

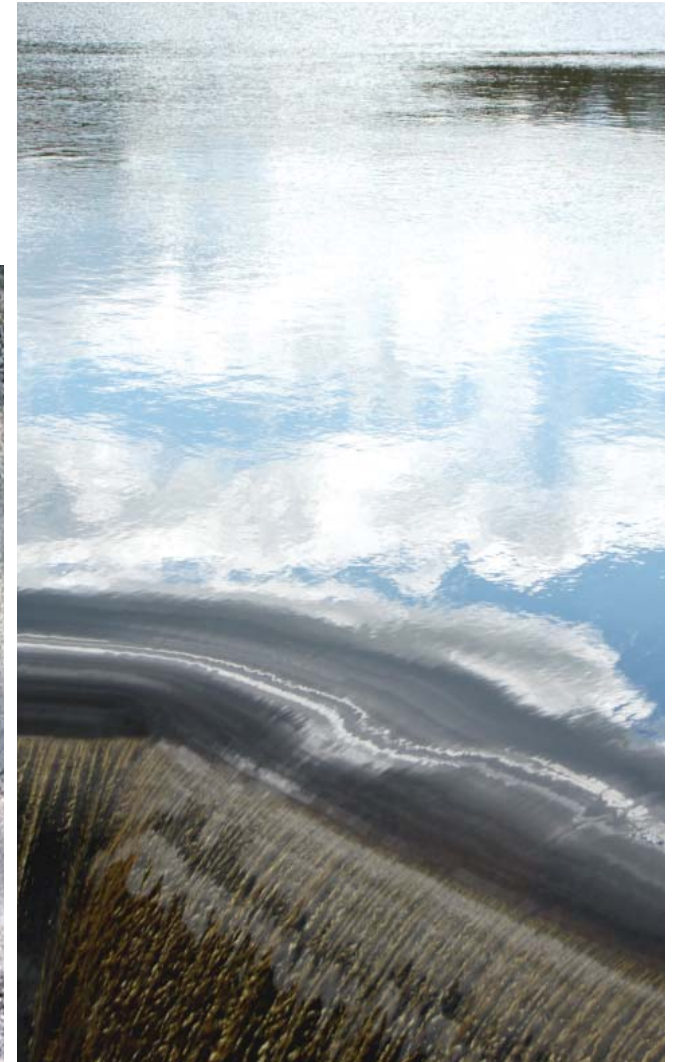
SPICKET RIVER GREENWAY DESIGN GUIDELINES

June 30, 2006

Lawrence, Massachusetts

Prepared for: Executive Office of Environmental Affairs

In conjunction with: Groundwork Lawrence
Arlington Community Trabajando



Copley Wolff Design Group
Landscape Architects & Planners
160 Boylston Street • Boston, MA

June 30, 2006

Kwabena Kyei-Aboagye
Executive Office of Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114

RE: Spicket River Greenway Design Guidelines, ENV 06 POL 24 Urban Open Space Design

Dear Kwabena:

Copley Wolff Design Group (CWDG) is pleased to present recommendations for design guidelines of the Spicket River Greenway in Lawrence, MA. This report represents a culmination of our efforts to understand the conditions along this diverse waterway, to reach out to the neighboring communities, and to develop a plan to guide the future improvements along the river.

The Urban Open Space Study included a series of site walks and field visits to record the conditions along the banks of the Spicket. These visits allowed CWDG to come to a detailed understanding of the opportunities and constraints along the river's edge. This understanding was supplemented by an earlier study of the Spicket River, which was utilized on CWDG's design of Brook Street Park. This early study is included as an appendix to this report.

This study also included a living and productive community outreach effort. A total of three (3) well-attended community meetings were held at the Arlington Elementary School where abutters, residents and other stakeholders offered their observations and input to the developing project. This input proved most valuable to the successful completion of this report.

This community outreach effort was greatly assisted by both Lesly Melendez and Kate Gormly of Groundwork Lawrence and Ana Luna of Arlington Community Trabajando. Without their tireless efforts, the community presentations and collected feedback would not have been possible.

It is also worth noting that during the course of this study, the New England region received rainfalls of historic proportions, which led to extensive flooding along the banks of the Spicket. The flood event caused extensive damage to the City of Lawrence and the Arlington neighborhood in particular. The Flood of 2006 illustrated the power of nature and the need to understand the Spicket River as a place to enjoy and also to respect.

Sincerely,

A handwritten signature in cursive script, appearing to read "David M. Walsh".

David M. Walsh, AIA, ASLA
Principal

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SPICKET RIVER GREENWAY
Lawrence, MA

GOALS

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STUDY GOALS

SPICKET RIVER GREENWAY DESIGN GUIDELINES

1. Document existing conditions on the river and along both edges.
2. Identify existing access points and river crossings.
3. Catalog observable wildlife and habitats.
4. Identify potential enhancement locations.
5. Document instances and locations of dumping and hazardous conditions.
6. Present to community and incorporate input.
7. Develop guidelines for improvements to existing conditions.
8. Secure support of City of Lawrence officials and EOEa.
9. Develop estimate of probable construction costs.
10. Deliver final report to EOEa.



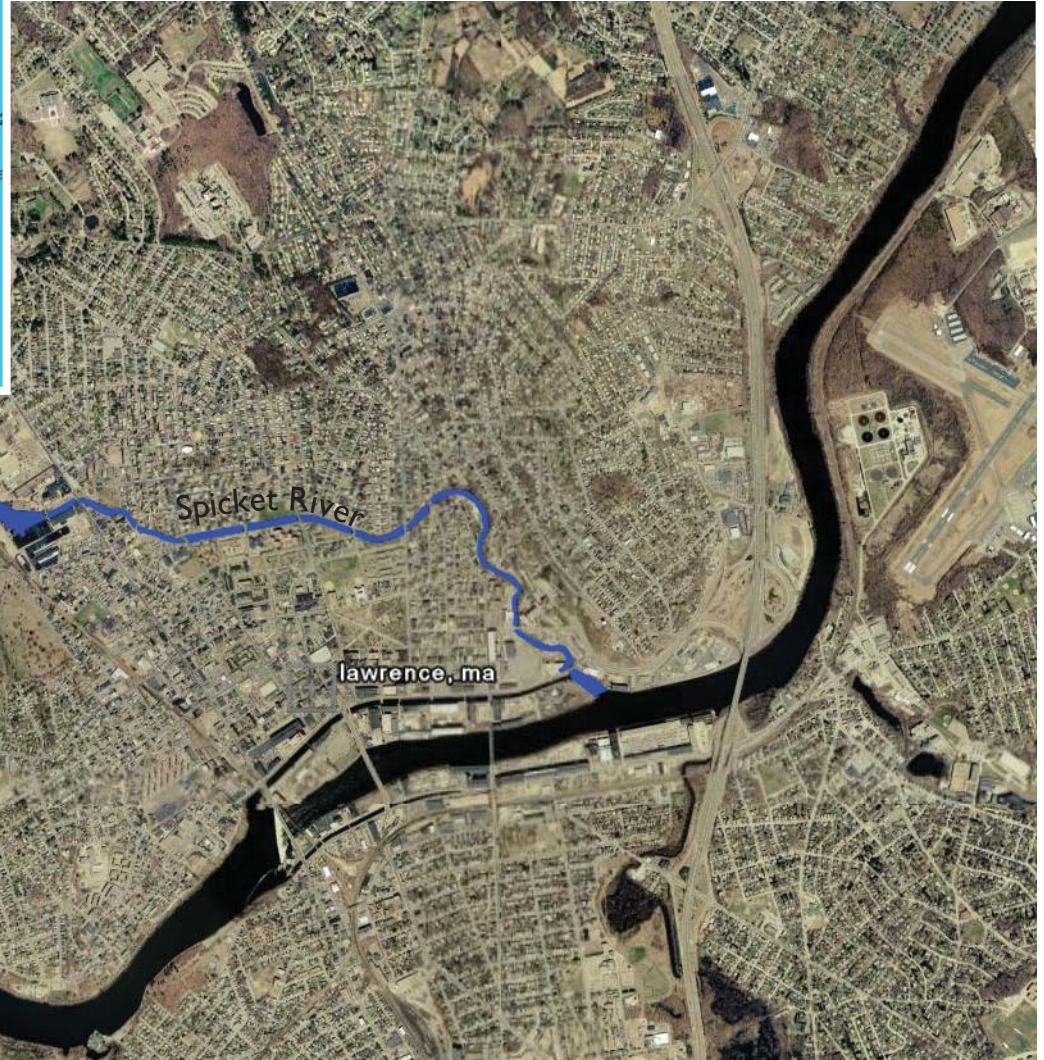


SITE CONTEXT

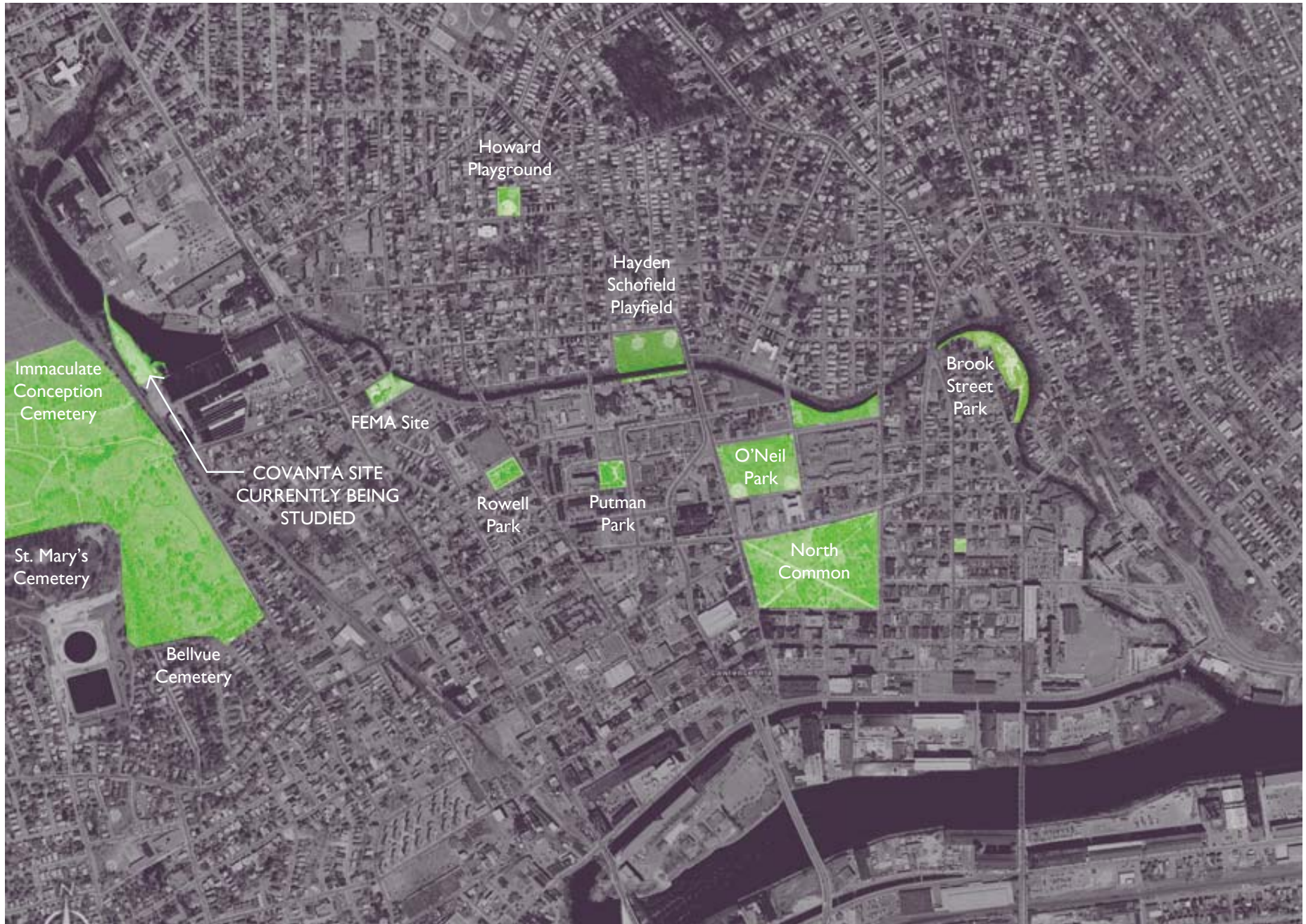
Lawrence, Massachusetts



Spicket River in Lawrence



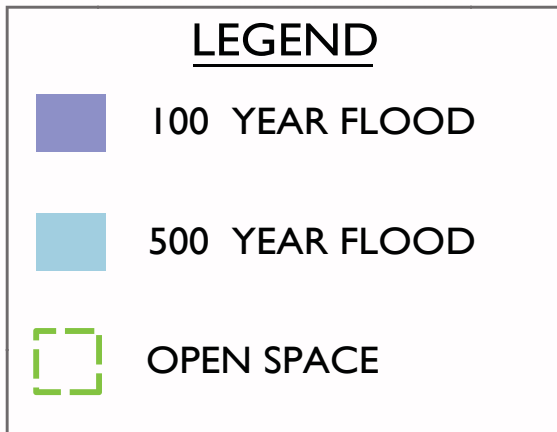
EXISTING GREEN SPACE IN LAWRENCE



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2.3 INTRODUCTION

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Flood of 2006



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SPICKET RIVER GREENWAY
Lawrence, MA



SPICKET RIVER GREENWAY

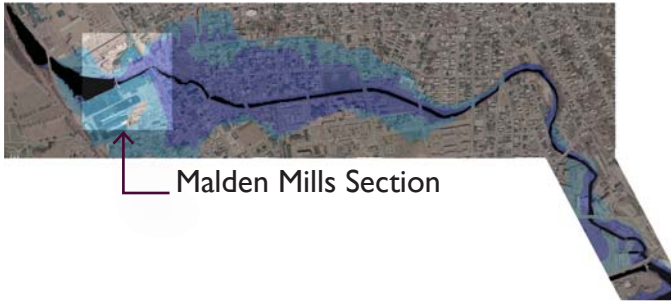
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EXISTING CONDITIONS

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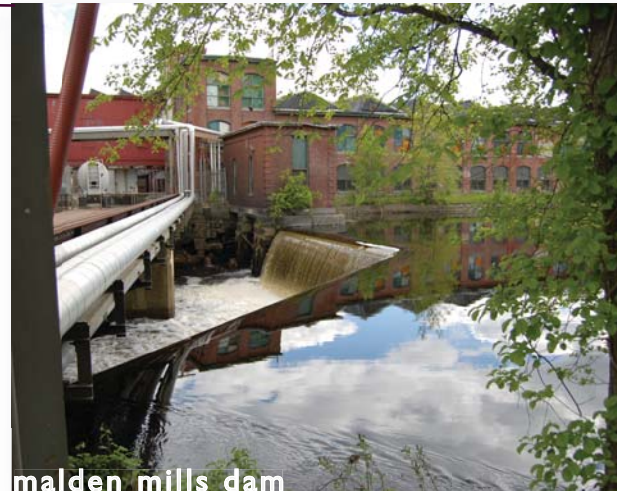


MALDEN MILLS

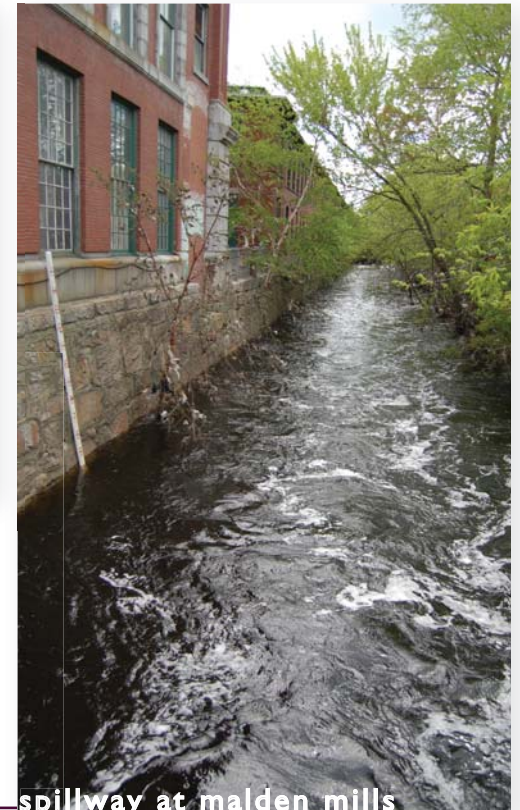


Malden Mills Section

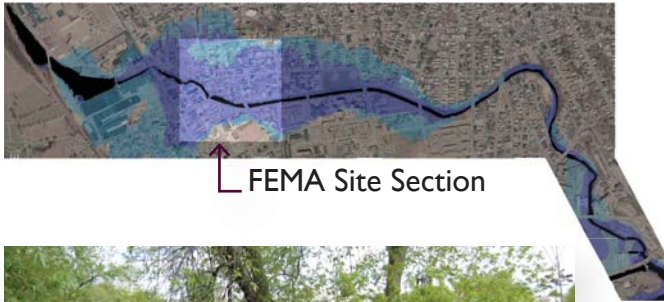
- The mill is the western beginning point of the river greenway in Lawrence.
- The mill dam serves as a landmark and the dramatic waterfall as a focal point.
- Remnants of the old mill provide an opportunity to educate the public about the industrial history of Lawrence, which was integral to its founding and growth as a city.
- The riverfront property east of Broadway is a vacant lot under private ownership and currently inaccessible. A possible easement could be acquired for the river greenway before development begins on the site.



malden mills dam



spillway at malden mills



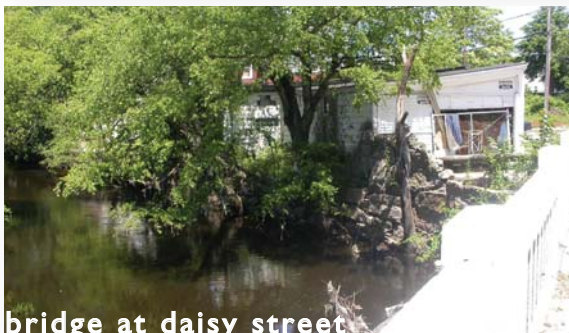
FEMA Site Section



edge at FEMA site



view west at FEMA site



bridge at daisy street

- The FEMA owned site, adjacent to Central Catholic High School parking lot, is to be constructed into a park with play equipment, a picnic pavilion and river greenway along Marion Avenue.
- The banks of the Spicket along the Lawrence Department of Public Works (DPW) site lack vegetation and are eroding. There is currently no river access at this site, but could be a potential location for a small pedestrian bridge to cross the river and continue the river greenway along Erving Avenue.
- The northern river banks become higher and steeper than the southern bank along Marion Avenue, which is lower and highly susceptible to seasonal flooding. Hampshire Street is often blocked off during spring floods.
- Short concrete retaining walls are in disrepair. There are muddy deposits along the bank and several buildings come up right to the river's edge.
- The most visually accessible locations are the river and the most sparsely vegetated areas, which have the least amount of collected refuse and illegal dumping.
- A two foot high guardrail along Erving Avenue separates the street from the densely vegetated and very steep riverbank, contributing to extremely limited visual and physical access to the river.



low fence potential



street edge

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3.2 EXISTING CONDITIONS

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HAYDEN SCHOFIELD PLAYFIELD



Hayden Schofield Section

- Hayden Field, a community park with ball fields and swings, is only a few feet in elevation above the Spicket's average high water level resulting in seasonal flooding.
- There is an existing path along the Spicket River at Hayden Field, providing community access to the river; however, this path is under water during floods.
- The Lawrence Street bridge features community artwork tiles. The river greenway could provide opportunities to display more of the work of local school children and artisans.
- The Lawrence Street bridge provides an easily accessible and scenic river overlook.
- A dirt pedestrian path lined with an eight foot high chain-link fence runs along the southern bank of the river on Marion Avenue. Many drivers and pedestrians are unaware of the river's presence due to the thick layer of vegetation separating one from the river. This fence lined path along the river's bank is reminiscent of an abandoned lot or retention basin and has become a popular area for illegal dumping over the past years.



Lawrence st. bridge artwork tiles



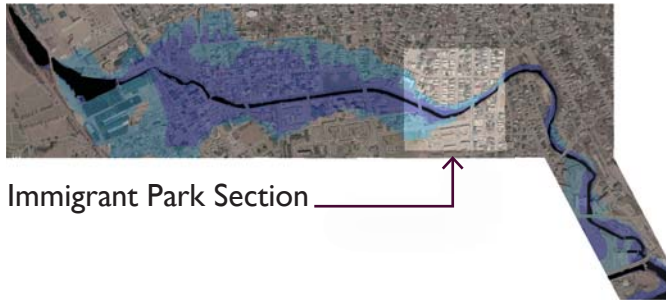
river access denied



seasonal flooding

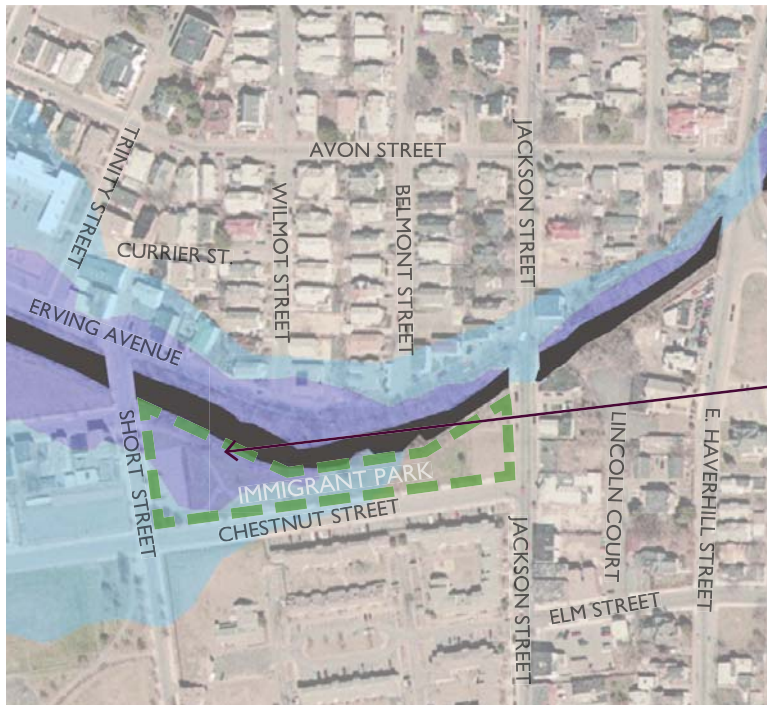


light and shade



Immigrant Park Section

- The Immigrant Place Park, located on the south bank, features benches, specimen trees and a lawn that gradually slopes towards the river.
- There is a narrow path that runs parallel to the river that could potentially connect with the river greenway. The path may not be accessible during flooding periods due to its low elevation.
- There is a clearing of vegetation at a low lying point along the path close to the river bank that could serve as a river access point for viewing, boating and fishing.
- The present design of the park makes it an undesirable and underutilized space; however, with modest design improvements, it could potentially host river greenway events and various recreational activities.
- Along the northern bank and Erving Avenue, there is extensive invasive plant growth, a six foot fence and a dirt path along the shoulder of the road, which prohibit views to the river.
- The bridge at Lawrence Street offers scenic views of the river and could become a fishing spot.



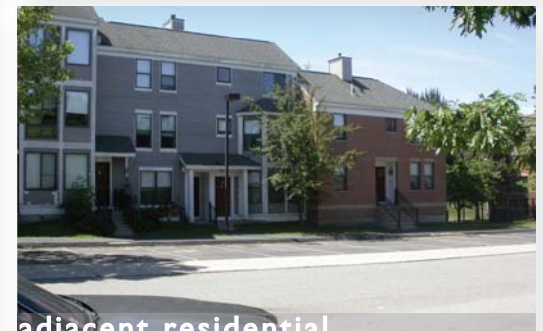
open event space



vertical separation

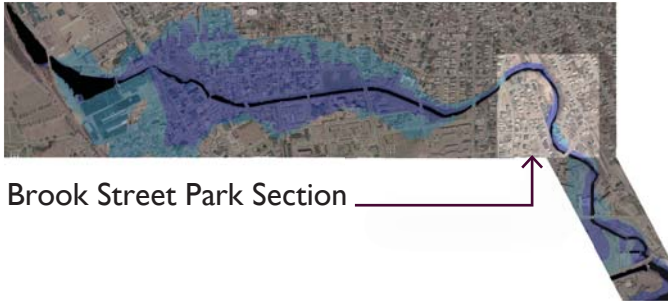


ease of access



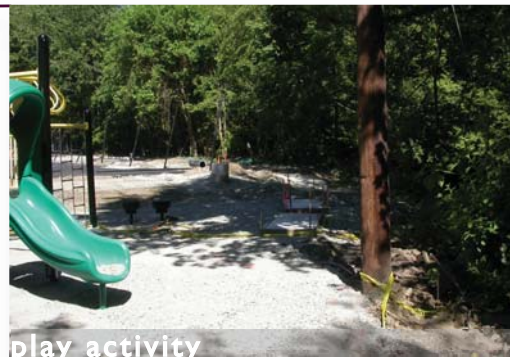
adjacent residential

BROOK STREET PARK



Brook Street Park Section

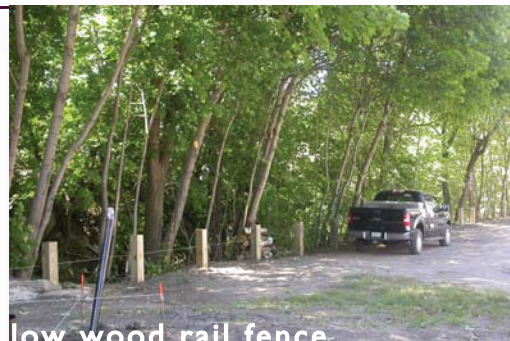
- Brook Street Park construction was completed in June 2006.
- A river access point behind the playground and basketball court have potential to become a canoe and kayak landing as well as a fishing site.
- Brook Street Park is not prone to flooding because it is located on high ground with a newly rebuilt retaining wall that separates the park from the river's edge.
- Recreational features of the park include a patio, picnics areas, a shade pavilion, a fountain and play fields. The park will also feature a series of paths designed to connect to the future river greenway.
- At this site, the river curves southward creating a bend that becomes a collection site for garbage and large debris.
- There are small rapids in the river at the southern end of park.



play activity



riverwalk in construction



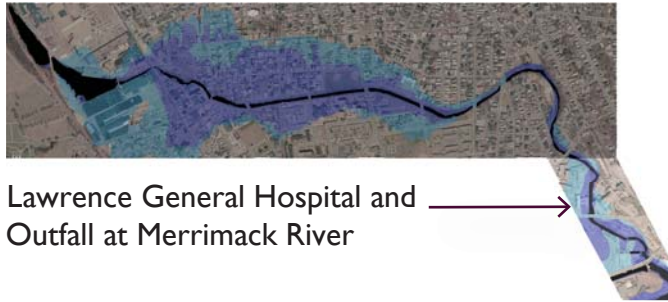
low wood rail fence



chain link fencing

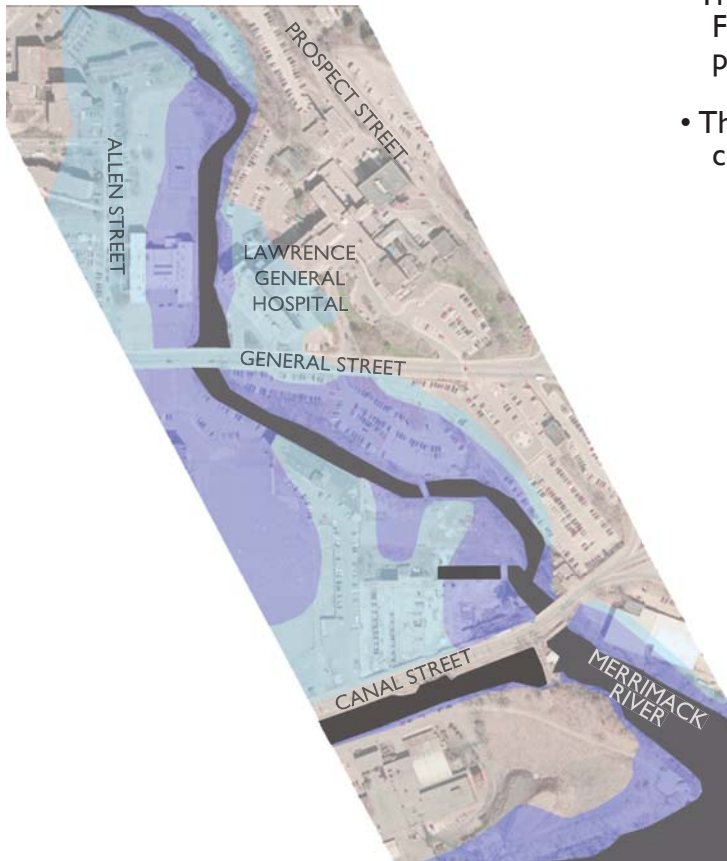
located in areas of high vertical separation

LAWRENCE GENERAL HOSPITAL AND OUTFALL AT MERRIMACK RIVER



Lawrence General Hospital and Outfall at Merrimack River

- This area is the end of the Spicket River, where it confluences with the Merrimack River, and is currently inaccessible. This area could be a fascinating endpoint to the river greenway with potential river and watershed geology educational opportunities.
- There is a dirt path from General Street to a small wooden walkway over a dam where the canal meets the Spicket, creating a dramatic overlook. A path to this walkway could be incorporated into the river greenway.
- The wooden walkway over the dam features a plaque showing the record high water mark.
- There is a small park off of Allen Street that has a field, benches and handball courts. There is high fencing and thick vegetation which obscure views to the river.
- There are steep grade changes between the land around Lawrence General Hospital and Lawrence Family Health Center's parking lot and the river, which features high retaining walls. A lower pathway at river level could offer seasonal access.
- The health centers' parking lots allow pavement runoff to flow directly into the river; this causes contamination of not only the Spicket, but the Merrimack River as well.



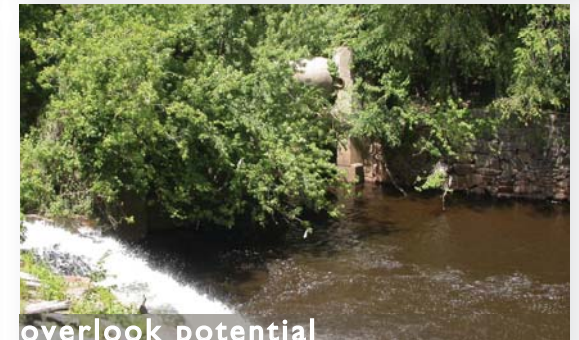
parking lot retaining walls



high water mark plaque



river rapids



overlook potential



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Lawrence, MA



EDUCATION

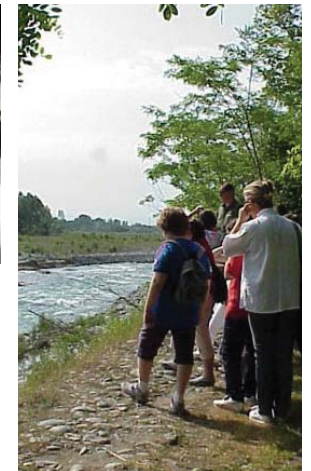
EDUCATIONAL OPPORTUNITIES

- The river greenway and trail could be adjacent to several schools to provide an “outdoor classroom,” allowing students to learn about the natural systems of the river and become leaders in community environmental education.
- A system of bilingual signs could be placed along the river greenway informing users about the river: its watershed, geology, history, plants and animal inhabitants.
- Develop a series of community events and school programs that celebrate the natural systems of the Spicket River.
- Some paths and resting spots along the river greenway could be located in areas that are only accessible when the river is low and inaccessible when the river is high, providing education and awareness of the Spicket’s seasonal flooding patterns.
- Promoting ecological awareness and education about the river can foster stewardship in the community, ending years of neglect, illegal dumping and polluting.



EDUCATIONAL CONSTRAINTS

- Existing conditions limit physical accessibility of the river.
- The visual accessibility of the river is limited due to overgrown vegetative materials, which significantly reduces the river’s presence.
- Because many people are unaware of the river’s proximity to local schools, it has been disregarded as an educational asset.



RECREATIONAL OPPORTUNITIES

- A river greenway could provide a variety of active recreation opportunities for the residents of North Lawrence such as biking, running, walking, fishing, canoeing and kayaking.
- These active recreational activities could improve the health and quality of life for the community, helping to combat problems of obesity, diabetes and asthma.
- Benches, parks and pavilions provide opportunities for passive recreation such as picnics, lunch breaks and observing nature.
- Organized recreational events such as walkathons, bike races, fund raisers, boat outings, etc., could promote use of the river and foster a greater sense of community with residents.
- The river greenway could connect the various parks adjacent to the river, providing a variety of sport and play activities.
- Green corridors connecting other parks in Lawrence could create further recreational opportunities.

RECREATIONAL CONSTRAINTS

- There is limited physical and visual access to the river.
- The river has become a popular place for dumping which may affect users' interest in actively using the river.
- There is a limited amount of locations for users to passively enjoy the river.
- The river lacks a connected pedestrian path, which may deter users from enjoying a local natural asset.



SOCIAL

SOCIAL OPPORTUNITIES

- Creating a recognizable logo and signage system for the river greenway would give the river more of a presence and identity within the neighborhood.
- Informative signage would enhance the community's understanding and stewardship of the Spicket River.
- Designing connections to other parks and cultural centers in Lawrence will create a safer environment for children and pedestrians, and it will facilitate larger events and festivals.
- A series of cultural events and performances at the parks along the river would create a greater sense of neighborhood involvement and community pride.
- Creating a place that more people would utilize will result in more “eyes on the neighborhood,” which will decrease crime.

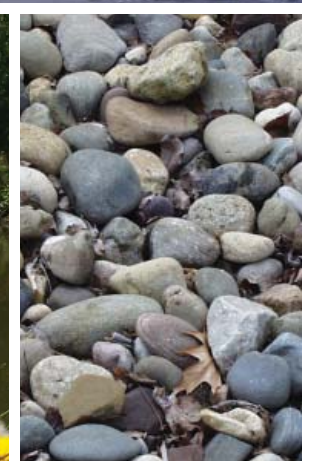
SOCIAL CONSTRAINTS

- There may be a fear of crime in the neighborhoods adjacent to the river due to underutilization of the existing open space.
- The existing condition of the river's banks is overgrown and may contribute to negative perceptions of care in the community.



ENVIRONMENTAL OPPORTUNITIES

- Creating better physical access to the river would better facilitate the existing annual river cleanup events, such that they could be more efficient and occur more often.
- More extensive and frequent trash cleanups would reduce the fill in the flood way, therefore reducing seasonal flood levels and improve habitat and water quality.
- Reducing contaminants and pollutants in the Spicket River would be a positive step toward improving the overall drinking water quality for cities such as Lawrence, whose source is the Merrimack River, which the Spicket empties into.
- A healthier ecological habitat would provide refuge for many endangered and threatened species such as the blue heron, Atlantic salmon and sturgeon.
- Acquiring easements along the river and purchasing properties through eminent domain would reduce the devastating effect of flooding on residents and land owners.
- With improved river access, another community program could be established to remove exotic/invasive growth, such as oriental bittersweet, which would improve the natural habitat and encourage the growth of native plants and animals.



ENVIRONMENTAL CONSTRAINTS

- The river has become a popular place for dumping which will take great effort to make improvements.
- There are a limited amount of locations for users to physically access the water.



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SPICKET RIVER GREENWAY
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APPLICATIONS

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RECOMMENDED IMPROVEMENTS



IMMIGRANT PARK TO HAYDEN
SCHOFIELD PLAYFIELD

The Spicket River presents many opportunities for improvements along the stretch from Immigrant Park to Hayden Schofield Playfield.

The proposed trail would continue along both banks of the Spicket between the Jackson Street bridge and the Lawrence Street bridge. Immigrant Park, which is located along the south bank, will benefit from improved access to the river, allowing users to connect with the water.

Along the Spicket's south bank, between these two bridges, there is open space adjacent to residential units that would be an ideal opportunity for a park.

The Lawrence Street bridge will provide a connection to the north bank, where the trail, lined with a chain link fence, would connect to Hayden Schofield Playfield.

The playfield itself is prone to seasonal flooding and because existing drainage system does not function properly, recreational use is limited. It is suggested that an under drainage system be implemented in order to increase use and community value of the playfields.



Existing Playfield: Poor drainage after flood event



Playfield Potential - Application of under drainage system resulting in better drained soil and sod

RIVER RECREATION

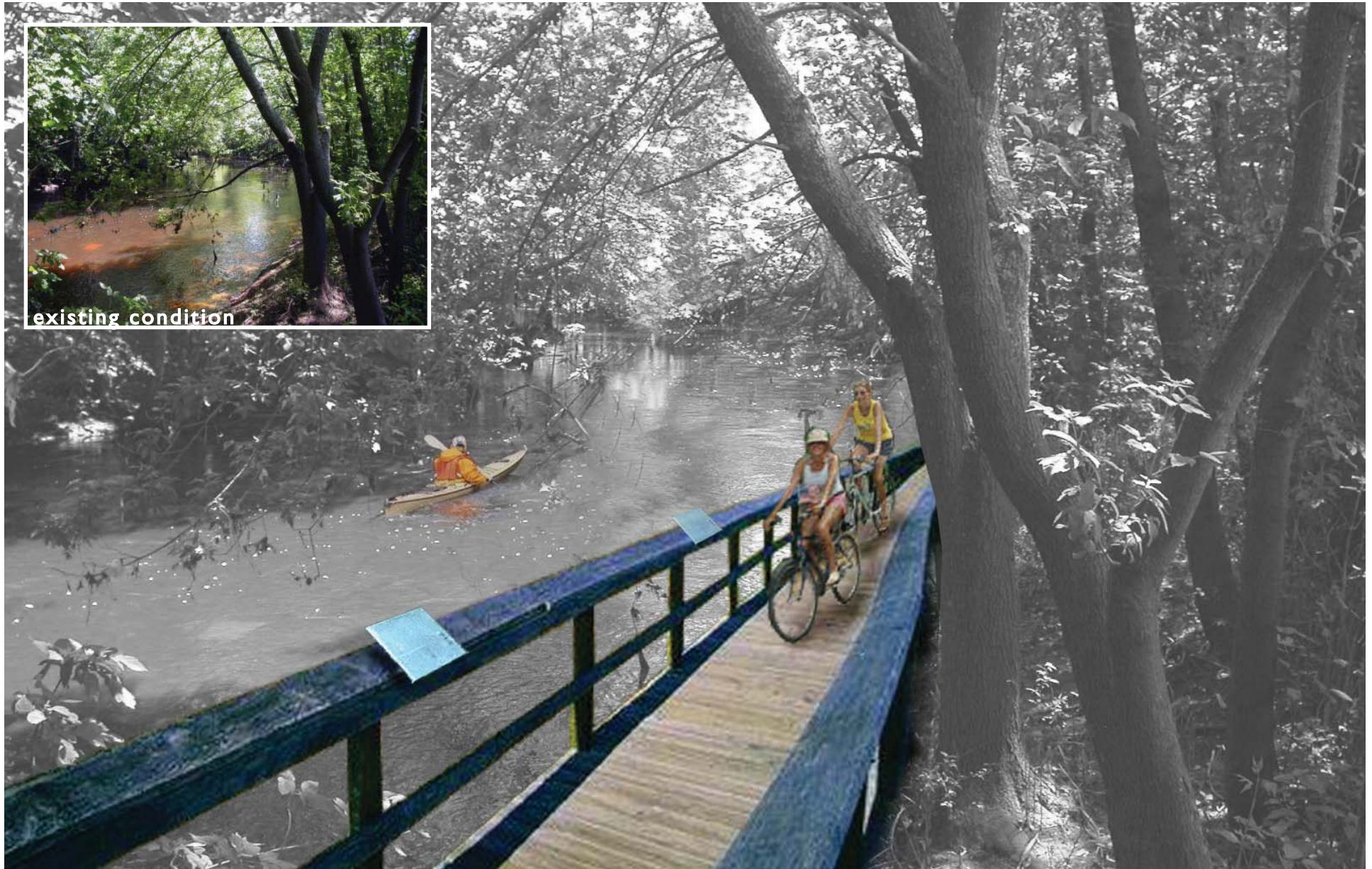


Strengthen pedestrian access along the banks of the river and encourage recreational uses.

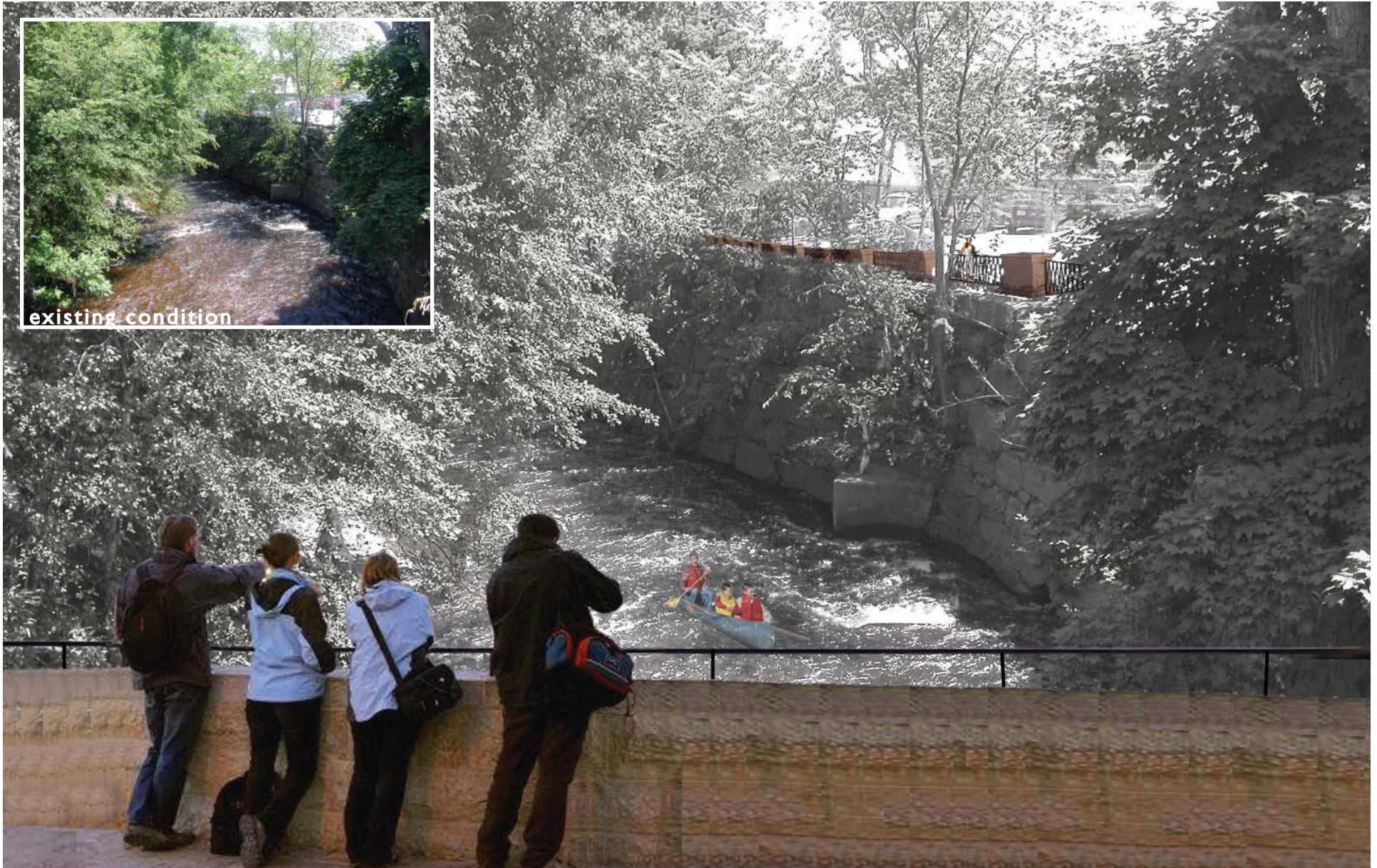


Enhance river access and connections at existing public open spaces.

INTERPRETIVE IMPROVEMENTS

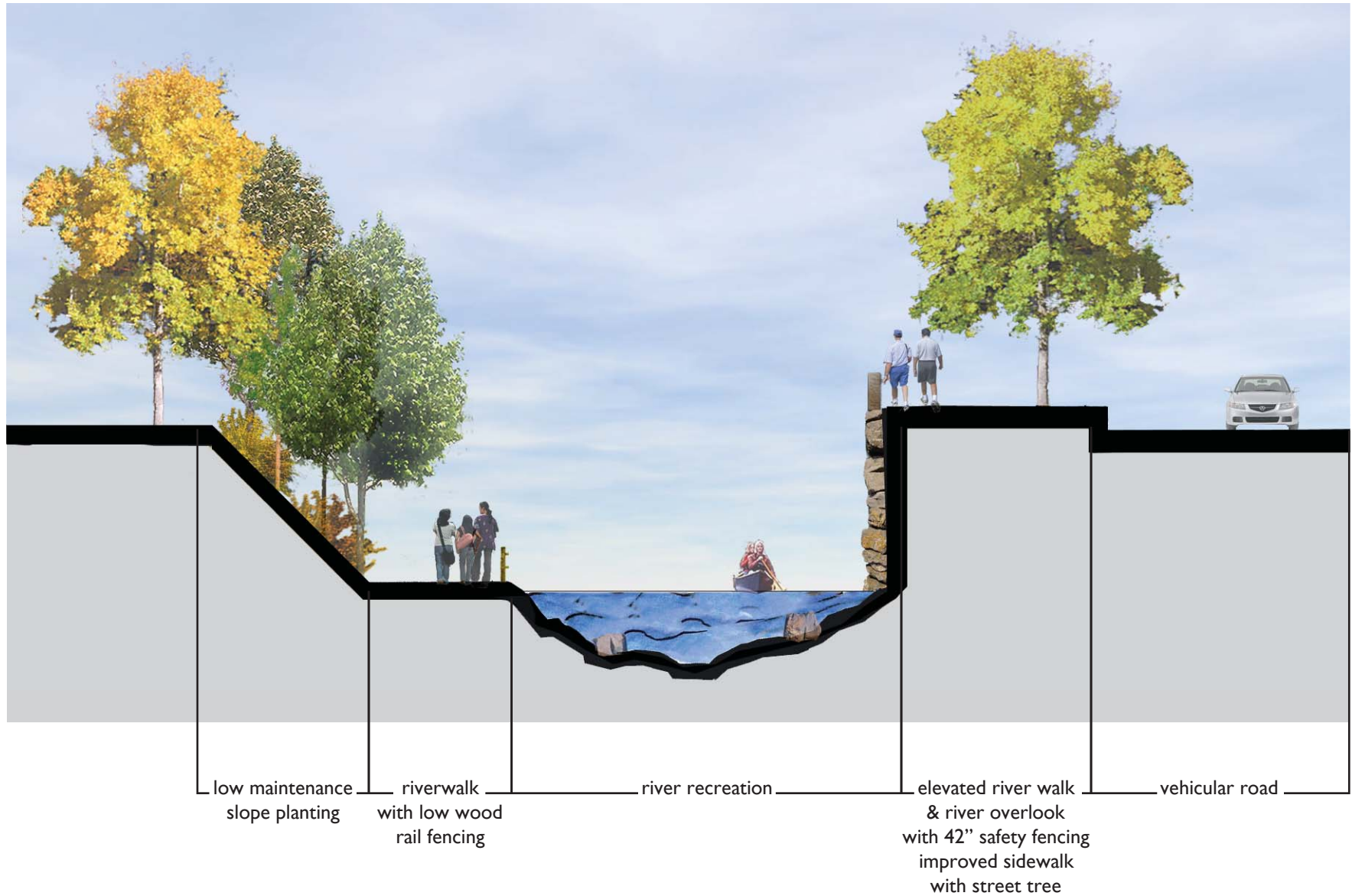


Introduce signage and interpretive stations to tell the story of the Spicket River's history and natural environment.



Encourage use and safety of roadways as places to fish, relax and observe the river below.

RETAINING WALL OVERLOOK/ LOWER TRAIL COMBINATION



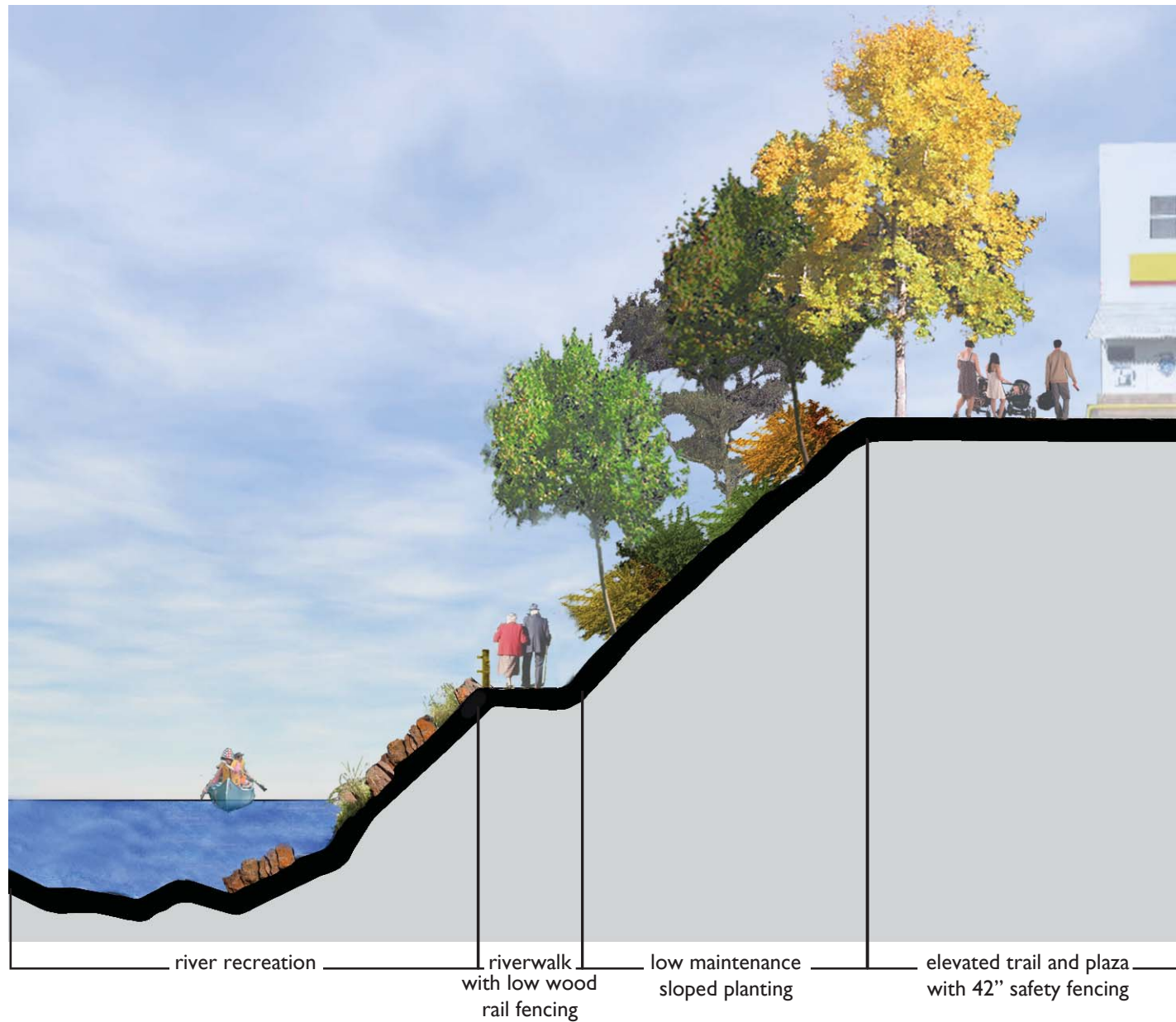
Typical river edge conditions should include protective safety fencing at elevated grade changes and low wood rail fencing at sections of gentle edge transition.



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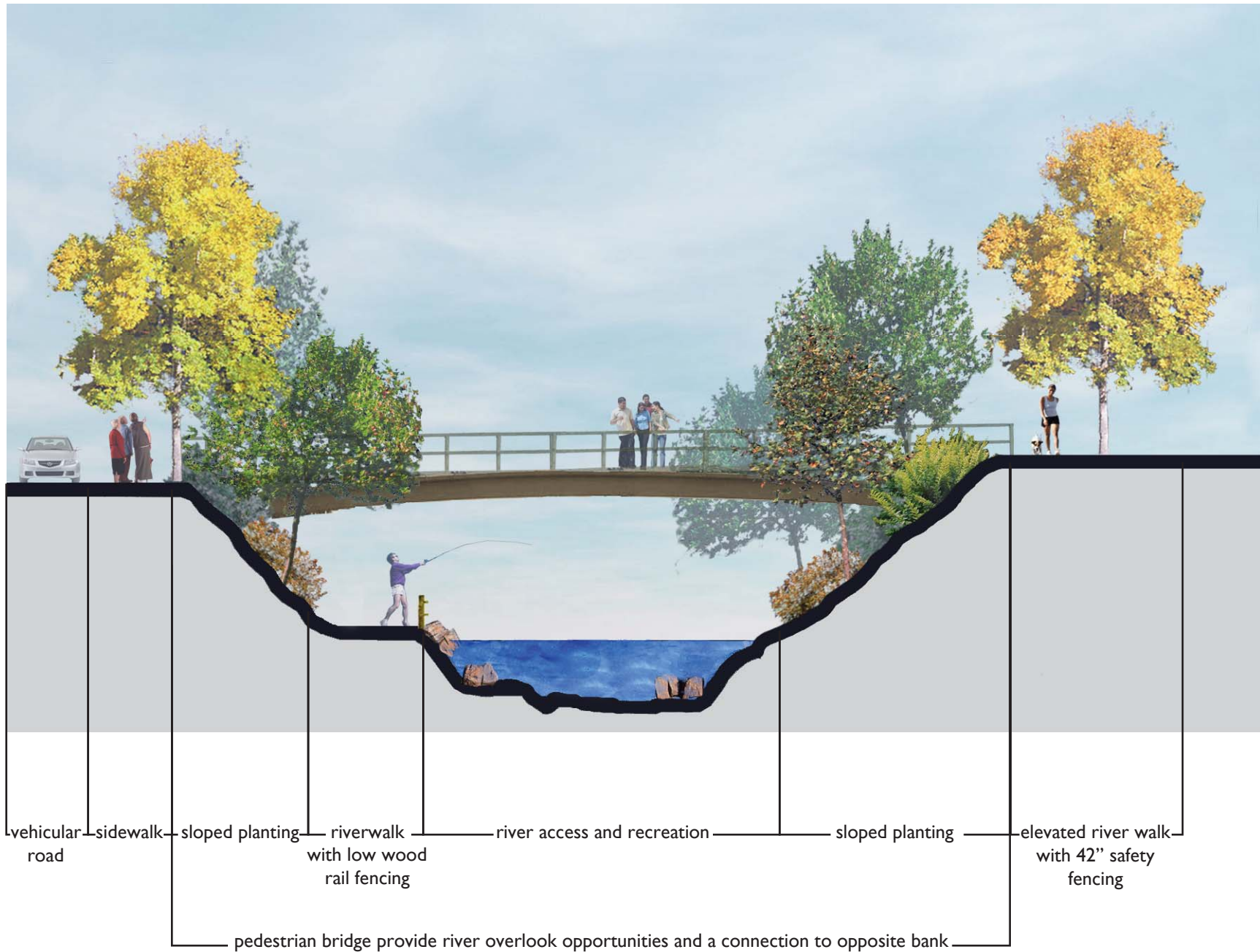
5.7 APPLICATIONS

SPICKET RIVER GREENWAY
Lawrence, MA



Typical river edge conditions should include protective low wood rail fencing at sections of gentle edge transition. Trail options would allow users to actively use portions of the trail depending on river level and seasonal flooding.

UPPER TRAIL OVERLOOK AND CONNECTION





SPICKET RIVER GREENWAY DESIGN GUIDELINES

SUMMARY OF RECOMMENDATIONS

1. **In order to heighten community awareness of the Spicket River, continue annual river cleanup events.**

The annual cleanup of the Spicket River, typically undertaken in the fall, is a wonderful activity that removes trash and debris from the river and contributes to direct community interaction with the natural systems along the Spicket. This activity should be heavily promoted and advertised to ensure its continued success. An anticipated bonus of the cleanup will be, hopefully, to discourage illegal dumping at various points along the river.

2. **Initiate a program to cut down and clean out dead trees and limbs along the length of the river.**

Groundwork Lawrence removed dead trees and limbs from the river stretch along Marion Street in 2005. This activity should be continued for the entire length of the Spicket River, phased as budgets allow. In light of the damage from the Flood of 2006, this activity should have a high priority.

3. **Encourage the City to enter into negotiations to receive ownership or easements to certain parcels.**

There are a number of parcels along both banks of the Spicket River that either are subject to seasonal flooding or have access opportunities to the river that should be pursued. In some cases, these parcels could be purchased; in other cases, easements to extend the riverwalk through the property would accommodate the public good.

4. **Commit to drainage and surface improvements to the Hayden Schofield playfield.**

The Hayden Schofield playfield is a major recreational asset to the Lawrence community. It is used actively for ball play and has a small area of play equipment. The field also presents the Spicket River with a significant storage area in flood events. Herein lies the dilemma. The field helps reduce flood hazard to surrounding areas but remains wet and unusable until well after the flood waters have receded.

The field would greatly benefit from the installation of well drained sub-base with an underdrains system. This would allow the field to continue to act as an area of flood storage while more quickly return to an active playfield once the flood waters have diminished. As part of the process, the field should be sodded and maintained with a seasonal irrigation system.

5. Establish enforcement programs at locations of dumping and hazardous conditions.

One of the continuing problems facing the Spicket River today is the continued dumping of construction debris, household trash and various other deposits at point along the river. Much of this activity happens at point where streets dead end or abut the river or at crossovers at bridge locations.

A hotline program should be established to encourage residential abutters to report dumping activities and fines for those caught should be increased to discourage illegal activity. In addition “No Dump” signage should be increased and the public made aware of appropriate location for trash pick up.

6. Heighten police patrol presence along Spicket River corridor.

A more visible police presence along the river would help residents feel safe and secure and would encourage recreational uses.

7. Assist City of Lawrence in study to relocate Department of Public Works from site abutting Spicket River.

The Lawrence Department of Public Works maintenance facility is located at No. 1 Auburn Street abutting the south bank of the Spicket River. This central location allows the DPW to service all parts of the City of Lawrence. Used as the storage and service yard for DPW vehicles, the facility is also the drop-off location for motor oil, batteries and other environmentally hazardous materials. Considering the environmental sensitivity of the Spicket River, these industrial and hazardous activities are not compatible.

A first step in addressing this concern would be a general recognition of the present conflict. This could be followed by a feasibility study to find an appropriate site for the DPW facility. This would be followed, hopefully, by the actual relocation after which the site could be developed for a more appropriate use.

8. Identify and pursue sources of funding for Spicket River improvements.

Many sources of funding have been identified by the City of Lawrence and Groundwork Lawrence on improvements to Brook Street Park, FEMA Site Park and other projects in Lawrence. This experience and expertise should be pursued as the plan for improvements proceed.

9. Approve project schedule and phasing.

Once embraced by the City of Lawrence as a valuable and worthwhile community asset, the planning for improvements to the Spicket River should begin. Given the associated costs and the likelihood that the improvements will likely stretch over a number of years, the project should be broken out in phases to ensure that issues of public safety and environmental concerns are addressed in a timely manner.

10. Secure approval to proceed.

The Lawrence Conservation Commission has been an informal participant in the public participation portion of this report. Subsequent improvements to the Spicket River should be presented to and formally approved by the body.



Estimate of Construction Costs

A. Assumptions

1. The Spicket River measures approximately 2.5 miles from Steven's Pond to the outfall at the Merrimack River. A rough calculation of linear improvements on both banks of the river suggests that a total of twenty-six thousand (26,000) linear feet of river greenway would be required.
2. Railings and fencing would be approximately divided evenly between low wood rail fencing and 42" high chain link fence.
3. Approximately 312,000 square feet of bituminous concrete pavement would be required to pave the full length of the river greenway.
4. Benches, interpretive displays and signage would be located at strategic locations along the length of the project.
5. Site lighting would be limited to roadway intersections.

B. Cost Estimate

1.	Wood Rail Fence	13,000	LF	@ \$50	=	\$ 650,000
2.	Chain Link Fence	13,000	LF	@ \$75	=	\$ 975,000
3.	Bituminous Concrete Pavement	312,000	SF	@ \$6	=	\$1,872,000
4.	Site Furniture	Lump Sum				\$ 100,000
5.	Site Lighting	Lump Sum				\$ 200,000
6.	Subtotal					<u>\$3,797,000</u>
7.	15% Project Contingency					\$ 569,550
8.	Project Total					<u>\$4,366,550</u>



SPICKET RIVER GREENWAY GUIDELINES - CASE STUDIES



RECREATIONAL AMENITIES: Kayaking at Confluence Park along greenway.



South Platte River, Denver, Colorado

CONTEXT AND HISTORY

- FLOWS THROUGH RESIDENTIAL, COMMERCIAL AND INDUSTRIAL ZONES
- SUBJECT TO FLOOD DAMAGE AND CHANNELIZATION
- ERODED BANKS, NO EDGES
- DUMPING GROUND FOR INDUSTRIAL WASTE AND TRASH
- AREAS OF SIGNIFICANT CONTAMINATION
- ZUNI POWER PLANT DOMINATES PORTION OF RIVER
 - COOLING WATER DIVERSION DAM
- NON-NATIVE VEGETATION IN DEGRADED CONDITION



EDUCATIONAL PROGRAMS: S.P.R.E.E. Outdoor Classrooms

CULTURAL/RECREATIONAL ACCOMPLISHMENTS

- EASEMENTS WITH PROPERTY OWNERS FOR CONSTRUCTION OF TRAILS
 - GREATER INTERFACE AND ACCESS BETWEEN NEIGHBORHOOD AND RIVER
 - COMMUNITY INVOLVEMENT AND STEWARDSHIP
 - RIVER CLEANUPS
 - LOCAL STUDENTS ACT AS RIVER TOUR GUIDES
 - "PUNT THE CREEK" BOAT RIDE
 - FORMATION OF THE GREENWAY FOUNDATION AND THE GREENWAY PRESERVATION TRUST IN 1974
- ACCOMPLISHMENTS INCLUDE:
- FREE CULTURAL EVENTS
 - 17 RIVERSIDE PARKS
 - 30 MILE TRAIL SYSTEM - THE SOUTH PLATTE RIVER GREENWAY
 - OVERSEEING A YOUTH EDUCATION PROGRAM, S.P.R.E.E. (SOUTH PLATTE RIVER ENVIRONMENTAL EDUCATION)
 - INTRODUCES STUDENTS TO THE RIVER
 - "THE GREENWAY EXPERIENCE" COMMUNITY PROGRAM FOR SCOUTS, CAMPS, ETC.



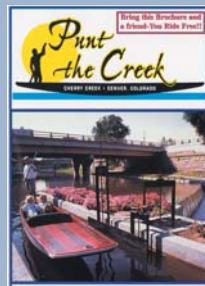
CULTURAL/HISTORIC INTERPRETATION: The trail parallels a short section of the old Denver and Rio Grande railway, now a scenic rail car service

ENVIRONMENTAL ACCOMPLISHMENTS

- REVEGETATION OF CORRIDOR WITH NATIVE SPECIES
- RESTORATION AND STABILIZATION OF ERODED BANKS
- CONSERVATION EASEMENTS
- FORMATION OF SOUTH PLATTE RIVER COMMISSION IN 1995
 - RESPONSIBILITIES INCLUDE :
 - REDEVELOPING THE URBAN RIVER CORRIDOR
 - REDUCING FLOOD HAZARD BY LOWERING AND WIDENING RIVER CHANNEL
 - RESTORING FISH AND WILDLIFE HABITAT
- REMOVE ZUNI POWER PLANT DAM
 - FISH HABITAT, ADJACENT WETLAND AND BOATING OPPORTUNITIES RESTORED AND IMPROVED



COMMUNITY INVOLVEMENT: Annual River Cleanups



CULTURAL ACTIVITIES: "Punt the Creek" tour guided boat ride



FREE CULTURAL EVENTS: Confluence Concerts

CONTEXT AND HISTORY

- 11,000 SQ.MILES
 - INDUSTRIAL REVOLUTION LED TO DAMMING THE RIVER FOR WATERPOWER
 - THREATENED WATER QUALITY FROM CONTAMINANTS, SEWER OVERFLOWS AND NON-SOURCE POLLUTION
 - HABITAT LOSS AND FRAGMENTATION
 - AIR POLLUTION
 - HYDROELECTRIC DAMS AFFECTING WATER QUALITY, FLOW, FISHERIES, ETC.
 - OVERRUN BY INVASIVE SPECIES
- "BEST LANDSCAPE SEWER"



Connecticut River, Hartford, Connecticut

CULTURAL/RECREATIONAL ACCOMPLISHMENTS

- RIVERFRONT RECAPTURE ORGANIZATION TO RESTORE PUBLIC ACCESS TO THE RIVER
 - COLUMBUS BOULEVARD PEDESTRIAN BRIDGE
- REGIONAL NETWORK OF PARKS AND PUBLIC RECREATIONAL FACILITIES ON THE RIVERFRONT INCLUDES:
 - RIVERFRONT PLAZA
 - CENTERPEICE
 - STAGE AND AMPHITHEATER
 - BOAT DOCK
- COMMUNITY ROWING
- YOUTH PROGRAMS "GET HOOKED ON FISHING- NOT DRUGS"
- DESTINATION POINT:
 - MAJOR SPORTING EVENTS
 - PROFESSIONAL BASS FISHING
- ECONOMIC DEVELOPMENT ALONG RIVERFRONT PLAZA
 - HOTEL
 - HOUSING
 - RETAIL/ENTERTAINMENT COMPLEX
- AN AMERICAN HERITAGE RIVER



CULTURAL OPPORTUNITIES: Riverfront Plaza Stage



CULTURAL OPPORTUNITIES: Map of Parks and Plazas



RECREATIONAL OPPORTUNITIES: Dragon Boat Races



FREE CULTURAL EVENTS: Annual Riverfest



PUBLIC ACCESS: Riverfront Plaza

ENVIRONMENTAL ACCOMPLISHMENTS

- HABITAT RESTORATION:
 - RETURN OF SALMON AND SHAD:
- HAS BEEN DESIGNATED:
 - A NATIONAL FISH AND WILDLIFE REFUGE
 - WETLANDS OF INTERNATIONAL IMPORTANCE
 - THE NATURE CONSERVANCY'S "LAST GREAT PLACES"
- IMPROVED WATER QUALITY



NEW RIVERFRONT PARKS: Riverfront Plaza

SPICKET RIVERWALK GUIDELINES

Lawrence, Massachusetts
CASE STUDIES

COPLEY WOLFF DESIGN GROUP - BOSTON, MASSACHUSETTS

SPICKET RIVER GREENWAY GUIDELINES - CORRIDOR SECTIONS

RIVERWALK PROPOSALS

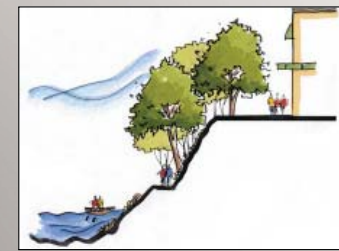
- GREATER INTERFACE AND ACCESS BETWEEN NEIGHBORHOOD AND RIVER
 - WAYFINDING SIGNAGE LOCATED THROUGHOUT LAWRENCE
 - GATEWAYS AND ACCESS POINTS
 - CONNECTIONS TO LOCAL PARKS AND CULTURAL CENTERS
- CONTINUOUS TRAIL SYSTEM ALONG RIVER RECREATIONAL AMENITY, I.E. JOGGING, BIKING ETC. IS NOT POSSIBLE
 - PEDESTRIAN OVERPASSES WHEN TRAIL ACCESS IS NOT POSSIBLE
 - ONE SIDED WHEN CORRIDOR WIDTH OR SLOPE IS INADEQUATE
- COMMUNITY INVOLVEMENT AND STEWARDSHIP
 - CULTURAL EVENTS AT RIVER OR ADJACENT PARKS AND PLAZAS, I.E. FESTIVALS, PERFORMANCES
 - LOCAL SCHOOLS USE RIVER AS AN OUT-DOOR CLASSROOM
- NATURALLY CLEANSE RUN-OFF BEFORE RUNNING INTO RIVER TO PROTECT HABITAT AND QUALITY OF WATER
- CANOPY LEVEL VEGETATION AND LOW GROUNDCOVER ONLY FOR SAFETY PURPOSES

MALDEN MILLS

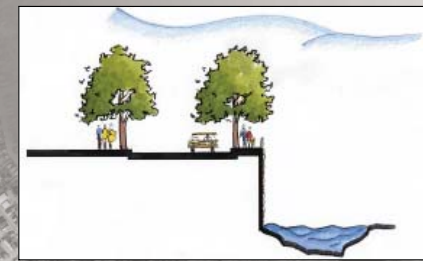
- HISTORICAL/INDUSTRIAL LANDMARK
- FOCAL AND DESTINATION POINT OF RIVERWALK

BROOK STREET PARK PROSAL

- ACTIVE RECREATION OPPORTUNITIES, I.E. BASKETBALL, SOCCER, ETC.
- BOAT LAUNCH
- CONNECTION TO RIVERWALK



SECTION D:
SEASONAL TRAILS



SECTION E:
RETAINING WALL OVERLOOK



SECTION A:
RETAINING WALL OVERLOOK/ LOWER TRAIL COMBINATION



SECTION B:
OVERFLOW/ RIVER PLAZA TIERS



SECTION C:
UPPER TRAIL

- SECTION REFERENCE
- POTENTIAL PARKS AND OPEN SPACES ALONG CORRIDOR
- RIVERWALK
- SIGNIFICANT RIVERWALK CONNECTIONS/WAYFINDING
- LANDMARK/FOCAL POINTS

SPICKET RIVERWALK GUIDELINES

Lawrence, Massachusetts
RIVERWALK PROPOSALS

COPLEY WOLFF DESIGN GROUP - BOSTON, MASSACHUSETTS

SPICKET RIVER GREENWAY GUIDELINES - EXISTING CONDITIONS

