



CHAPTER 3

PARK VISION AND RECOMMENDATIONS

3.1 VISION AND GOALS

3.2 PARK VISION PLAN

3.3 DETAILED RECOMMENDATIONS

3.3.1 BOAT RAMP AND WATER ACCESS

3.3.2 CENTRAL LAWN, SWIMMING, AND DAY USE AREA

3.3.3 SECONDARY LAWN AND PASSIVE SHORELINE

3.3.4 CIRCULATION AND CAMPING AREAS

3.4 UTILITY DIAGRAMS AND UTILITY ALTERNATIVES

3.5 CITY PARK ROAD - TRAFFIC IMPROVEMENTS

The Vision for the Park sets the stage for the future and establishes obtainable goals that can be met during the various phases of implementation. The Framework for the Vision helped identify the goals that focus on meeting the infrastructural, operational, recreational, and natural needs of the park. In order to obtain the goals identified in this document, the park is broken out based on the four Functional Zones within the park and recommendations are provided which identify ways to meet the specified goals.

3.1 VISION AND GOALS

VISION

EMMA LONG METROPOLITAN PARK IS...

- a safe, well-maintained recreational destination park which is accessible to all and sensitive to surrounding communities
- a getaway where visitors can unplug from life, reconnect with nature, participate in active recreation and focus on spending time with family and friends
- a green space nestled along Lake Austin whose open spaces, forested areas, and historic features are preserved and maintained



GOALS: The Emma Long Metropolitan Park Visioning Document addresses the four major components of the Park's physical development

1

INFRASTRUCTURAL

Goal: Facilitate park use and circulation with amenities that are durable, comfortable and responsive to needs of the visitor

2

RECREATIONAL

Goal: Incorporate constructed amenities in unified fashion that allows for diverse and robust park usership

3

OPERATIONAL

Goal: Define a park character that allows for efficient management, facilitates intuitive wayfinding and celebrates its history

4

NATURAL

Goal: Propose park improvements that appropriately respond to the unique waterfront site, enhance water quality and sustain the natural environment



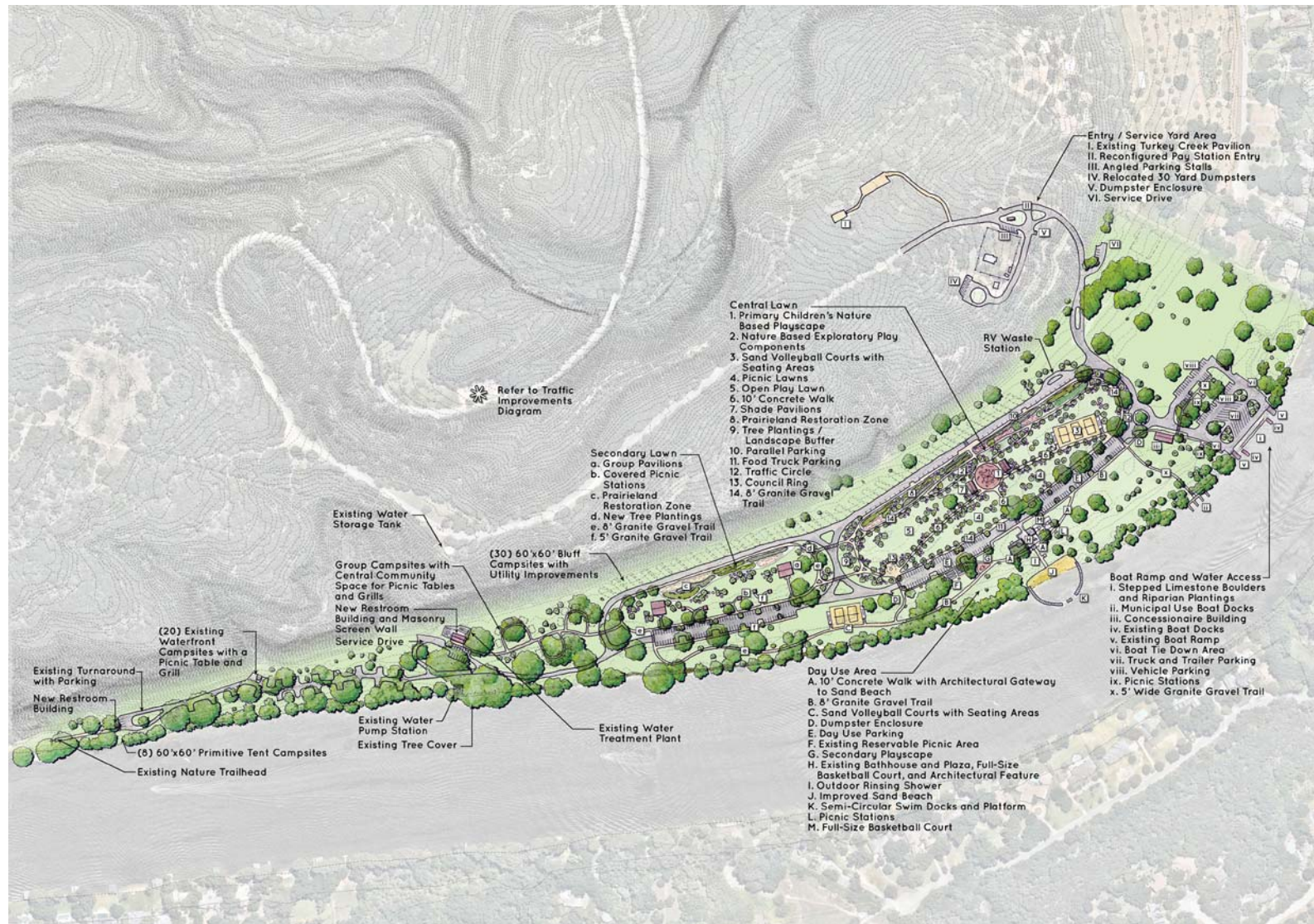
3.2 PARK VISION PLAN

The Park Vision Plan is a cumulation of gathering input from the public, park personnel and the City, analyzing existing conditions and previous studies, and utilizing the information received to create a design that meets the needs of today's park users and future generations to come. During the planning process, residents shared their concerns about issues relating to traffic backing up on City Park Road, the lack of adequate signage along City Park Road and at the Park entrance, parking issues, failing infrastructure, trash issues, and the need for additional recreational activities. We utilized this information to influence the design that became the Park Vision Plan.

The Park Vision Plan has been broken down into four Functional Zones which are discussed in further detailed within this chapter. The major highlights of the Park Vision Plan include the following:

- Reconfigured Park Entry/Pay Station
- Relocated 30-yard dumpsters within the Park Maintenance Area
- New park road pavement and parking throughout the park
- Multi-purpose campsites along the bluff
- New primitive tent campsites along the waterfront
- New group tent campsites
- Upgrades to the electrical, water and wastewater utilities
- Relocated waste station for the RVs
- New recreational amenities within the Central Lawn and Day Use Area
- New reservable group pavilions
- New pavilions and picnic stations
- Additional shade trees
- New riparian and prairieland restoration planting
- New sidewalks and trails to provide accessibility throughout the park
- Improved boat ramps and docks
- New municipal boat docks
- New concessionaire building
- Improved sand beach and swim docks
- Relocated park control gate
- Additional parking capacity at Turkey Creek Trailhead

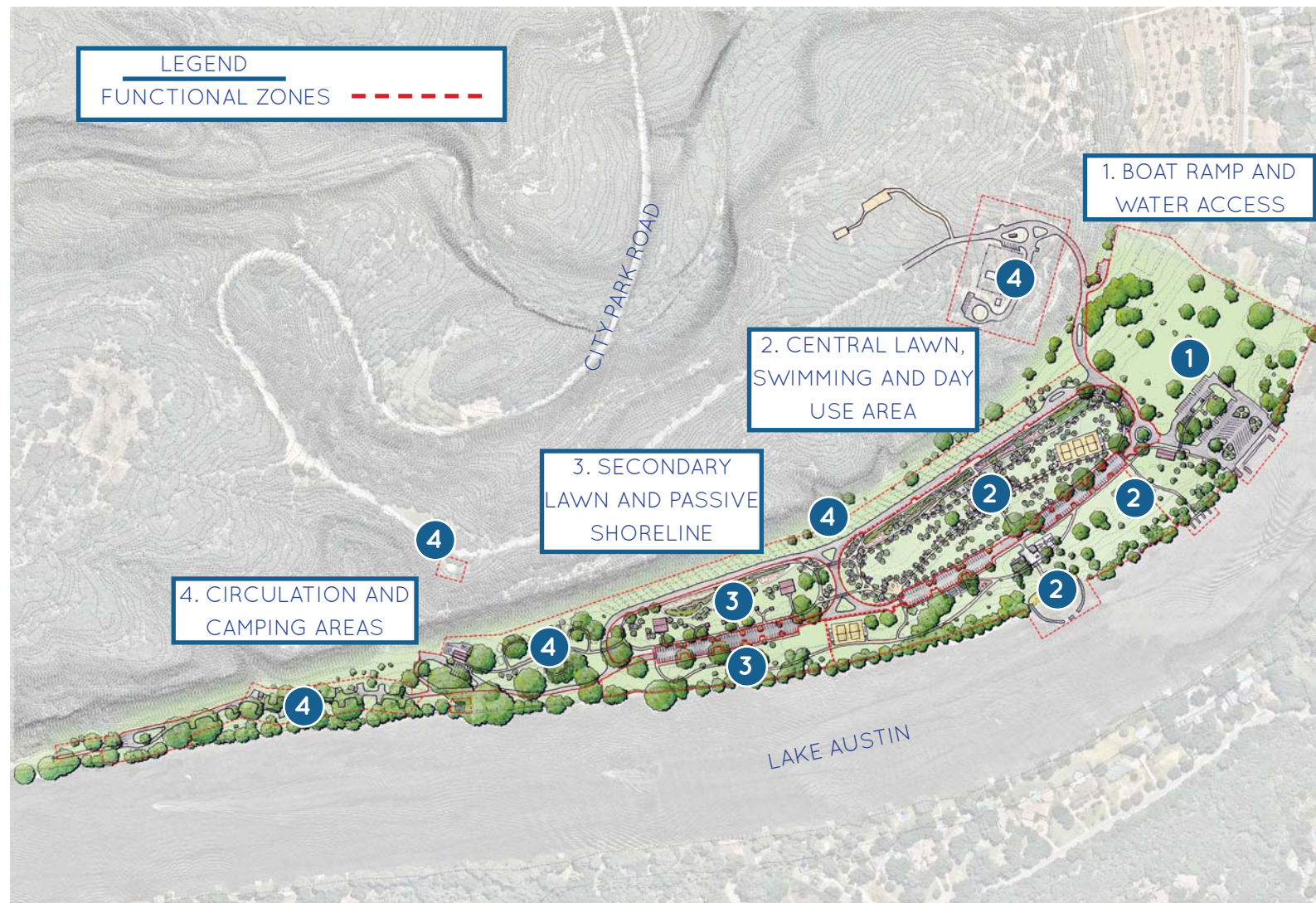
PARK VISION PLAN



3.3 DETAILED RECOMMENDATIONS

The discussion of each Functional Zone will include an introduction, a detailed map, recommendations, and finally an action summary, broken down into four major components: Recreational, Natural, Operational and Infrastructural.

PRIMARY USE AREA / FOUR FUNCTIONAL ZONES



3.3.1 FUNCTIONAL ZONE 1: BOAT RAMP AND WATER ACCESS

Located on the southernmost edge of the park, the Boat Ramp and Water Access Zone provides recreational access to the water for boats and other watercraft. This zone also serves as an access point for emergency responses to watercraft-related emergencies. The proposed plan increases the amenities for the park and serves as the new connection point for security within the park by adding in new municipal-use boat docks.

ACTION SUMMARY

RECREATIONAL

- Sidewalk and Trail Improvements
- Picnic Stations

NATURAL

- Stepped Limestone Boulders and Riparian Plantings
- Tree Plantings

OPERATIONAL

- Concessionaire Building
- Enclosed Trash Receptacles

INFRASTRUCTURAL

- Park Road and Parking Areas
- Bulb-Outs for Boat Tie-Down
- Dumpster Enclosure
- Removal of Existing Cable and Bollards at Overflow Area
- Boat Dock Decking Material, Cleats and Bumpers
- Safety Lighting at Boat Docks
- Boat Ramps
- Boat Dock for Regulatory/Municipal Use
- Water, Wastewater, Electrical and Lighting for Concessionaire Building



BOAT RAMP AND WATER ACCESS RECOMMENDATIONS

RECREATIONAL

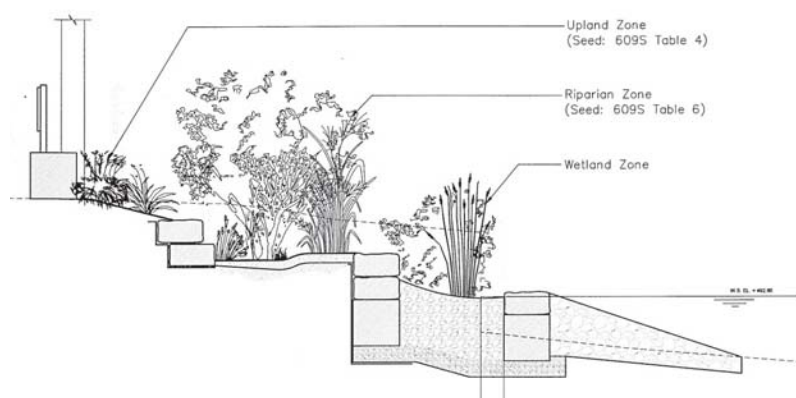
- Provide sidewalk and trail improvements that connect the truck and trailer parking lot to the Day Use Area, Concessionaire Building, and Municipal Use Boat Dock
- Construct picnic stations along the trail improvements and provide picnic table and seating
- Construct additional boat dock for Regulatory/Municipal Use

NATURAL

- Replace the existing bulkhead with stepped limestone boulders and plant riparian plant material to help stabilize the bank between the boat docks
- Infill the zone with trees plantings for additional shade

OPERATIONAL

- Construct the concessionaire building to include:
 1. Vendor operating area with full utility service
 2. ADA-compliant restroom
- Provide enclosed trash receptacles with lids to help reduce the amount of trash within the park



City of Austin- Watershed Protection Department:
Shoreline Protection Detail

Upland

- Agarita
- Big Muhly
- Nolina
- Sideoats grama
- Spineless prickly pear

Riparian

- Possumhaw
- Yaupon holly
- Carolina buckthorn
- Bushy bluestem
- Cardinal flower
- Sedge
- Eastern gamagrass
- Frogfruit
- Maximilian sunflower

Plant List

Wetland

- Bald cypress
- Buttonbush
- Squarestem spikerush
- Roughleaf dogwood
- American water willow
- Bulrush **
- Giant cutgrass

Note:

** plant several feet away from the shoreline to prevent bank erosion due to wave action

INFRASTRUCTURAL

- Construct Proposed Parking Areas to Include:
 1. Curbed, paved and striped stalls for approximately 47 vehicles and 18 truck/trailers as shown
 2. Bulb-outs for boat tie-down and dumpster enclosure
 3. Remove existing cable and bollards at overflow area
- Boat Dock Improvements
 1. Replace boat dock decking material, cleats and bumpers
 2. The existing boat dock pole mounted lights should be removed and replaced with new LED pole lights. The overhead power line which feeds the lights should be replaced with an underground feed from the nearby concessionaire building. The lights can be controlled via a combination time clock and photocell located in the concessionaire building.
 3. Extend boat ramps further into the water for use when lake levels are lowered
- Concessionaire Building Utilities
 1. Potable water connection will be included with three-inch tap off of the six-inch main water line. The three-inch tap will allow up to 110 GPM of flow through the service line at the recommended maximum velocity of five fps. The demand at the concessionaire building will vary depending the number of fixtures installed at the facilities, but is anticipated to have a peak demand between 60-120 GPM.
 2. Wastewater connection will include a six-inch PVC service line and cleanout leading to the main six-inch PVC wastewater pipeline. Due to the potential waste and food particles that could be included in this service, the six-inch size is recommended over a standard four-inch for a typical service connection.
 3. A new transformer and distribution panel sized to handle the load will be required and the size will depend on how much kitchen equipment is installed. New power for HVAC, food service equipment, and efficient LED lighting will be required. The transformer will be fed from the newly established underground service.
- Regulatory/Municipal Use Boat Dock Utilities
 1. New LED pole lights to be installed at the municipal boat docks. The lights can be fed from the nearest panelboard and can be controlled via a combination time clock and photocell located in the at the concessionaire building.



3.3.2 FUNCTIONAL ZONE 2:

CENTRAL LAWN, SWIMMING AND DAY USE AREA

Located north of the Boat Ramp and Water Access Zone, the Central Lawn, Swimming and Day Use Zone provides active recreational activities for all park users. For daytime use, this zone is the most utilized area within the park and features playscapes, organized sports, an open play lawn, a sand beach and swimming area, and a council ring. Parking and trails have been provided throughout the zone to provide access and connections to each amenity.

ACTION SUMMARY

RECREATIONAL

- Sidewalks and Trail Improvements
- Picnic Stations
- Reservable Shade Pavilions
- Primary Children's Nature-Based Playscape
- Secondary Playscape
- Nature-based Discovery/Exploratory Play Pockets
- Expanded Basketball Court
- Expanded Sand Beach
- Sand Volleyball Courts with Shaded Seating Areas
- Council Ring

NATURAL

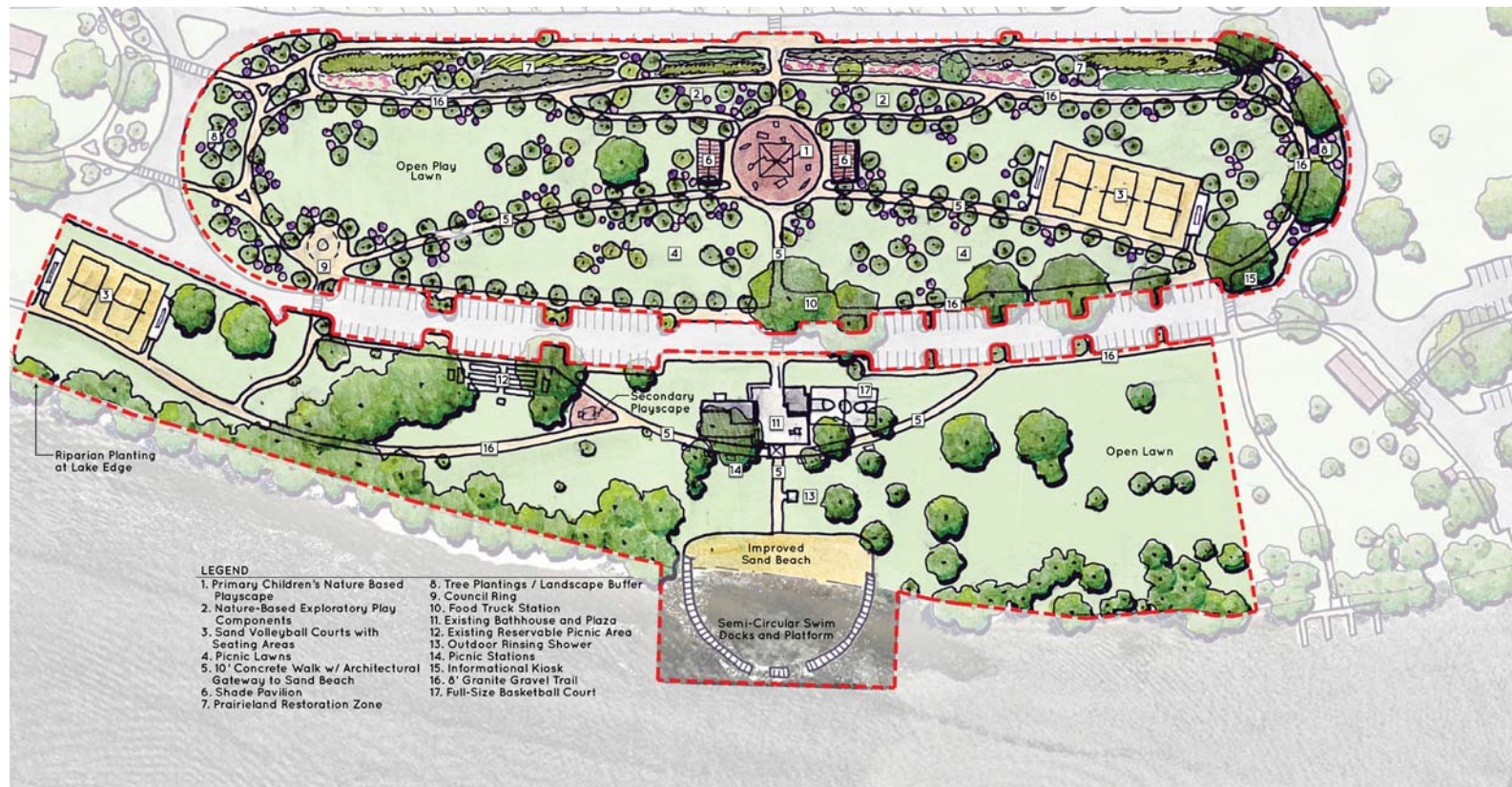
- Amend the Soil, Installation of Zoned Irrigation System, and Resod the Central Lawn
- Open Lawn
- Prairieland Planting Zone
- Riparian Plantings at Lake Edge
- Tree Plantings
- Landscape Buffer

OPERATIONAL

- Informational and Wayfinding Kiosk
- Enclosed Trash Receptacles

INFRASTRUCTURAL

- Food Truck Vendor Pads
- Removal of Existing Cable and Bollards Parking Areas
- Safety Lighting at Swimming Docks
- Architectural Gateway Feature
- Semi-Circular Swim Docks and Platform
- Rinsing Shower
- Electrical Connections/Outlets
- Water Connections



CENTRAL LAWN, SWIMMING AND DAY USE AREA RECOMMENDATIONS

RECREATIONAL

- Provide sidewalk and trail improvements that connect the Central Lawn, Swimming and Day Use area to the surrounding park amenities to include:
 1. 10-foot-wide concrete walk
 2. 8-foot-wide granite gravel perimeter and bisecting trails
- Central Lawn Improvements to include:
 1. Two reservable shade pavilions with site furnishings
 2. Primary children's nature-based playscape
 3. Construct nature-based discovery/exploratory play pockets
 4. Informational and wayfinding kiosk
 5. Amend soil, install zoned irrigation System and resod with Tifway Bermuda Sod to eliminate sticker burrs
 6. Council ring
- Day Use Area Improvements to include:
 1. Secondary playscape in proximity to bathhouse
 2. Expanded basketball court in proximity to existing location
- Construct picnic stations along the trail improvements and provide picnic table and seating
- Construct sand volleyball courts with shaded seating areas
- Improved sand beach area to Include:
 1. Expanded sand beach footprint and replacement of existing material
 2. Improved rinsing shower station

NATURAL

- Infill the zone with trees plantings for additional shade
- Establish prairieland planting zone along east lawn edge
- Stabilize shoreline pockets with riparian plantings at lake edge
- Tree planting and landscape buffer at lawn edges

OPERATIONAL

- Provide enclosed trash receptacles with lids to help reduce the amount of trash within the park

INFRASTRUCTURAL

- Construct three food truck vendor pads to include:
 1. New service pedestals should be installed for each proposed truck parking space. A new transformer and distribution panel will be needed for this area. The transformer can be fed via underground primary service.
- Reservable shade pavilions to include:
 1. The pavilions will require general lighting and power. Depending on the desired use for the pavilions, minimal receptacle power can be provided, or if special events are to be held there, more power can be coordinated. The pavilions should not require a dedicated transformer and can be served from one of the new transformers and distribution panelboards installed nearby.
- Remove existing cable-and-bollards parking area
- Swim dock improvements
 1. Construct semicircular swim docks and platform
 2. The existing pole-mounted lights should be removed and replaced with new LED pole lights. The overhead power line which feeds the lights should be replaced with an underground feed from the nearby restroom building. The lights can be controlled via a combination time clock and photocell located in the Bathhouse.
- Volleyball court and playground water connections to include:
 1. Potable water connections include a one-inch tap off of the six-inch main water line. The one-inch tap will be capable of serving hose bibs at each of these facilities. If additional fixtures are required at these locations, it is recommended to upsize the service taps.
- Rinsing shower water connection
 1. The water connection will include a three-inch tap off of the existing main water distribution pipeline looping around the Park.
- Construct architectural gateway feature to sand beach

INFRASTRUCTURAL, CONTINUED

- Irrigation within the Central Lawn will be added to approximately 8 acres. The exact amount of water required to irrigate this land will be dependent upon the type of landscaping installed. For purposes of this study, it is assumed that approximately 100 GPM of flow over 4-6 hours will be needed at a pressure of 70-80 PSI. To irrigate this land a few options for water supply are available:
 1. EXISTING INTAKE TIE-IN – A new tie-in could be added to the existing raw water intake pipeline to push water to the irrigation system directly from the lake water. Solids buildup in the irrigation system could be an issue with the lake water. A filtration system could be added for this purpose, but would require regular maintenance. Additionally, water from the existing intake would only be available when the pumps are running, which is on an intermittent schedule depending on demand. An irrigation pump would also be required to boost the water to the needed pressure.
 2. IRRIGATE WITH POTABLE WATER SUPPLY – The proposed treated six-inch PVC water main loop is directly adjacent to the lawn area, so adding a tap and backflow preventer to use this water for irrigation is an option. Depending on the design of the irrigation system, an irrigation pump may also be required to boost the water to the needed pressure, as the pressure in the existing system is typically at 35-50 PSI. Additionally, using the potable water for irrigation purposes will draw down the water level in the existing 50,000-gallon storage tank, since a typical night of irrigation would use 25,000-30,000 gallons of water. The additional water storage recommended would be required to utilize the potable system for irrigation.
 3. WELL WATER – A new non-potable water supply well could be utilized to feed the irrigation system, if water quality results show the water constituents are sufficient for irrigation water use.
 4. LAKE WATER – A new intake into the lake could be constructed to provide water to the irrigation system, but would require substantial permitting and water rights acquisition. This option is not recommended.

The recommendation for the irrigation water supply will be dependent on the amount of irrigation water required and the capital cost limitations for the City. Drilling a well would be the recommended option for decreased life-cycle and permitting costs, but would have a high capital cost associated with it. Further investigation would need to be conducted to analyze the geological feasibility of finding a reliable production well. Building a new intake into the lake (Option 4) would be the most time-consuming option, with water rights and permitting requirements. Option 2 (irrigating with the potable water supply) would only be possible if the supply needed for irrigation is minimal. For purposes of the Visioning Document, it is assumed that the irrigation will be done with the existing potable water supply.

3.3.3 FUNCTIONAL ZONE 3: SECONDARY LAWN AND PASSIVE SHORELINE

Located north of the Central Lawn, Swimming and Day Use Zone, the Secondary Lawn and Passive Shoreline transitions to a passive recreational zone. This area accommodates all park users and features reservable group pavilions, picnic stations, open lawn, and restoration planting. Parking and trails have been provided throughout the zone to provide access and connections to each amenity.

ACTION SUMMARY

RECREATIONAL

- Trail Improvements
- Picnic Stations
- Reservable Group Pavilions

OPERATIONAL

- Enclosed Trash Receptacles

NATURAL

- Open Lawn
- Prairieland Planting Zone
- Riparian Plantings at Lake Edge
- Tree Plantings
- Landscape Buffer

INFRASTRUCTURAL

- Remove Existing Cable and Bollards Parking Areas
- Electrical Outlets for Group Pavilions

SECONDARY LAWN AND PASSIVE SHORELINE RECOMMENDATIONS

RECREATIONAL

- Provide trail improvements that connect the Secondary Lawn and Passive Shoreline area to the surrounding park amenities to include:
 1. Eight-foot and five-foot-wide granite gravel perimeter and bisecting trails
- Construct covered picnic stations along the trail improvements and provide picnic table and seating
- Construct two reservable group pavilions with site furnishing

NATURAL

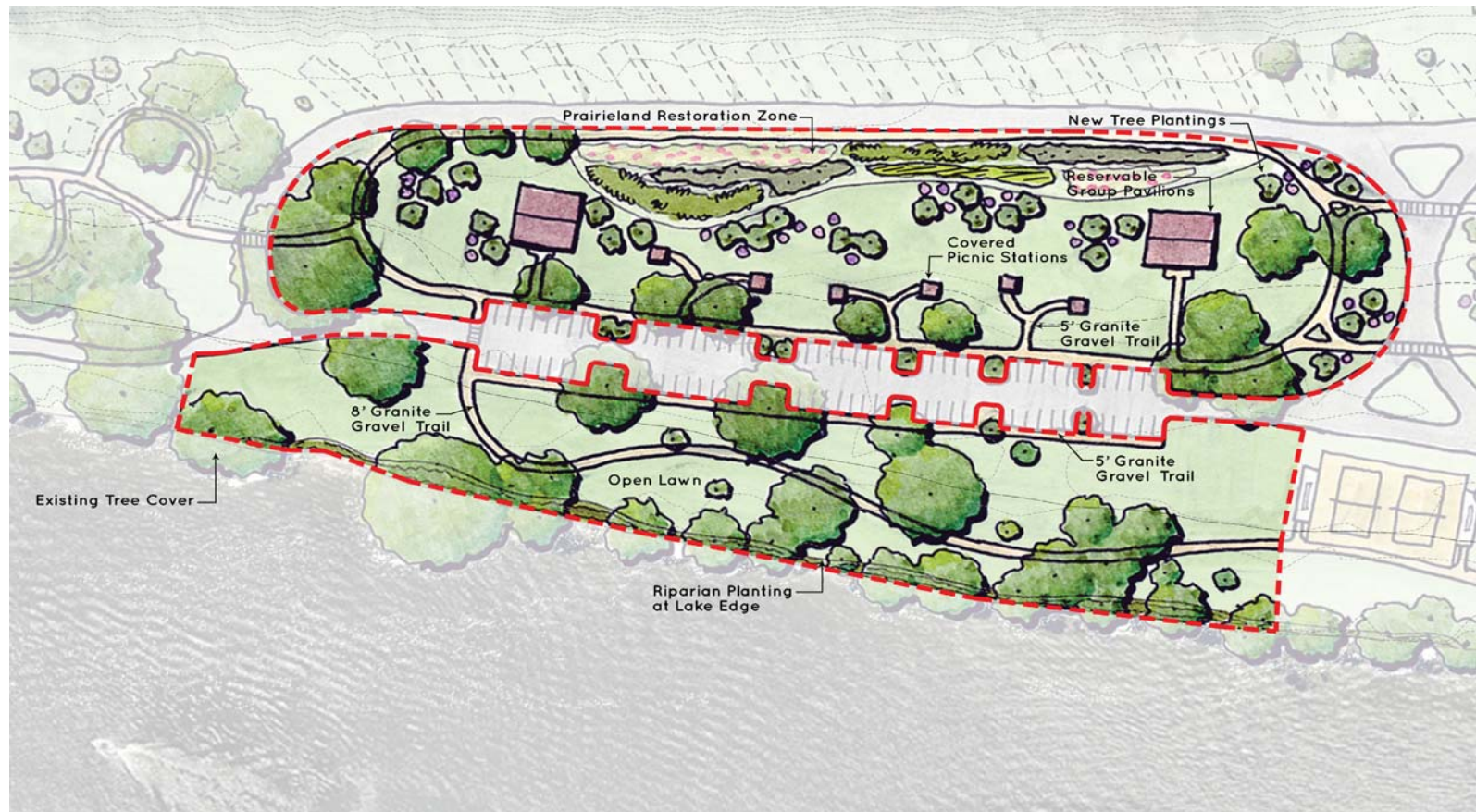
- Infill the zone with trees plantings for additional shade
- Establish prairieland planting zone along east lawn edge
- Stabilize shoreline pockets with riparian plantings at lake edge
- Tree planting and landscape buffer at lawn edges

OPERATIONAL

- Provide enclosed trash receptacles with lids to help reduce the amount of trash within the park

INFRASTRUCTURAL

- Reservable group pavilions to include general lighting and power. Depending on the desired use for the pavilions, minimal receptacle power can be provided, or if special events are to held there, more power can be coordinated. The pavilions should not required a dedicated transformer



3.3.4 FUNCTIONAL ZONE 4:

CIRCULATION AND CAMPING AREAS

Located throughout the park, the Circulation and Camping Areas Zone provides access throughout the site, parking that is dispersed based on the zones within the park, and campsites for both RV and tent campers. Both utility and primitive campsites are provided and each campsite includes some or all of the following amenities: site furnishings, a water connection, a wastewater connection and an electric connection. Parking and trails have been provided throughout the zone to provide access and connections to each amenity.

ACTION SUMMARY

RECREATIONAL

- Sidewalks and Trail Improvements
- Picnic Stations
- Site Furnishing for Campsites
- Waterfront Primitive Campsites
- Group Campsites
- Campsite Markers
- Improved Bluff Campsites
- Improved Waterfront Campsites

NATURAL

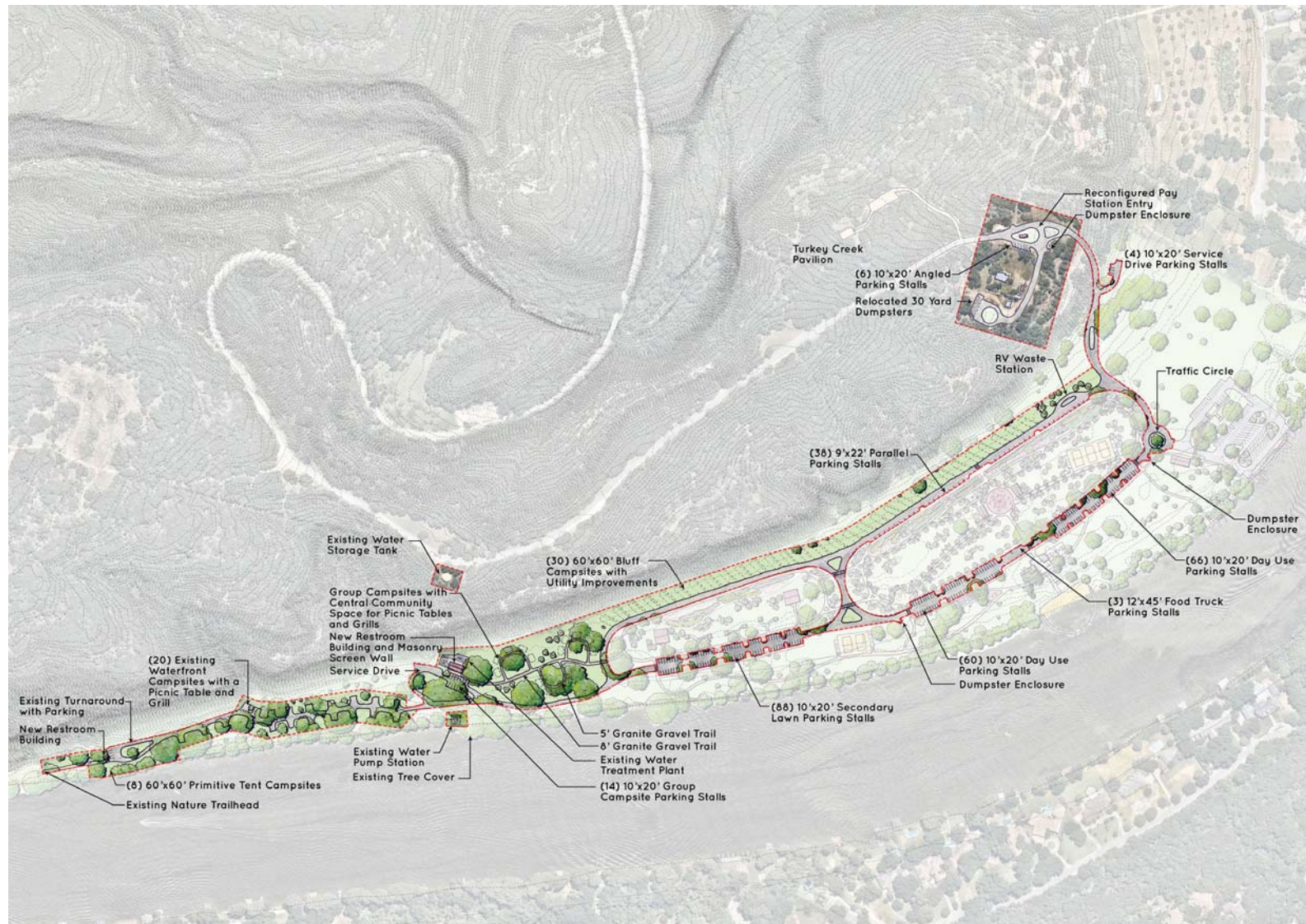
- Tree Plantings
- Landscape Buffer

OPERATIONAL

- Informational and Wayfinding Kiosk
- Enclosed Trash Receptacles
- Small Restroom Building for Primitive Campsites
- Northern Restroom Building

INFRASTRUCTURAL

- Park Control Gate
- Increased Parking Capacity at Turkey Creek Trailhead
- Electronic Notification Sign at FM 2222 Intersection
- Prominent Park Entry Sign
- Pay Station Structure
- Self-Pay Kiosks
- Remove Existing Cable-and-Bollards Parking Areas
- Upgrade Northern Transformer
- Electrical Pedestals at RV Campsites
- Lift Station Pumps
- Enclosure for 10- and 30-Yard Dumpsters
- Park Roads and Parking Area
- Asphalt Road Overlay for Waterfront Campsite Area
- Water Storage Tank
- Wastewater and Water Distribution Pipe and Connection; Electrical Service Line and Pedestal at Each Bluff Campsite
- Relocated RV Waste Station
- Bury Existing Overhead Electrical Distribution Lines
- Grass Pave Parking Area for Bluff Campsites
- Shared Water and Electrical Connections at Group Campsites
- Masonry Screen Structures for Water Intake and Treatment Plant



CIRCULATION AND CAMPING AREAS RECOMMENDATIONS

RECREATIONAL

- Provide sidewalk and trail improvements that connect the Circulation and Camping area to the surrounding park amenities to include:
 1. Eight and five-foot-wide granite gravel trails
- Construct new Waterfront Primitive Camping Area to include:
 1. Eight 60-by-60-foot campsites
 2. Markers and site furnishings
- Improve Bluff Campsites to include:
 1. 30 60-by-60-foot campsites
 2. Site furnishings
- Construct Group Campsite Area to Include:
 1. Site furnishings

NATURAL

- Infill the zone with trees plantings for additional shade



OPERATIONAL

- Provide enclosed trash receptacles with lids to help reduce the amount of trash within the park
- Relocate the Park Entry Gate to include:
 1. A new Park Control Gate in proximity to the Turkey Creek Trailhead parking area
 2. Electronic notification sign at FM 2222 Intersection
- Reconfigure the existing Entry Station to include:
 1. New Pay Station structure
 2. Additional self-pay kiosks
 3. Replace the existing overhead power service and install a new load center within the pay station which will feed all loads
 4. Install new power receptacles and lighting fixtures according to design.

INFRASTRUCTURAL

- Relocate the Park Entry Gate to include:
 1. Increased parking capacity at the Turkey Creek Trailhead
- Upgrade Northern Transformer to supply 50A service and replace failing electrical pedestals at existing waterfront campsites in order to:
 1. Be able to simultaneously serve 20 RV camping spaces with the electrical requirements expected for modern recreational vehicles
 2. Increase the capacity to the RV area by upgrading the dual 200A fused disconnects to a 600A distribution panel
 3. Work with Austin Energy to replace the existing transformer with a maximum size transformer of 167KVA to serve the new distribution panel
 4. Replace each pedestal and establish a new standard; we recommend a Square D Servicepak, PAK75CTG or similar which includes one 20A outlet, one 30A outlet, and one 50A outlet for RV standards.
 5. Install steel pylons to protect new pedestals from being hit by RVs
- Replace existing lift station grinder pumps to disposal field
 1. The existing lift station grinder pumps are inadequately sized at 1.5 HP and clog frequently due to age. Replacement of the two pumps with larger grinder pumps (3.0 HP) is recommended, based on Park staff input.
- Construct centralized enclosure with space for five 30-yard dumpsters in the Service Area
- Replace existing 50,000-gallon water storage tank with a new 150,000-gallon tank
 1. The existing 50,000-gallon steel water storage tank was recoated in 2004 and given a tank-life of 5-10 years at that time. Park Staff reports that the tank is in poor condition. Per Park staff input, a new 150,000-gallon water storage tank will be installed and the existing tank will be demolished. See Section 3.4 UTILITY DIAGRAMS AND UTILITY ALTERNATIVES for additional information on water storage options.
- Construct Proposed Parking Areas along Lower Road to Include:
 1. Curbed, paved and striped stalls for approximately 241 vehicles
 2. Bulb-outs for dumpster enclosures
 3. Removal of existing cable-and-bollard parking enclosures
- Asphalt road overlay for Waterfront Campsite Area
- Construct Group Campsite Area to include:
 1. Shared water and electrical connections at each site
 2. New water connection taps to serve the new group campsite area, including three one-inch waterline taps off the main water pipeline
 3. Installation of a 50KVA transformer and a 200A distribution panel, possibly a bollard-mounted 120V 20A GFCI weatherproof receptacle (quantity of feeds to be determined); the new transformer could be fed from the nearby primary electrical service.

INFRASTRUCTURAL, CONTINUED

- Construction improvements along Bluff Road to include:

1. Curbed, paved and striped stalls for approximately 38 Vehicles
2. PVC Wastewater Distribution Pipeline and Cleanout Station at Each Site

A. Typically, 60-90% of potable water flows become wastewater flows within a system. Due to the increasing water flows at the Park, the wastewater flows are also increasing. The following wastewater infrastructure improvements are consistent with the phasing plan developed for the Park as a whole, and include slowly phasing in improvements as the Park needs grow.

B. Buried Wastewater Pipeline - six-inch diameter PVC pipeline will be installed adjacent to the bluff to collect from the bluff camp sites, totaling approximately 2,500 linear feet.

C. Wastewater Connections along the Bluff - Thirty new four-inch PVC wastewater service lines and cleanouts connecting to the proposed wastewater pipeline and draining to the new waste station and disposal field.

3. PVC Water Distribution Pipeline Loop and Riser at Each Site

A. Buried Water Main Pipeline Loop - A six-inch diameter PVC pipeline loop will be installed adjacent to the bluff and main drive loop areas, totaling approximately 5,500 linear feet. The existing main loop is three-inches in diameter, and due to the increased demand on the system, it is anticipated a six-inch diameter pipeline would be able to serve the myriad of improvements on site. A six-inch pipeline is capable of carrying 440 Gallons per Minute (GPM) at a recommended maximum velocity of five-feet-per-second (fps).

B. Water Connections along the Bluff - 30 new one-inch water connections will be installed at the 30 new bluff campsites, connecting to the proposed pipeline loop. These one-inch connections will serve hose bibs at each site and be capable of approximately 25 GPM for flow through the hose at the recommended velocity.

4. Buried Electrical Service Line and Mounted Pedestal at Each Site

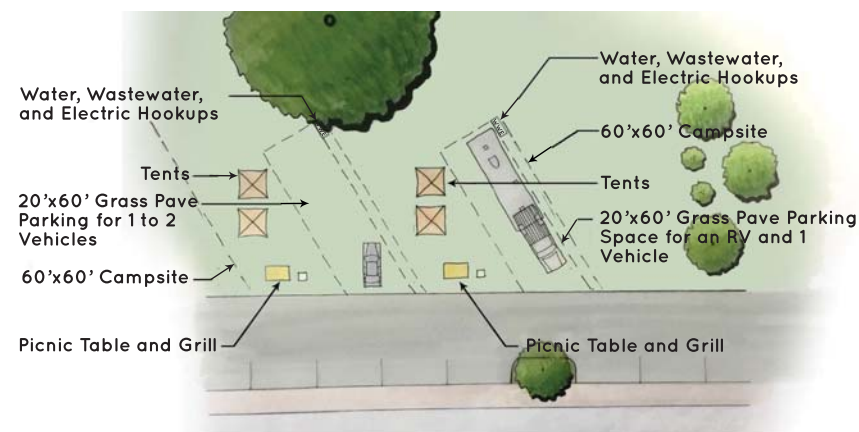
A. The bluff campsites currently do not have any electrical service.

B. To account for future growth where the current bluff campsites may be used as RV sites, each site will need to have a 50A RV pedestal installed similar to the waterfront campsites. Two new 167KVA Austin Energy transformers will need to be installed along with new 600A distribution panelboards. The new transformers will be fed from underground with the newly established underground primary service.

5. Removal of existing cable-and-bollard parking enclosures

- Improve Bluff Campsites to include:

1. Grass pave parking area for vehicles



Bluff Campsites

INFRASTRUCTURAL, CONTINUED

- Relocated RV Waste Station with Water and Wastewater Connections
 1. Disposal Field for Bluff Waste Station - A new disposal field for the bluff waste station will be required. The disposal field will be similar to others at the Park and include a network of perforated PVC headers, gravel bed areas, and lateral disposal lines. The exact sizing of the disposal field will depend on the size of the pumps installed at the disposal field. Proper setbacks from the disposal field shall be considered for the adjacent camp sites, water mains, and wastewater mains.
 2. Waste Station along the Bluff - A new waste station consisting of a duplex grinder pump system, controls, site improvements, a water tap connection, and piping will be installed. The submersible pumps will pump to the new disposal field for this waste station.
 3. Water Connection - A new water tap will be included at the wastewater station, connecting to the proposed pipeline loop. The one-inch tap will be capable of serving a hose bib at this facility, which will include a backflow preventer since water will be used to hose off equipment at the waste station.
- Construct Small Restroom Building for Waterfront Primitive Camping Area to Include:
 1. Small restroom building
 2. A new four-inch diameter PVC pipeline will be installed from the water treatment plant to the primitive camping restroom building, totaling approximately 1,400 linear feet. The four-inch pipeline size should ensure adequate size for covering any other water service needs in the area in the future, providing up to 195 GPM of flow at the recommended maximum velocity.
 3. A new disposal field for the primitive restroom building will be required. The disposal field will be similar to others at the Park and include a network of perforated PVC headers, gravel bed areas, and lateral disposal lines. The exact sizing of the disposal field will depend on the number of type of fixtures in the restroom building.
 4. The proposed location of a new restroom located at the end of the waterfront campsite area will require a new service point for the building for power and lighting.
- Replace Northern Restroom Building by Water Treatment Plant to Include:
 1. ADA-Compliant Restrooms
 2. Masonry Screen Structure to Mask Water Treatment Area and Water Pump Station
 3. Associated Parking Stalls
 4. Water Connection - A new three-inch tap will be installed off the new main distribution line. This three-inch tap will allow up to 110 GPM of flow through the service line at the recommended maximum velocity of 5 fps. The demand at the restroom will vary depending the number of fixtures installed at the facilities, but is anticipated to have a peak demand between 60-120 GPM.
 5. Wastewater Connection - A new six-inch PVC service line and cleanout will be installed leading to the expanded disposal field. A six-inch service line is recommended to facilitate easy maintenance and servicing of the line.
 6. Upsized Disposal Field - Due to the new restroom building sizing, the existing disposal field will need to be upsized for the capacity of the restroom building. A similar network of perforated PVC headers and lateral disposal lines will be included to match the existing disposal field. The exact sizing of the disposal field will depend on the number of type of fixtures in the restroom building.
 7. Installation of a new service point for power and lighting to serve the new restroom building

INFRASTRUCTURAL, CONTINUED

- Reconfigure Existing Entry Station to Include:
 1. Road and parking reconfiguration
 2. Prominent Park Entry sign in landscape island (this will create an Art Opportunity)
 3. Bulb-out for dumpster enclosure
- Bury Existing Overhead Electrical Distribution Lines
 1. The large overhead utility wiring which traverses the park and then proceeds across Lake Austin would not be a practical candidate to move underground. However, it may be feasible to relocate the primary branch wiring which runs overhead along the lake front portion of City Park Road to underground conduits.
 2. Austin Energy owns and maintains the overhead distribution systems. To relocate the overhead conductors to underground would require work by Austin Energy and a contractor. A contractor could trench roughly along the existing overhead path and install underground conduits. New concrete pads would be installed to accommodate pad mounted transformers in place of the existing pole mounts. The utility company would then pull new primary wiring and install new transformers on the pads. Care must be taken to not trench in any tree critical root zone as outlined by the City of Austin Development Services Department.
 3. The feed from each transformer to each facility would need to be re-established from underground by the contractor. This may involve some rework to bring each facilities service entrance up to code. Telephone service existing on the pole would also need to be brought underground.
 4. Relocating the overhead cable to underground can be broken down into the North branch and the South Branch. The city could decide to do either branch, or both branches. The North branch would be the less challenging because it is a smaller single phase primary and only has one pole mounted transformer that would need to be relocated to a pad. The South branch is a larger three phase primary which servers four pole mounted transformers that would be replaced with pad mount.
 5. This work would have significant impact on the look along City Park Road but will also have significant cost. It involves trenching and installing approximately 3/4 of a mile of underground conduit and primary cable, installing several underground pull boxes, and installing 5 new pad mounted transformers to do both the North and South branch. The simpler North branch would require approximately \$150,000 including parts and labor from Austin Energy and a contractor to do the trenching and secondary re-work. The more challenging South branch would be approximately \$850,000. This estimate is for parts and installation. A more complete estimate would include additional costs such as design fees.
 6. An analysis of the flood plain should be conducted before pad mounted transformers are installed. Should the flood risk be unacceptable, then the transformers should remain pole mounted with only the cable being buried. Because the utility will not install risers on the same pole as a transformer then two additional poles will be required by each existing transformer to accomplish the underground transition. This option would reduce the cost but would have less of a visual improvement on the park.
 7. In addition to reworking the existing utility feed, there are several new facilities being constructed as part of this project. These new transformers will be fed from the newly established underground service.



Overhead Electrical Wires and
Distribution Poles

3.4 UTILITY DIAGRAMS AND UTILITY ALTERNATIVES

ADDITIONAL WATER RECOMMENDATIONS

The purpose of including these improvements is to complete the necessary water upgrades to facilitate the master buildout of the Park in the future, and to install these new utilities as the roads are repaved to minimize construction impacts. Additional water utility improvements will include:

1. Water Treatment Plant (WTP) Replacement - The existing WTP was constructed in 1984 and has already exceed its 30-year design life. A complete replacement is recommended. The cost associated with this is for a conventional WTP.
2. A membrane filtration plant is not recommended due to the infrequent operation of the WTP, as the membranes would require frequent maintenance when the plant is not operating to protect them. Additionally, membranes would not be compatible if softening is required due to scaling.
3. If finished water remains in the ground storage tank for long periods of time (over two to three days), FNI would also recommend consideration of a chemical feed system to boost chlorine levels as water leaves the tank.

ALTERNATE WATER INFRASTRUCTURE OPTIONS

For some of the improvements listed above, additional options are available for water infrastructure upgrades. These options can be evaluated in further detail if requested by the City, but were not part of the Visioning Document recommendations.

A. Other Water Supply Options -

1. The Park is situated at a low elevation, surrounded by land with fluctuating elevations. The closest water supply source is across Lake Austin, Travis County WCID No. 20, which would require a trenchless installation method under the river.
2. An additional source of water is City of Austin water located approximately four miles north along City Park road. Connection to either of these supplies would mean the existing raw water intake, storage tanks, and water treatment plant buildings could be abandoned.
3. An additional option for raw water supply would be a well, but this would require drilling a test well and testing the water quality of the water.

B. Additional Water Storage - The existing site includes an aging 50,000-gallon steel ground storage tank. Two options are available to increase the amount of water storage - 1) Adding an additional tank, or 2) Replacing the existing tank with a bigger tank. Both of these options are feasible, but the recommendation moving forward is dependent upon a variety of factors, including:

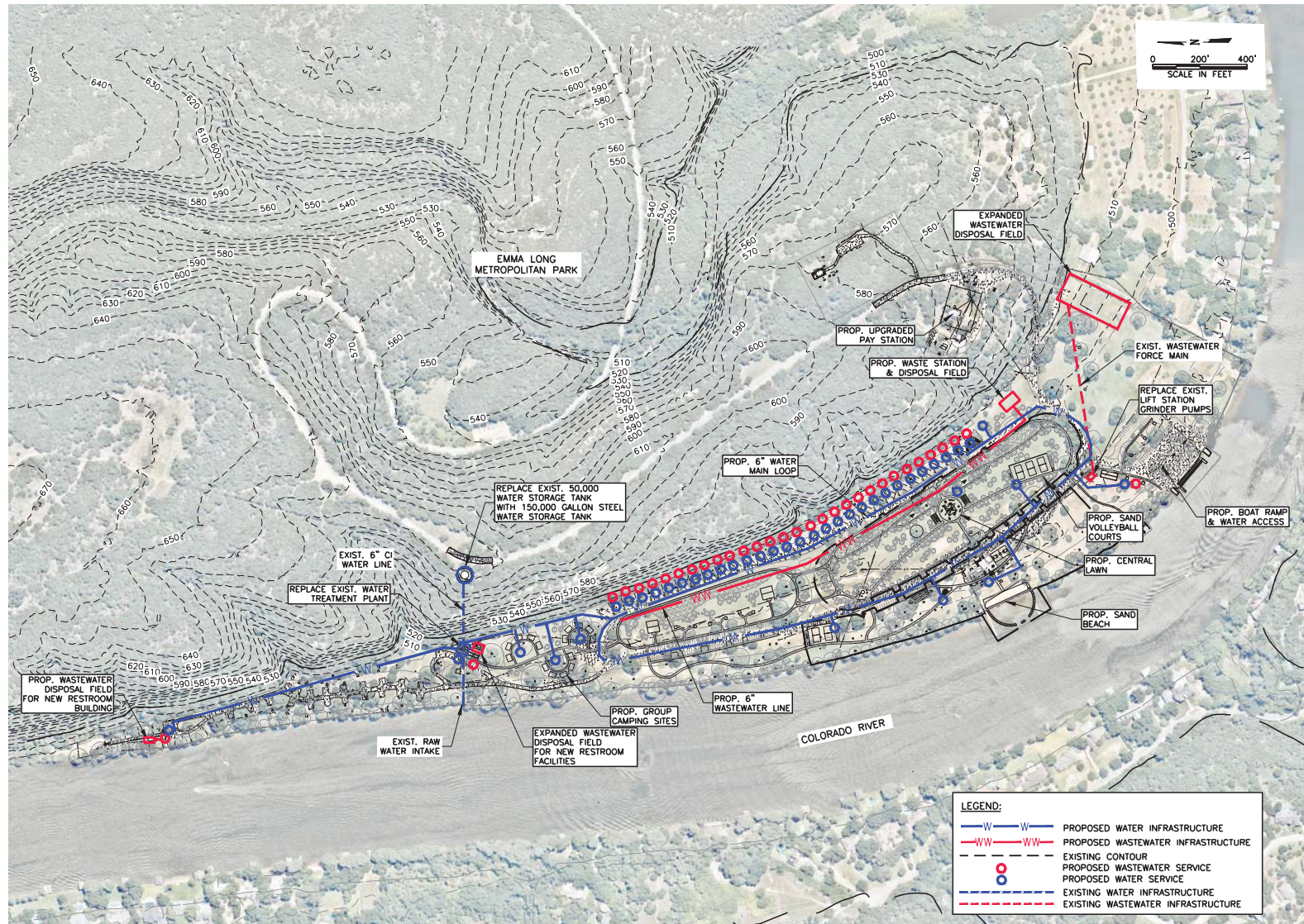
1. Conditional of the Existing Storage Tank - If the existing storage tank is in extremely poor condition and past the point of repair, then demolishing the tank and installing a larger tank in its place is the recommended option.

2. Constructability – Demolishing the old tank and adding a new one in its place will require at least a month of down time for the existing tank demolition and construction/ placement of the new tank. While the tank is down, a temporary tank will have to be brought in to serve water at the Park. Another option is clearing additional trees in the area and constructing the new tank while the existing tank is still online.
3. Hydraulics – To preserve the hydraulics of the system and the existing pumps, the tank height should remain the same with a new tank, requiring the same footprint whether the tank is being replaced in place or a new tank is added. If the Water Treatment Plant is replaced at the same time, the new system could be designed to pump to a tank with a higher elevation.
4. Redundancy – If the existing tank is in good condition, adding a redundant tank will help the City have flexibility in taking tanks down for maintenance or recoating in the future. This scenario would require the tanks to have similar heights for the purpose of hydraulic equalization.
5. Cost – Construction of a new smaller tank will be less expensive in terms of capital cost than demolition and replacement of the existing tank. Depending on long term maintenance and O&M costs of upkeep with the existing tank, construction of a new larger tank may be less expensive long-term.
- 6, Per Park Staff input, the option proposed in the Visioning Document is complete replacement of the existing tank with a new 150,000 gallon steel ground storage tank.

ALTERNATE WASTEWATER INFRASTRUCTURE RECOMMENDATIONS

The Park is situated at a low elevation, surrounded by land with changing elevations. On-site sewage disposal is the most cost-effective option for the Park. If maintenance and capacity become issues in the future, the City can evaluate the option of pumping wastewater approximately four miles to the City of Austin existing wastewater system. To do this, a new high-head lift station and four miles of force main would be required.

PROPOSED WATER AND WASTEWATER UTILITY IMPROVEMENTS



3.5 CITY PARK ROAD - TRAFFIC IMPROVEMENTS

Throughout the planning process, the project team heard concerns about the following items:

- Inadequate signage along City Park Road directing people to the park
- Traffic congestion on City Park Road caused by vehicles waiting to get into the park on weekends, making it difficult for residents to travel in the surrounding communities
- Littering along City Park Road caused by lack of sufficient trash receptacles

In order to address the concerns, we suggest the following changes, illustrated by the diagram on the following page:

1. Addition of an electronic notification sign at the intersection of FM 2222 and City Park Road, indicating whether park is at capacity. When the park is full, this will notify visitors in time for them to turn around at the intersection instead of driving six miles further down City Park Road.
2. Provide directional signage at Pearce Road North, Oak Shores Drive, and Pearce Road South, in both English and Spanish to accommodate all park users.
3. Provide roundabouts at Oak Shore Drive and Pearce Road South to allow visitors to turn around if the Park is full. This will help alleviate traffic from RV's, trucks and trailers that currently have to drive further into the park to turn around
4. Move the Park Control Gate to City Park Road and the Turkey Creek Trailhead from its current location at Pearce Road South and City Park Road. This will move traffic on City Park Road further into the park, reducing traffic backups at the neighborhood intersections.
5. Increase the parking lot capacity at the Turkey Creek Trailhead to accommodate more vehicles, once the Park Control Gate is relocated.
6. If needed, provide additional queue parking lot locations to help alleviate traffic backups on City Park Road.
7. Provide car-accessible trash receptacles in certain locations along City Park Road to reduce littering.
8. Any development along City Park Road that is located with the BCP Preserve Area will require close coordination and permitting with BCP regulations. See the Preserve vs. Non-Preserve Area on Page 77 for the BCP preserve location.

