

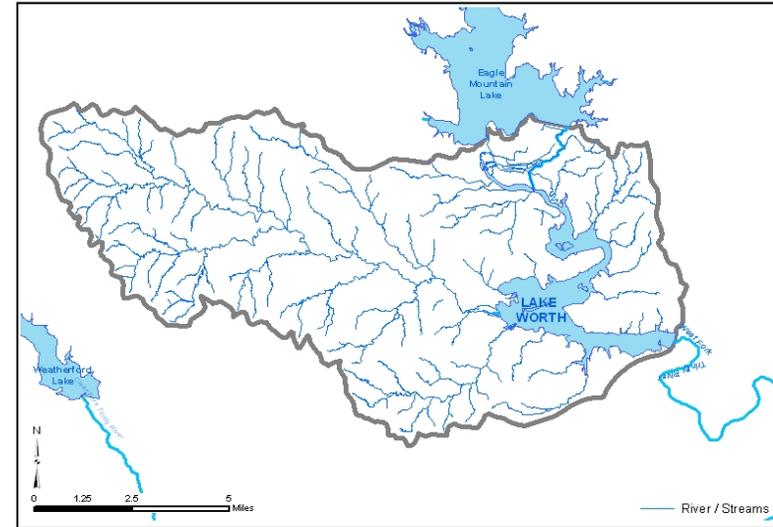
PART FOUR: PRINCIPLES, RECOMMENDATIONS, AND IMPLEMENTATION

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Recommendations

1.1 Include the entire Lake Worth watershed when planning for development around Lake Worth. The consultant panel highlighted the importance of the entire Lake Worth watershed and its connection to water quality, sedimentation, and pollution levels in Lake Worth. Planning should not be limited to the areas immediately surrounding the lake. To protect Fort Worth's drinking water supply, standards should be established and implemented to control sedimentation and pollution along all perennial and intermittent streams that flow into Lake Worth. The consultant panel believes the City of Fort Worth will have to repeatedly dredge the lake unless measures are implemented to improve current conditions along waterways within Lake Worth's watershed.

The consultant panel recommended that a thorough study be conducted during normal and flash flood rain events for the entire Lake Worth watershed. Sediment and pollution yields increase substantially during flash flood events. Often, studies are conducted during normal rain events only, which could miss critical information in identifying areas contributing most to sediment buildup and pollution. The study would identify these critical areas and allow communities to focus resources to achieve best results.



The Lake Worth watershed is approximately 94 square miles (including Lake Worth) with about 230 linear miles of streams and rivers



Sediment that has made it through silt fences north of Loop 820/South of Jacksboro Highway



Sediment runoff from new development on White Settlement Road

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Recommendations

1.1 Include the entire Lake Worth watershed when planning for development around Lake Worth. (cont.)

Implementation Measures:

1.1(a) Create a Lake Worth Regional Coordination Committee (LWRCC) to review and recommend to the City of Fort Worth and participating jurisdictions relevant actions regarding development activity around the lake. The committee should include representatives from the City of Fort Worth, Tarrant County, surrounding jurisdictions, watershed neighborhood leaders, major property owners, and nonprofit stakeholders. The consultant panel suggested using the Trinity River Vision Authority as a template for Lake Worth. However, an authority may not be the appropriate body since an authority typically receives funds from all participating jurisdictions. A coordinating committee similar to the NAS JRB Regional Coordination Committee is recommended for Lake Worth. A Lake Worth Watershed Council made up primarily of landowners within the watershed may also be a future implementing body of the Vision Plan.

1.1(b) One of the first tasks for the Lake Worth Regional Coordination Committee should be to commission a study to assess the entire Lake Worth watershed during normal and flash flood rain events. The results from the study would provide essential information for the watershed master planning process.

1.1(c) The LWRCC should lead a detailed master watershed planning process, with input from all stakeholders in the Lake Worth watershed, to identify areas contributing excessively to sediment and pollution runoff into Lake Worth, and to determine the most appropriate strategies and actions to implement throughout the watershed to control erosion, reduce sediment pollution loading, and minimize nonpoint source pollution within the watershed.

1.1(d) Lake Worth stakeholders may wish to form a committee to provide input to the Lake Worth Regional Coordination Committee, the Fort Worth City Council, and other agencies to support implementation of the Lake Worth Vision Plan. This committee might include but is not limited to watershed neighborhood leaders, property owners, business owners, recreational users, environmental interests, and development interests.



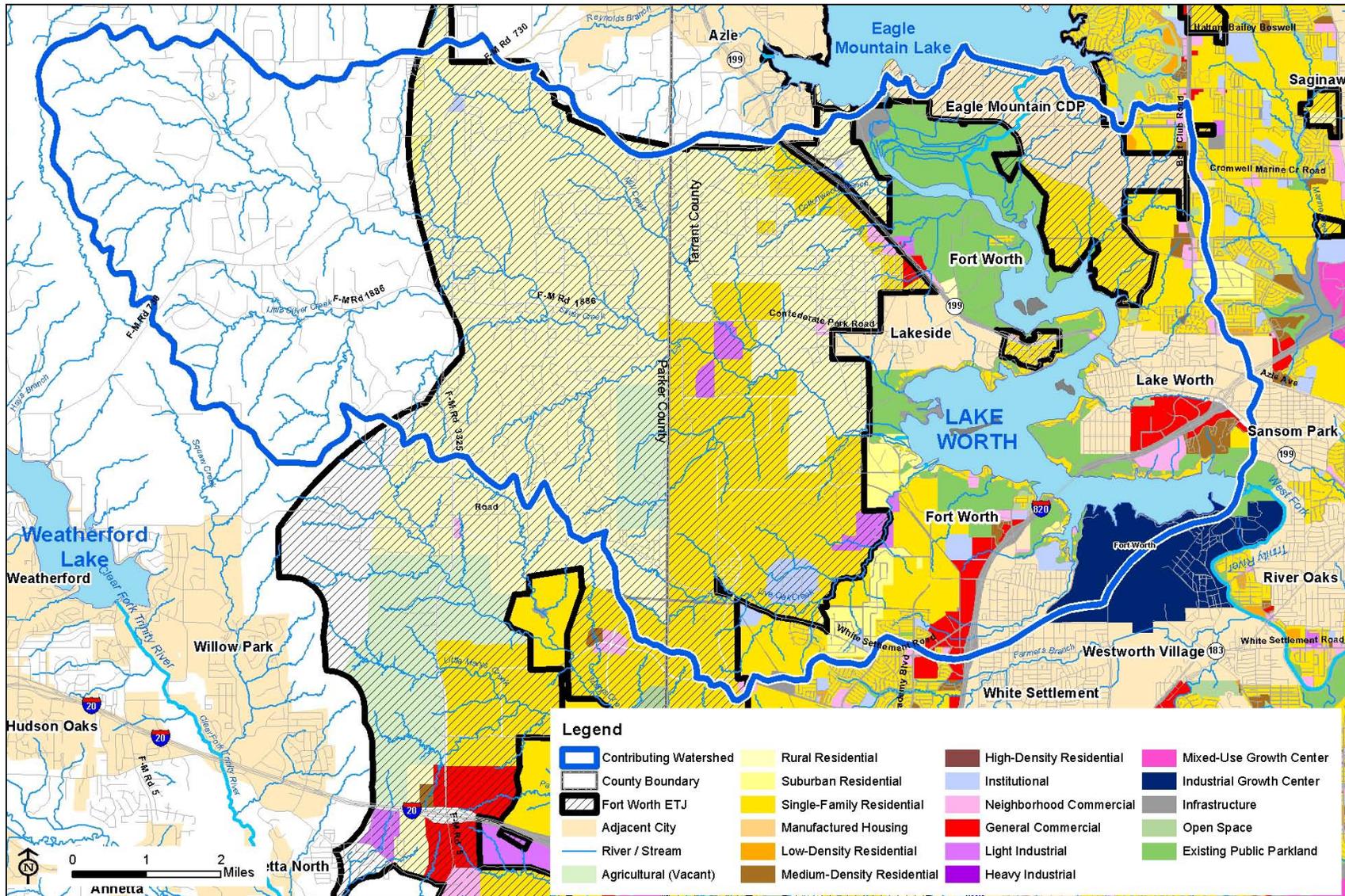
New development on Lake Worth; silt fence in place; grass buffer good aid in catching silt runoff

Nonpoint source (NPS) pollution results when small amounts of contaminants from a large number of sources are carried by rainfall runoff into streams, lakes, or bays.



Sediment deposited on abutments from runoff at FM 1886 and Silver Creek Road

Map 21: Watershed Jurisdictions



Source: City of Fort Worth

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

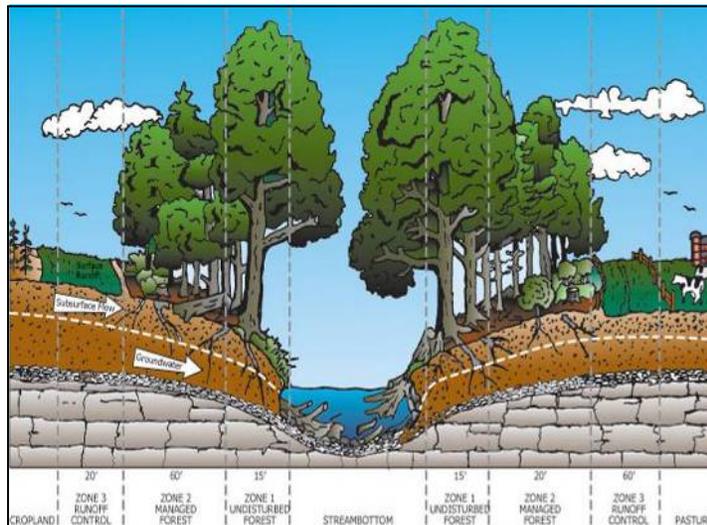
Recommendations

1.2 Protect riparian areas, 100-year floodplains, steep slopes, and highly erodible soils. The consultant panel emphasized the need to prohibit development and agricultural uses within riparian buffer areas while also prohibiting development within the 100-year floodplain. Additionally, limited development should be allowed on steep slopes and areas with highly erodible soils, and best practices should be implemented where development does occur.

Riparian areas are the transition zones between open water and developable or arable dry land. In order to protect streams and rivers from sediment and pollution carried by storm water runoff, a riparian buffer is often established as a last line of defense. The consultant panel recommended establishing a 100-foot riparian buffer from the edge of streams and rivers where development as well as agricultural uses would be prohibited. By prohibiting development and agricultural uses, and allowing native and adapted vegetation to flourish in the riparian buffer, streams, rivers, and lakes are better protected against excessive sediment buildup and nonpoint source pollution.

The 100-year floodplain includes areas that have a one-percent chance of flooding in any given year. Development should be prohibited in these areas to preserve the natural function of floodplains and to further protect Lake Worth from sediment buildup and nonpoint source pollution during flood events.

Undeveloped floodplains reduce the number and severity of floods in developed areas downstream by slowing and storing storm water runoff. Natural floodplains also improve water quality by filtering sediment and impurities carried by storm water. The resulting reduction in nonpoint source water pollution entering drinking water supply reservoirs helps to reduce water treatment costs and preserve drinking water supply capacity over the long term.



Typical riparian buffer with thick vegetation close to the rivers edge.

Principle One: Protect and enhance Lake Worth’s water quality, natural beauty, and recreational character.

Recommendations

1.2 Protect riparian areas, 100-year floodplains, steep slopes, and highly erodible soils. (cont.)

Implementation Measures:

1.2(a) Strengthen the existing subdivision and storm water ordinances to better protect riparian areas, steep slopes, and floodplains from development, and to more effectively facilitate and reward clustering of development away from these sensitive areas. Consider creating a riparian buffer overlay zone for use in drinking water supply watersheds.

1.2(b) Consider amending the Fort Worth Tree Ordinance to highlight the importance of creating and maintaining an appropriate tree canopy for protecting riparian buffer areas, steep slopes, and highly erodible soils. This amendment could add an enhanced riparian buffer zone tree planting requirement, such as requiring plantings to provide a specified percentage of mature tree canopy coverage within 100 feet of natural drainage ways. To support such an amendment, conduct a study to determine appropriate strategies to protect sensitive areas around Lake Worth, and implement such strategies through amendments to the tree ordinance and other pertinent ordinances.

1.2(c) Consider adopting policies, principles, and standards to authorize and direct Transfer of Development Rights (TDR) and/or other innovative approaches to steer development clear of riparian areas and 100-year floodplains while relocating development density to Model Sustainable Communities and other appropriate locations.

1.2(d) Ensure that large 100-year floodplain areas remain undeveloped, while potentially supporting low-impact organic farming opportunities or ranching activities in areas where the floodplain is particularly broad, such as along Silver Creek in the West Lake Sector. Riparian corridors within floodplain areas should be enhanced with native or adapted plantings, particularly appropriate tree plantings along stream-banks



Urban riparian zone buffer example.



From “Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways”, United States Department of Agriculture, General Technical Report SRS-109, September 2008, Page 70.

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Recommendations

1.2 Protect riparian areas, 100-year floodplains, steep slopes, and highly erodible soils. (cont.)

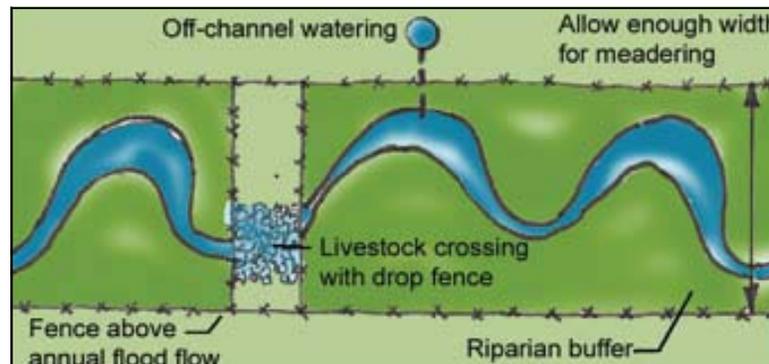
Implementation Measures: (cont.)

1.2(e) Ideally, riparian buffers should be fenced in upstream areas where cattle are present to reduce opportunities for sediment and bacteria from animal waste to be carried to Lake Worth in storm water runoff from streambanks disturbed by cattle encroachment. Work with agricultural agencies and willing landowners to identify funding sources and appropriate demonstration projects to protect and enhance rural riparian buffer areas that support municipal drinking water supplies.

1.2(f) Share ordinance amendments with Lake Worth Regional Coordination Committee partners and encourage them to adopt similar measures.

1.2(g) Evaluate legislative opportunities and impediments at the state level, and pursue appropriate changes to state law to better support local actions designed to protect riparian areas and floodplains from development that paves, fills, or builds on these areas.

1.2(h) Support local programs that educate landowners and citizens on watershed management and the natural functions of floodplains and riparian areas, such as the watershed management workshops sponsored by the Texas Agrilife Extension Service.

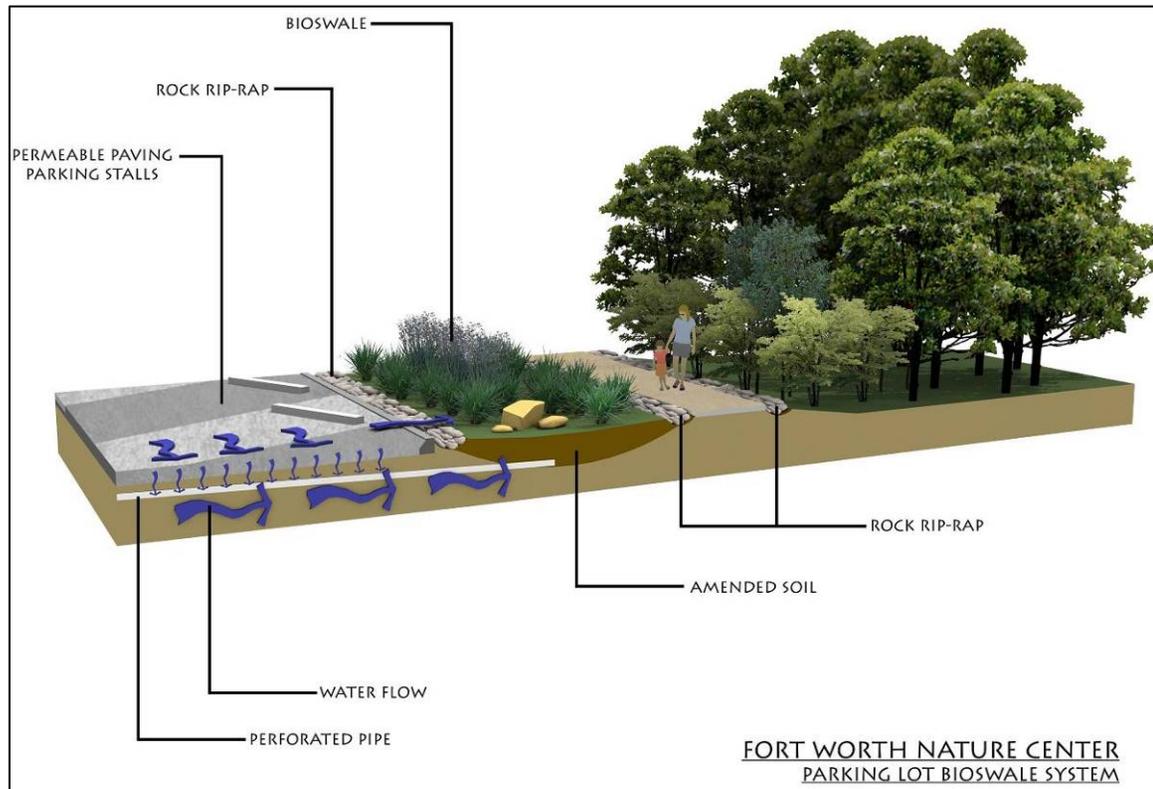


From “Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways”, United States Department of Agriculture, General Technical Report SRS-109, September 2008, Page 41.

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Recommendations

1.3 Use Low-Impact Development techniques such as street edge alternatives, rain gardens adjacent to parking lots, permeable pavement, bioswales, bio retention, scourstops, and green roofs to reduce the amount of sediment and nonpoint source pollution entering Lake Worth. Low-Impact Development techniques mimic natural drainage systems to manage storm water and enhance natural movement of water within the watershed, allowing more storm water to be absorbed and filtered through the water table. Each of these storm water management techniques used alone helps to reduce runoff and lighten the load on streams, rivers, and lakes. However, using all of these techniques as part of a Low-Impact Development approach can reduce the pollutant load in storm water runoff substantially, and in some cases can virtually eliminate it. (See examples of Low-Impact Development methods on the next two pages.)



Fort Worth Nature Center Parking Lot Bioswale System

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Recommendations

1.3 Use Low-Impact Development techniques such as street edge alternatives, rain gardens adjacent to parking lots, permeable pavement, bioswales, bio retention, scourstops, and green roofs to reduce the amount of sediment and nonpoint source pollution entering Lake Worth. (cont.)

Implementation Measures:

- 1.3(a) Coordinate with the Fort Worth Water Department's storm water best management practice (BMP) study being prepared by Freese and Nichols to identify appropriate BMPs to implement within the Lake Worth watershed.
- 1.3(b) Implement pertinent City of Fort Worth Sustainability Action Plan items within the Lake Worth watershed.
- 1.3(c) As opportunities arise and funding allows, implement urban stream restoration projects within the Lake Worth watershed.



Stream restoration before and after Austin, TX

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Examples of Low-Impact Development Techniques

The following techniques slow the speed and reduce the volume of storm water runoff, while filtering out sediment and pollutants before storm water reaches water supplies. In addition, such practices help to recharge aquifers that supply well water in rural areas.



Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

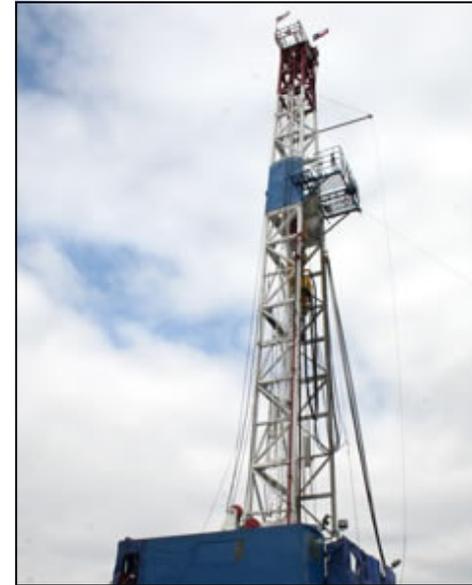
Recommendations

1.4 The City should seek appropriate areas to drill that do not negatively affect sensitive habitat, drainage, or riparian areas, and that maximize the use of existing drill sites on private land. As pipelines are developed, opportunities to include trail development and public access easements along the pipeline routes should be explored. All decisions on gas wells and pipelines should be weighed against the principles and recommendations of the Lake Worth Vision Plan, and any subsequent land use plans. Additionally, sites should be selected so that gas well impacts and benefits are balanced among all stakeholders.

Implementation Measures:

1.4(a) Amend the City of Fort Worth Gas Drilling Ordinance to require that proposed drilling pad sites and gas wells within 600 feet of the shoreline of Lake Worth be reviewed by the Gas Drilling Review Committee.

1.4(b) If gas drilling on parkland is permitted by the City, establish enhanced requirements and mandate use of City-identified best practices in such activities.



Gas drilling rig



Gas well pad site



Typical storage tanks

Principle One: Protect and enhance Lake Worth's water quality, natural beauty, and recreational character.

Recommendations

1.5 As development occurs south and west of Lake Worth, portions of the undeveloped land should be dedicated as parkland or platted as common open space, and made available for passive or active recreation. Specifically in response to lake-shore residents' concerns about additional development around the lake, the consultant panel suggested establishing areas of undeveloped land abutting and close to the lake as park or open space to protect water quality, enhance natural beauty, and conserve wildlife habitat.

Implementation Measures:

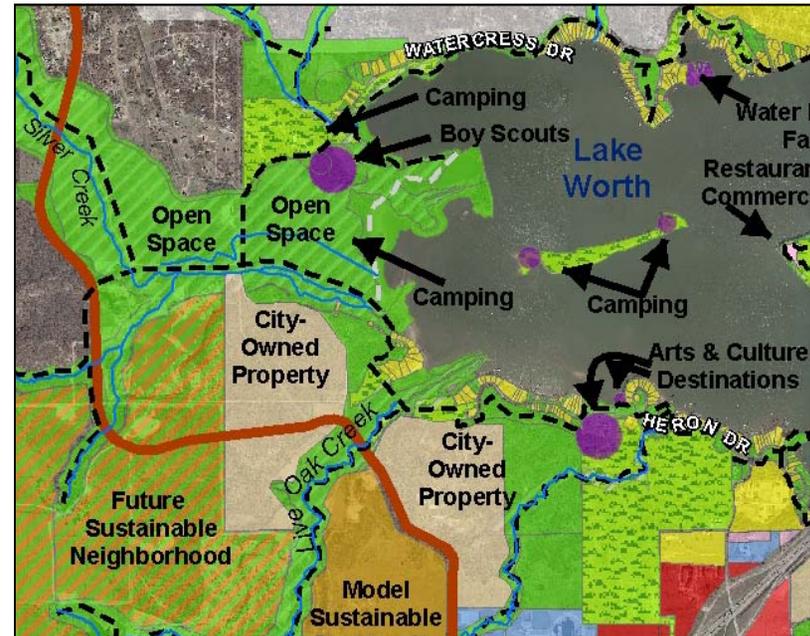
1.5(a) Prepare a refined Future Land Use Plan intended to begin implementing the adopted Lake Worth Vision Plan.

1.5(b) Prepare Lake Worth park boundary surveys where necessary to document park boundaries. Revise the Lake Worth Vision Map if necessary to ensure that the map is consistent with surveyed park boundaries.

1.5(c) Conduct a Lake Worth historic resource inventory and incorporate appropriate elements into the Fort Worth Parks, Recreation, and Open Space Master Plan.

1.5(d) Amend the 2004 Fort Worth Parks, Recreation, and Open Space Master Plan to reflect, to the extent possible and appropriate, the adopted Lake Worth Vision Plan.

1.5(e) In model sustainable communities and other future developments around Lake Worth, work with developers to dedicate as parkland or plat as common open space all riparian areas, 100-year floodplains, and areas of steep slopes within each development.



Potential open space areas south and west of Lake Worth



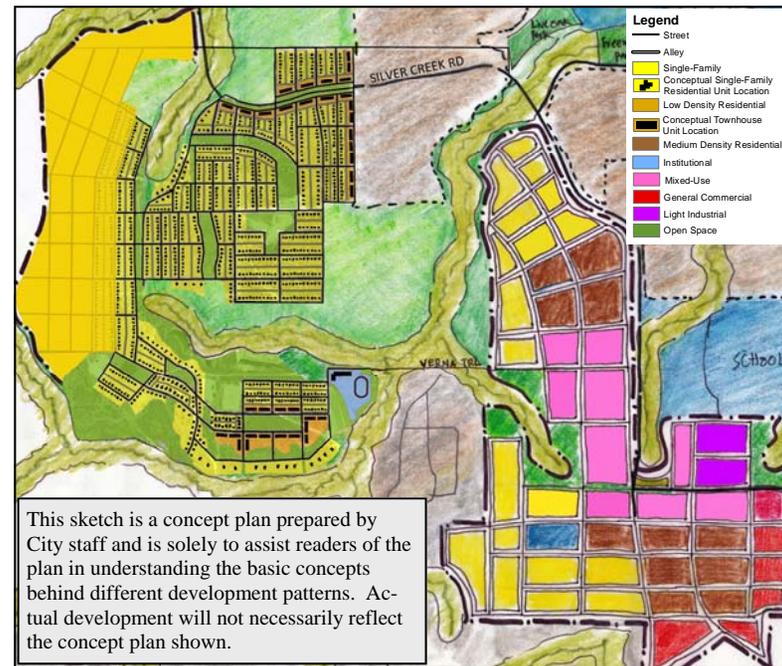
Bear Creek Park, Keller, TX

Principle Two: Develop Model Sustainable Communities in the Lake Worth area that create desirable places to live and work while enhancing livability of existing communities.

Recommendations

2.1 Implement one or more Model Sustainable Communities around Lake Worth to serve as an example of Low-Impact Development. With limited examples of Low-Impact Development currently in Fort Worth, and none in the sensitive watershed of Lake Worth, the consultant panel recommended establishing a Model Sustainable Community on City-owned property near Lake Worth as a guide for future development in the Lake Worth watershed and other parts of the city. The Model Sustainable Community should incorporate a variety of best management practices, creating a livable, walkable, mixed-use community with significantly reduced and highly filtered storm water runoff. Lakeshore residents felt strongly that any new development near Lake Worth should be located on private property rather than City-owned land.

Low-Impact Development is an approach to land development that uses various land planning and design practices and technologies to simultaneously reduce infrastructure costs while protecting natural resource systems. Low-Impact Development uses site and subdivision design techniques in coordination with storm water management engineering to mimic or enhance the hydrologic conditions associated with an undeveloped site to the greatest practical extent. One of Low-Impact Development's primary goals is to reduce runoff volume by infiltrating rainfall to groundwater, evaporating rainwater back to the atmosphere after a storm, and finding beneficial uses for rainwater rather than exporting it as a waste product down storm sewers. Particularly in water supply watersheds like Lake Worth's, Low-Impact Development can be an effective sustainable landscaping approach to restore natural watershed functions in order to protect the City's drinking water supply.



Concept plan sketch of potential Model Sustainable Community and Sustainable Neighborhood in Southwest Development Sector

Implementation Measures:

2.1(a) Study the opportunities and constraints associated with developing vacant land near Lake Worth. Develop a more detailed land use plan evaluating and recommending future uses of land, including location and layout of riparian buffers, conservation areas, and appropriate mixed-use development patterns and residential neighborhoods with Low-Impact Development features.

2.1(b) Prepare a Model Sustainable Community feasibility study that evaluates the carrying capacity of non-park land in this area and examines the market potential for, and financial feasibility of, partnering with a developer to create a walkable, mixed-use community highlighting Low-Impact Development techniques.

Principle Two: Develop Model Sustainable Communities in the Lake Worth area that create desirable places to live and work while enhancing livability of existing communities.

Recommendations

2.1 Implement one or more Model Sustainable Communities around Lake Worth to serve as an example of Low-Impact Development. (cont.)

Implementation Measures: (cont.)

2.1(c) Begin a dialogue with property owners in areas identified in the Lake Worth Vision Plan as Model Sustainable Communities to encourage their interest in developing their property in accordance with Model Sustainable Communities Development Standards and Guidelines.

2.1(d) Pursue funding to create detailed development plans for the Model Sustainable Community sites depicted in the Lake Worth Vision Plan. Funding options could include grants from the North Central Texas Council of Governments or other organizations/foundations.

2.1(e) Prepare Development Standards and Guidelines or a form-based code for the Model Sustainable Communities identified in the Lake Worth Vision Plan.

2.1(f) To clarify the City's expectations of especially sustainable development patterns around Lake Worth, and to provide property owners and developers with certainty that the Model Sustainable Communities will be implemented, prepare and adopt a Zoning Ordinance amendment creating a Model Sustainable Community Overlay District or form-based code and apply it by Zoning Map amendment to the locations identified in the Lake Worth Vision Plan.

2.1(g) Provide the Model Sustainable Community Overlay District text and maps, including the associated Standards and Guidelines or the form-based code, to surrounding jurisdictions and encourage them to consider adopting a similar zoning ordinance amendment.



Example of Model Sustainable Community walkable core area in Mt. Laurel, AL

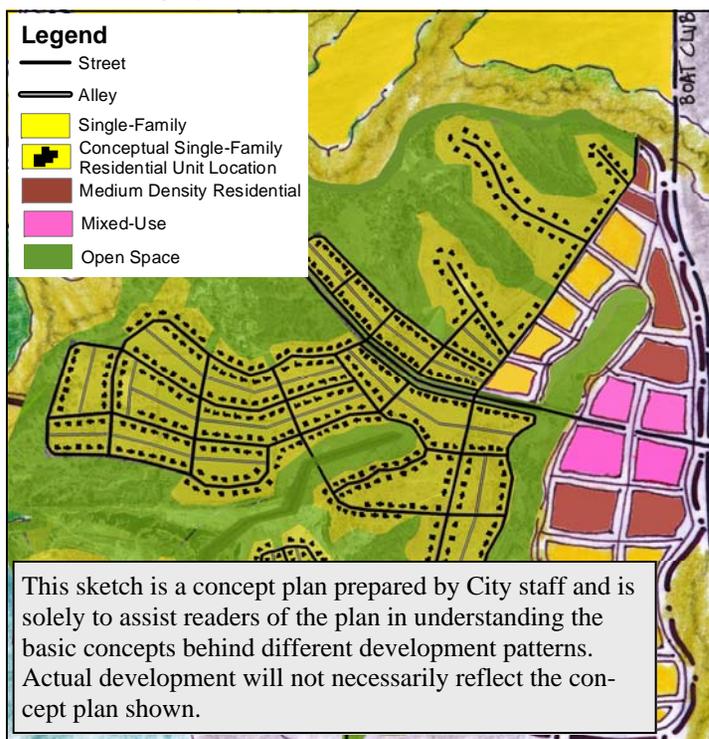


Example of a Low-Impact Development in Prairie Crossing, IL

Principle Two: Develop Model Sustainable Communities in the Lake Worth area that create desirable places to live and work while enhancing livability of existing communities.

Recommendations

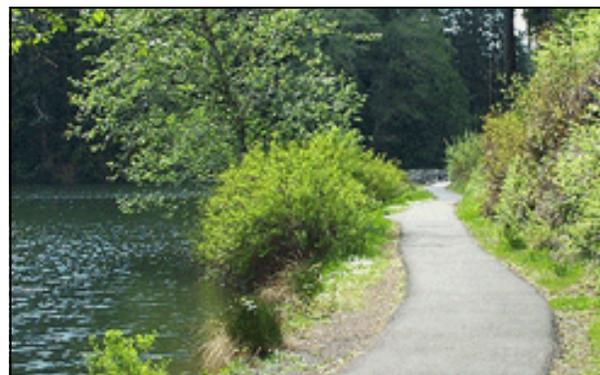
2.2 In areas near Lake Worth where Low-Impact Development should be implemented, but existing development patterns or lack of public sewer service limit opportunities for Model Sustainable Communities, encourage development of Sustainable Neighborhoods. Future Sustainable Neighborhoods are shown on the Lake Worth Vision Plan map in areas where landowners have expressed a desire to develop their property at very low densities in harmony with the natural landscape, or where significant constraints to developing at Model Sustainable Community densities may exist. As envisioned for these specific areas within the Lake Worth watershed, Sustainable Neighborhoods would be expected to offer primarily lower density residential areas designed around enhanced natural drainage ways and open spaces. Greenway trails that connect the neighborhoods to Lake Worth and provide access to the integrated open space areas within the neighborhoods would be integral components of Sustainable Neighborhood designs. Low Impact Development techniques in these neighborhoods will mimic natural drainage system elements and extend them into the residential areas, providing amenities to future residents while protecting water quality. Sustainable Neighborhoods should incorporate a variety of best practices in their design, and provide enhancements to encourage active and healthy lifestyles in order to create desirable, walkable, more sustainable neighborhoods with significantly reduced and highly filtered storm water runoff.



Concept plan sketch of potential Model Sustainable Community and Sustainable Neighborhood in Northeast Development Sector

Implementation Measures:

- 2.2(a) Begin a dialogue with property owners in areas identified in the Lake Worth Vision Plan as Future Sustainable Neighborhoods to encourage their interest in developing their property in accordance with Sustainable Neighborhoods Development Standards and Guidelines.
- 2.2(b) Prepare Development Standards and Guidelines for the Sustainable Neighborhoods identified in the Lake Worth Vision Plan.



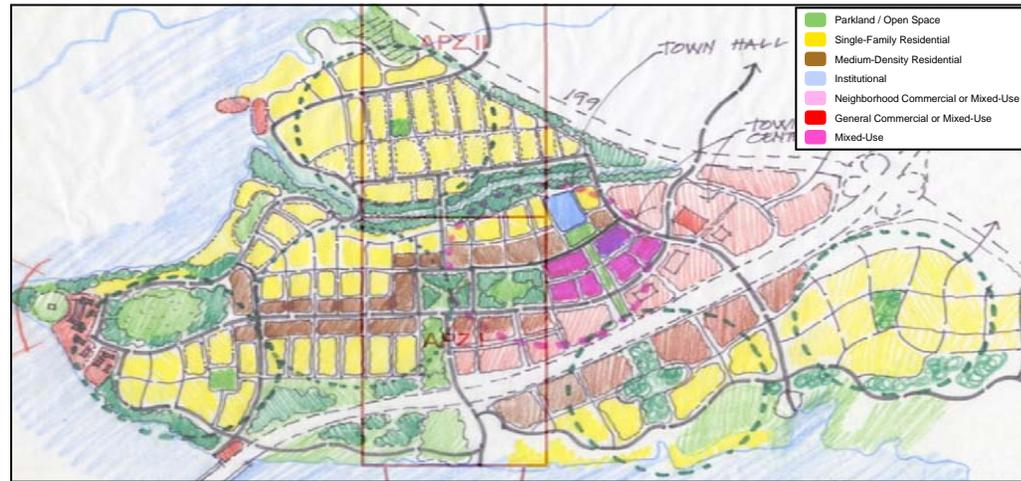
Lake Sylvania, IN

Principle Two: Develop Model Sustainable Communities in the Lake Worth area that create desirable places to live and work while enhancing livability of existing communities.

Recommendations

2.3 The City of Fort Worth and the City of Lake Worth should work together to create a town center implemented through appropriate development standards that are consistent with the NAS JRB Joint Land Use Study.

The consultant panel and stakeholders expressed significant concern about the continuation of the current development pattern along Jacksboro Highway (SH 199) and its negative impact on neighborhood connectivity and water quality. As an alternative to the likely expansion of large parking lots, big-box rooftops, and other impervious surfaces that will physically divide the community and potentially affect Lake Worth's water quality, the consultant panel created an illustration of a conceptual town center which encompasses land in both the City of Fort Worth and the City of Lake Worth. The panel emphasized the opportunity to collaborate and create a true town center with a mix of uses and densities. While full implementation of this concept may require modification of some existing and planned streets within the area, and a long-term conversion of some existing land uses, adoption of the concept plan can begin the long transition to a more sustainable town center development pattern in the area.



Consultants' illustration of Lake Worth Conceptual Town Center, before changes and including Accident Potential Zones

The base-friendly Lake Worth Town Center concept shown on the next page envisions a long-term future that includes a walkable street grid stretching west from Quebec Street/Northwest Centre Drive to Mosque Point, with a strong commercial core near the Loop 820/Jacksboro Highway interchange and lower density employment areas between Buda Lane and Dakota Trail. While the focus of pedestrian activity would likely be east of Buda Lane, the light industrial park or similar low-density employment area should transition smoothly between the commercial uses east of Buda Lane and the existing City of Lake Worth residential neighborhood west of Dakota Trail. To achieve the longer-term vision for the future Town Center area, near-term commercial development projects should incorporate a street grid that yields walkable block sizes, even if the street grid is intended to serve as private parking lot access roads in the near term.

In consultation with the property owners, a small portion of the Lake Worth Town Center along the Charbonneau Road greenway is depicted as a mixed-use area contained within several walkable blocks abutting the greenway. This series of mixed-use blocks could provide the beginning of the pedestrian-oriented Lake Worth Town Center envisioned by the consultant team.

Principle Two: Develop Model Sustainable Communities in the Lake Worth area that create desirable places to live and work while enhancing livability of existing communities.

Recommendations

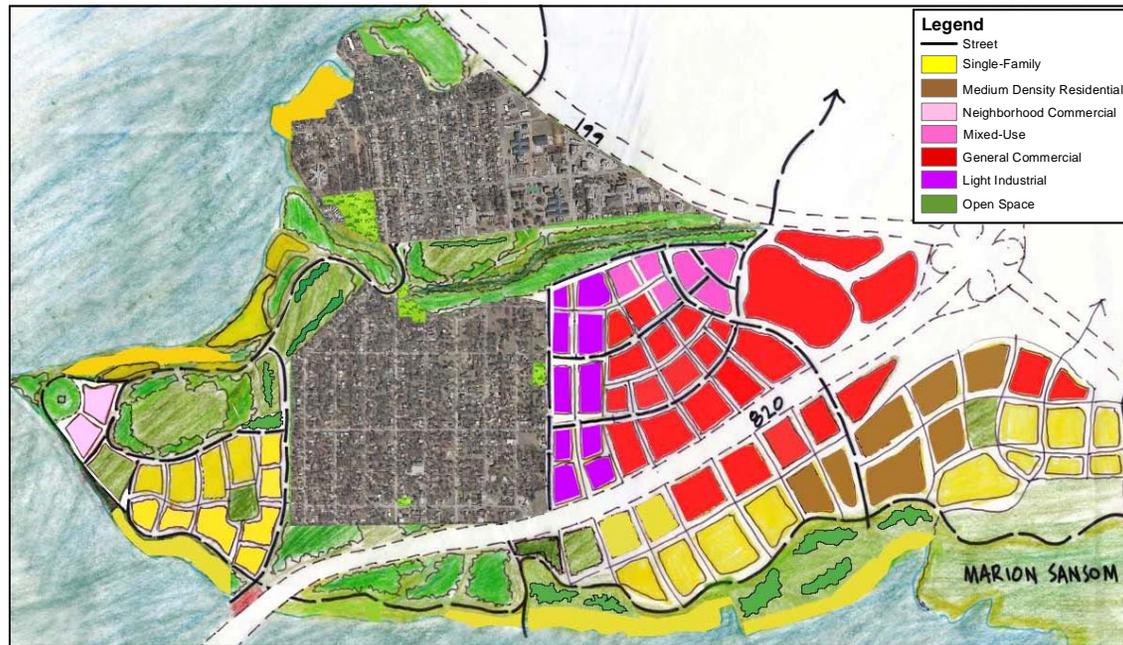
2.3 The City of Fort Worth and the City of Lake Worth should work together to create a town center implemented through appropriate development standards that are consistent with the NAS JRB Joint Land Use Study. (cont.)

Implementation Measures:

2.3(a) Amend the Future Land Use map of the City of Fort Worth as needed to reflect the uses depicted in the revised concept plan.

2.3(b) To achieve the longer-term vision of a walkable mixed-use Town Center area, near-term commercial development projects should incorporate a street grid that yields walkable block sizes, even if the street grid is intended to serve as private parking lot access roads in the near term. The presence of a walkable street grid will facilitate future redevelopment of big-box retail sites and similar single-use commercial products.

2.3(c) To protect the NAS JRB from potential negative Base Realignment and Closure Commission (BRAC) actions in the future, pursue avigation easements on City-owned property and on single-family property located within the Accident Potential Zones.



Town Center concept as modified by staff



Southlake Town Center, TX

Principle Two: Develop Model Sustainable Communities in the Lake Worth area that create desirable places to live and work while enhancing livability of existing communities.

Recommendations

2.4 Create an employment center at Loop 820 and Las Vegas Trail near Lockheed Martin and the Naval Air Station Joint Reserve Base. The consultant panel and stakeholders envisioned this area as a key employment center with office, high-tech, and commercial uses due to its proximity to Lockheed Martin and the Naval Air Station Joint Reserve Base. This employment center will provide job opportunities to residents of nearby Model Sustainable Communities.

Implementation Measures:

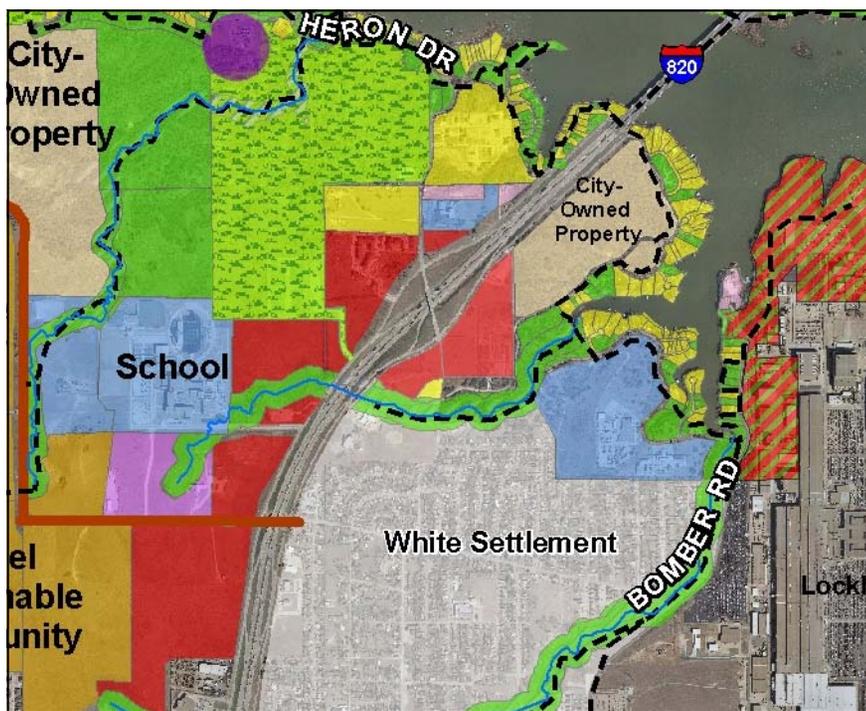
2.4(a) Amend the City of Fort Worth Future Land Use Map to reflect the location of the NAS JRB employment center, in accordance with the adopted Lake Worth Vision Plan.

2.4(b) Amend the City of Fort Worth Zoning Map as necessary and appropriate to implement the NAS JRB employment center.

2.4(c) Consider developing and adopting an NAS JRB Employment Center Overlay District with Low-Impact Development standards and design guidelines intended to ensure compatibility with adjacent residential areas, protect water quality, facilitate trail access, and encourage pedestrian access and connectivity.

2.4(d) Encourage the City of White Settlement to amend its Future Land Use Plan to reflect the location of the NAS JRB employment center, and to expand it to appropriate parcels within its jurisdiction.

2.4(e) In the context of creating a refined Future Land Use Plan for the area around NAS JRB, seek to align compatible uses with the facility's high noise contours, to the extent practicable.



The red area on the map indicates an employment center with office, high-tech, and commercial uses near the Model Sustainable Communities

Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.1 Maximize visual and physical access to the lake and improve water access within walking distance of neighborhoods. Enhance the attractiveness and use of the lake access by developing recreational hubs, amenities, and points of interest at regular intervals and developing a continuous bicycle/pedestrian path around the lake. The consultant panel and stakeholders expressed that it was essential to the success of Lake Worth as a public asset to maximize visual and physical access to the lake for all the citizens of Fort Worth, as well as the residents of adjacent cities and those living near Lake Worth. Many of the stakeholders living in communities near Lake Worth feel that lakeshore access is too limited, making it necessary to use an automobile to reach a destination point on the lake, even when the water's edge is nearby. This reduced public access is mainly due to expanding private ownership around the lake, brought about by previous City sales of leased property, and limited access points that are not connected by a pathway system.

To halt the decline of public access to this City-owned lake, the City has a responsibility to all citizens of Fort Worth to return the remaining City-owned lakefront property that is not identified for sale to public access and use for the benefit of all its citizens. Additionally, sidewalks and pathways should connect surrounding communities and neighborhoods to the lake, allowing residents to walk or bike to the lake.

Implementation Measures:

3.1(a) To maximize physical and visual access to the lake, maintain all City-owned lakefront property — including City-owned individual lots that are not identified for sale — as public parkland or open space, whether the property is improved as public parkland or simply set aside as open space.

3.1(b) As funding allows, purchase existing improvements and option contracts from willing lease holders around Lake Worth. Notify all lease holders of this buy back opportunity, but particularly target unplatted properties and areas where City water and sewer service is not yet in place.



Bicycle/pedestrian path on Lake Calhoun in Minneapolis (above and below), with public ownership of the lakefront retained



Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.1 Maximize visual and physical access to the lake and improve water access within walking distance of neighborhoods. Enhance the attractiveness and use of the lake access by developing recreational hubs, amenities, and points of interest at regular intervals and developing a continuous bicycle/pedestrian path around the lake. (cont.)

Implementation Measures: (cont.)

3.1(c) As soon as opportunities arise to do so, reassemble unneeded City-owned lots by vacating their plats or combining them through a replat to reduce potential future pressure on the City to sell such lots to private interests. Plat parkland as necessary to ensure its protection for park uses.

3.1(d) As property becomes available, seek to fulfill the Fort Worth Nature Center & Refuge Master Plan goal of acquiring land on the north side of Jacksboro Highway/SH 199, including the Love Circle leases and the commercial properties within the unincorporated area.

3.1(e) To facilitate retention or acquisition of strategically important leased or owned lakeshore land, consider offering trades of vacant City-owned lakeshore lots within neighborhoods where privately-owned residential neighborhoods already exist.

3.1(f) As a long-term strategy, seek to buy back at market rates properties that have already been sold if the properties are deemed important for expanding recreational uses or public access to the lake.

3.1(g) In discussions with the Boy Scouts and other potential users of City-owned lakeshore land, it is critical to preserve City ownership of significant areas of shoreline in order to protect the alignment of the lakeshore bicycle/pedestrian path – and with it the opportunity to improve access to the Lake Worth shoreline for all existing and future Fort Worth citizens.



Shoreline trail in Northfield, MN

Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.2 The Casino Beach Park area should be developed as the heart of Lake Worth Regional Park, with a mix of uses and development types. Historical significance, location, access, and availability of developable land make the Casino Beach Park area ideal for a mix of commercial and recreational uses. The consultant panel identified this location as best-suited for key recreational uses, such as a fueling station for motor boats and a place to provide boat rentals. The area could accommodate an appropriate mix of higher-density commercial and residential uses. The unincorporated property along Jacksboro Highway/SH 199 between the Town of Lakeside and Casino Beach Park is likely to redevelop when City water and sewer become available and the land is annexed by the City of Fort Worth. Appropriate future uses of this land should be considered and land use plans amended accordingly.

Implementation Measures:

3.2(a) Evaluate existing and potential land uses and development opportunities within the unincorporated area along Jacksboro Highway/SH 199 between the Town of Lakeside and Casino Beach Park.

3.2(b) Amend the City of Fort Worth Future Land Use Map to reflect the desired mix of recreational, commercial, and higher-density residential uses around the Casino Beach Park area.

3.2(c) Change the zoning in the Casino Beach Park area to accommodate an appropriate mix of uses.

3.2(d) Coordinate with the Texas Department of Transportation (TxDOT) on the characteristics and timing of improvements to Jacksboro Highway (SH 199), and work to ensure appropriate vehicle, bike, and pedestrian access is provided to the Casino Beach Park area.

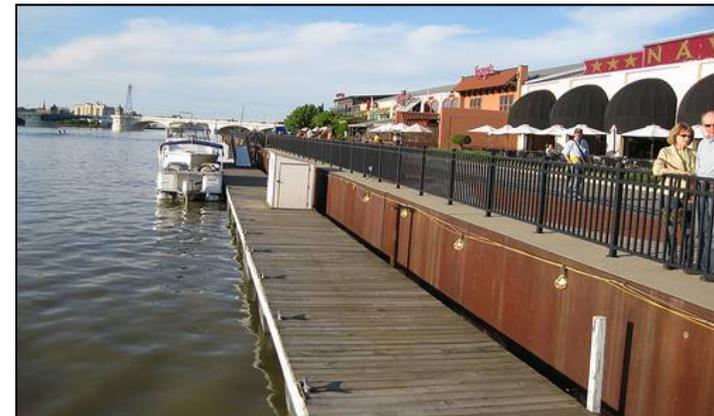
3.2(e) Work with TxDOT to provide a safe bicycle/pedestrian pathway across the Jacksboro Highway/SH 199 bridge over Lake Worth.

3.2(f) Prepare a more detailed concept plan for future development of the Casino Beach Park area.

3.2(g) Investigate options for increasing the amount of developable land around Casino Beach Park, such as parkland swaps.



Casino Beach Park at Lake Worth



Restaurants overlooking Maumee River in Toledo, OH

Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.3 Mosque Point Park should be maintained as an inviting park and public space, but with some destination commercial uses. The consultant panel recognized the significant opportunities around Mosque Point Park. They suggested improving the area with more park amenities, but also recommended other destination uses for the area, such as one or more restaurants overlooking the lake.

Implementation Measures:

3.3(a) Provide opportunities for new restaurants and similar destination commercial development overlooking Lake Worth, especially at Mosque Point, by offering long-term leases for such destination uses at sites identified in the Lake Worth Vision Plan.

3.3(b) Prior to development of a restaurant or other destination commercial use at Mosque Point, ensure that adequate infrastructure exists to support the use, and preserve significant trees on the site.



Mosque Point Park at Lake Worth



Gardens Restaurant in Botanic Gardens, Fort Worth



Restaurant overlooking Lake Carmel, NY

Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.4 Cultural uses should become focal points on Lake Worth and should stimulate redevelopment of the existing Lake Worth Castle and areas around Casino Beach Park. The consultant panel and stakeholders emphasized the importance of creating cultural hubs around Lake Worth. The existing castle is an excellent location for cultural activities. Access to cultural activities near the shoreline could occur by boat as well as by car. Cultural amenities should be incorporated into future development projects around the Casino Beach Park area as well.

Implementation Measures:

3.4(a) Encourage increased cultural use of the lake by offering long-term leases of appropriate City-owned lakefront property to existing and new cultural uses, such as the Hip Pocket Theatre, in accordance with the Lake Worth Vision Plan.



Lake Worth Castle, on the south side of the lake, could house the Hip Pocket Theatre and other cultural uses, or be redeveloped as a Bed and Breakfast



Arts festival on Lake Canandaigua, NY



Music festival on Watts Bar Lake, TN

Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.5 Water-based recreation sites, such as the Lake Worth Boat & Ski Club and the Lake Worth Sailing Club, should be more publicly accessible and should be focal points on the lake for all citizens of Fort Worth. Both clubs have a rich history on Lake Worth. Improving facilities and access to such sites could increase public participation and attract more visitors to Lake Worth.

Implementation Measures:

3.5(a) Encourage increased water-based recreational use of the lake by offering long-term leases of appropriate City-owned lakefront property to existing and/or new recreational uses, such as the Lake Worth Sailing Club and the Lake Worth Boat & Ski Club.

3.5(b) Assess the feasibility of adding new locations and/or enlarging existing water-based recreational facilities, whether managed by public or private entities.

3.5(c) Address opportunities to enhance water-based recreation at Lake Worth in the next update of the Parks and Open Space Master Plan.

3.6 The Boy Scouts could benefit from relocating their Mosque Point camp to the west side of the lake, where they could have better access to the shoreline.

While the Boy Scouts have long had facilities near Lake Worth, they currently lack access to the lake. Relocating the Boy Scout Camp to the west side of Lake Worth could provide significant benefits to the Scouts, including providing opportunities for enhanced facilities and more direct lake access for water-based activities.

Implementation Measures:

3.6(a) Encourage relocation of the Boy Scout Camp to the west side of the lake by offering a long-term lease of appropriate City-owned property, by selling near-lakeshore property to the Boy Scouts, or by a combination of the two options. As noted in Recommendation 3.1(g), ensure that City ownership of the shoreline area is preserved as much as possible in order to protect the alignment of the lakeshore bicycle/pedestrian path.



Lake Worth Sailing Club



Principle Three: Create Lake Worth Regional Park, a linear park that encompasses the lake and provides high-quality recreational amenities and cultural hubs.

Recommendations

3.7 Camping facilities should be available on Goat Island and elsewhere in appropriate locations. Goat Island is only accessible by boat. The island could become a destination spot for boaters, including the neighboring Boy Scout Camp, if camping areas on the island are designated and minimal facilities provided.

Implementation Measures:

3.7(a) Address Goat Island in the next Fort Worth Parks, Recreation, and Open Space Master Plan update by identifying opportunities for its use, including as a remote camping facility, and determining facility needs and maintenance requirements.

3.7(b) Coordinate with the Boy Scouts to determine their interest in using Goat Island as a remote camp, and their capacity to contribute to its development and maintenance as a public permit-only camping facility.



Campgrounds should be available on Goat Island

3.8 Consider developing a limited-duration stay RV park on City-owned property on the west side of the lake. Facilities are not currently available on the lake for recreational vehicle users. Such a facility could provide RV enthusiasts with access to Lake Worth.

Implementation Measures:

3.8(a) Conduct a feasibility study to determine appropriate locations for an RV park.

3.8(b) Determine appropriate Low-Impact Development techniques to require in the design and construction of any RV park near Lake Worth, and describe the techniques in a future update to the Fort Worth Parks, Recreation, and Open Space Master Plan if parkland is identified for RV park use.



Campground at Canyon Lake Park, TX

Principle Four: Connect communities, resources, and amenities with parkways, greenways, and trails.

Recommendations

4.1 Silver Creek Road should be reconstructed as a relatively low speed scenic parkway using context sensitive street design practices.

Silver Creek Road, located on the southwest side of Lake Worth, is currently a two-lane rural road. Silver Creek Road is listed in the City's Master Thoroughfare Plan to be developed as a four-lane divided major arterial roadway. There is currently no funding for the project, apart from the short segment between Brewer High School and Loop 820. Due to current industrial uses along the road, large trucks contribute to heavy traffic in the area and deterioration of the roadway.

The Federal Highway Administration defines **Context Sensitive Solutions** as "a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist."

The consultant panel and stakeholders agreed that improving and increasing the capacity of the road should be a priority, but also recommended enhancements using context sensitive solutions (CSS) and complete street design strategies. The consultant panel emphasized the opportunity to use context sensitive solutions to improve the design of Silver Creek Road, building the road to fit the land instead of altering the land to fit the road. In addition, a CSS design approach to the improvement of Silver Creek Road would allow flexibility in the street's design as it moves from Model Sustainable Community urban centers to surrounding park and open space areas.



Silver Creek Road



Paris Pike Parkway, KY

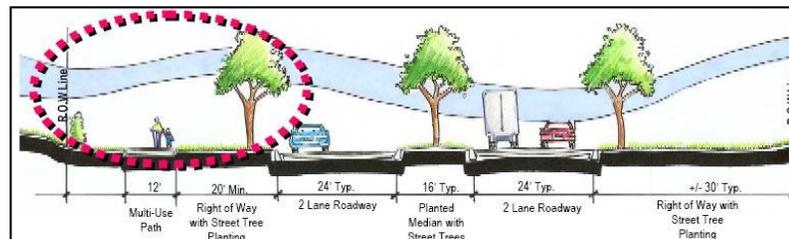


Paris Pike Parkway, KY

Implementation Measures:

4.1(a) Amend the Fort Worth Master Thoroughfare Plan (MTP) map and cross-section schematics to designate and depict Silver Creek Road as a more urban and walkable thoroughfare within the Model Sustainable Community areas, and as a limited-access four-lane divided parkway with a continuous off-street bicycle/pedestrian path outside of the Model Sustainable Communities. Low-Impact Development techniques should be incorporated into the design of Silver Creek Road to effectively filter storm water runoff from the roadway while creating amenity value for the surrounding neighborhoods.

4.1(b) Consider changing the name of the street from Silver Creek Road to Silver Creek Parkway or Lake Worth Parkway upon or prior to reconstruction.



Cross-section diagram of a scenic parkway. The red circle highlights a multi-use path that runs parallel to the parkway.

Principle Four: Connect communities, resources, and amenities with parkways, greenways, and trails.

Recommendations

4.2 Establish F.M. 1886, Confederate Park Road, as a scenic, rural, main street in the Town of Lakeside. The consultant panel had concerns about dividing the Town of Lakeside by the potential future construction of a major arterial through the town. By maintaining the roadway as a two-lane rural road, the town will remain a quaint, lakeside community.

Implementation Measures:

4.2(a) Provide planning information and assistance to the Town of Lakeside, if requested and as staff resources allow, related to ensuring that Confederate Park Road continues to support the principles and recommendations of the Lake Worth Vision Plan and the Town of Lakeside



Confederate Park Road

Principle Four: Connect communities, resources, and amenities with parkways, greenways, and trails.

Recommendations

4.3 Create a lakeshore bicycle/pedestrian path around the perimeter of Lake Worth and connect it to the Fort Worth Nature Center and Eagle Mountain Lake, so as to link them together and provide recreational access to all park amenities. Along the recommended bicycle/pedestrian path, visual and physical access to the lake should be provided wherever possible. Unless prohibited by topographical, property ownership patterns, or other constraints, the path should be constructed immediately adjacent to the shoreline, within 50 feet of the water. The bicycle/pedestrian path should be designed to provide connections between neighborhoods and the many recreation and open space opportunities surrounding Lake Worth.

Implementation Measures:

4.3(a) Determine the most appropriate conceptual alignment of the bicycle/pedestrian path, ensuring that the path alignment remains as close to the shoreline as possible, and create a map of the conceptual alignment in the City's Geographic Information System (GIS). Use this map to identify access issues or constraints due to topography, water features, existing ownership patterns, etc.

4.3(b) Conduct a preliminary engineering study of the bicycle/pedestrian path alignment, including determining the feasibility of linking the trail under Loop 820 by adding a bicycle/pedestrian bridge to the existing structure, and (if use of federal or state funds are anticipated) obtain appropriate environmental clearances to improve the chance of obtaining grant funding for the construction of the path.

4.3(c) As part of the City's Lake Worth Dredging Study and subsequent engineering and implementation, consider using in-lake dredging spoils placement to create one or more naturally landscaped peninsulas or islands linked by bicycle/pedestrian bridges to extend the public's ability to access and enjoy Lake Worth. Also consider directing the bicycle/pedestrian path onto causeways built with dredging spoils to create the sediment settling basins within the lake that will isolate and reduce future dredging needs.

4.3(d) Program and fund the final design and construction of a lakeshore bicycle/pedestrian path.

4.3(e) Work with surrounding jurisdictions to ensure that lake access is efficiently provided to existing and planned neighborhoods around Lake Worth.



White Rock Lake path in Dallas



View of Lake Worth under Loop 820

Principle Four: Connect communities, resources, and amenities with parkways, greenways, and trails.

Recommendations

4.4 Use riparian buffers as greenways with bicycle/pedestrian paths to create connections between new or existing neighborhoods and Lake Worth. Where appropriate, consider locating equestrian trails within riparian buffers also. Riparian buffers can serve a dual purpose by providing greenway connections between neighborhoods, schools, parks, and Lake Worth, while serving as a last line of defense to protect waterways from sediment build up and pollution.

Implementation Measures:

4.4(a) Determine the most appropriate conceptual alignments of the bicycle/pedestrian paths and equestrian trails within riparian buffer areas, and create a map of their conceptual alignments in the City’s Geographic Information System (GIS). Use the GIS to identify access opportunities or constraints due to topography, water features, existing ownership patterns, physical obstructions, etc.

4.4(b) Identify locations where riparian buffers cross dedicated parkland or land owned by the City of Fort Worth and establish appropriate mechanisms for documenting the location of the riparian buffers and their associated bicycle/pedestrian path or equestrian trail conceptual alignments.

4.4(c) Conduct a preliminary engineering study of the bicycle/pedestrian path alignments within riparian buffers that pass through parklands or City-owned property.

4.4(d) Where riparian buffer areas cross private lands, discuss with affected landowners the importance of conserving riparian buffer areas near Lake Worth either in the immediate future or at the time of future development. Also describe the goal of connecting existing and future neighborhoods to Lake Worth by using bicycle/pedestrian paths or equestrian trails within public access easements or rights-of-way.



From “Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways”, United States Department of Agriculture, General Technical Report SRS-109, September 2008, Page 125.



Trinity River Trail

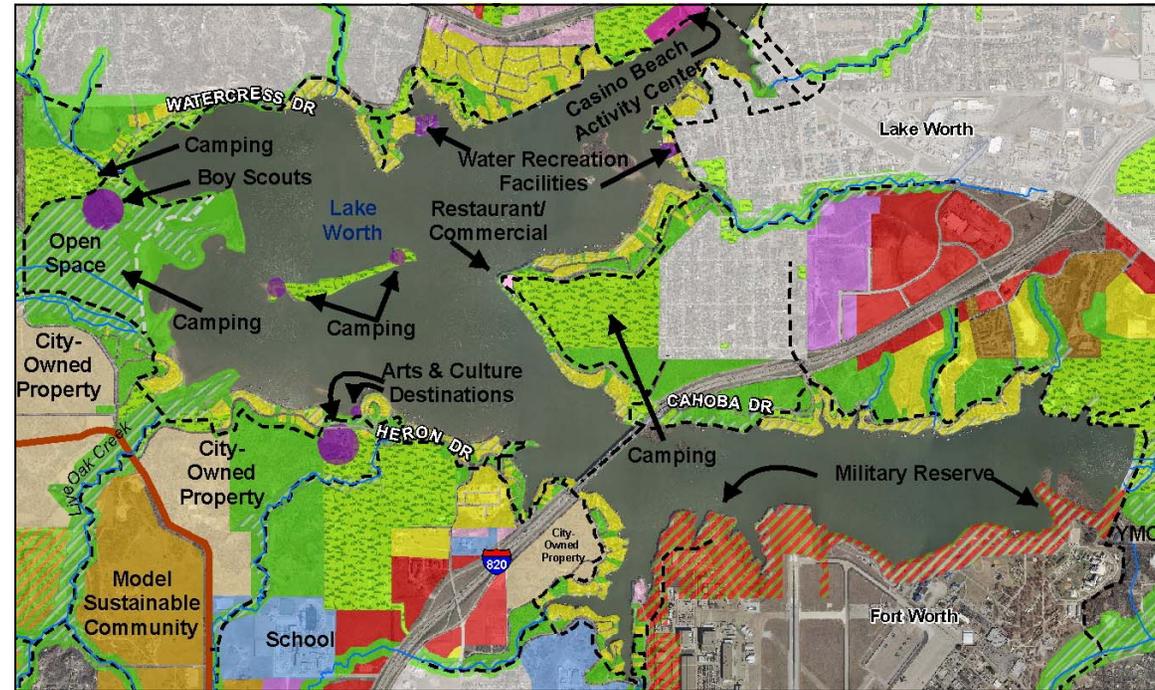
Principle Four: Connect communities, resources, and amenities with parkways, greenways, and trails.

Recommendations

4.4 Use riparian buffers as greenways with bicycle/pedestrian paths to create connections between new or existing neighborhoods and Lake Worth. Where appropriate, consider locating equestrian trails within riparian buffers also. (cont.)

Implementation Measures: (cont.)

- 4.4(e) Amend the Bike Fort Worth Plan to include bicycle/pedestrian paths located within riparian buffer areas near Lake Worth.
- 4.4(f) Program and fund the final design and construction of bicycle/pedestrian paths and, where appropriate, equestrian trails within designated riparian buffer areas.
- 4.4(g) Encourage neighboring jurisdictions to plan, design, and construct bicycle/pedestrian paths within riparian buffer areas that connect their neighborhoods to Lake Worth.



Recommended lakeshore trail map (portion)

Principle Four: Connect communities, resources, and amenities with parkways, greenways, and trails.

Recommendations

4.5 Connect the Trinity River Trail system to Marion Sansom Park. By connecting a Lake Worth bicycle/pedestrian path system with the Trinity River Trails, recreation and open space opportunities surrounding Lake Worth will be accessible to more residents of the region. This key link will connect a regional veloweb and trail system to the Lake Worth Regional Park.

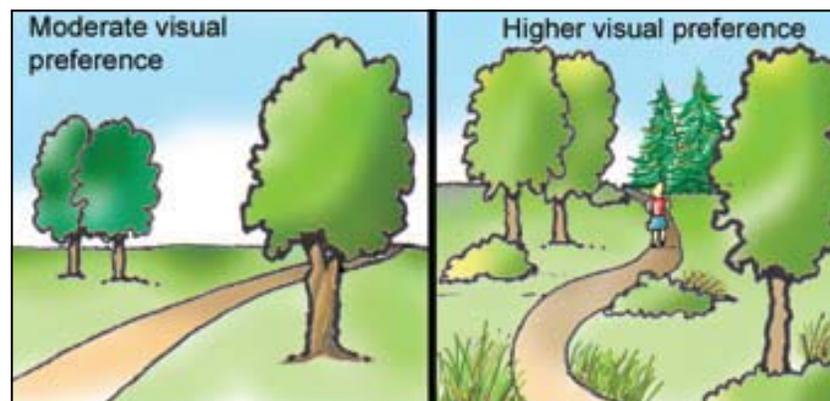
Implementation Measures:

4.5(a) Secure a public access easement, right-of-way dedication, or direct acquisition of land as needed for an extension of the Trinity Trails system to connect with a Lake Worth perimeter bicycle/pedestrian path.

4.5(b) Coordinate with Streams and Valleys, Inc. on a Trinity Trails extension to Lake Worth and, ultimately, to an Eagle Mountain Lake perimeter trail.



Trinity River Trail



From "Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways", United States Department of Agriculture, General Technical Report SRS-109, September 2008, Page 126.