

Environmental Resource Inventory

For the City of Austin
Related to LDC 25-8-121, City Code 30-5-121, ECM 1.3.0 & 1.10.0

The ERI is required for projects that meet one or more of the criteria listed in LDC 25-8-121(A), City Code 30-5-121(A).

1. SITE/PROJECT NAME: Pilot Knob Interceptor Project - Phase 2b
2. COUNTY APPRAISAL DISTRICT PROPERTY ID (#'s): several
3. ADDRESS/LOCATION OF PROJECT: South of Dee Gabriel Collins Rd and Cottonmouth
4. WATERSHED: Cottonmouth Creek
5. THIS SITE IS WITHIN THE (Check all that apply)
Edwards Aquifer Recharge Zone* (See note below) ☐ YES ☒ NO
Edwards Aquifer Contributing Zone* ☐ YES ☒ NO
Edwards Aquifer 1500 ft Verification Zone* ☐ YES ☒ NO
Barton Spring Zone* ☐ YES ☒ NO
**(as defined by the City of Austin -- LDC 25-8-2 or City Code 30-5-2)*

Note: If the property is over the Edwards Aquifer Recharge zone, the Hydrogeologic Report and karst surveys must be completed and signed by a Professional Geoscientist Licensed in the State of Texas.

6. DOES THIS PROJECT PROPOSE FLOODPLAIN MODIFICATION? ☐ YES** ☒ NO
If yes, then check all that apply:
☐ (1) The floodplain modifications proposed are necessary to protect the public health and safety;
☐ (2) The floodplain modifications proposed would provide a significant, demonstrable environmental benefit, as determined by a **functional assessment** of floodplain health as prescribed by the Environmental Criteria Manual (ECM), or
☐ (3) The floodplain modifications proposed are necessary for development allowed in the critical water quality zone under LDC 25-8-261 or 25-8-262, City Code 30-5-261 or 30-5-262.
☐ (4) The floodplain modifications proposed are outside of the Critical Water Quality Zone in an area determined to be in poor or fair condition by a **functional assessment** of floodplain health.

** If yes, then a functional assessment must be completed and attached to the ERI (see ECM 1.7 and Appendix X for forms and guidance) unless conditions 1 or 3 above apply.

7. IF THE SITE IS WITHIN AN URBAN OR SUBURBAN WATERSHED, DOES THIS PROJECT PROPOSE A UTILITY LINE PARALLEL TO AND WITHIN THE CRITICAL WATER QUALITY ZONE? ☒ YES*** ☐ NO

***If yes, then riparian restoration is required by LDC 25-8-261(E) or City Code 30-5-261(E) and a functional assessment must be completed and attached to the ERI (see ECM 1.5 and Appendix X for forms and guidance).

8. There is a total of 5 (#s) Critical Environmental Feature(s)(CEFs) on or within 150 feet of the project site. If CEF(s) are present, attach a detailed **DESCRIPTION** of the CEF(s), color **PHOTOGRAPHS**, the **CEF WORKSHEET** and provide **DESCRIPTIONS** of the proposed CEF buffer(s) and/or wetland mitigation. Provide the number of each type of CEFs on or within 150 feet of the site (Please provide the number of CEFs):

____ (#s) Spring(s)/Seep(s) ____ (#s) Point Recharge Feature(s) ____ (#s) Bluff(s)
 ____ (#s) Canyon Rimrock(s) 5 (#s) Wetland(s)

Note: Standard buffers for CEFs are 150 feet, with a maximum of 300 feet for point recharge features. Except for wetlands, if the standard buffer is not provided, you must provide a written request for an administrative variance from LDC 25-8-281(C)(1) and provide written findings of fact to support your request. Request forms for administrative variances from requirements stated in LDC 25-8-281 are available from Watershed Protection Department.

9. The following site maps are attached at the end of this report (Check all that apply and provide):

All ERI reports must include:

- ☒ Site Specific Geologic Map with 2-ft Topography
- ☒ Historic Aerial Photo of the Site
- ☒ Site Soil Map
- ☒ Critical Environmental Features and Well Location Map on current Aerial Photo with 2-ft Topography

Only if present on site (Maps can be combined):

- ☐ Edwards Aquifer Recharge Zone with the 1500-ft Verification Zone
(Only if site is over or within 1500 feet the recharge zone)
- ☐ Edwards Aquifer Contributing Zone
- ☒ Water Quality Transition Zone (WQTZ)
- ☒ Critical Water Quality Zone (CWQZ)
- ☒ City of Austin Fully Developed Floodplains for all water courses with up to 64-acres of drainage

10. **HYDROGEOLOGIC REPORT** – Provide a description of site soils, topography, and site specific geology below (Attach additional sheets if needed):

Surface Soils on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups*. If there is more than one soil unit on the project site, show each soil unit on the site soils map.

Soil Series Unit Names, Infiltration Characteristics & Thickness		
Soil Series Unit Name & Subgroup**	Group*	Thickness (feet)
Behring clay, 1 to 3 percent slopes, Udic Haplustolls	C	6.67
Behring clay, 3 to 5 percent slopes, Udic Haplustolls	C	6.67
Heiden gravelly clay, 8 to 20 percent slopes, Udic Haplustolls	D	6.67
Tinn clay, 0 to 1 percent slopes, Udic Haplustolls	D	6.67

***Soil Hydrologic Groups Definitions (Abbreviated)**

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.

**Subgroup Classification -- See Classification of Soil Series Table in County Soil Survey.

Description of Site Topography and Drainage *(Attach additional sheets if needed):*

The Project Area is located in the Cottonmouth Creek watershed within the Colorado River Basin (City of Austin 2015). The primary source of surface water within the Project Area is precipitation runoff from mostly undeveloped lands within and adjacent to the Project Area. Many of the local hydrologic features within the Project Area have been altered to facilitate agricultural fields.

Topography along the alignment is mostly flat. Elevation ranges from approximately 570 to 520 feet above mean sea level. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel shows much of the southern half of the Project Area located within Zone A (areas subject to inundation by the 1-percent-annual-chance flood event) of the 100-year floodplain (FEMA 2008).

List surface geologic units below:

Geologic Units Exposed at Surface		
Group	Formation	Member
N/A	Cretaceous Igneous Rocks (Ki)	N/A

Brief description of site geology *(Attach additional sheets if needed):*

The Project Area is underlain by the Cretaceous igneous rocks (Ki) formation in the vicinity of Pilot Knob volcano (UTBEG 1981). This formation consists of two rock types: basalt and pyroclastics.

Wells – Identify all recorded and unrecorded wells on site (test holes, monitoring, water, oil, unplugged, capped and/or abandoned wells, etc.):

There are 0 (#) wells present on the project site and the locations are shown and labeled

 (#s) The wells are not in use and have been properly abandoned.

 (#s) The wells are not in use and will be properly abandoned.

 (#s) The wells are in use and comply with 16 TAC Chapter 76.

There are 1 (#s) wells that are off-site and within 150 feet of this site.

11. THE VEGETATION REPORT – Provide the information requested below:

Brief description of site plant communities *(Attach additional sheets if needed):*

See additional sheets.

There is woodland community on site ☒ YES ☐ NO *(Check one).*

If yes, list the dominant species below:

Woodland species	
Common Name	Scientific Name
Sugar hackberry	Celtis laevigata
Honey mesquite	Prosopis glandulosa

There is grassland/prairie/savanna on site ☒ YES ☐ NO *(Check one).*

If yes, list the dominant species below:

Grassland/prairie/savanna species	
Common Name	Scientific Name
Johnsongrass	Sorghum halepense
Spreading hedgeparsley	Torilis arvensis
Perennial rye	Lolium perenne
Dallisgrass	Paspalum dilatatum
Giant ragweed	Ambrosia trifida
Virginia wildrye	Elymus virginicus

There is hydrophytic vegetation on site ☒ YES ☐ NO *(Check one).*

If yes, list the dominant species in table below *(next page):*

Hydrophytic plant species		
Common Name	Scientific Name	Wetland Indicator Status
American water-willow	Justicia americana	OBL
Texas rush	Juncus texanus	OBL
Curly dock	Rumex crispus	FAC

A tree survey of all trees with a diameter of at least eight inches measured four and one-half feet above natural grade level has been completed on the site.

☒ YES ☐ NO (Check one).

12. WASTEWATER REPORT – Provide the information requested below.

Wastewater for the site will be treated by (Check of that Apply):

- ☐ On-site system(s)
☐ City of Austin Centralized sewage collection system
☐ Other Centralized collection system

Note: All sites that receive water or wastewater service from the Austin Water Utility must comply with City Code Chapter 15-12 and wells must be registered with the City of Austin

The site sewage collection system is designed and will be constructed to in accordance to all State, County and City standard specifications.

☐ YES ☐ NO (Check one).

Calculations of the size of the drainfield or wastewater irrigation area(s) are attached at the end of this report or shown on the site plan.

☐ YES ☐ NO ☒ Not Applicable (Check one).

Wastewater lines are proposed within the Critical Water Quality Zone?

☒ YES ☐ NO (Check one). If yes, then provide justification below:

The 30" wastewater interceptor line encroaches the CWQZ for two important reasons:

1. The 30" wastewater line is a regional gravity wastewater line. In order to adequately serve the wastewater shed, the line must be location within the low-lying areas of the existing topography.
2. This alignment also provides adequate permanent easement access, while still providing functional, usable land space for landowners.

Is the project site is over the Edwards Aquifer?

☐ YES ☒ NO (Check one).

If yes, then describe the wastewater disposal systems proposed for the site, its treatment level and effects on receiving watercourses or the Edwards Aquifer.

N/A

13. One (1) hard copy and one (1) electronic copy of the completed assessment have been provided.

Date(s) ERI Field Assessment was performed: May 19 and 27, 2015
Date(s)

My signature certifies that to the best of my knowledge, the responses on this form accurately reflect all information requested.

Kaolin Young

512-476-0891

Print Name

Telephone

Kaolin Young

kyoung@swca.com

Signature

Email Address

SWCA Environmental Consultants

6/25/2015

Name of Company

Date

For project sites within the Edwards Aquifer Recharge Zone, my signature and seal also certifies that I am a licensed Professional Geoscientist in the State of Texas as defined by ECM 1.12.3(A).

P.G.
Seal

City of Austin Environmental Resource Inventory - Critical Environmental Feature Worksheet

5	Primary Contact Name: Kaolin Young
6	Phone Number: 512-476-0891
7	Prepared By: SWCA Environmental Consultants
8	Email Address: Young@swca.com

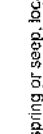
1	Project Name:	Pilot Knob Interceptor Project
2	Project Address:	Near Intersection of Dee Gabriel Collins Road and
3	Site Visit Date:	6/19/2015 & 5/27/2015
4	Environmental Resource Inventory Date:	6/25/2015

[illegible]

Please state the method of coordinate data collection and the approximate precision and accuracy of the points and the unit of measurement.


City of Austin Use Only
CASE NUMBER:

For a spring or seep, locate the source of groundwater that feeds a pool or stream.




The diagram shows a small circle with a star inside, representing the source of groundwater. A line extends from the circle, representing the path of the groundwater flow.

For wetlands, locate the approximate centroid of the feature and the estimated area.



The diagram shows an irregular polygon representing a wetland feature. A star is located inside the polygon, representing the approximate centroid.

For rimrock, locate the midpoint of the segment that describes the feature.



The diagram shows a curved line segment representing a rimrock feature. A star is located at the midpoint of the segment.

8. Critical Environmental Features (CEFs)

There are 5 CEFs on or within 150 feet of the project site. All 5 CEFs are wetlands (WET). Color photographs are provided in the attached photograph log.

WET 1 is an isolated wetland located within an agricultural field and vegetated with American water-willow (*Justicia americana*) and curly dock (*Rumex crispus*). WET 1 sits at least 250 feet from the channel of Cottonmouth Creek and receives water largely by direct rainfall due to relatively flat slope of the surrounding area.

WET 2, 3, and 4 are fringe wetlands located along Cottonmouth Creek. This fringe supports hydrophytic vegetation such as American water-willow, curly dock, Texas rush (*Juncus americanus*) as well as giant ragweed (*Ambrosia trifida*).

WET 5 is located in a depression but isolated from the local hydrology by a dirt road. Both wetlands exhibited ponding at the time of survey due to the excessive amount of rainfall in May.

CEF Buffer Descriptions

WET 1: This CEF is buffered by the standard 150-foot buffer. The proposed alignment would cross this standard buffer at its eastern-southeastern boundary and is approximately 140 feet from the CEF boundary. Brookfield Residential proposes to open cut through this buffer and restore it.

WET 2, 3, and 4: These CEFs are buffered by 150 feet from the edge of each feature. Brookfield Residential proposes trenchless crossings in this area. All bore pits and receiving pits would be located outside the half-CWQZ (150 feet from the centerline of Cottonmouth Creek).

WET 5: This CEF is buffered by 150 feet from the edge of the feature. This CEF formed in the depression caused by earth removal in order to build the drive and receives water from overland flow from the west as well as direct rainfall. It is isolated from Cottonmouth Creek and all land east of the driveway and is, therefore, effectively isolated from any effects of the project. The proposed alignment does not cross into this buffer, but the proposed 80-foot construction easement may cross it slightly. It may be feasible avoid impacts to this buffer; however, Brookfield Residential proposes to reduce the standard 150-foot buffer at this CEF to align with the private driveway given its isolation from the agricultural field to its east where the proposed alignment is located.

10. Hydrogeologic Report

Surface Soils

Soil Series Unit Names, Infiltration Characteristics & Thickness		
Soil Series Unit Name & Subgroup	Group	Thickness (feet)
Behring clay, 1 to 3 percent slopes, Udertic Haplustolls	C	6.67

Soil Series Unit Names, Infiltration Characteristics & Thickness		
Soil Series Unit Name & Subgroup	Group	Thickness (feet)
Behring clay, 3 to 5 percent slopes, Udertic Haplustolls	C	6.67
Heiden gravelly clay, 8 to 20 percent slopes, moderately eroded, Udic Haplusterts	D	6.67
Tinn clay, 0 to 1 percent slopes, frequently flooded, Typic Hapluderts	D	6.67

Source: USDA NRCS (2015a)

11. Vegetation Report

Brief description of site plant communities

SWCA identified four types of vegetation communities within the Survey Area: forested upland, scrub-shrub upland, herbaceous upland, and palustrine emergent wetland.

Common species observed in the forested upland vegetation community included plateau live oak (*Quercus fusiformis*), sugar hackberry (*Celtis laevigata*), honey mesquite (*Prosopis glandulosa*) and cedar elm (*Ulmus crassifolia*) with an understory containing green-briar (*Smilax bona-nox*), giant ragweed (*Ambrosia trifida*), spreading hedgeparsley (*Torilis arvensis*), and poison ivy (*Toxicodendron radicans*).

Common species observed in the scrub-shrub upland vegetation community include honey mesquite, sugar hackberry, and cedar elm. Herbaceous species identified included giant ragweed, straggler daisy (*Calyptracarpus vialis*), and Texas prickly pear (*Opuntia lindheimeri*).

The herbaceous vegetation communities mainly occur in the agricultural fields. All fields were fallow at the time of the survey. Common species observed in the herbaceous upland community included Johnsongrass (*Sorghum halepense*), perennial ryegrass (*Lolium perenne*), annual ragweed (*Ambrosia artemisiifolia*), turkey tangle frogfruit (*Phyla nodiflora*), spreading hedgeparsley, and giant ragweed.

Common species observed in the palustrine emergent wetland include curly dock (*Rumex crispus*), Texas rush (*Juncus texanus*), American water-willow (*Justicia americana*), and giant ragweed.

References

City of Austin. 2015. Find Your Watershed: Cottonmouth Creek Fact Sheet. Available online at <http://www.austintexas.gov/GIS/FindYourWatershed/Factsheet.aspx?id=34>. Accessed May 21, 2015.

U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS). 2015a. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed May 21, 2015.

Pilot Knob Interceptor Project – Phase 2b
City of Austin Environmental Resource Inventory – Additional Sheets
SWCA Environmental Consultants
Project No. 33011-AUS

———. 2015b. *The PLANTS Database*. National Plant Data Center, Greensboro, NC 27401-4901 USA. Last modified May 4, 2015. Available online at <http://plants.usda.gov/>. Accessed May 27, 2015.

University of Texas Bureau of Economic Geology (UTBEG). 1981. *Geologic Atlas of Texas*. Austin Sheet. Scale 1:250,000.

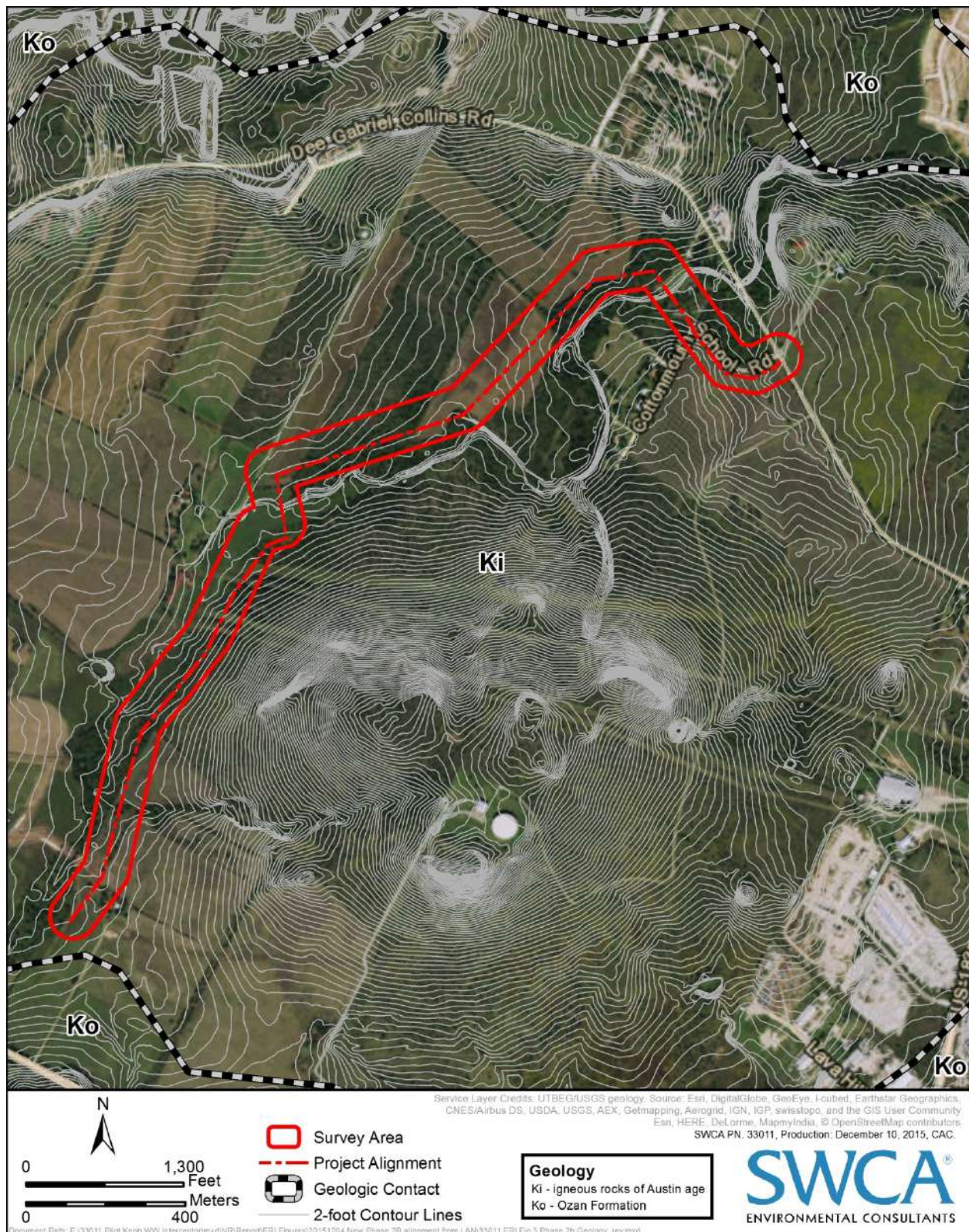


Figure 1. Site-specific geology map with 2-ft topography



Figure 2. Historic aerial photo of the site (1996)

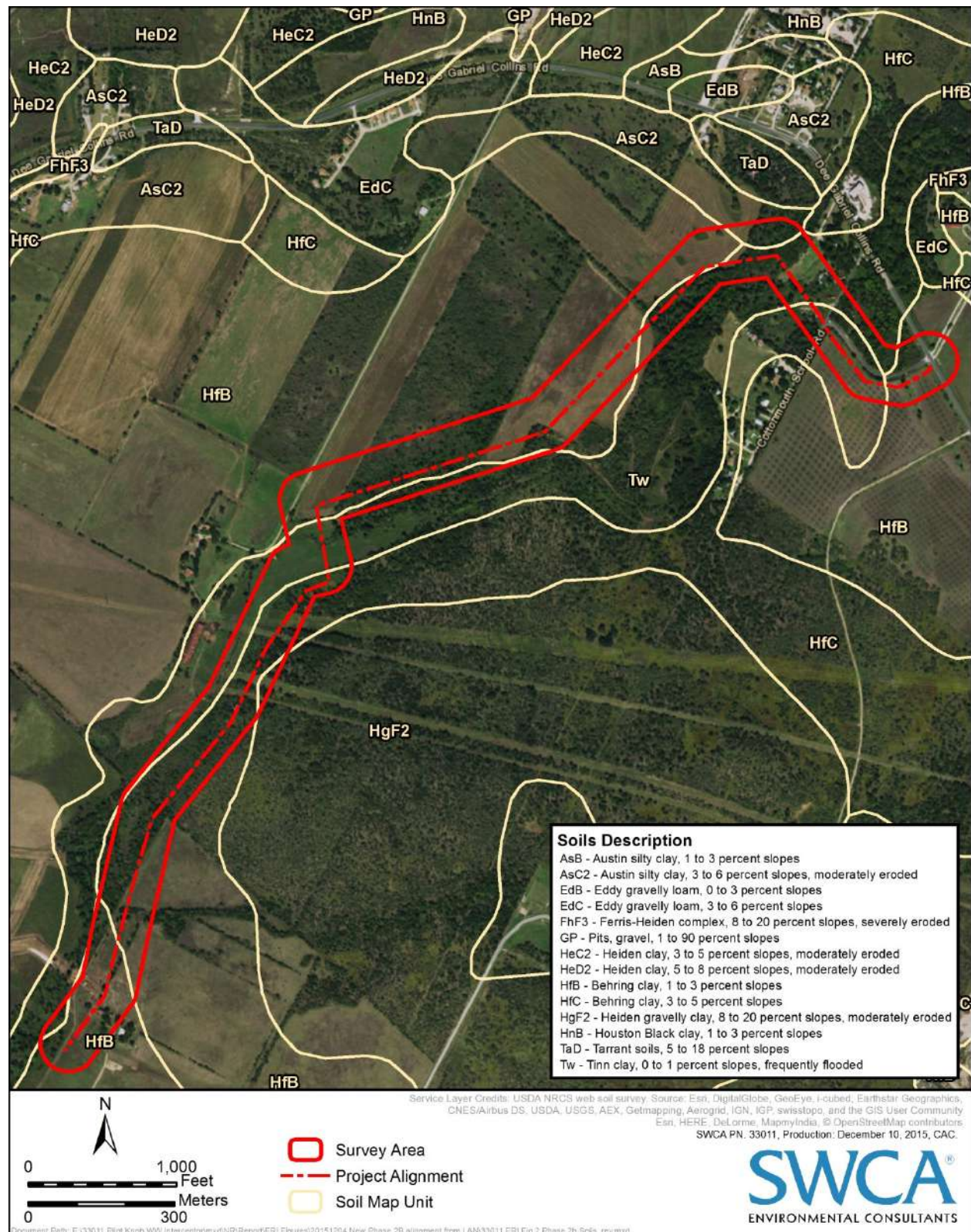


Figure 3. Site soil map.

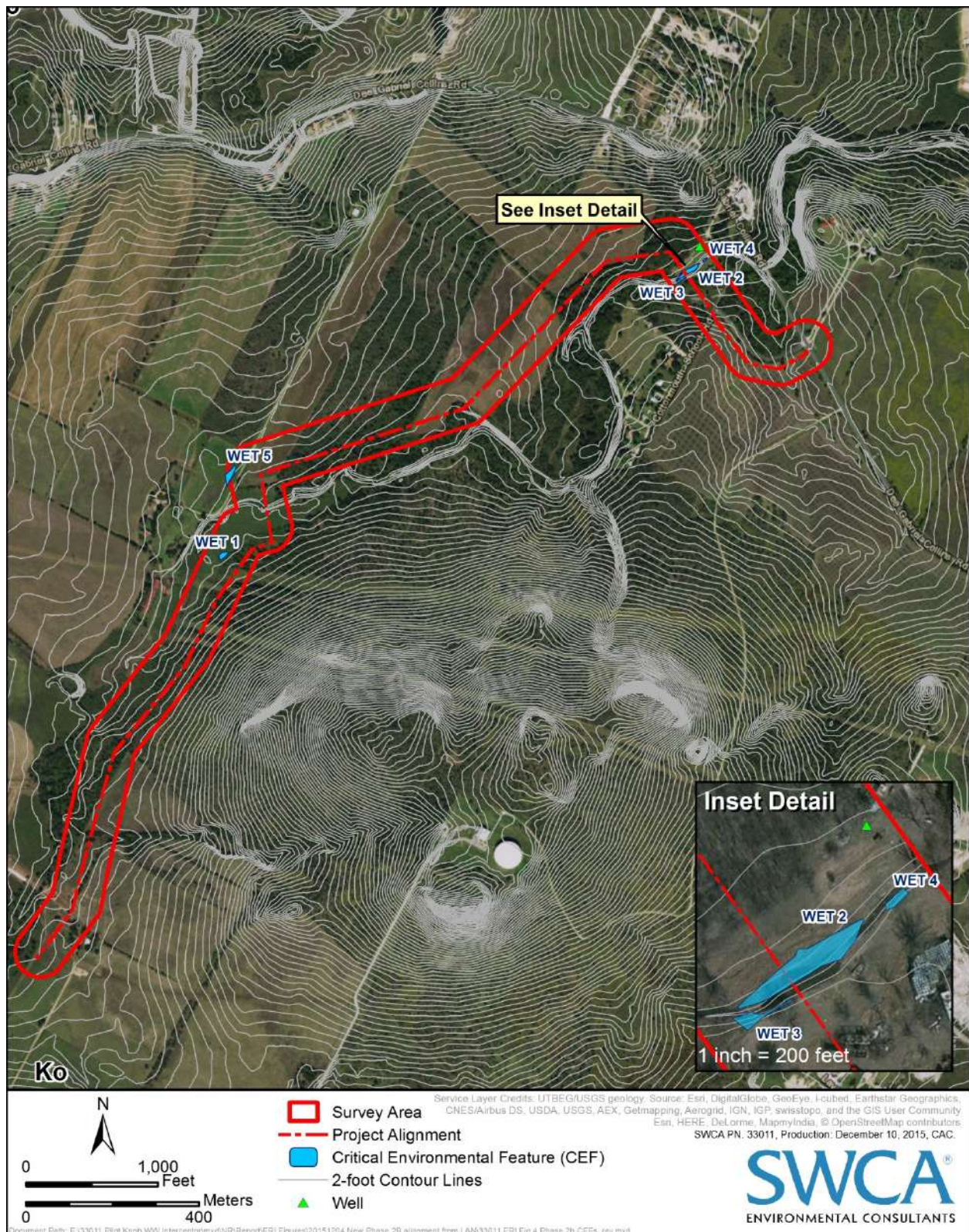


Figure 4. CEFs on current aerial photo with 2-ft topography.

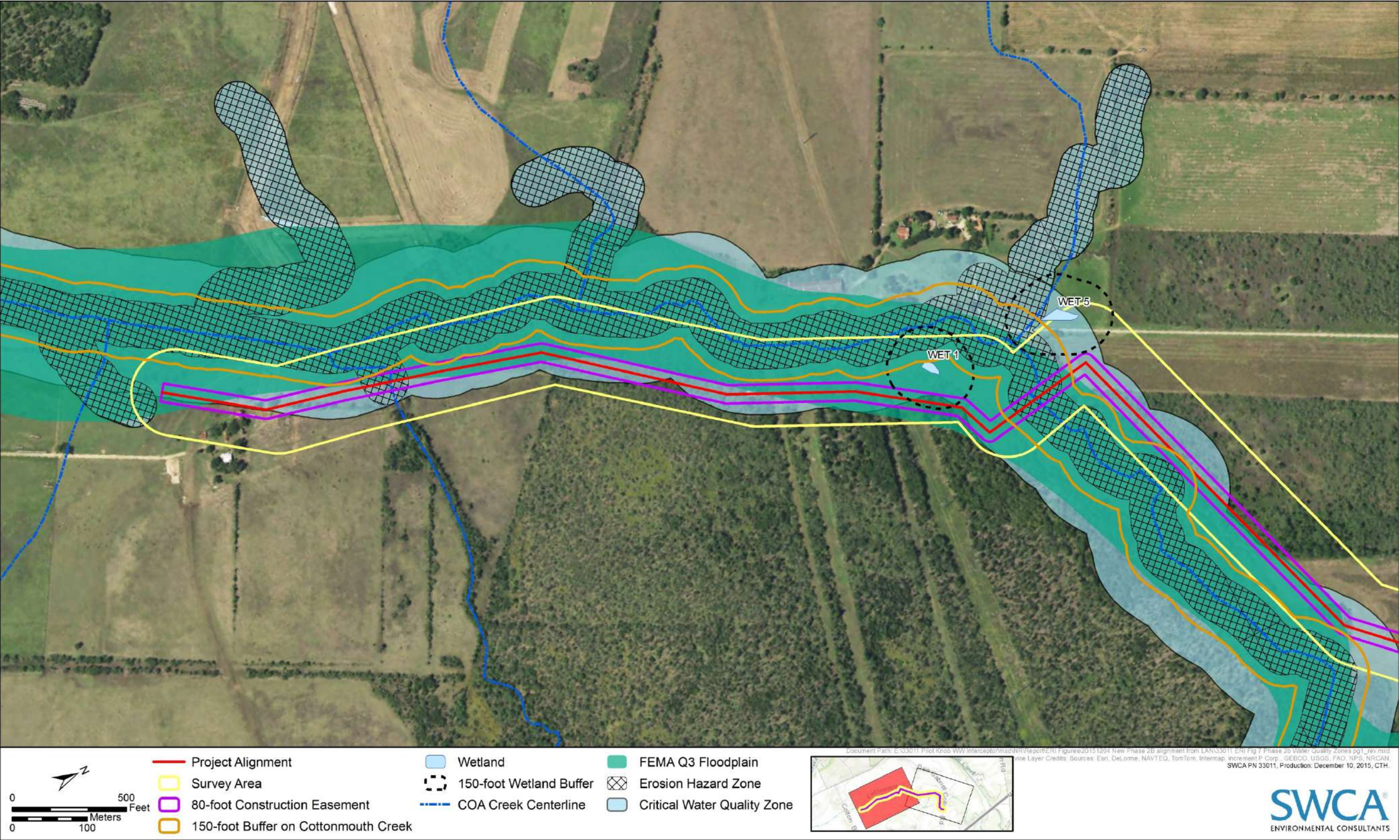
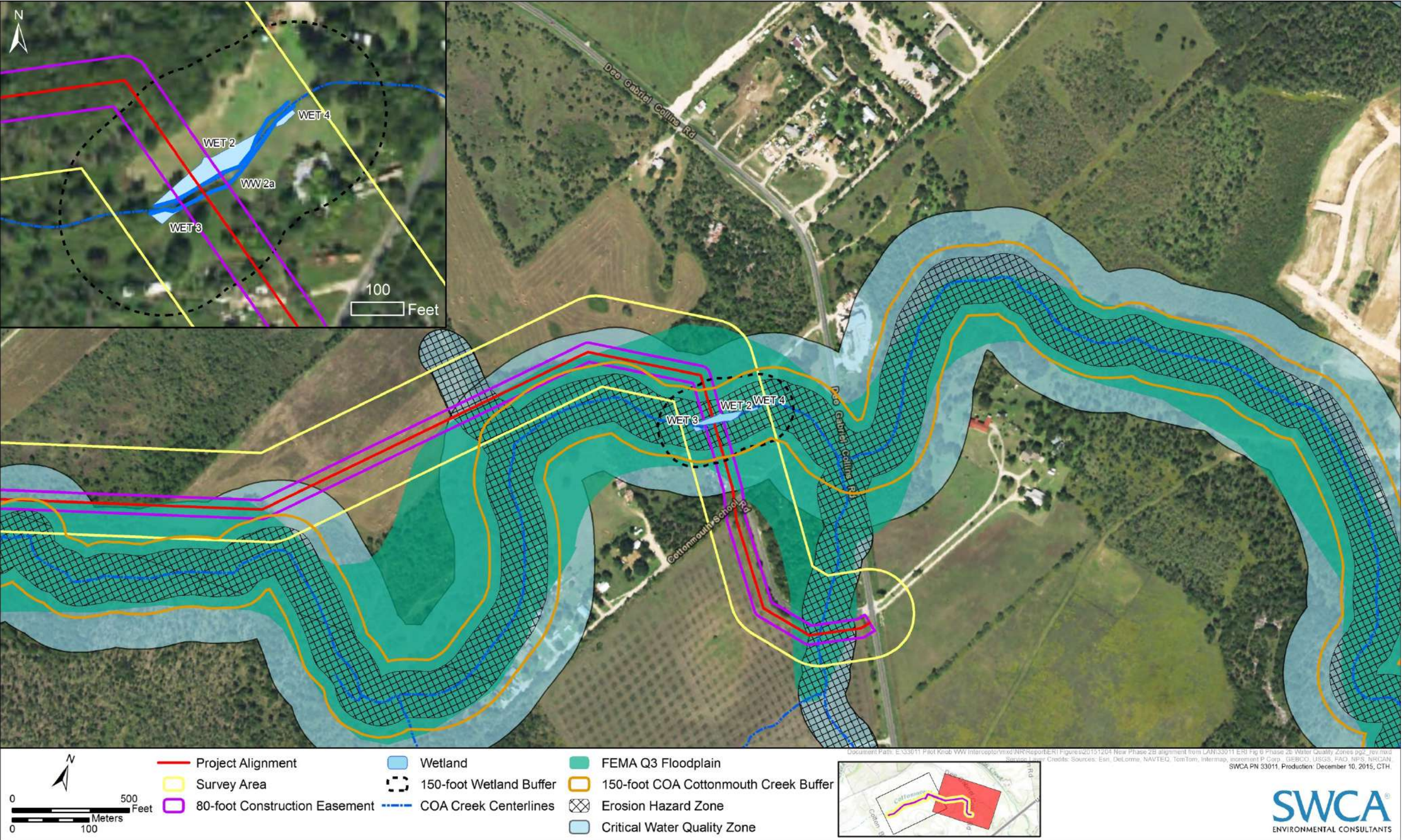


Figure 5a. Critical water quality zones and floodplain – Sheet 1.



Environmental Resource Inventory

For the City of Austin
 Related to LDC 25-8-121, City Code 30-5-121, ECM 1.3.0 & 1.10.0

The ERI is required for projects that meet one or more of the criteria listed in LDC 25-8-121(A), City Code 30-5-121(A).

1. SITE/PROJECT NAME: Pilot Knob Wastewater Interceptor 2B Extension
2. COUNTY APPRAISAL DISTRICT PROPERTY ID (#'s): 297339, 297340, 797572, 297353
3. ADDRESS/LOCATION OF PROJECT: Near 6499 Cottonmouth School Road, Austin, Texas 78744
4. WATERSHED: Cottonmouth Creek
5. THIS SITE IS WITHIN THE *(Check all that apply)*
 - Edwards Aquifer Recharge Zone* *(See note below)* ☐ YES ☒ No
 - Edwards Aquifer Contributing Zone* ☐ YES ☒ No
 - Edwards Aquifer 1500 ft Verification Zone* ☐ YES ☒ No
 - Barton Spring Zone* ☐ YES ☒ No

*(as defined by the City of Austin – LDC 25-8-2 or City Code 30-5-2)

Note: If the property is over the Edwards Aquifer Recharge zone, the Hydrogeologic Report and karst surveys must be completed and signed by a Professional Geoscientist Licensed in the State of Texas.

6. DOES THIS PROJECT PROPOSE FLOODPLAIN MODIFICATION?..... ☐ YES** ☒ NO
 If yes, then check all that apply:
 - (1) The floodplain modifications proposed are necessary to protect the public health and safety;
 - (2) The floodplain modifications proposed would provide a significant, demonstrable environmental benefit, as determined by a **functional assessment** of floodplain health as prescribed by the Environmental Criteria Manual (ECM), or
 - (3) The floodplain modifications proposed are necessary for development allowed in the critical water **quality zone under LDC 25-8-261 or 25-8-262, City Code 30-5-261 or 30-5-262.**
 - (4) The floodplain modifications proposed are outside of the Critical Water Quality Zone in an area determined to be in poor or fair condition by a **functional assessment** of floodplain health.

**** If yes, then a functional assessment must be completed and attached to the ERI (see ECM 1.7 and Appendix X for forms and guidance) unless conditions 1 or 3 above apply.**

7. IF THE SITE IS WITHIN AN URBAN OR SUBURBAN WATERSHED, DOES THIS PROJECT PROPOSE A UTILITY LINE PARALLEL TO AND WITHIN THE CRITICAL WATER QUALITY ZONE? ☒ YES*** ☐ NO

*****If yes, then riparian restoration is required by LDC 25-8-261(E) or City Code 30-5-261(E) and a functional assessment must be completed and attached to the ERI (see ECM1.5 and Appendix X for forms and guidance).**

8. There are a total of 1 (#'s) Critical Environmental Feature(s)(CEFs) on or within 150 feet of the project site. If CEF(s) are present, attach a detailed **DESCRIPTION** of the CEF(s), color **PHOTOGRAPHS**, the **CEF WORKSHEET** and provide **DESCRIPTIONS** of the proposed CEF buffer(s) and/or wetland mitigation. Provide the number of each type of CEFs on or within 150 feet of the site *(Please provide the number of CEFs):*

0____(#'s) Spring(s)/Seep(s) 0____(#'s) Point Recharge Feature(s) 0____(#'s) Bluff(s)
 0____(#'s) Canyon Rimrock(s) 1____(#'s) Wetland(s)

Note: Standard buffers for CEFs are 150 feet, with a maximum of 300 feet for point recharge features. Except for wetlands, if the standard buffer is not provided, you must provide a written request for an administrative variance from LDC 25-8-281(C)(1) and provide written findings of fact to support your request. Request forms for administrative variances from requirements stated in LDC 25-8-281 are available from Watershed Protection Department.

9. The following site maps are attached at the end of this report (Check all that apply and provide):

All ERI reports must include:

- ☒ **Site Specific Geologic Map with 2-ft Topography**
- ☒ **Historic Aerial Photo of the Site**
- ☒ **Site Soil Map**
- ☒ **Critical Environmental Features and Well Location Map on current Aerial Photo with 2-ft Topography**

Only if present on site (Maps can be combined):

- ☐ **Edwards Aquifer Recharge Zone with the 1500-ft Verification Zone**
(Only if site is over or within 1500 feet the recharge zone)
- ☐ **Edwards Aquifer Contributing Zone**
- ☒ **Water Quality Transition Zone (WQTZ)**
- ☒ **Critical Water Quality Zone (CWQZ)**
- ☒ **City of Austin Fully Developed Floodplains for all water courses with up to 64-acres of drainage**

10. **HYDROGEOLOGIC REPORT** – Provide a description of site soils, topography, and site specific geology below (Attach additional sheets if needed):

Surface Soils on the project site are summarized in the table below and use the SCS Hydrologic Soil Groups*. If there is more than one soil unit on the project site, show each soil unit on the site soils map.

Soil Series Unit Names, Infiltration Characteristics & Thickness *		
Soil Series Unit Name & Subgroup**	Group*	Thickness (feet)
Behring clay (HfB), neutral subsoil variant, 1 to 3% slopes	C	10.8
Behring clay (HfC), neutral subsoil variant, 3 to 5% slopes	C	Unknown
Tinn clay (Tw), 0 to 1% slopes	D	Unknown
Heiden gravelly clay (HgF2), 8 to 20% slopes	D	5.0
Source: Natural Resources Conservation Service 2016 * See Figure 3 in site maps attachment.		

***Soil Hydrologic Groups Definitions (Abbreviated)**

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.

**Subgroup Classification – See Classification of Soil Series Table in County Soil Survey.

Description of Site Topography and Drainage *(Attach additional sheets if needed):*

The potential project construction zone (Project Area) is located in the Cottonmouth Creek watershed within the Colorado River Basin (City of Austin 2017). Cottonmouth Creek intersects the Project Area. Surface water across the Project Area includes precipitation runoff from mostly undeveloped lands. Aerial photography indicates many hydrologic features near the Project Area have been altered to facilitate agricultural fields. Field surveys corroborate such assumptions.

Topography along the Project Area is gently rolling. Elevation ranges from approximately 540 to 560 feet above mean sea level. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map panel shows Project Area extent closest to Cottonmouth Creek is located within Zone A (areas subject to inundation by the 1-percent-annual-chance flood event) of the 100-year floodplain (FEMA 2008).

List surface geologic units below:

Geologic Units Exposed at Surface		
Group	Formation	Member
N/A	Cretaceous Igneous Rock (Ki)	N/A

Brief description of site geology *(Attach additional sheets if needed):*

The Survey Area (Project Area plus 150-foot-wide buffer centered over the proposed project centerline) is underlain by the Cretaceous igneous rocks (Ki) formation in the vicinity of Pilot Knob volcano (University of Texas Bureau of Economic Geology 1981). This formation consists of two rock types: basalt and pyroclastics.

Wells – Identify all recorded and unrecorded wells on site (test holes, monitoring, water, oil, unplugged, capped and/or abandoned wells, etc.):

There are 0 (#) wells present on the project site and the locations are shown and labeled

____ (#s) The wells are not in use and have been properly abandoned.

____ (#s) The wells are not in use and will be properly abandoned.

____ (#s) The wells are in use and comply with 16 TAC Chapter 76.

There are 0 (#s) wells that are off-site and within 150 feet of this site.

11. **THE VEGETATION REPORT** – Provide the information requested below:

Brief description of site plant communities (Attach additional sheets if needed):

SWCA identified two vegetation communities during field surveys conducted on 25 January and 2 August 2017.

Forested Wetland

The palustrine forested wetland (PFO 1) within the Survey Area is situated on the west side of Cottonmouth Creek (Figure 4). The tree and sapling/shrub stratum is dominated by sugarberry (*Celtis laevigata*). Vegetation within the herbaceous stratum consist of wild carrot (*Daucus carota*), manyflower marshpennywort (*Hydrocotyle umbellata*), giant ragweed (*Ambrosia trifida*), and catchweed bedstraw (*Galium aparine*).

The forested wetland is not within the Project Area, but is within the 150-foot CEF buffer zone around the Project Area. See attached CEF worksheet for approximate wetland dimensions within the CEF buffer zone. Photographs 1 and 2 (Attachment 1) displays PFO 1.

Forested Uplands

Generally, the Project Area is characterized as forested with relatively open canopy. Fast growing tree and shrub species dominate the project area, with humanly traversable space between tree clumps where grasses and shrubs cover the ground. Photographs 1 and 2 (Attachment 1) shows general Project Area vegetation composition.

More specifically, the dominant plant species within the forested upland community include cedar elm, hackberry, Osage orange (*Maclura pomifera*), and honey mesquite (*Prosopis glandulosa*). Shrub species includes possomhaw (*Ilex decidua*), and young cedar elm, mesquite, and hackberry. The common herbaceous species identified in the forested uplands community consist of dewberry (*Rubus trivialis*), tapered rosette grass (*Dichanthelium acuminatum*), field brome (*Bromus arvensis*), weeping lovegrass (*Eragrostis curvula*), Texas croton (*Croton texensis*), prairie broomweed (*Amphiachyris dracunculoides*), and spreading hedgeparsley (*Torilis arvensis*). Photograph 3 (Attachment 1) displays the upland vegetation community.

There is woodland community on site ☒ YES ☐ NO (Check one).

If yes, list the dominant species below:

Woodland species	
Common Name	Scientific Name
Sugarberry	<i>Celtis laevigata</i>
Possomhaw	<i>Ilex decidua</i>
Osage orange	<i>Maclura pomifera</i>
Honey mesquite	<i>Prosopis glandulosa</i>
Cedar elm	<i>Ulmus crassifolia</i>

There is grassland/prairie/savanna on site.....☒YES ☐ NO (Check one).

If yes, list the dominant species below:

Grassland/prairie/savanna species	
Common Name	Scientific Name
Prairie broomweed	<i>Amphiachyris dracunculoides</i>
Field brome	<i>Bromus arvensis</i>
Texas croton	<i>Croton texensis</i>
Tapered rosette grass	<i>Dichanthelium acuminatum</i>
Weeping lovegrass	<i>Eragrostis curvula</i>
Dewberry	<i>Rubus trivialis</i>
Spreading hedgeparsley	<i>Torilis arvensis</i>

There is hydrophytic vegetation on site☐YES ☒ NO (Check one).

If yes, list the dominant species in table below (next page):

Hydrophytic plant species		
Common Name	Scientific Name	Wetland Indicator Status
	No hydrophytic plants within Project Area	

A tree survey of all trees with a diameter of at least eight inches measured four and one-half feet above natural grade level has been completed on the site.

☐ YES ☒ NO (Check one).

12. WASTEWATER REPORT – Provide the information requested below.

Wastewater for the site will be treated by (Check of that Apply):

- ☐ On-site system(s)
- ☐ City of Austin Centralized sewage collection system
- ☐ Other Centralized collection system

Note: All sites that receive water or wastewater service from the Austin Water Utility must comply with City Code Chapter 15-12 and wells must be registered with the City of Austin

The site sewage collection system is designed and will be constructed to in accordance to all State, County and City standard specifications.

☐ YES ☐ NO (Check one).

Calculations of the size of the drainfield or wastewater irrigation area(s) are attached at the end of this report or shown on the site plan.

☐ YES ☐ NO ☒ Not Applicable (Check one).

Wastewater lines are proposed within the Critical Water Quality Zone (CWQZ)?

☒ YES ☐ NO (Check one). If yes, then provide justification below:

The wastewater interceptor line encroaches the CWQZ because:

1. The project is a regional gravity wastewater line; therefore, it must follow existing topography.
2. This project provides adequate permanent easement access while still providing functional, usable land space for landowners.

Is the project site over the Edwards Aquifer?

☐ YES ☒ NO (Check one).

If yes, then describe the wastewater disposal systems proposed for the site, its treatment level and effects on receiving watercourses or the Edwards Aquifer.


13. One (1) hard copy and one (1) electronic copy of the completed assessment have been provided.

Date(s) ERI Field Assessment was performed: 2 August 2017
Date(s)

My signature certifies that to the best of my knowledge, the responses on this form accurately reflect all information requested.

Stephen Van Kampen-Lewis
Print Name

512.476.0891 ext. 5237
Telephone


Signature

svankampenlewis@swca.com
Email Address

SWCA Environmental Consultants
Name of Company

15 September 2017
Date

For project sites within the Edwards Aquifer Recharge Zone, my signature and seal also certifies that I am a licensed Professional Geoscientist in the State of Texas as defined by ECM 1.12.3(A).

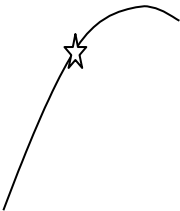

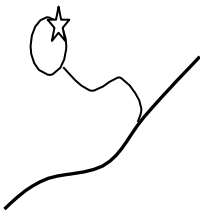
City of Austin Environmental Resource Inventory - Critical Environmental Feature Worksheet

1	Project Name:	Pilot Knob Wastewater Interceptor 2B Extension
2	Project Address:	Near 6499 Cottonmouth School Rd, Austin, TX 78744
3	Site Visit Date:	2 Aug 2017
4	Environmental Resource Inventory Date:	21 Aug 2017

5	Primary Contact Name:	Stephen Van Kampen-Lewis
6	Phone Number:	512.476.0891 ext. 5237
7	Prepared By:	Stephen Van Kampen-Lewis
8	Email Address:	svankampenlewis@swca.com

[illegible]

City of Austin Use Only	
CASE NUMBER:	

<p>For rimrock, locate the midpoint of the segment that describes the feature.</p> 	<p>For wetlands, locate the approximate centroid of the feature and the estimated area.</p> 	<p>For a spring or seep, locate the source of groundwater that feeds a pool or stream.</p> 
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Please state the method of coordinate data collection and the approximate precision and accuracy of the points and the unit of measurement.

Method

Accuracy

GPS ☐ sub-meter ☐

Surveyed ☐ meter ☐

Other ☐ > 1 meter ☐

Professional Geologists apply seal below

APPENDIX A

Figures

Pilot Knob Wastewater Interceptor 2B Extension
City of Austin Environmental Resource Inventory – Figures
SWCA Environmental Consultants
Project No. 44757

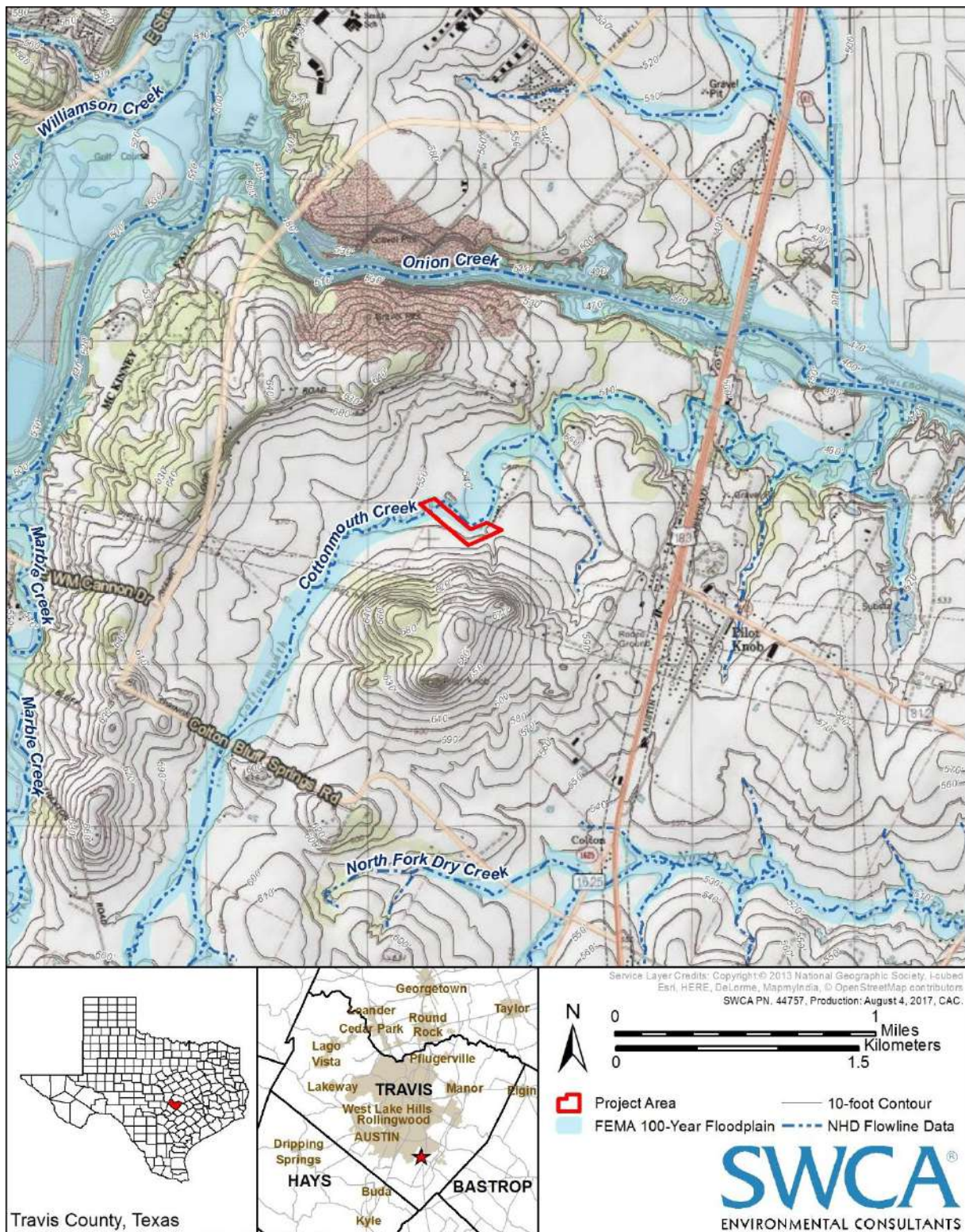


Figure 1. Location map showing Project Area, Federal Emergency Management Agency (FEMA) 100-year floodplains, National Hydrography Dataset (NHD) flowlines, and 10-foot contours.

Pilot Knob Wastewater Interceptor 2B Extension
City of Austin Environmental Resource Inventory – Figures
SWCA Environmental Consultants
Project No. 44757

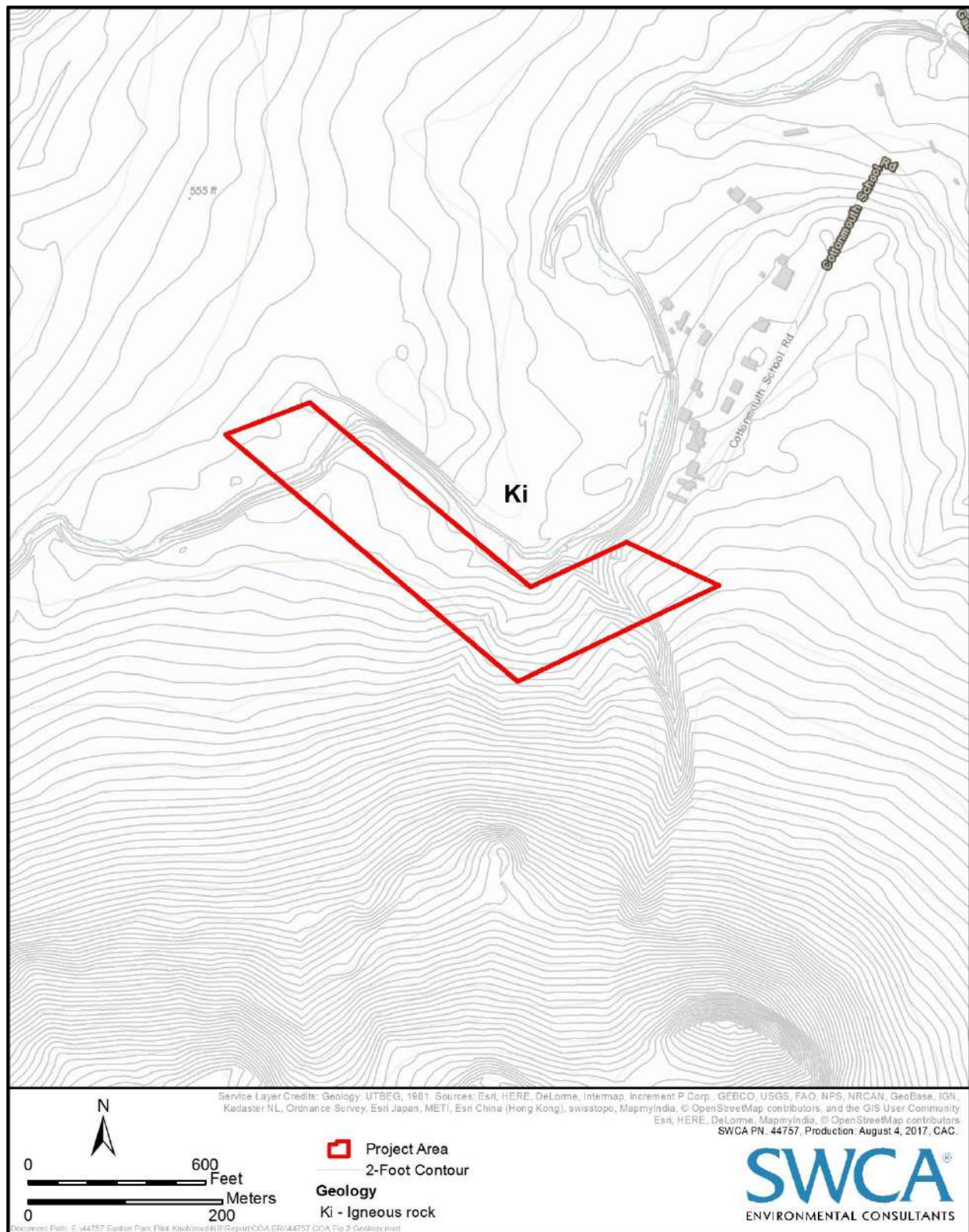


Figure 2. Project Area geology map with 2-foot contours.

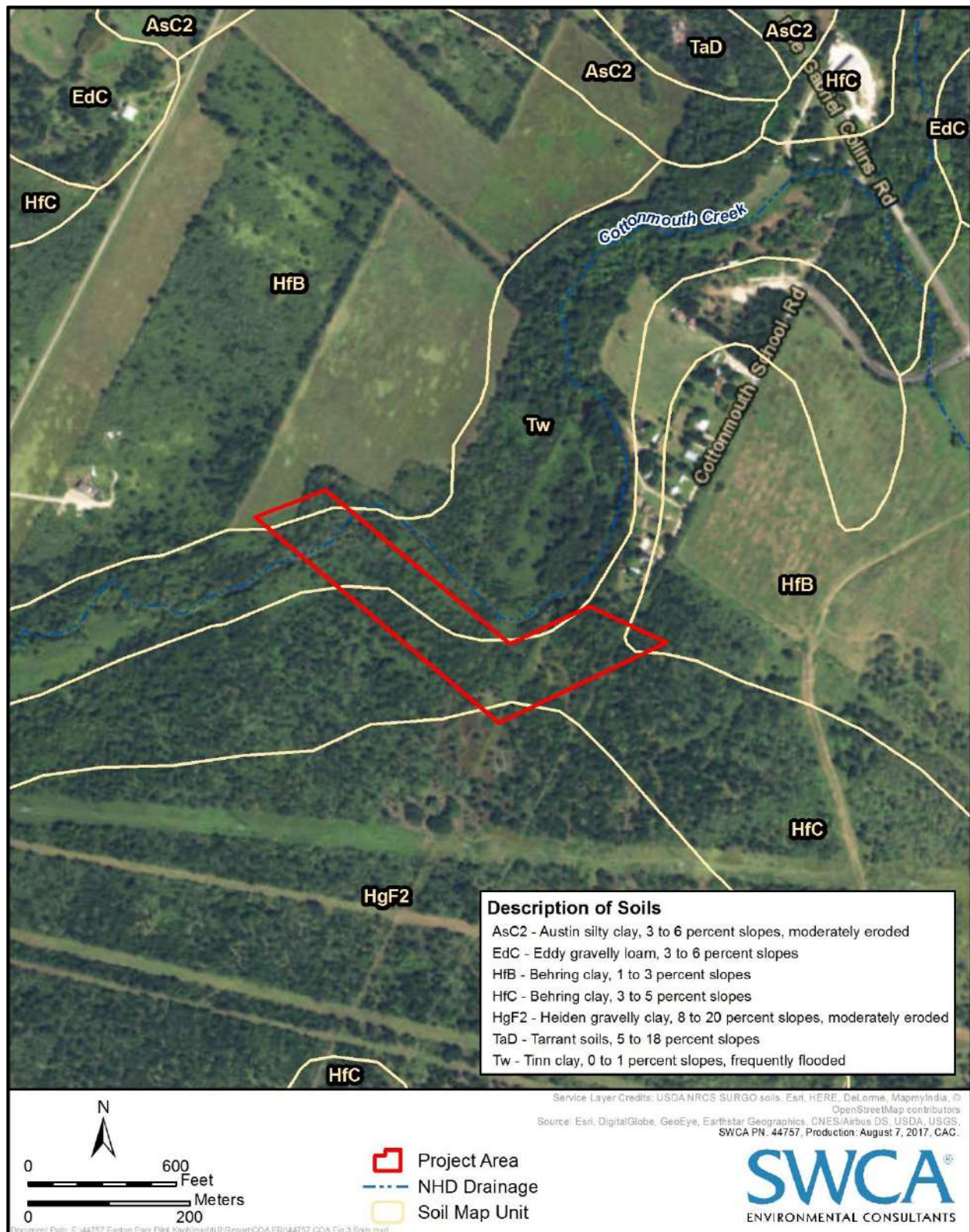


Figure 3. Project Area soil map with NHD flowlines.

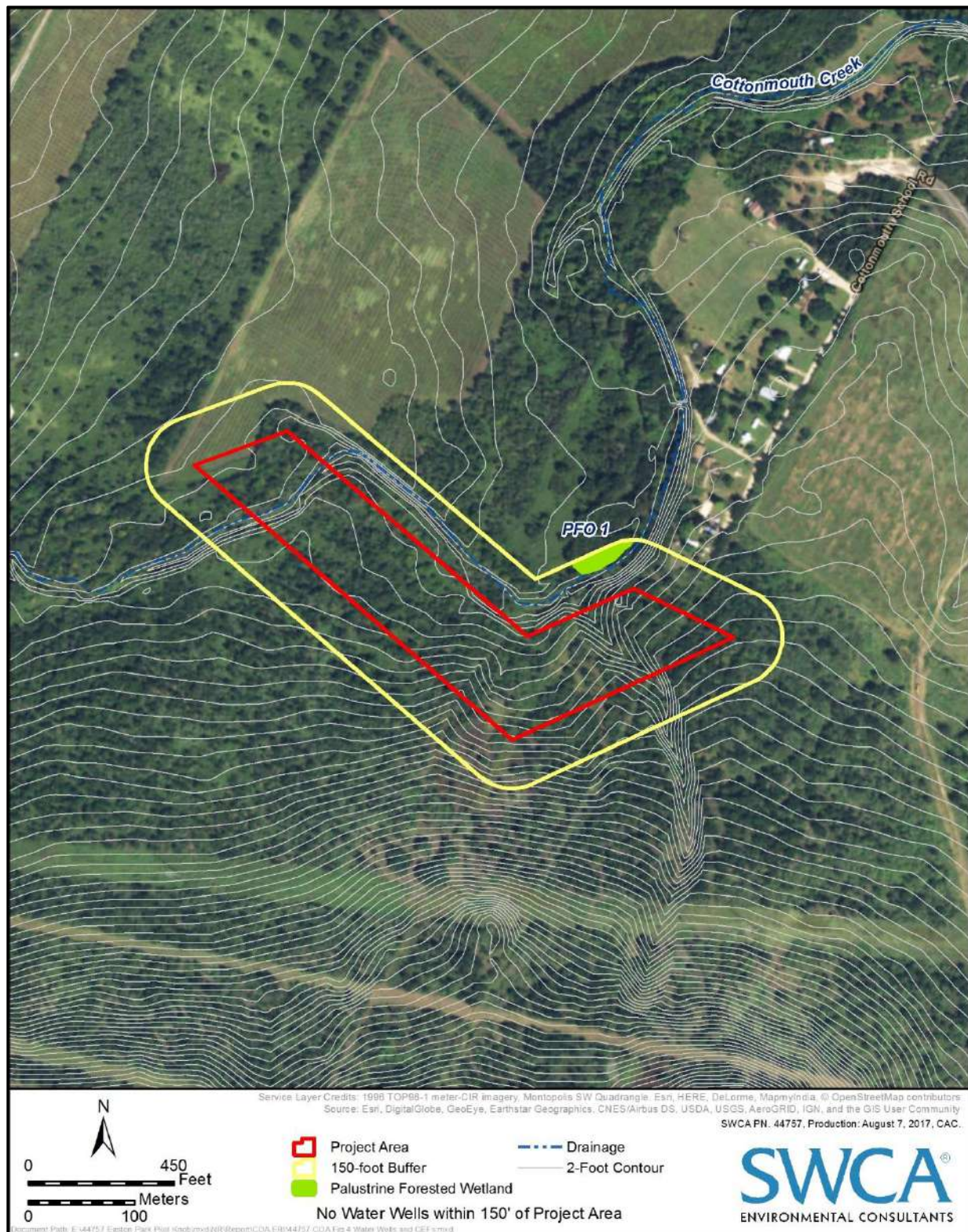


Figure 4. Survey area (150-foot buffer) around Project Area, palustrine forested wetland (PFO), NHD flowlines (drainage) and 2-foot contours.

Pilot Knob Wastewater Interceptor 2B Extension
City of Austin Environmental Resource Inventory – Figures
SWCA Environmental Consultants
Project No. 44757



Figure 5. Project Area with historic (1996) aerial image.

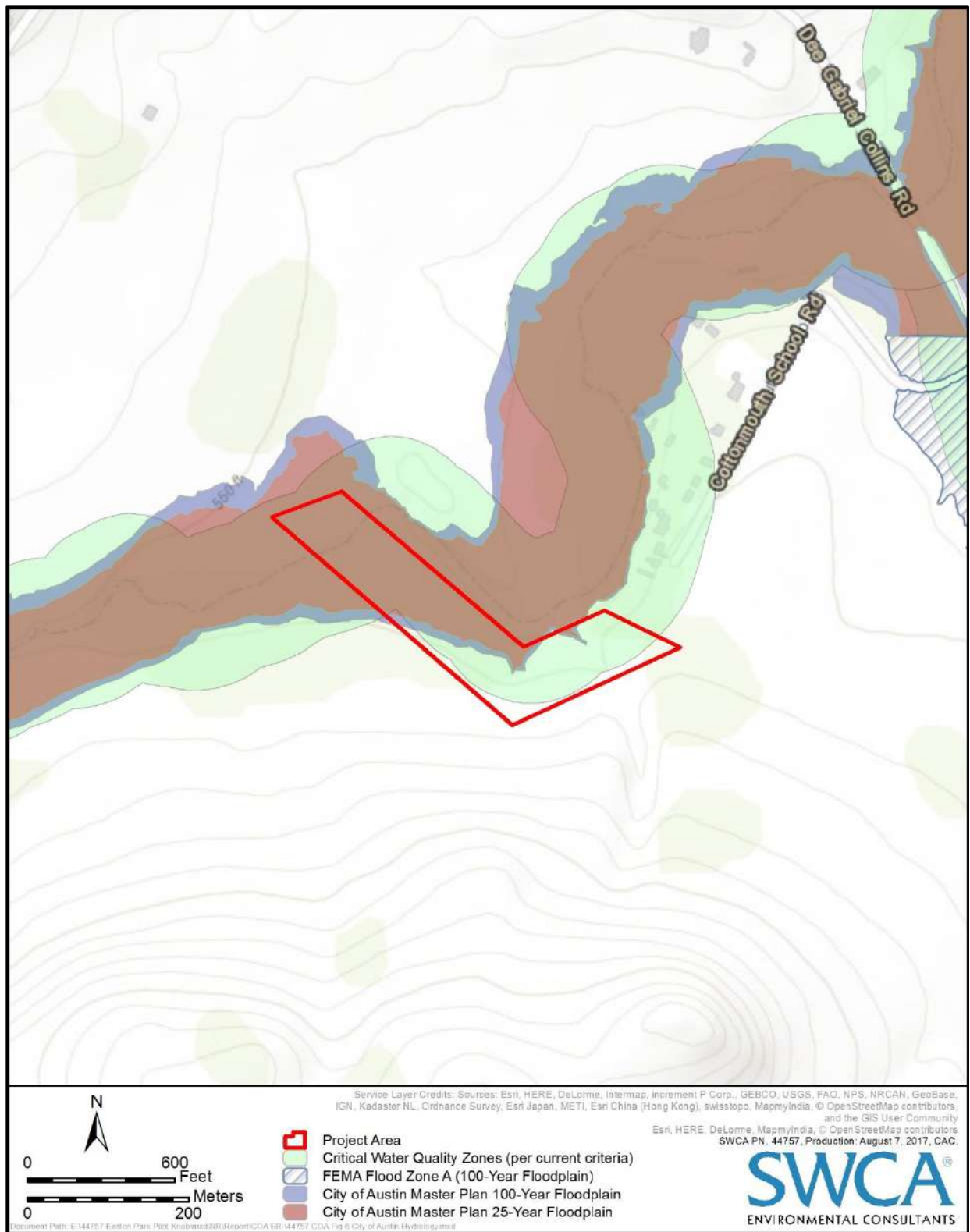


Figure 5. Project Area with critical water quality zones, FEMA 100-year floodplain and City of Austin floodplains.

APPENDIX B

Photolog

Pilot Knob Wastewater Interceptor 2B Extension
City of Austin Environmental Resource Inventory – Photograph Log
SWCA Environmental Consultants
Project No. 44757



Photograph 1. Palustrine Forested Wetland 1 (PFO 1) within Survey Area, facing northwest.



Photograph 2. PFO 1, facing southeast.

Pilot Knob Wastewater Interceptor 2B Extension
City of Austin Environmental Resource Inventory – Photograph Log
SWCA Environmental Consultants
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Photograph 3. Representative photograph of upland vegetation community.

APPENDIX C

Additional Sheets

8. Critical Environmental Feature (CEF) Descriptions

SWCA specialists delineated one CEF (wetland) within 150 feet of the Project Area: Palustrine Forested 1 (PFO 1). Color photographs are provided in the attached photograph log. The wetland location is depicted in Appendix B.

PFO 1: The forested wetland within the survey area is situated on the western side of Cottonmouth Creek's. The tree and sapling/shrub stratum is dominated by sugarberry. The herbaceous stratum is dominated by wild carrot, dollarweed, giant ragweed, and catchweed bedstraw (Natural Resources Conservation Service 2017). Wetland hydrology field indicators include water marks, drift deposits, and water-stained leaves. Hydric soil satisfying the criteria for Hydric Soil Indicator F3 (Depleted Matrix) is present within the wetland.

Potential Critical Environmental Feature Impacts

PFO 1: Lockwood, Andrews & Newnam, Inc. will not install the Project within 150 feet from the southern boundary of PFO 1; therefore, no impacts to this CEF are anticipated. No mitigation is anticipated because no impacts to the wetland are anticipated.

References

- City of Austin. 2017. Find Your Watershed: Cottonmouth Creek Fact Sheet. Available at: <http://www.austintexas.gov/GIS/FindYourWatershed/Factsheet.aspx?id=34>. Accessed 27 January 2017.
- Federal Emergency Management Agency (FEMA). 2008. Flood Insurance Rate Map, Travis County, Texas and Unincorporated Areas.
- Natural Resources Conservation Service. 2016. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/app/>. Last modified 10 August 2016. Accessed August 2017.
- . 2017. *The PLANTS Database*. National Plant Data Center, Greensboro, NC 27401-4901 USA. Last modified 31 July 2017. Available online at <http://plants.usda.gov/>. Accessed August 2017.
- University of Texas Bureau of Economic Geology (UTBEG). 1981. Geologic Atlas of Texas. Austin Sheet. Scale 1:250,000.