City of Winona
Riverfront Revitalization Plan

August 2007

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1. Introduction

Historical Precedent

Once established as a European immigrant settlement in 1851, the City of Winona prospered through its location and natural setting on the river, surrounded by wooded hills and rolling prairies to the west. Its growth and success was fueled by steamboat and railway transportation, wheat processing and lumber milling. Steamboats and rail lines served to transport both raw materials and finished goods both north and south. Southern Minnesota was one of the greatest wheat growing regions in the country and Winona its main shipping port. Sawmilling was a successful and profitable enterprise that peaked around 1890 and continued to thrive well into 20th century.

Historical development patterns included housing for industrial workers built close to riverfront industry, distinctive neighborhoods with small retail stores, a downtown core containing many handsome commercial structures, and landmark churches to serve the growing population. Thus the riverfront's role was set and unquestioned as a place of industry, commerce and commercial navigation.

One notable exception to the City's grid pattern was the creation of Levee Park adjacent to downtown between Johnson and Walnut Streets. The park was designated as public property in 1896 and was designed in 1903 by City Attorney William Finkelnberg in a formal style typical of the period. With its broad traditional embarcadero, pedestrian promenade, shaded arbor, and large formally-landscaped green space, the park was a refined counterpoint to the character of other marine industrial edges (see Figures 2 and 3).

Upstream of the industrial activity and Winona's emerging downtown, natural river-formations created a protected harbor, which eventually became the focal point for commercial navigation and barge fleeting. Further upstream the river contained multiple channels, islands and backwaters, which historically have been seen and used primarily as wildlife habitat and for recreation. The donations by prominent businessman John A. Latsch of thousands of floodplain and riparian acres to the City and the States of Minnesota and

Figure 1: Winona City and Township, late 1800s

Wisconsin indicates that resource conservation and recreation were already viewed as a public good early in the 20th century.

The City, and particularly downtown, continued to prosper during the first decades of the 20th century, when much of the historic and architecturally significant structures in downtown were built. This success was largely driven by river-related industry and manufacturing and by the City's role as a transportation hub and an agricultural processing center.

Figure 2: Levee Park and downtown, early 20th c.

Figure 3: Levee Park view

both Winona County Historical Society

A Complementary Vision Emerges

The essence of the urban riverfront as a setting for industry, commerce, and commercial navigation has remained unchanged through subsequent eras and gradual changes in land use up to the present. This pattern mirrors that of many other riverfront communities along the Upper Mississippi. The single most powerful change for the City's riverfront was the construction of the flood protection levee by the U.S. Army Corps of Engineers. A temporary levee was constructed in 1965 following a major flood. The permanent levee was completed by the early 1980s. Although it finally offered long-term protection from flooding for residents and businesses, the interaction of the levee, rail alignments, and industrial land uses effectively cut off physical and visual access to the riverfront.

However, within the last several decades, a different role for urban rivers and riverfronts has emerged. River environments have become appreciated and valued for their aesthetic, visual and natural qualities; as settings for recreation and open space; and as prime locations for economic development. Further, environmental and sustainability concerns have increased public awareness of riverfront environments as natural ecosystems in need of preservation and enhancement. Goals of riverfront revitalization include improvements to water quality, storm water management, wildlife habitat, and natural communities. Many communities have wisely made the decision to complement their working waterfronts with additional land uses and activities where appropriate. These decisions make riverfronts into more multi-faceted community assets and offer additional long term economic benefits to the city. And, like other assets, once riverfronts are the beneficiary of initial investment, they need ongoing attention and care to maintain their value.

Thus the basic issue for Winona's riverfront revitalization is *how to invest in the riverfront in ways that will accrue multiple benefits to the City and return the Mississippi River to its central defining role in Winona.*

The Comprehensive Plan and the Riverfront Revitalization Plan

This report is an expanded element of the citywide Comprehensive Plan. The general direction and content of the Riverfront Revitalization Plan is guided by the goals, objectives, and policies of

the Comprehensive Plan, which establishes an overall vision of the riverfront and defines its future role in the City. These goals, objectives and policies are carried through into this plan along with more detailed site-specific strategies for riverfront improvements.

The Vision Statement for the Comprehensive Plan expresses broad community values and aspirations. The statement has direct bearing on the future riverfront, as shown in the following excerpt:

> *"Winona's multi-faceted relationship to the Mississippi River sustains the City's economic system, natural resources, and social and cultural character. The developed shoreline incorporates a vibrant port area and recreational boat docks, as part of a linear open space corridor emphasizing the River's natural systems. Green pedestrian and bike trails connect Levee Park, the downtown, Winona's cultural landmarks, college and university campuses… Aghaming Park, river islands, and restored shoreland areas sustain habitat for native flora and fauna and allow residents and visitors to enjoy Winona's natural history. River and rail connections continue to bring jobs and tax base that diversifies the local economy… Intermodal transportation facilities have expanded, just back from the restored riverbanks and new docking/transfer points along the river are efficient and clean. The core of the City is linked to developing areas along the river…"*

In addition, other Comprehensive Plan components[1] contain goals and objectives linking them with riverfront revitalization:

- Integrate public art and architectural elements into parks and recreational sites, particularly those in the downtown and along the riverfront.
- Develop improved public access to and use of the riverfront while preserving the mixed use heritage of the "working" river.
- Create river oriented recreational equipment and visitor services (biking canoeing, fishing, kayaking).
- Complete a regionally connected trail system.

These all underscore how critical riverfront revitalization is for Comprehensive Plan success.

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[1] Arts and Humanities, Downtown Revitalization, Economic Development, Parks and Open Space, Transportation

2. Current Context, Issues and Opportunities

The River and Its Setting

The Upper Mississippi National Wildlife and Fish Refuge

It is important to understand Winona's riverfront within its context – an eight-mile segment of the Upper Mississippi River, a river segment that is nationally significant both as a commercial navigation system and as an ecosystem, protected in large part by the Upper Mississippi National Wildlife and Fish Refuge. The Refuge, headquartered in Winona, covers 240,220 acres and extends 261 river miles from near Wabasha to near Rock Island, Illinois.[2] It is perhaps the most important fish and wildlife habitat corridor in the central United States, as well as a nationally significant scenic landscape, with broad pools, islands, braided channels, extensive bottomland forest, floodplain marshes and occasional sand prairie, all framed by steep wooded bluffs. These habitats are critical to mammals, waterfowl, songbirds and raptors, amphibians and reptiles.

In 2002 the U.S. Fish and Wildlife Service began preparation of an Environmental Impact Statement (EIS) that weighed several alternatives for the management of the Refuge. In August 2006 a Record of Decision was signed choosing Alternative E, the preferred alternative in the Final EIS, as the Comprehensive Conservation Plan for the Refuge. This alternative seeks to balance the needs of fish and wildlife with the needs of the public for recreation. (See Figure X)

Specific improvements proposed in the Winona area include an access point to the Great River State Trail[3] on Wisconsin Highway 35/54 (trail access is currently about 4 miles east of the Interstate Bridge at the Trempealeau National Wildlife Refuge). Other improvements are discussed below under "Land Use and Development Patterns - Prairie Island Road."

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[2] *Upper Mississippi River Refuge Final Environmental Impact Statement / Comprehensive Conservation Plan*, 2006.

[3] Great River State Trail: This 24-mile rail bed trail winds its way through the Mississippi River bottom lands north from Onalaska through Trempealeau, Perrot State Park, and the Trempealeau National Wildlife Refuge.

The Navigational System

The U.S. Army Corps of Engineers maintains a 9-foot navigational channel within the Upper Mississippi River system, providing a continuous channel for barge traffic through a series of reservoirs created by 29 locks and dams on the Mississippi and eight on the Illinois River. These locks and dams create reservoirs (pools) that sustain most of the floodplain habitat of the Refuge.

Lock and Dam 5A is located at approximately the mid-point of Prairie Island, so that most of the City is adjacent to downstream Pool 6, but with ample access to the upstream Pool 5A. A recent habitat improvement project in Pool 5A, completed in 2003, was the construction of an island complex in Polander Lake to increase aquatic plant growth and provide deepwater fish habitat. Stabilization of Lock and Dam 5A through rock placement on upstream and downstream embankments is scheduled for 2007. The Corps of Engineers is also responsible for maintaining Winona's levee, completed in the 1970s.

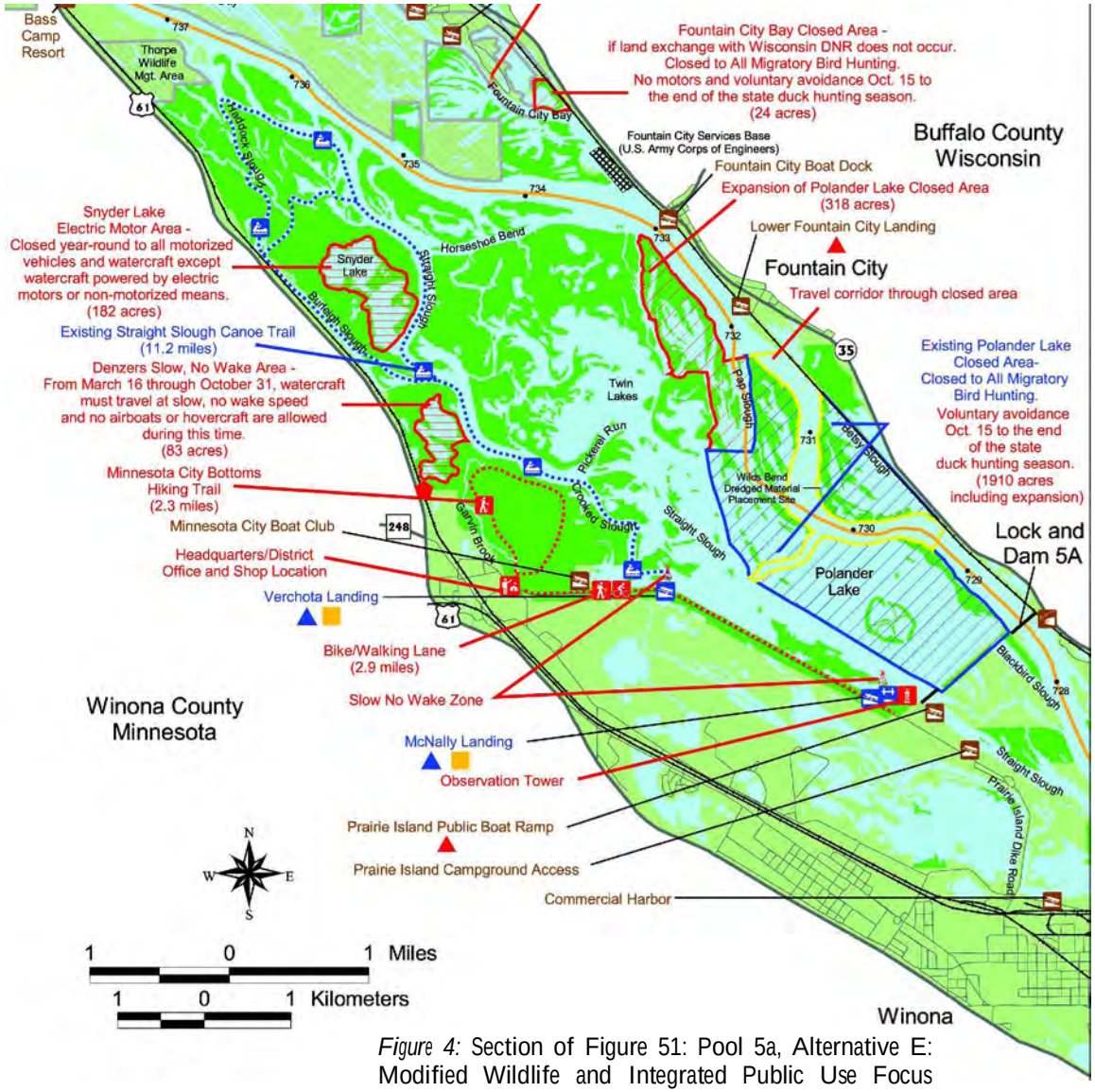

Figure 4: Section of Figure 51: Pool 5a, Alternative E: Modified Wildlife and Integrated Public Use Focus (Preferred Alternative), Comprehensive Conservation Plan, Upper Mississippi National Wildlife and Fish Refuge.

The Port of Winona

The Port of Winona is the second largest commercial harbor in the state on the Mississippi River (after St Paul) and the third largest harbor in the state (after Savage), with seven port terminals serving the river. Typically the Port ships over two million tons of corn, soybeans and fertilizer annually.

The Port Authority of Winona was established in 1968 to maintain and operate the river port and to promote the river and commerce. Today the Port Authority is the facilitator of local economic development activities for the City of Winona. The Port Authority conducted a brief survey in 2004 to measure the economic impact of the Winona Commercial Harbor, with the following findings:

- Over three hundred million dollars are paid annually to customers, predominantly farmers.
- Estimated market value of port property: $3.9 million
- Payroll: 77 Jobs (from the 62% responding) with an annual payroll over $3 million
- Average wage: $39,571
- Local machinery and hardware purchases: $285,000
- Legal, accounting and other services: $142,000
- Electric utilities (Xcel Energy only): $209,000

Land Use and Development Patterns

The riverfront's regional setting has been historically shaped by several strong forces, which are still at work today. The upstream natural environment, shaped by river islands, backwaters, marshes, and canals, continues to offer prime wildlife habitat and outdoor recreation for residents and visitors. Establishment of the Upper Mississippi National Wildlife and Fish Refuge has fixed this segment as a wild and scenic natural environment and a place for low- impact recreation.

Downstream of Lock and Dam 5A, the area transitions to a zone shaped by more permanent use of the land for programmed recreation and housing along Prairie Island Dike and Road.

Further downstream and somewhat inland from the main navigation channel is the district that defines the essential urban character of the City. Anchored by the barge fleeting pond of the Port of Winona, along with several milling and rail transshipment/docking facilities, the next four miles of riverfront are a mixture of urban commercial, industrial and transportation terminal activities. The exceptions to this pattern are Levee Park adjacent to downtown, intermittent private and public marinas/docks, and Lions Park.

These land uses are served by a series of transportation modes including commercial and recreational navigation, railroads, and federal-state-county roadways to serve commercial trucking and automobile use. Minnesota Highway 43 between Interstate 90 and Wisconsin is routed through the City and crosses the river on the Interstate Bridge, connecting downtown, Latsch Island, and Wisconsin Highway 35. This bridge is scheduled for replacement by MnDOT around 2017, and its future structure and approaches could have significant impact on the downtown riverfront.

Figures 5, 6 and 7 summarize current land uses, issues and opportunities along the riverfront. These have been identified through public input and by the citizen leadership committees responsible for guiding the Plan. The illustrations geographically identify concerns that the Riverfront Plan must address and opportunities to which the Plan should attempt to respond. The approximately eight-mile reach of the municipal riverfront is broken into three distinct river reaches: 1) Prairie Island Road, 2) Riverview Drive/Harbor, and 3) Downtown/Industrial.

Prairie Island Road Reach (mile markers 731 to 727)

The island is largely used for outdoor recreation and open space. Lock and Dam 5A is located at the mid-point of the island, separating the City-owned Prairie Island Park from the Upper Mississippi National Wildlife Refuge, which occupies the western half of the island. Refuge facilities include McNally Landing, a public access site with parking, a boat launch and an interpretive panel exhibit. The recently approved Comprehensive Conservation Plan for the Refuge proposes several improvements in this area (see Figure 4):

- An observation tower at McNally Landing;
- A bike/walking lane along the extension of Prairie Island Road, extending from McNally Landing to Verchota Landing, a distance of 2.9 miles;
- A slow/no wake zone throughout the Straight Slough segment between the two landings.

Prairie Island Park, 540 acres in size, occupies much of the peninsula. Facilities include a nature preserve with walking trails south of the road, the public Prairie Island Campground, which can accommodate 200 campsites (110 with electric hook-ups), two picnic shelters, (Kiwanis and Latsch), the Spillway Boat Ramp just downstream from the dam, a public boat dock and swimming beach adjacent to the campground, cross-country ski and hiking trails, a playground, softball fields and volleyball courts. An enclave of private single family housing has been developed at the downstream end of the island and is protected by the westernmost extension of the levee. One critical issue along this stretch is that of permanent seasonal RV camping –

occupants who essentially use their sites for the entire season – and whether this should continue as an acceptable land use.

Figure 5: Existing Land Uses and Development, Prairie Island Road Reach

Riverview Drive/Harbor Reach (mile markers 727 to 726)

This stretch, between Prairie Island Road and the Interstate (Highway 43) bridge, is dominated by the commercial harbor, barge fleeting, grain loading/transshipment activities, and marine, rail, and roadway transportation. Riverview Drive is designed for – and carries – high volumes of truck traffic, which discourages pedestrian and bicycle use of the road. All these transportation elements are compressed along the riverfront and act as constraints to riverfront access from south of Riverview Drive and the creation of a continuous riverfront trail. Major industrial properties include Fastenal, Cenex, R & R Services, Harvest States Coop, and others. The new Minnesota Marine Art Museum introduces a major visitor attraction into this largely industrial port setting and creates a need for connections between it and the related cultural and recreational attractions of Downtown. Adjacent to Riverview Drive are several tracts of vacant and underutilized land that may have development or redevelopment potential.

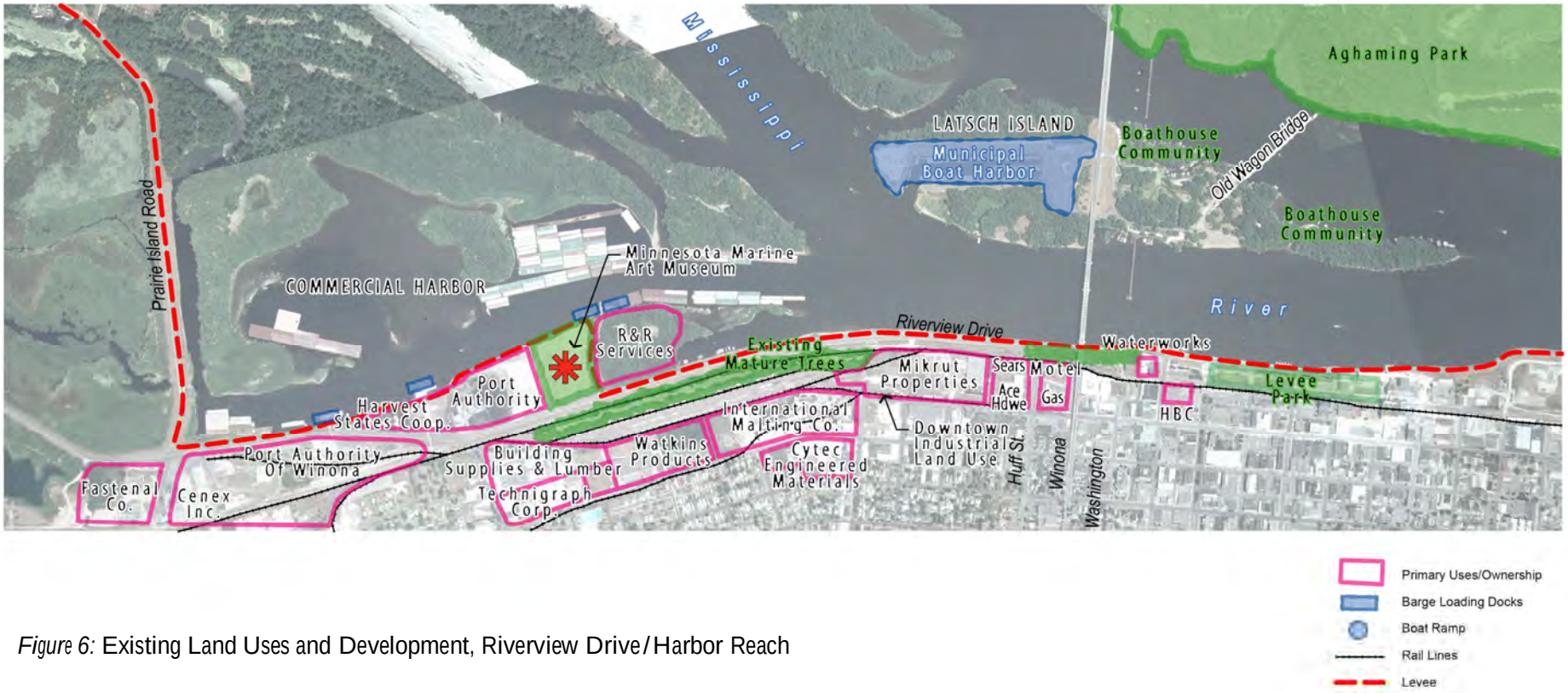

Figure 6: Existing Land Uses and Development, Riverview Drive/Harbor Reach

Downtown/Industrial Reach (mile markers 726 to 723)

This reach can be divided into three sub-areas: the downtown proper, the East End industrial segment, and Latsch Island.

The downtown segment of this reach, with the exception of Levee Park, is disconnected from the heart of downtown, due to the presence of the active railroad storage tracks, industrial complexes, and the levee itself. Bay State Milling and Xcel Energy are the major downtown industrial and utility uses. Other large uses include lumber yards, a printing plant and the HBC headquarters (telecommunications). These uses are likely to remain, but interspersed along them are several redevelopment opportunities, primarily for housing and mixed uses, discussed in the Framework Plan section of this report.

East of Hamilton Street, manufacturing, grain and bulk commodity storage and shipping dominate the riverfront and are expected to remain, as they are dependent on water, rail, and road transportation modes. These land uses and the water, rail and roadway transportation modes significantly limit access to the river from adjacent residential neighborhoods and parks. The exceptions to this pattern are Lion's Park and the East End (Small) Boat Harbor. Both provide public access to riverfront land for recreation and boat launching. The few parcels of vacant land along this stretch have been claimed by local manufacturers looking for business expansion. These forces will keep the riverfront character here in industrial use for the foreseeable future.

Latsch Island is a unique sub-area within the larger river reach. Divided in half by the Interstate Bridge, its western half is the site of the Winona Municipal Harbor (Dick's Marine), which provides over 200 boat slips, 24 docks, a store and related services. The marina is operated by Dick's Marine under a lease agreement with the City. The eastern half of Latsch Island is largely public parkland, but much of the shoreland is the site of the City's boathouse[4] community. After some years of controversy between state and city agencies and residents, state legislation was passed in 1997 allowing existing boathouses to remain and be repaired or replaced. A City ordinance (Chapter 28A) specifies permitted locations for boathouses and imposes construction, maintenance and sanitation requirements. There are currently 101 licensed boathouses on Latsch Island and 20 at the East End Boat Harbor, as well as some boat storage structures along the Riverview Drive shoreline. Most boathouses are used as seasonal homes.

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[4] "Boathouse," as defined by state statute, is essentially a floating structure designed for human habitation which is not operable under its own power; while a "houseboat" is an operable boat designed for permanent housing. The state statute allows boathouses in existence prior to January 1, 1997 in areas of historic use to remain in place and be repaired or replaced. See Minn. Statute 103G.245, Work in Public Waters.

Figure 7: Existing Land Uses and Development, Downtown/Industrial Reach

3. Goals and Objectives

The following broad goals are intended to identify the central priorities of the Riverfront Plan. The objectives are more specific, and relate to priority locations or public improvements. Some of these are also referenced in other sections of the Comprehensive Plan. The following section, the Framework Plan, applies these goals and objectives, with specific recommendations for improvements along the entire riverfront.

1. Mix of uses. Encourage a wide range and integrated mix of industrial, retail, restaurant, park, entertainment and residential uses along the riverfront. The following general priorities are established for riverfront uses, with the understanding that these will vary depending on the character of each river segment:

1. Parks and protected open space;
2. River-related industrial uses that take full advantage of their location;
3. Housing and related uses that capitalize on the riverfront's amenities while providing for public access.

2: Improve access. Improve visual and physical access to the River and the riverfront's relationship with adjacent areas of the City.

Objective:

Create the Winona Waterfront Trail and connecting streets and river access points as an attractive, safe and accessible bicycle, pedestrian and paddling network that will enable people of all ages to access uses on the Mississippi River.

3. Provide recreation options. Provide river recreation options along the Mississippi River shoreline to enhance community livability and attractiveness to tourists.

Objectives:

1. Develop Prairie Island and Latsch Island as regional recreation and tourism attractions, focusing on attractions that will generate the highest returns on costs and produce the lowest impact on community assets and resources. Examples of attractions could include canoe and kayak rental, boating tours, fishing piers, birding/hiking paths, dog park/trail system, etc.
2. Redesign and improve Levee Park as a gateway to Downtown Winona. Preliminary criteria for the redesign of the park are outlined in the Downtown Revitalization Plan.

The park should be enhanced as permanent open space, designed to attract day use boaters as well as other visitors.

4. Maintain current assets. Maintain and improve upon Winona's existing industrial, business and goods-transportation assets on the River while improving the River ecologically.

Objectives:

1. Improve the aesthetics of industrial parks and rail yards.
2. Work with MnDOT and other agencies to improve access and traffic flow along the developed riverfront.
3. Minimize the number of physical and aesthetic obstacles between riverfront areas and adjacent areas of the City.
4. Seek opportunities to acquire any vacant or abandoned buildings for redevelopment, to increase tax base and clean up the industrial parks.

4. Framework Plan

This section outlines the key policies and proposed improvements that together constitute the Riverfront Framework Plan. "Policies" are general in nature and apply across more than one location or riverfront reach. Proposed improvements are site-specific, and are generally shown on the figures in this section.

Citywide Land Use Plan

The Comprehensive Plan develops nearly twenty categories to describe proposed future land use. This land use palette, greatly expanded from that of previous plans, reflects the changing sophistication to understand and guide land use. These categories are used to plan land use in a more fine-grained manner, with sensitivity to 1) contemporary (re)development practices, 2) public interest in specific activities at the riverfront, 3) changing economic/real estate markets, and 4) existing site conditions. The Comprehensive Plan also establishes overall intensity of land use for each category, acceptable densities, and requirements which must be met for design or site plan approval.

The Future Land Use Plan, Figure 8, shows that nearly half of the land use categories identified citywide occur along the riverfront.[5] Riverfront land use spans the complete range from natural wetlands and open space to the heaviest industrial use category. The Downtown Mixed Use classification covers most of the central downtown core. This category recognizes the existing diversity of retail, office, government and entertainment uses in this area, and encourages housing that takes advantage of riverfront amenities, particularly a redesigned Levee Park, and cultural facilities. The Downtown Fringe classification is proposed for the blocks west of downtown between Olmsted and Winona Street. This is a change from previous industrial use to one that supports downtown's central core but with lower densities.

Lions Park and the East End Boat Harbor remain as public open space counterpoints to the land remaining in Industrial Riverfront use.

A key component of implementing the land use plan is updating the City's existing zoning ordinance, much of which is unchanged since the 1960s, and would need to undergo significant modernization to match the land use plan. (Almost all the land fronting the river, with the sole notable exception of the Prairie Island housing, is currently zoned for General Manufacturing and Light Manufacturing.)

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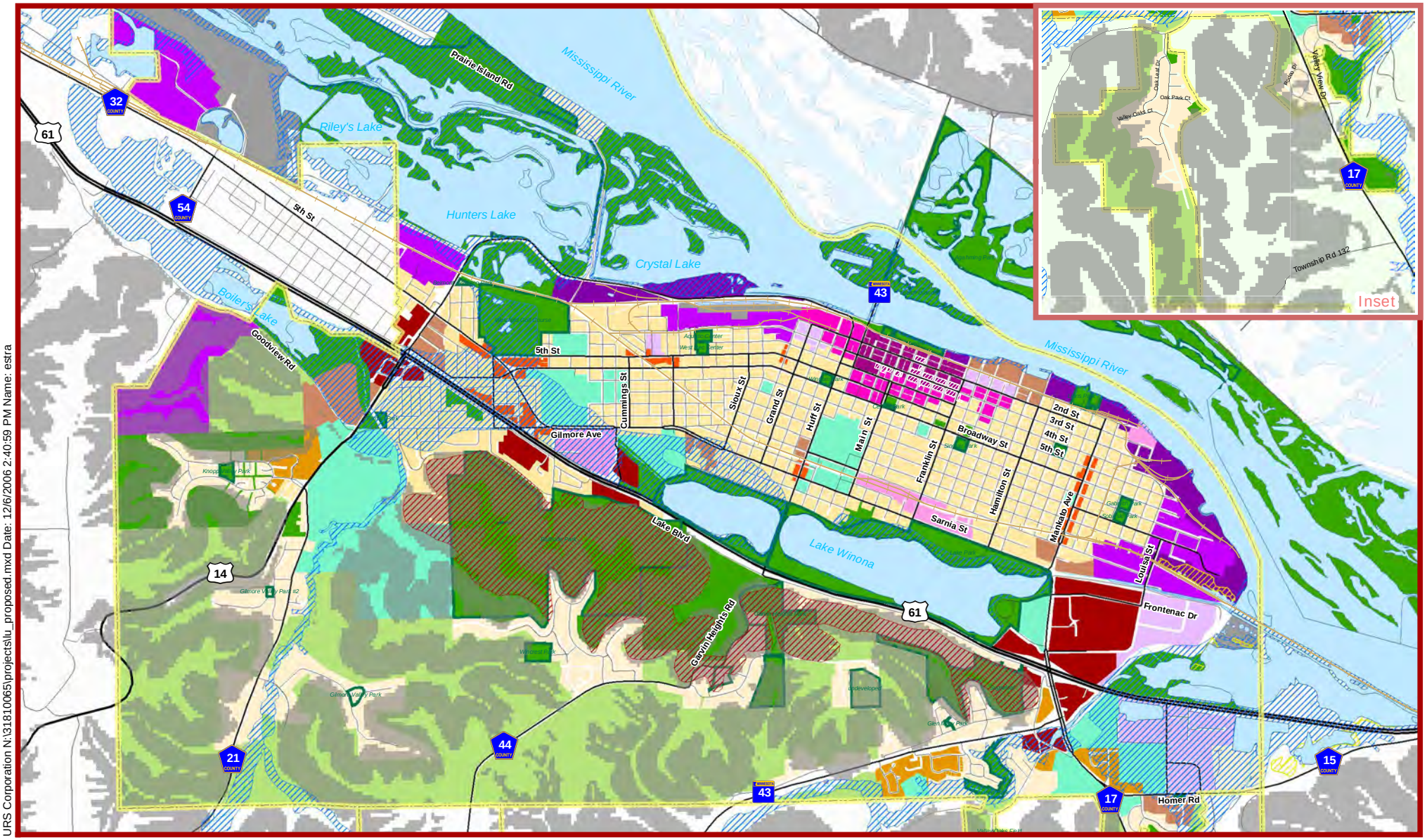
[5] Downtown Fringe, General Industrial, Riverfront Industrial, Transportation/Utilities, Low Density Residential, Urban Residential, Public/Open Space



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CITY OF Winona MINNESOTA

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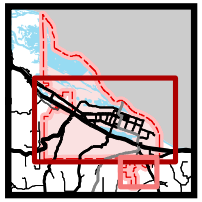


Land Uses

- Downtown Mixed Use
- Downtown Fringe
- Neighborhood Commercial
- General Commercial
- Limited Industrial
- General Industrial
- Industrial Riverfront
- General Mixed Use
- Transportation and Utilities
- Limited Residential
- Low Density Residential
- Traditional Neighborhood
- Mixed Residential
- Urban Residential
- Public and Open Space
- Semi-Public/Institutional/Education
- Recreational Riverfront
- Park

Sensitive Resources Overlay

- Wetlands
- High Quality Native Plant Communities
- 100 year floodplain
- Slopes > 30%

Historic Resources Overlay

- Historic District

Figure 8

Future Land Use Plan

June 2007

Miles 0 0.5

Data Sources: URS

Riverfront Designations

Because the riverfront breaks naturally into the three primary segments identified previously, these have been use to organize the analysis, planning and design. Land within each segment is further classified into four districts or activity zones, which are similar to but more detailed than the land use classifications shown on the Land Use Plan. The designations are:

- Natural/Open Space
- Urban Recreation
- Urban Transition
- Urban Diversified

Each activity zone has specific priorities for land and water uses, both primary and secondary. Existing land uses would continue to be permitted, and are likely to remain in place until such time as market conditions and private investment result in a change. The City will encourage gradual land use changes consistent with these designations through zoning changes, other land use decisions, and public improvements.

Riverfront Districts and Primary Land Uses	Priorities	Image Examples
A: Natural/Open Space: wetlands, wildlife habitat, outdoor recreation Examples: • Upper Mississippi National Wildlife Refuge – McNally Landing • Aghaming Park • Prairie Island Park open space and natural areas	Natural resource protection Pedestrian land access Non-motorized (paddling) water access 	
B. Urban Recreation: active recreation, camping, marinas and dockage Examples: • Prairie Island Campground • Municipal Harbor • Small Boat Harbor (East End)	Pedestrian, bike and limited vehicular land access, motorized and non-motorized water access. Remove or minimize rail conflicts, emphasize natural resource protection and seasonal/visitor activities. 	

Riverfront Districts and Primary Land Uses	Priorities	Image Examples
C: Urban Transition: commercial, recreational, housing Examples: • Downtown riverfront/Levee Park • Houseboat communities • Prairie Island housing	Pedestrian, bike and vehicular land access, minimize rail conflicts, motorized and non-motorized water access 	
D. Urban Diversified: industrial, commercial, utilities, with limited recreational and other uses. Examples: • Commercial Harbor • Industrial Port facilities • Major industrial uses	All modes transportation; rail may take precedence over vehicular access; pedestrian/bike access along shoreline or closest alternate route 	

Transportation and Access Improvements

Figure 9 shows opportunities to modify railroad operations and car storage, primarily along the industry tracks serving riverfront customers. These improvements were originally identified in MnDOT's *Winona Intermodal Study* (2002) and subsequently proposed as part of a recent referendum ballot initiative, which was not approved by voters in 2006. However, it will likely be necessary to prioritize and gain approval for these improvements in order to achieve the goals of the Downtown and Riverfront Revitalization Plans.

Since manufacturing and industrial uses will continue to be part of a working waterfront and for land immediately behind it, defining and providing for truck access to these uses will be necessary. Second Street from the East End to Huff Street will continue as a designated route for trucks. Of long range concern to river-related transportation is MnDOT's planned upgrading, after 2017, of the Interstate Highway 43 bridge from 2 lanes to 4 lanes. How this structure is planned, designed and constructed will have lasting and significant visual effects upon downtown and its portion of the riverfront.

Citywide trails and bikeways

Trails for pedestrian and bicycle use are a major feature of the Riverfront Plan. Figure 10 illustrates the overall planned system of regional and citywide trails and bikeways. The Waterfront Trail will be the primary component of the network, providing continuous access along the length of the riverfront. Leading to this trail, a series of "riverway streets" is proposed to increase vehicular, bicycle and pedestrian access to the river.

Waterfront Trail. The centerpiece of the riverfront plan is the development of the Waterfront Trail, envisioned as a continuous multi-purpose riverfront trail following or paralleling the levee, designed for non-motorized use: pedestrians, bicycles, inline skates and similar modes. The trail has been in the planning stages for several years, and multiple easements have already been acquired. The design of the trail must address a variety of different shoreline conditions and existing access barriers, and therefore varies from segment to segment, as detailed in the following section. Specifically:

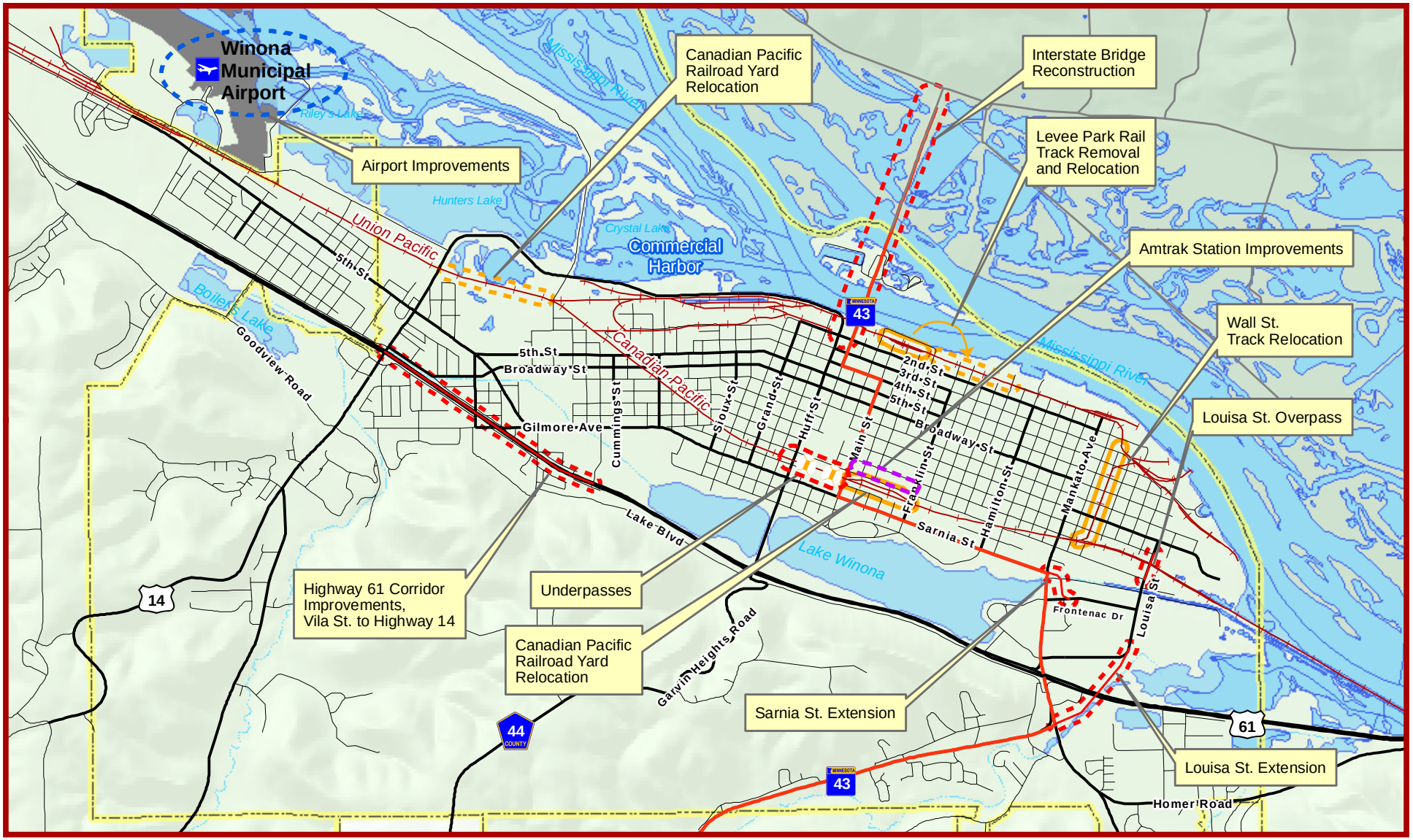
- The trail should be integrated with the potential downtown conference/performing arts center and with existing trails at Levee Park.
- The trail should be designed to avoid conflicts with port and dockage facilities.
- The trail should follow parallel routes where direct shoreline access is unavailable, but direct access should remain as a long term goal.

- The trail is part of a citywide system, as shown in Figure 10, with future connections to Wisconsin's Great River Trail and to the Root River Trail system, with the closest access point in Rushford.

Riverway Streets. A series of riverway streets – signed routes geared toward bicycle and pedestrian as well as vehicular use – are shown connecting neighborhoods, civic landmarks and parks/open space to the riverfront. These streets would be characterized by increased street trees, pedestrian scale lighting, increased sidewalk width or on-street trail designations, and clear way-finding signage to orient people to the river. Suggested streets are: Johnson, Walnut, Liberty, Zumbro and Wall (following removal of the spur track).

Water Recreation Trails. The informal canoe and kayak routes that extend up- and downstream from Prairie Island Park, Latsch Island and the East End Boat Harbor should be restored and publicized. These routes, formerly mapped and signed, extend from Prairie Island Park downstream to Aghaming Park and upstream to Verchota Landing.

Water recreation trails and landings, shown in Figure 11, would function as a natural extension of the recreational trail system, giving visitors an intimate experience of the river's ecology and wildlife habitat. The trail system could be serviced by private outfitters offering rental, shuttle and other trip planning assistance to visitors. Canoe routes exploring river backwaters should be well signed for use by novice paddlers.



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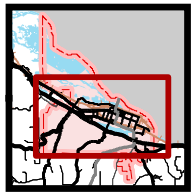
Map Location



Legend

- Pedestrian Underpass
- Existing Rail Track Location
- Proposed Track Location
- Proposed Road Improvement

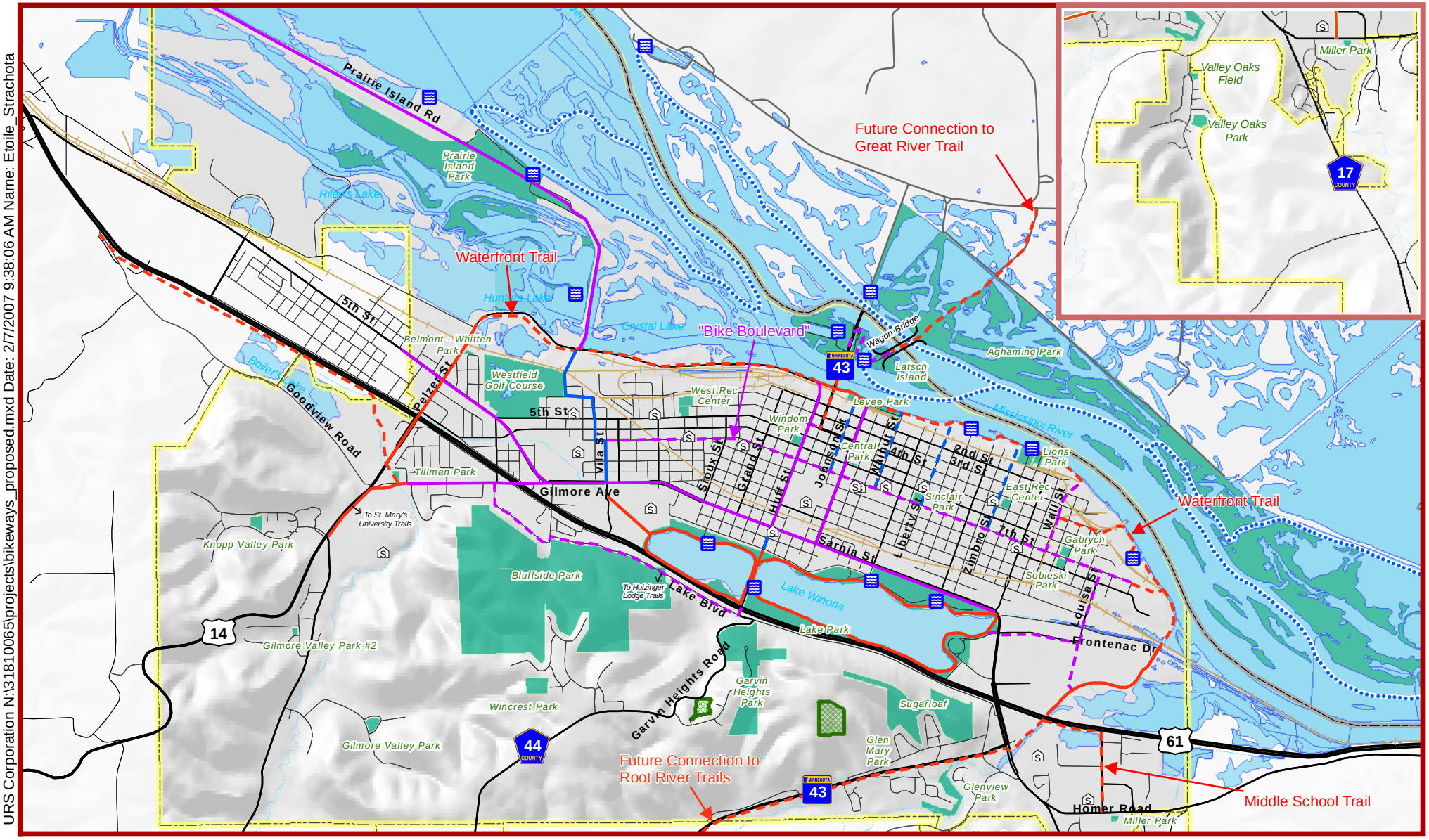
Data Sources: City of Winona, MnDOT, ESRI, URS

Figure 9

Road and Rail Improvements

August 2007

Miles 0 0.5



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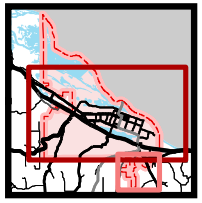
CITY OF Winona MINNESOTA

Map Location



Legend

- Water Access
- Park
- Open Space
- School

Existing Trails

- Multi-Purpose Trail
- Bicycle Lane / Shared Shoulder
- Signed Bicycle Route

Proposed Trails

- Multi-Purpose Trail
- Bicycle Lane / Shared Shoulder
- Signed Bicycle Route
- Water Trail

Figure 10

Future Trails and Bikeways Plan

June 2007

URS

Data Sources: City of Winona, MnDOT, ESRI, URS

Miles
0 0.5

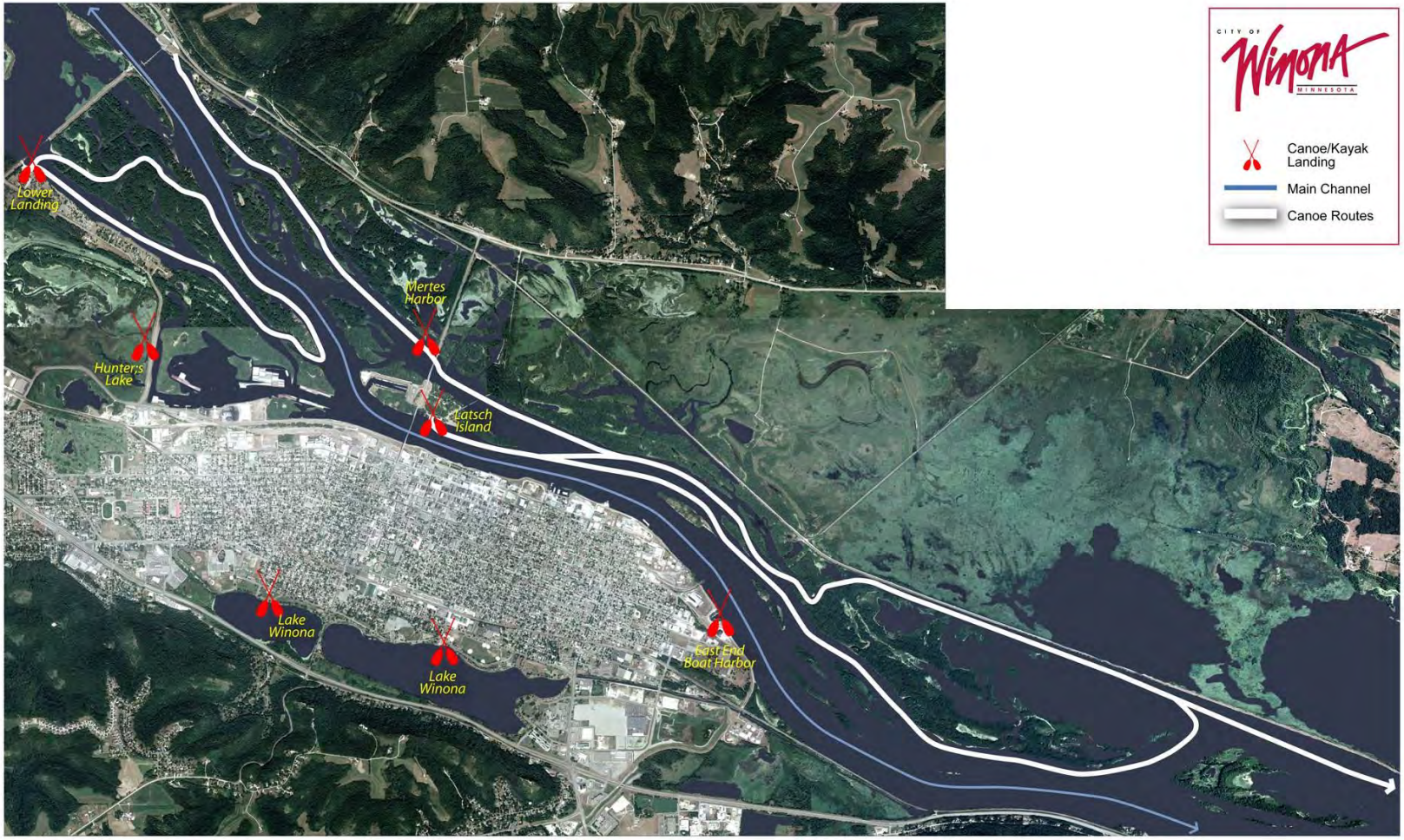


Figure 11: Canoe/Kayak Landings and Water Trails

River-Related Park Improvements

The Parks and Recreation Section of the Comprehensive Plan discusses parks as a citywide system. The following recommendations pertain specifically to high-priority improvements to specific riverfront parks:

Aghaming Park: Increase cooperation with state and federal agencies. Much of the river corridor is a 'patchwork' of state, federal and local jurisdictions and authorities, including the U. S. Fish and Wildlife Service, the Army Corps of Engineers, the Minnesota and Wisconsin Departments of Natural Resources, the City, Winona County and Buffalo County, Wisconsin. This situation produces overlaps, gaps in protection, and occasional conflicts. For example, the City-owned Aghaming Park is located in Wisconsin and falls under both Buffalo County and Wisconsin Department of Natural Resources authority, making enforcement and management by the City very difficult. The City should initiate discussion with the U.S. Fish and Wildlife Service regarding a management agreement for Aghaming Park, allowing it to be managed in a manner consistent with the Upper Mississippi National Wildlife Refuge and the adjacent Trempeleau National Wildlife Refuge.

Latsch Island: Define public and semi-private use areas. Define and demarcate public and private (boathouse) parts of the park with signage, road improvements, and designated visitor parking and activity areas. Incorporate the (privately managed) Municipal Harbor as part of the park. Continue to work with the boathouse community to ensure that visitors feel welcome in designated areas.

Prairie Island: Revise management policies to specify short-term use of the campground, rather than the current pattern of permanent seasonal use. Emphasize the natural and scenic qualities of the park and link it more closely to the National Wildlife Refuge facilities nearby. Proposed improvements include moving the picnic area west of the campground closer to the river, moving tent sites further away from the river, and improving pedestrian paths throughout the park.

Levee Park: Plan for a comprehensive redesign of this central downtown park. Ample public input throughout the planning process has highlighted concerns that Levee Park, particularly the lower level, is a harsh and uninviting environment. It is well suited to withstand flooding, but has never been the type of signature waterfront park many would prefer to see at this location. The Downtown Revitalization Plan discusses goals for the redesign process, but also notes that additional study and public involvement would be needed.

Segment Plans

The following text and graphics illustrate the riverfront classifications and proposed improvements for each riverfront segment.

A

B

C

Prairie Island Road Reach

Fig. 12 illustrates the plan for this segment. Much of the existing land use is retained to reinforce and preserve the area's open space and natural habitat qualities (picture A). It is recommended that the City phase out the permanent seasonal recreational vehicle (RV) use of the Prairie Island Campground. The City would increase the numbers of summertime recreational visitors it could attract if shorter time limits were used to turn over the sites (picture B). These activities are connected by a continuous bike, rollerblade and pedestrian trail on either side of Prairie Island Road and through the campground sites along the river, and providing access to the Upper Mississippi Wildlife Refuge upstream and downstream to the City.

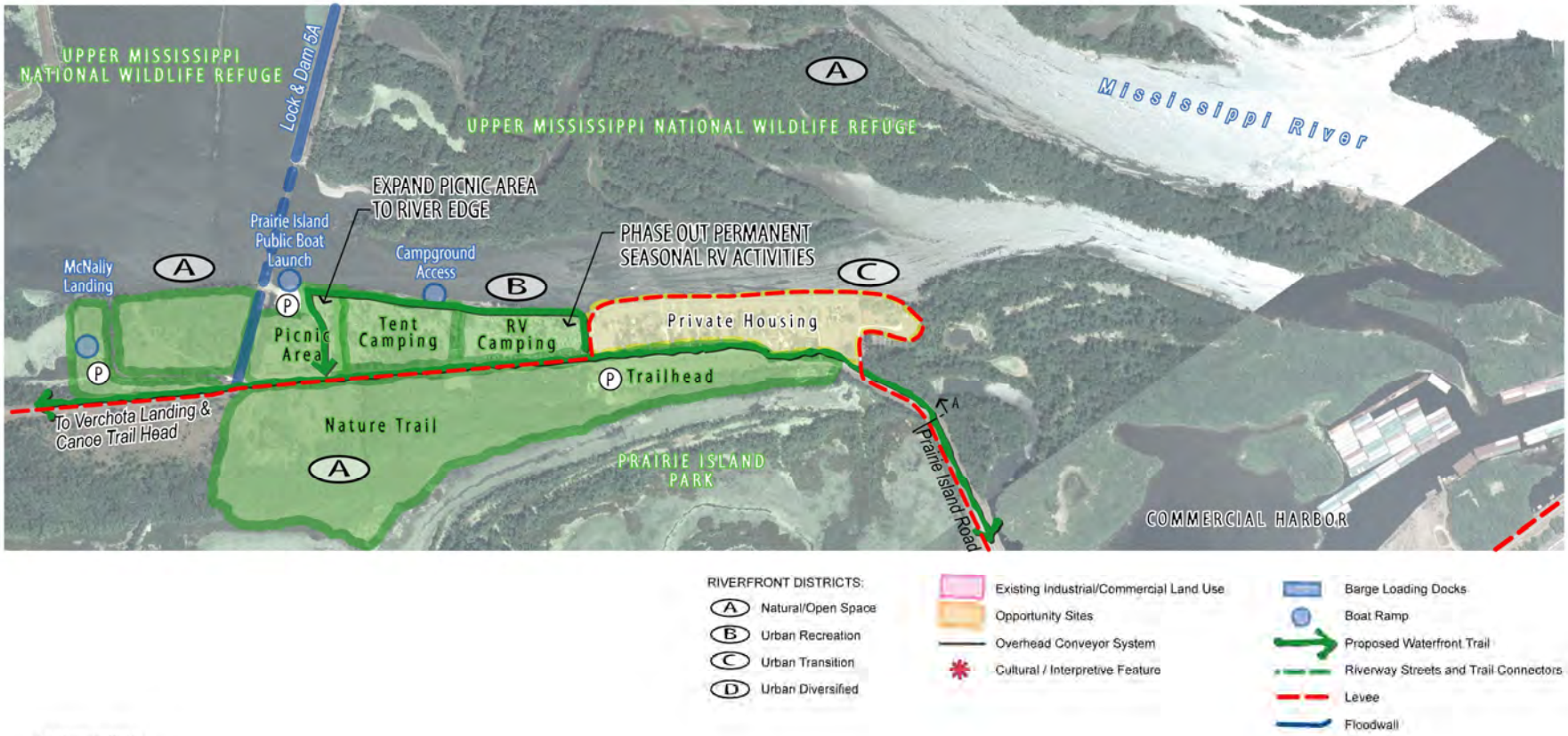


Figure 12. Prairie Island Road Reach Improvements

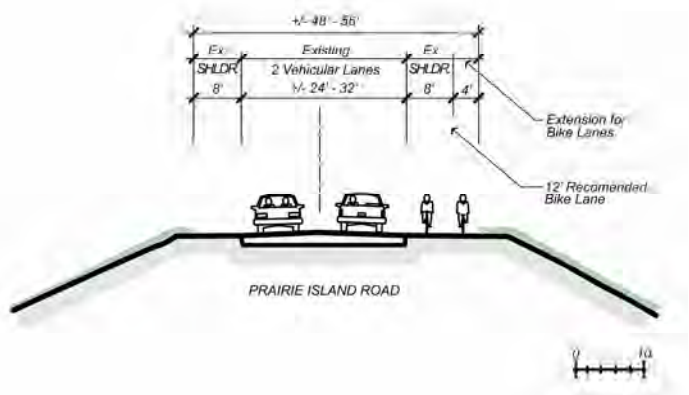


Figure 13. Prairie Island trail cross-section

The trail utilizes the existing levee structure on Prairie Island Road (picture C and Figure 13) and can be constructed with relatively inexpensive methods through the campgrounds where it would be susceptible to flooding.

Riverview Drive/Harbor Reach

Fig 14 illustrates the next segment downstream. Most of the existing industrial and transportation land uses are likely to remain, reinforcing the district's primarily industrial identity, with the notable exception of the Minnesota Marine Art Museum (picture D) and the historic commercial craft planned to be moored at the river's edge.

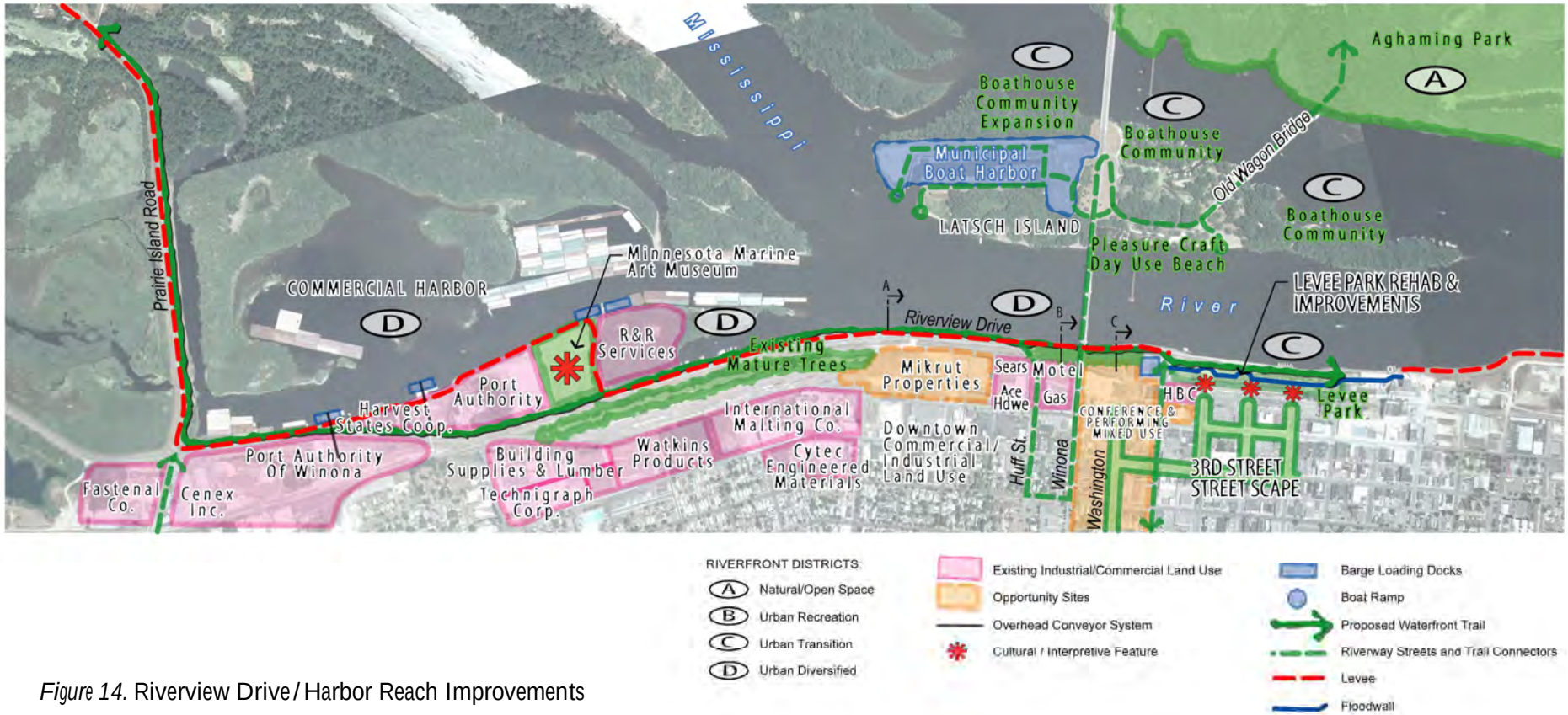


Figure 14. Riverview Drive/Harbor Reach Improvements

D

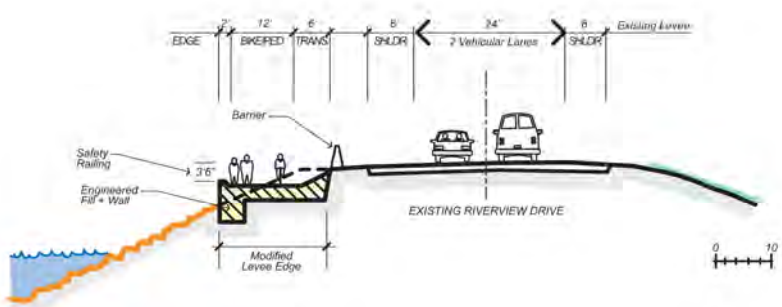


Figure 15. Riverview Drive trail, cross-section A

The portion that poses the greatest design challenge for construction of the Waterfront Trail is along Riverview Drive between its intersection with Prairie Island Road and Huff Street. The Drive is atop the levee at this point with travel lanes constructed close to the riprap embankment and minimal shoulder. It is heavily traveled with private vehicles and commercial truck traffic. Figure 15 illustrates the cross- section A at Riverview Drive. The river side of the road and levee edge are modified with an engineered retaining wall and fill at a lower elevation than that of the existing road. A continuous crash barrier needs to be constructed as a safety separation between the shoulder and the trail. On top of the modified edge is a transition embankment (minimum of 6') to the trail elevation. An absolute minimum of 12 feet is recommended for the surface width along with a safety railing at the edge. The drawing also shows an approximate two-foot edge strip as a "shy" distance from the retaining wall edge to the trail surface.

E

Once the trail passes Huff Street, site conditions change significantly. Picture E, below the Highway 43 bridge, illustrates the potential to improve the trail surface. Existing levee and landscape conditions allow for a broad widening here with the potential to achieve a wider trail than the 12' minimum recommended. This is particularly important for this parkland/open space zone to accommodate increased use from major visitor attractions. This segment can also be expected to handle both recreational users from the bridge and downtown who will be entering the Waterfront Trail via Huff Street.

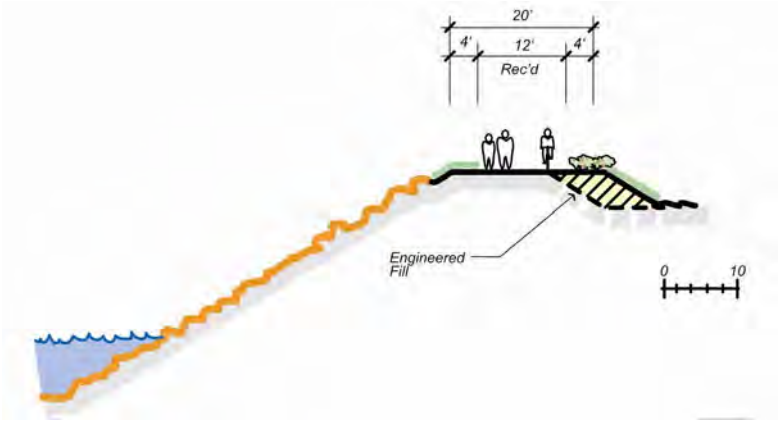


Figure 16. Trail cross-section B at Highway 43 bridge

Downtown/Industrial Reach

The downtown waterfront district east of the bridge has been identified in the Downtown Revitalization Plan as a unique redevelopment opportunity site. It represents the single best opportunity to construct a major year-around riverfront visitor attraction. The proposed conference and performing arts center is conceived to extend out over the rail tracks and physically connect with the Trail via an elevated outdoor plaza. Washington Street in this district provides a landscaped open space as a setting for the County Courthouse and as a pedestrian connection to Winona State University. Johnson Street is conceived as a riverway street with on-street bike lanes, diagonal parking, wayfinding signage and enhanced street trees.

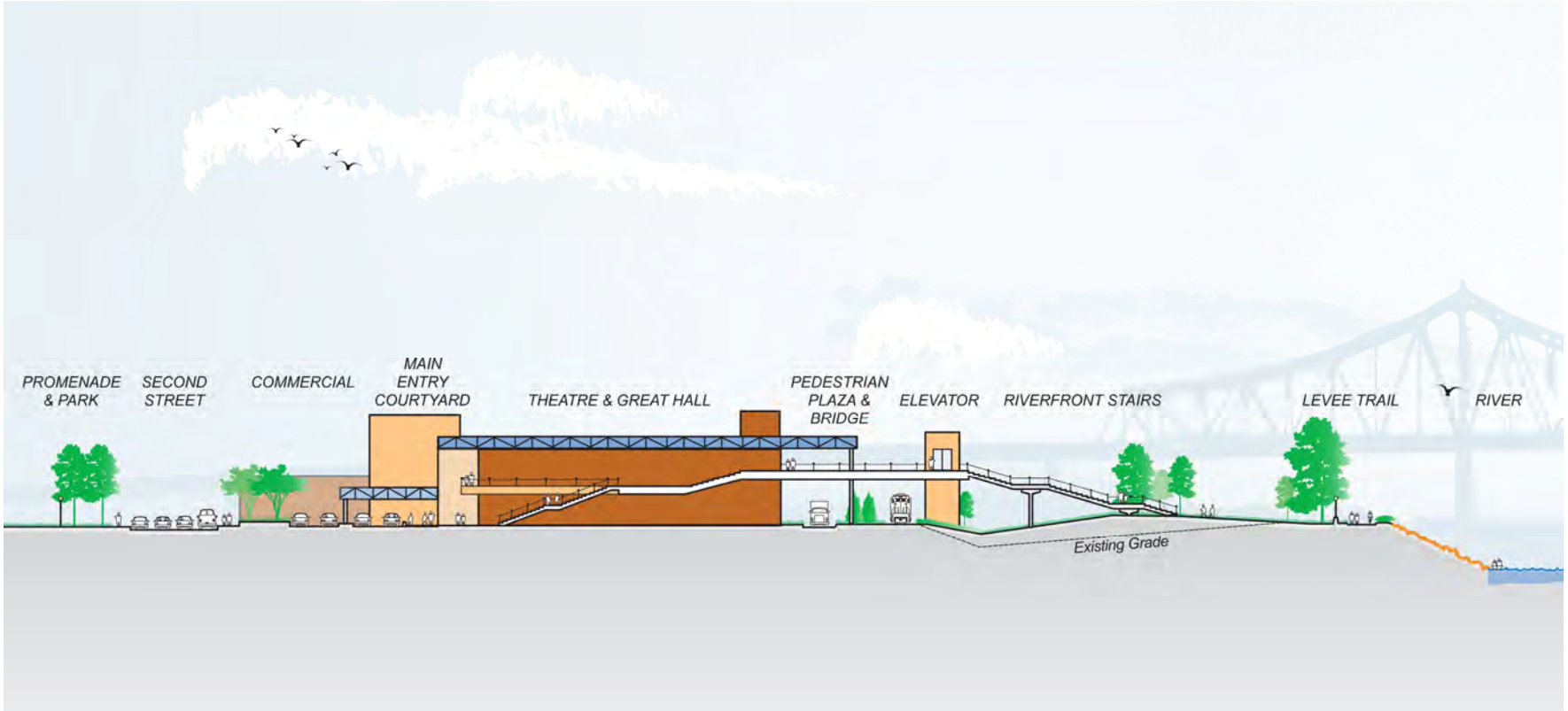


Figure 17. Trail cross-section C at proposed conference/performing arts center site east of Highway 43 bridge

Figure 18 illustrates the remaining portion of the Waterfront Trail as it traverses downtown, connects redeveloped land uses with existing uses, departs the levee top and is routed behind Terminal Services and Winona River and Rail, returns to the levee before it circles around the East End Harbor then curves inland connecting to Louisa and Wabasha streets. The red line identifies where flood walls have been constructed in lieu of earthen levees. The wall at Bay State Milling has a flood gate for access to their commercial shipping dock. The Winona Yacht Club marina also uses a floodwall to separate river elevation slips and boat mooring from related boat repair and warehousing activities. A flood gate here provides vehicular access and boat launch/lifting services.

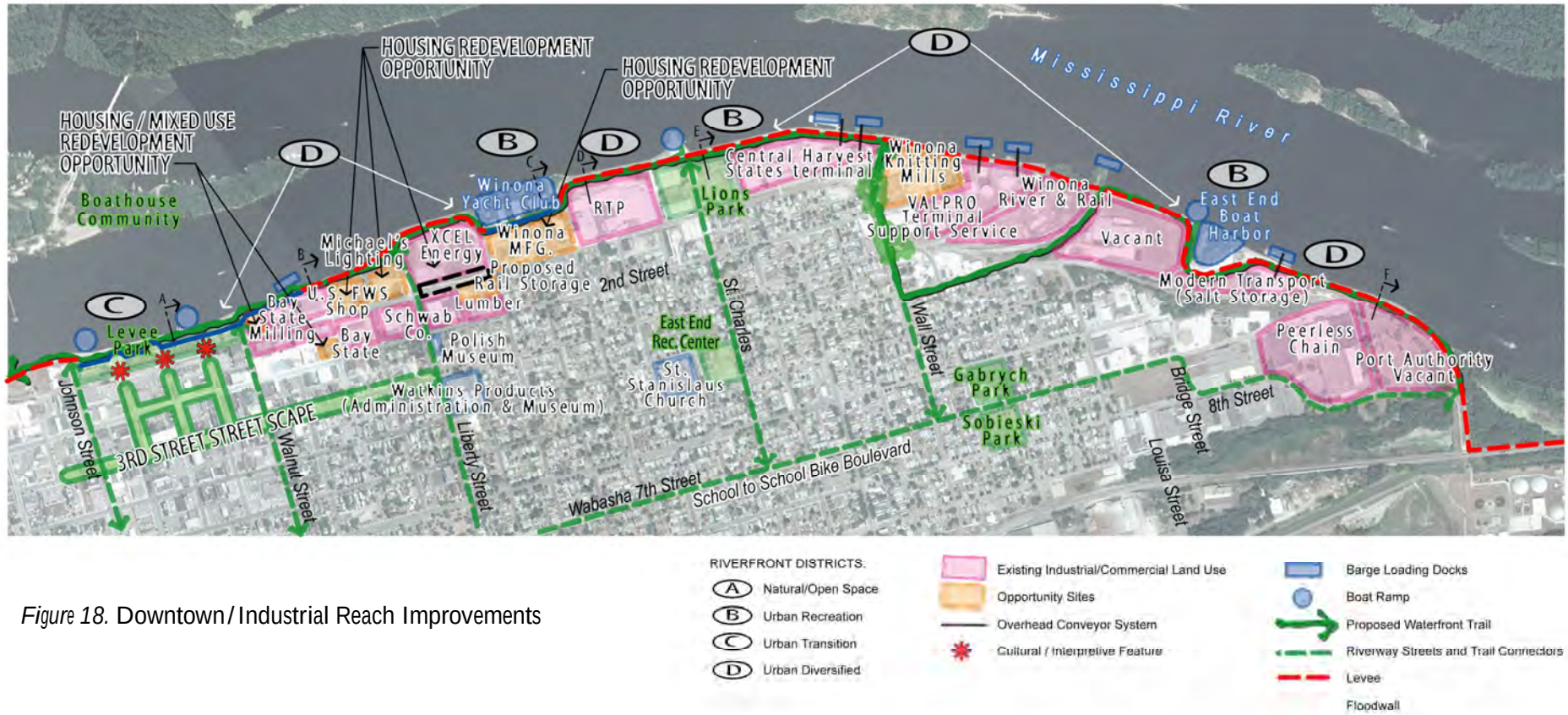


Figure 18. Downtown/Industrial Reach Improvements

F

Picture F is a downstream view of Levee Park showing existing conditions from the river wall/promenade at the recreational craft docks, vehicular access and parking, the flood wall, and the upper park.

Figure 19 shows some initial suggestions for improvements, particularly below the flood wall, that could be redesigned to create a more appealing park environment. Admittedly, redesigned improvements with different surface materials, lighting, and landscaping may be more susceptible to flood damage and have higher maintenance costs. As discussed in the Downtown Revitalization Plan, the redesign of Levee Park will require more detailed study and additional public input.

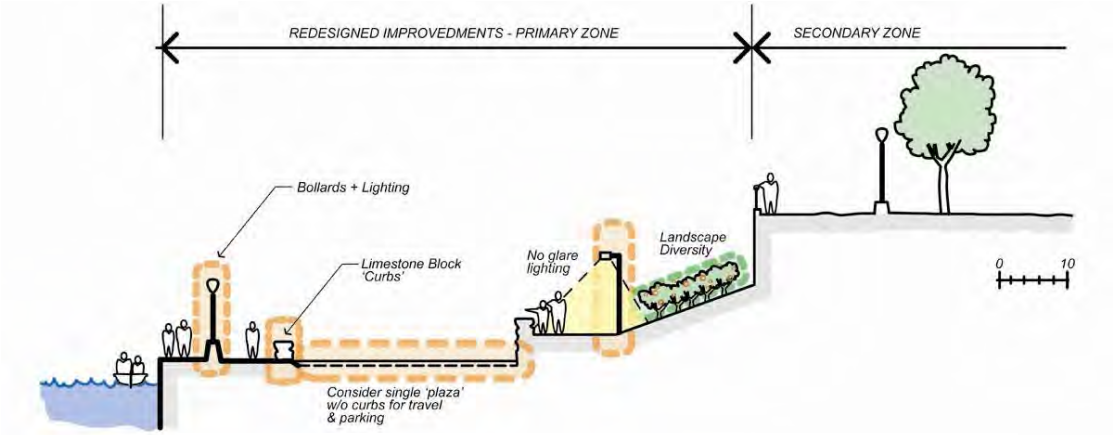


Figure 19. Levee Park cross-section concept

G

Existing levee conditions at Bay State Milling and the US Fish and Wildlife Service Sign Facility are seen in picture G. At this location, a more prototypical approach to widening the levee top for trail construction can be achieved by adding engineered fill on the downtown side.

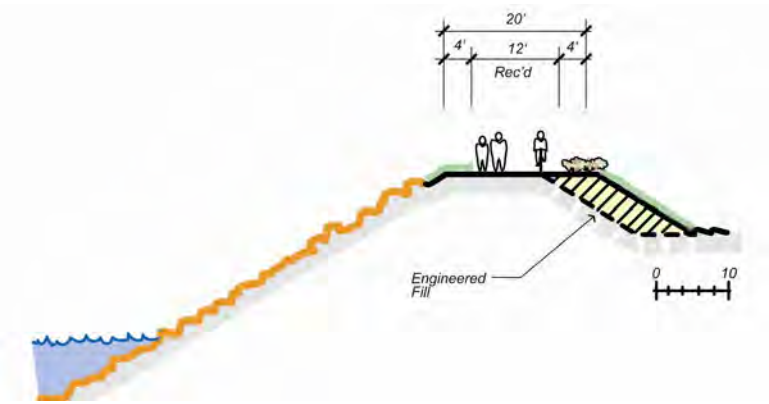


Figure 20. Trail cross-section B at Bay State Milling

H

Further downstream at the Winona Yacht Club (picture H) a floodwall is combined with the typical earthen levee. The trail must be at grade where it crosses the floodwall gate and then ramp up across the face of the floodwall to match the earthen levee's top elevation. Fig 21 illustrates the trail's construction built on a retaining wall and engineered fill. This solution also applies to the floodwall gates upstream at Bay State Milling.

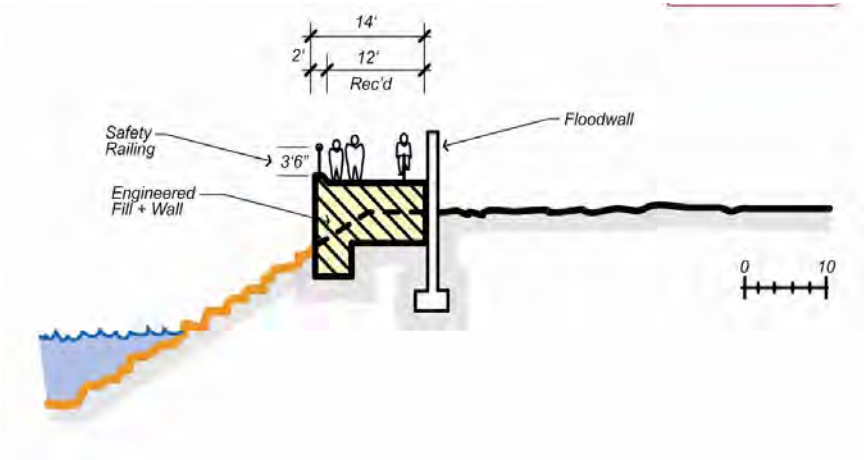


Figure 21. Trail cross-section C at Winona Yacht Club

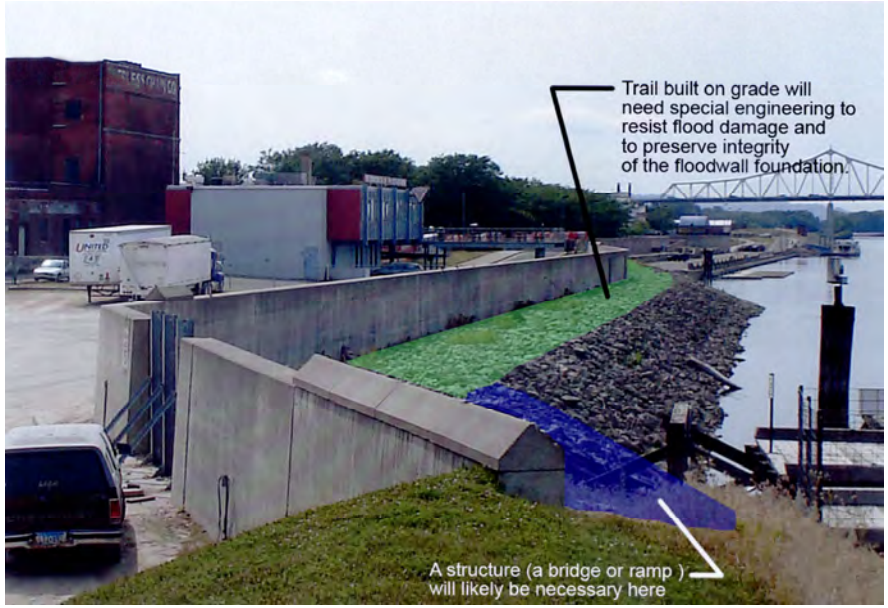


Figure 22. Floodwall detail

I

At RTP (picture I) the levee is partially integrated with the fenced parking lot and truck access. This condition may require a narrower top for the levee and trail and may result in the need for a safety railing, as shown in Fig 23.

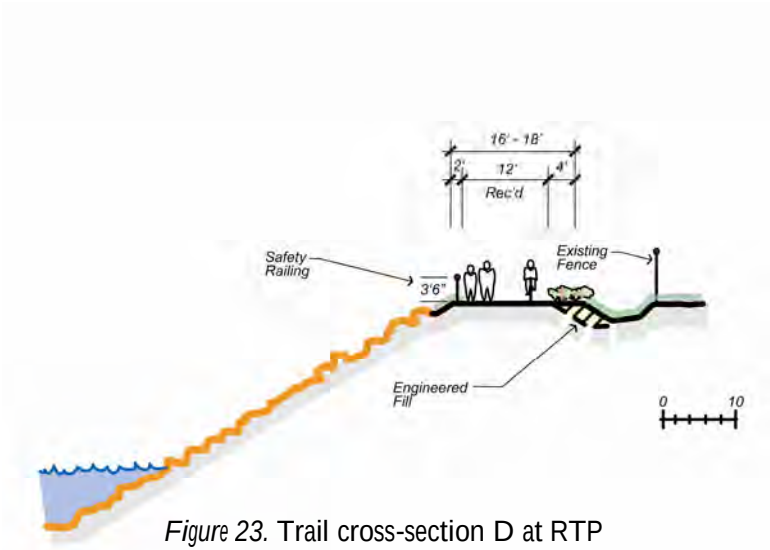


Figure 23. Trail cross-section D at RTP

The next focus area is Lions Park, picture J, where existing levee conditions are similar to that of RTP, except the park open space and lawn flow directly into the levee without restriction to the trail width. Improvements shown in Fig 24 can be accomplished without need for a safety railing. Complementing the Waterfront Trail here is the planned use of Zumbro Street as a riverway connector to the East End neighborhood and the recreation center. This connection is further anchored by the semi-public institutional presence of St. Stanislaus Church.

J

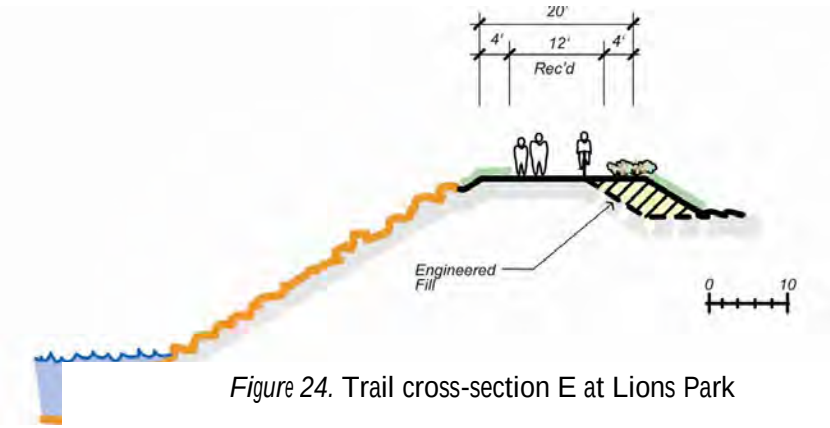


Figure 24. Trail cross-section E at Lions Park

K

Further downstream at Winona Knitting Mills, the Trail takes advantage of existing conditions at the levee and the planned riverway connector on Wall Street (pictures K and L). The Plan shows the Trail leaving the levee and, using public right of way and easements, being routed inland behind Terminal Support Services and Winona River and Rail (WRR) (picture M). This is in response to public safety concerns related to heavy use of commercial docks and overhead conveyor systems at these operations. The Trail returns to the levee adjacent to the railroad tracks defining the eastern edge of WRR and the current vacant parcel downstream.

L

M

The next segment connects to the public river access and boat launch ramp at the East End Boat Harbor (pictures N and O) Currently the harbor is used for both small craft slips and seasonal boathouses. These are suggested to eventually be phased out at this location and relocated to the larger community on Latsch Island.

N

O

The final segment uses the levee along Peerless Chain and the adjacent vacant land parcel. Existing conditions here allow for a wider levee top accommodating a minimum 12-foot trail and no safety railing. The trail would then curve inland following the levee and eventually connect with Louisa Street improvements and continuation of the non-motorized network to and across Highway 61.

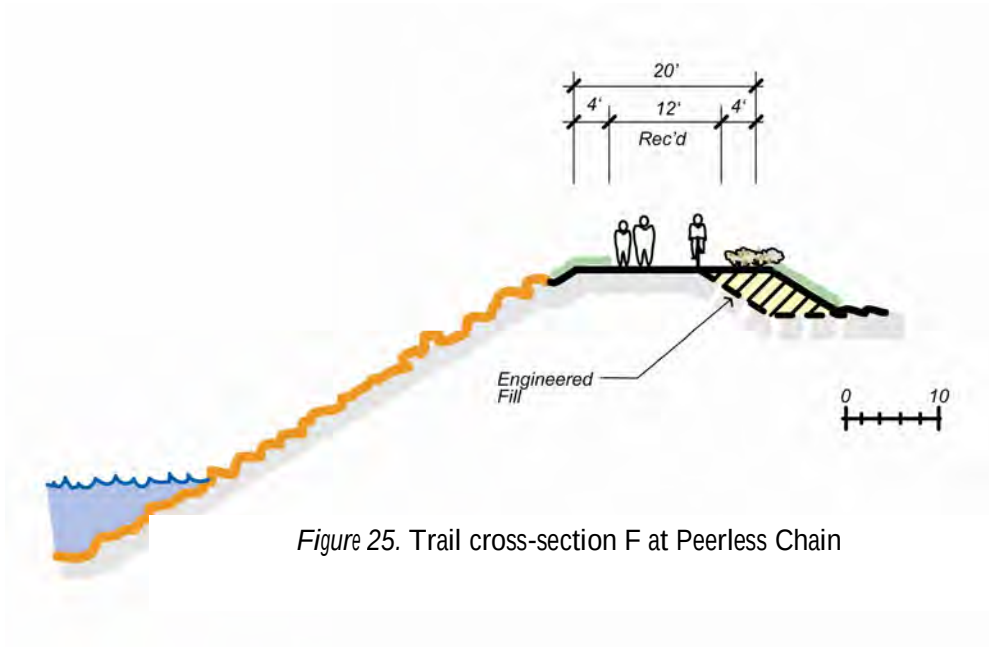


Figure 25. Trail cross-section F at Peerless Chain