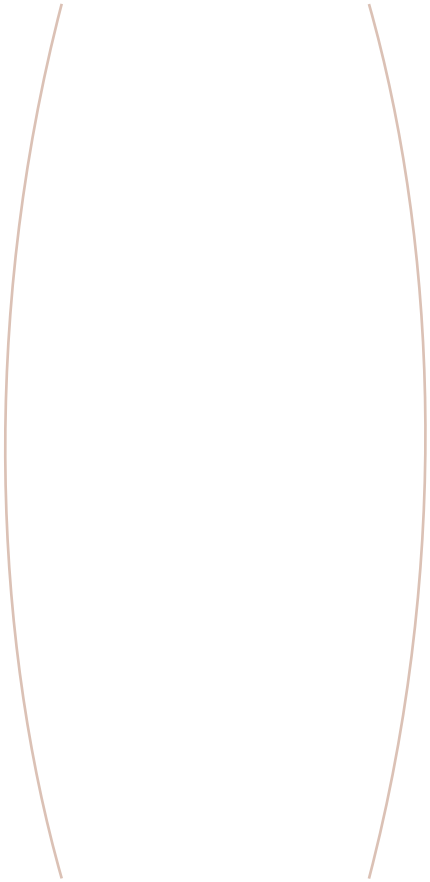
The CSST: a team at your service

CSST regional offices



Is it necessary to register with the CSST?

The prevention program



Occupational health services

Cooperation between workers and employers

When and how does a CSST inspector intervene?

Joint sector-based associations

Can a worker refuse dangerous work?

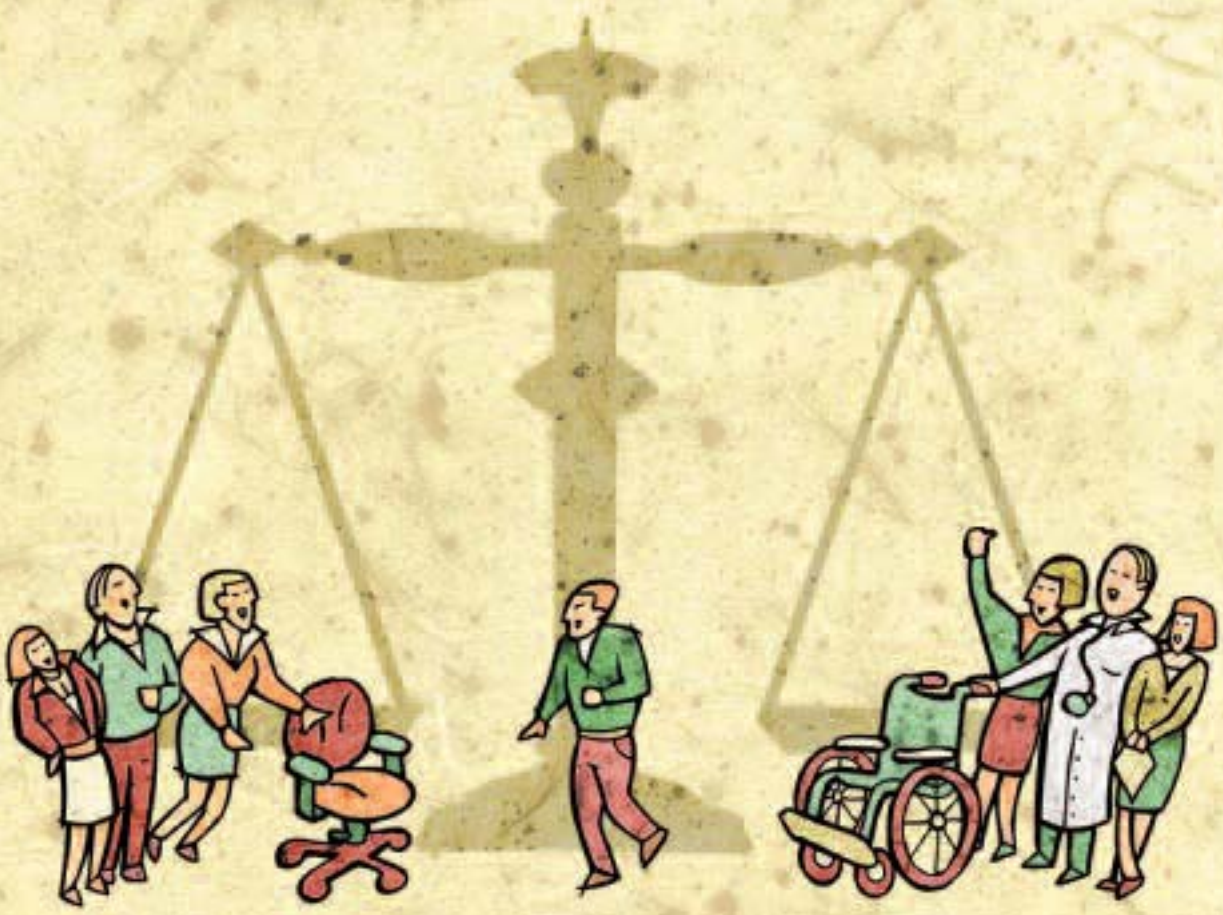
The *For a Safe Maternity Experience* program

Is the worker’s income protected?

In the event of an occupational disease

The attending physician and medical reports

Are medical assistance costs paid by the CSST?



What is the right to return to work?

What is the right to rehabilitation?

A return-to-work solution: temporary assignment

What is the compensation for bodily injury?

What are the rights of the worker's dependants in the event of his death?

What is the worker's recourse against penalization?

Can a CSST decision be challenged?

Reconsideration of a CSST decision

Average premium rate

Employer's premium rate

Prevention mutual groups: strength in numbers

Important steps for the employer

Recourse in respect of financing

Conciliation

Gross annual income

Consolidation

Health professional

Industrial accident

Employer

Employment injury

Net income

Equivalent employment

Occupational disease

Worker

Permanent physical or mental impairment (PPMI)

Spouse

Suitable employment

www.csst.qc.ca :
A Website linked to your needs !

DC 200-256-11A (05-10)

CSST

Direction régionale
de Montréal - 2
1199, rue De Bleury, 10e étage
C. P. 6056, succ. Centre-ville
Montréal (Québec) H3C 4E1
Tél. : 514 906-3500
ou 1 888 452-4199
Téléc. : 514 906-3233

Le 9 février 2017

Madame Louise Rochon
Fleetmind Seon solutions inc.
1751, rue Richardson, suite 7200
Montréal (Québec) H3K 1G6

Numéro d'entreprise du Québec (NEQ) : 1171957112

Objet : Confirmation d'inscription

Madame,

Pour faire suite à votre demande, nous vous confirmons que votre entreprise est inscrite à la Commission de la santé et de la sécurité du travail (CSST). Cette confirmation d'inscription vise le contrat prévu ou conclu avec Republic Services et intitulé Master supplier agreement. Toutefois, cette confirmation ne dégage pas Republic Services de son éventuelle responsabilité en ce qui concerne le paiement de la cotisation due par l'entrepreneur. Seule l'attestation de conformité est valable à cet égard et doit être demandée à la fin des travaux.

Par ailleurs, nous vous rappelons que le service Demande d'information sur l'état de conformité est également disponible. Celui-ci permet à l'employeur, pendant la durée d'un contrat, d'être tenu informé si l'entrepreneur est conforme ou non conforme à la loi en ce qui concerne le paiement de sa cotisation due à la CSST.

Nous vous invitons à consulter le www.csst.qc.ca ou communiquer avec un de nos préposés aux renseignements au 1 866-302-CSST (2778) si vous avez besoin de renseignements supplémentaires à ce sujet ou pour toute autre question.

Nous vous prions d'agréer, Madame, nos salutations distinguées.

Le centre de conformité et de vérification
des employeurs

INA_00136