

# **Green Grand Rapids & Community Discussions about Stormwater**

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Executive Director, WMEAC**



**CITY OF  
GRAND  
RAPIDS**



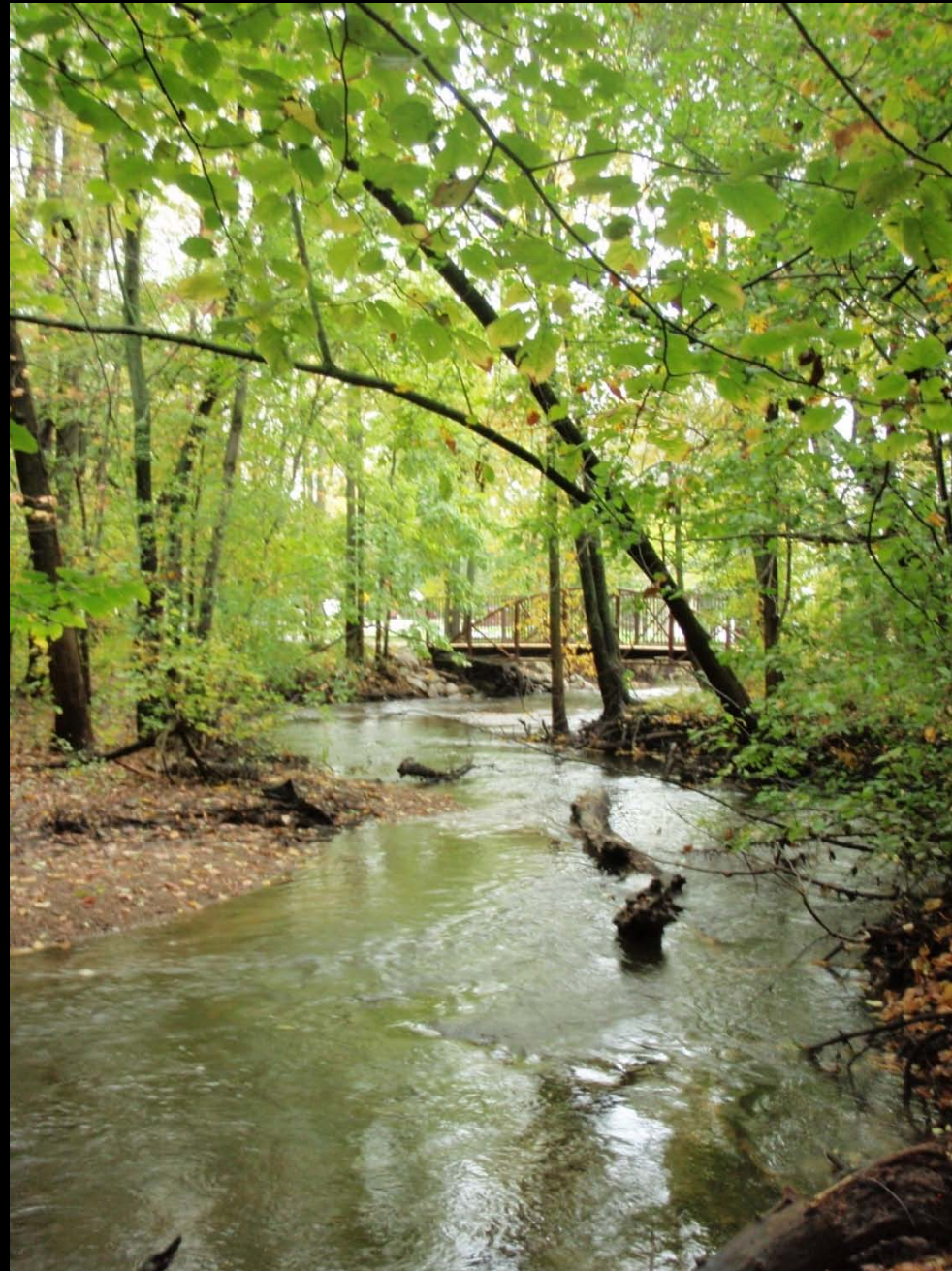
**introduction**

**master plan**

**zoning ordinance**

**green grand rapids**

**citizen engagement**





# Policies & Regulations

## What are our tools?

- Master Plan is a policy document
- Zoning Ordinance is law
- Community engagement and education

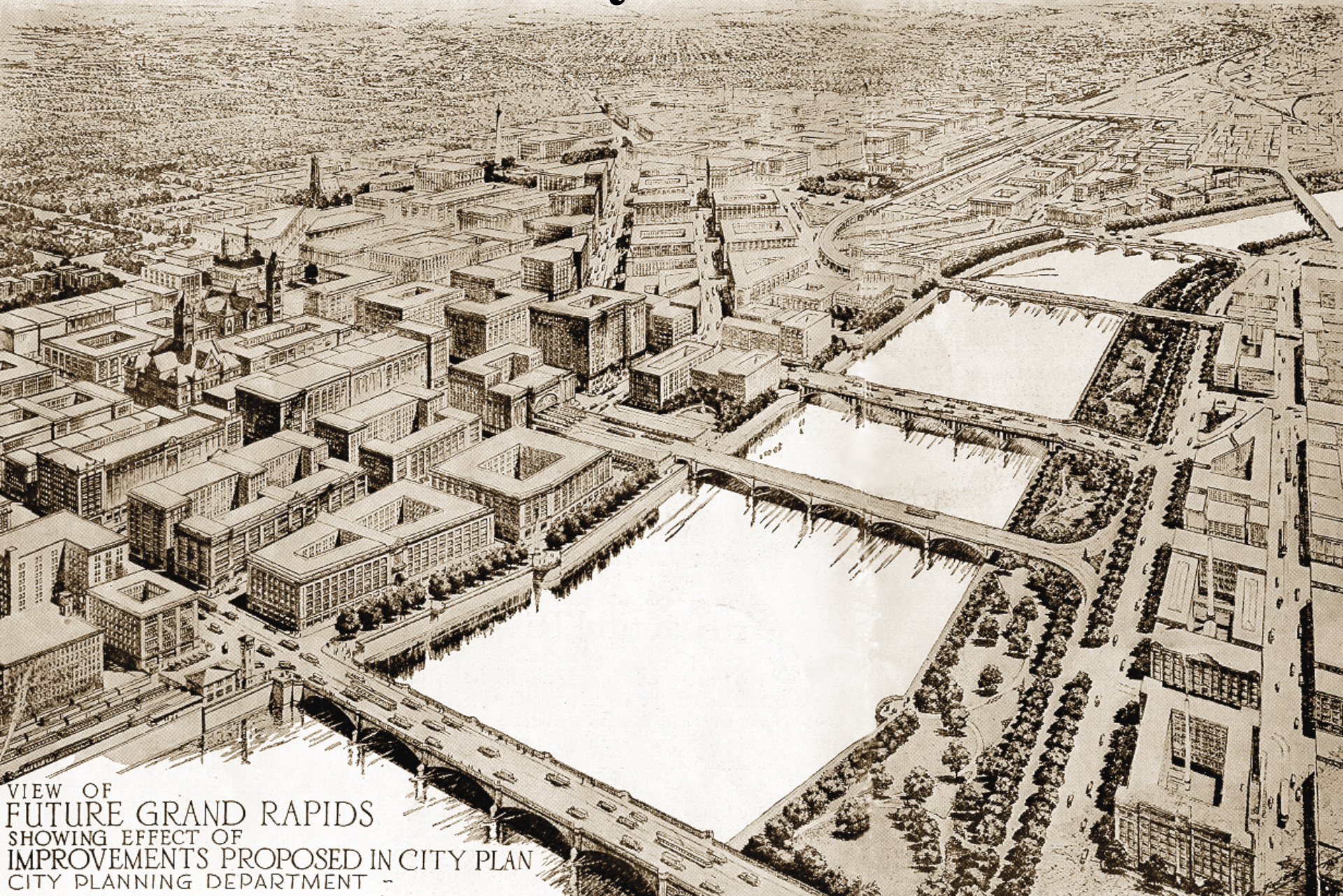


CITY OF GRAND RAPIDS  
2002  
MASTERPLAN





# 1923 – City Beautiful



VIEW OF  
FUTURE GRAND RAPIDS  
SHOWING EFFECT OF  
IMPROVEMENTS PROPOSED IN CITY PLAN  
CITY PLANNING DEPARTMENT



# 1963 – Urban Renewal





# Smart Growth

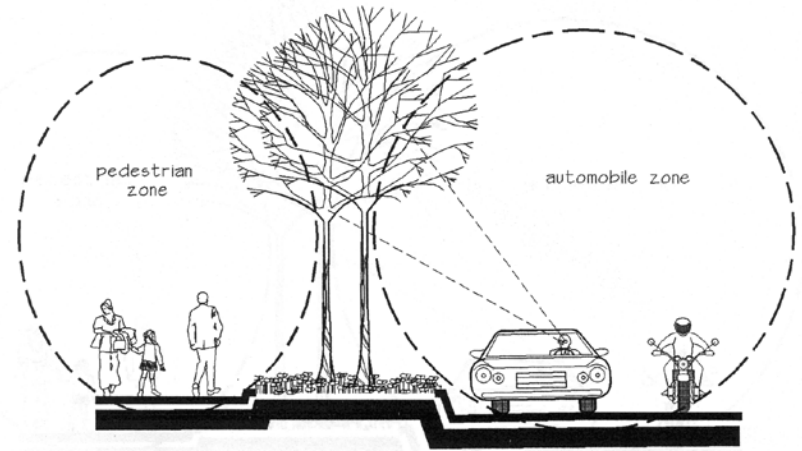
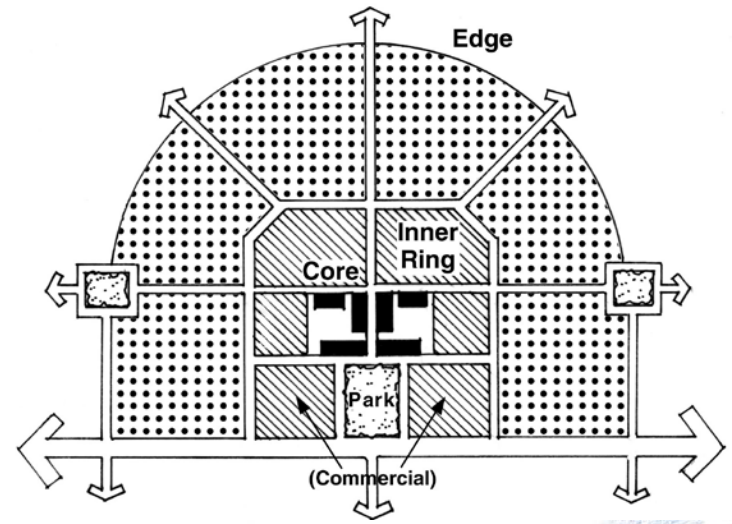
- Create a range of housing choices and opportunities.
- Create walkable and accessible neighborhoods.
- Mix land uses.
- Foster distinctive, attractive development with a strong sense of place.





# Smart Growth

- Strengthen and direct development towards existing communities.
- Encourage compact development patterns.
- Provide a variety of transportation choices.





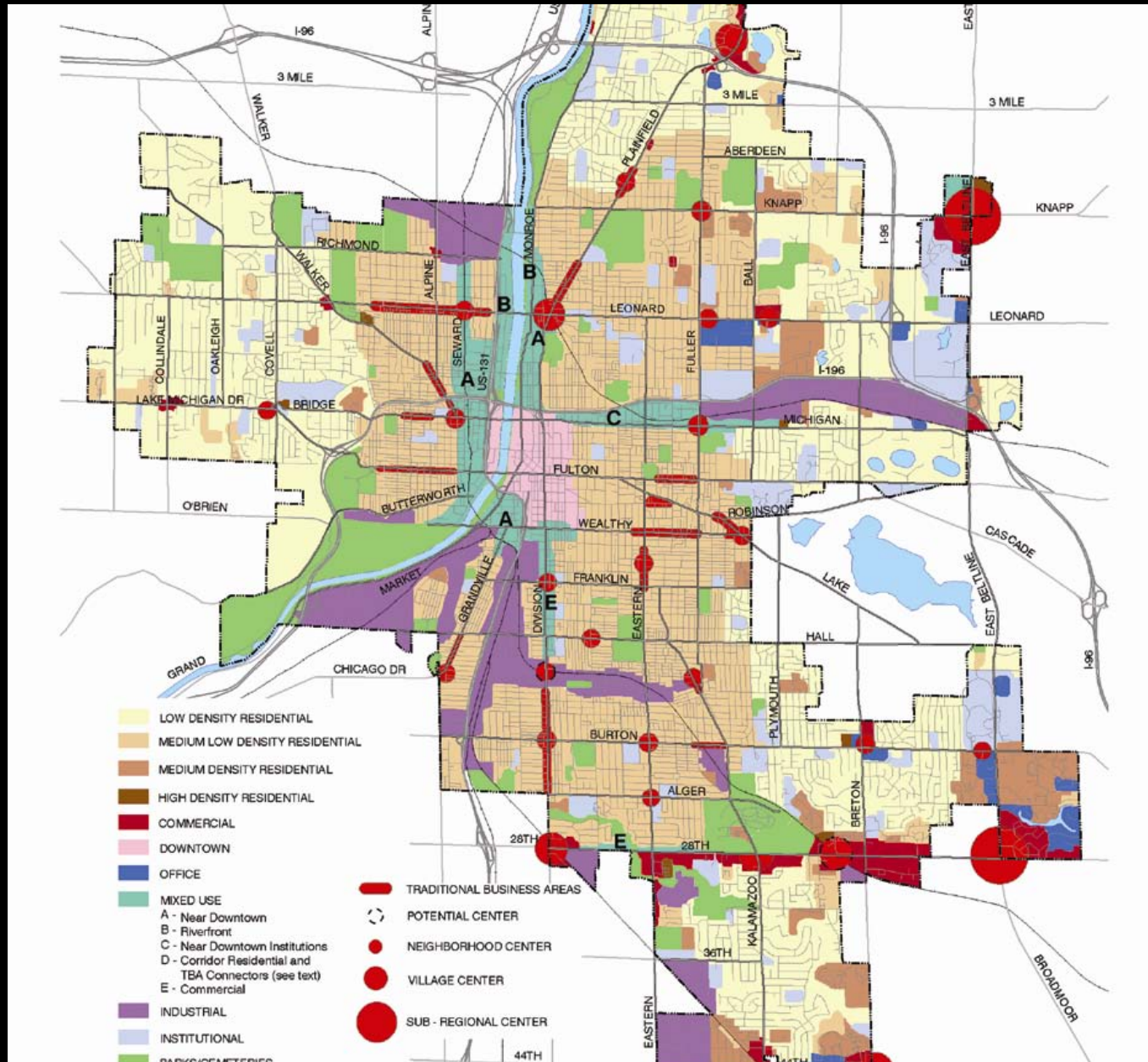
# Smart Growth

- Preserve farmland, open space, natural beauty and critical environmental areas.
- Encourage stakeholder and community collaboration.
- Make development decisions predictable, fair and cost effective.

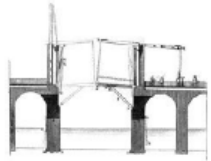




# Future Land Use Map







Public Interest Projects, Inc.  
Joseph Minicozzi, AICP  
Joem@pubintproj.com



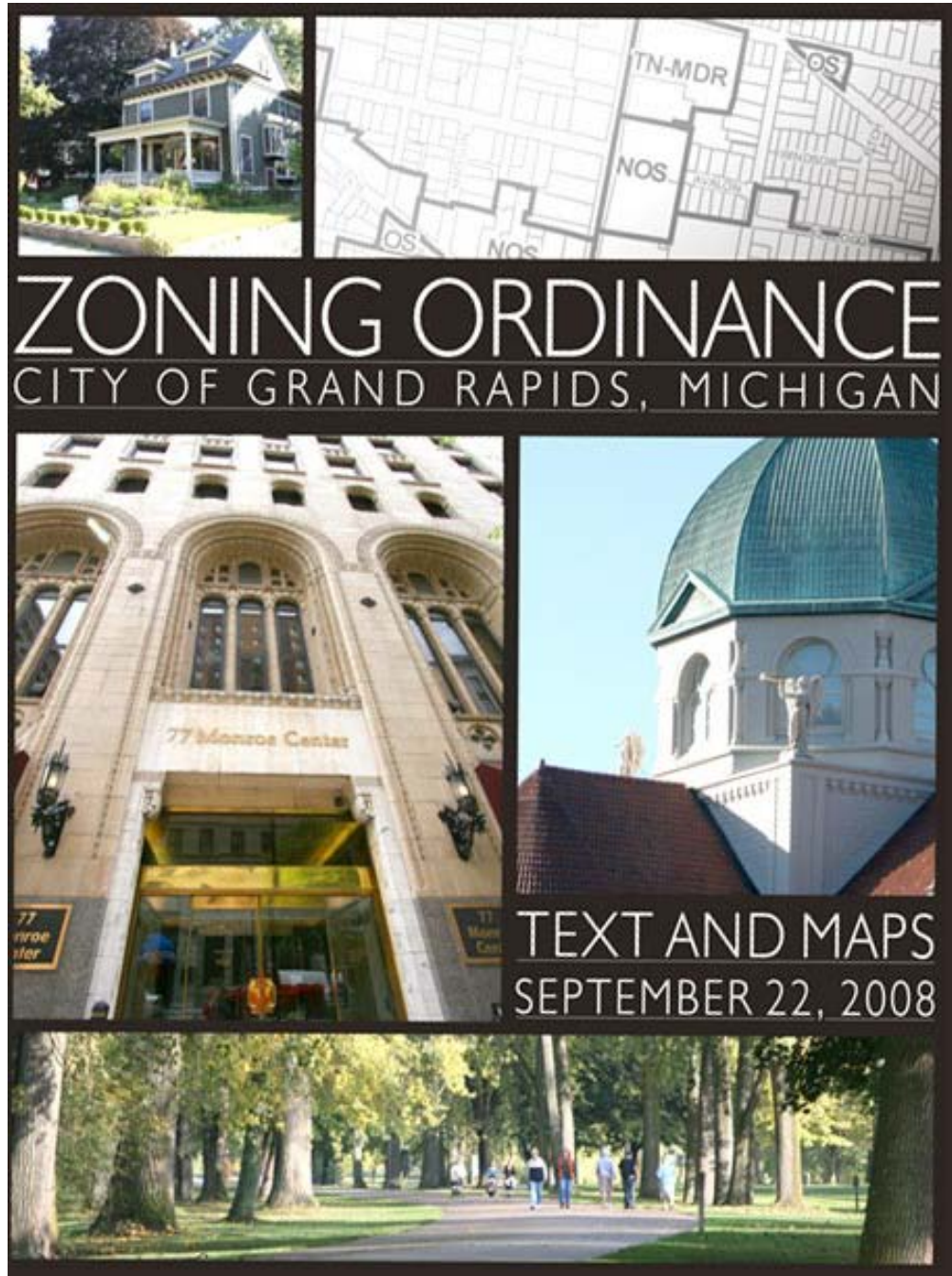
<b>Land Consumed (Acres):</b>	<b>34.0</b>	<b>0.5</b>
<b>Total Property Taxes/Acre:</b>	<b>\$ 6,500</b>	<b>\$634,000</b>
<b>City Retail Taxes/Acre:</b>	<b>\$ 47,500</b>	<b>\$ 83,600</b>
<b>Residents per Acre:</b>	<b>0.0</b>	<b>90.0</b>
<b>Jobs per Acre:</b>	<b>5.9</b>	<b>73.7</b>



# Zoning Ordinance

- Implementation tool.
- Local law = mandated.
- Includes principles of Smart Growth, LEED-ND, Transit-Oriented Development (TOD), Crime Prevention Through Environmental Design (CPTED), and the Vision of 3,000 Grand Rapidians.

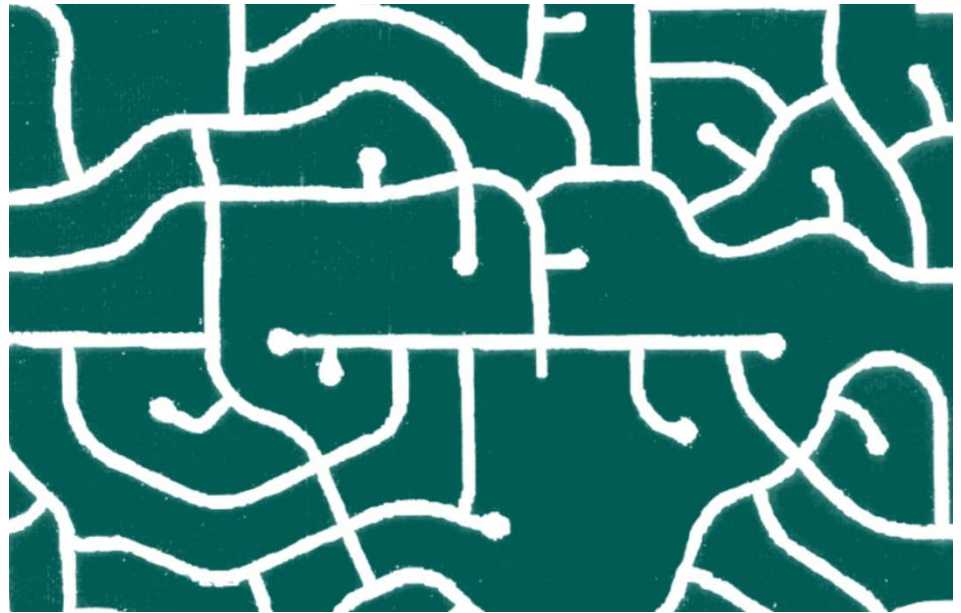
Effective November 5, 2007  
Revised September 22, 2008





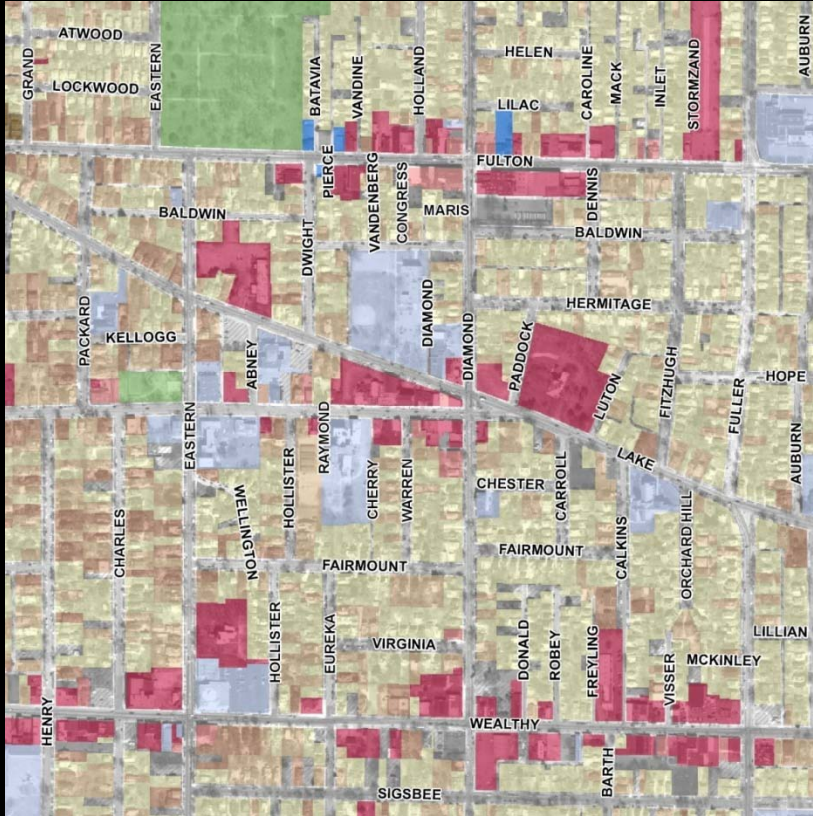
# Street Network

- Pre WWII: tight street grid, straight connected streets, sidewalks and alleys, block size 400' or <
- Post WWII: curvilinear streets, cul-de-sacs, few sidewalks, large blocks at 600' or > and super blocks at ½ - 1 mile

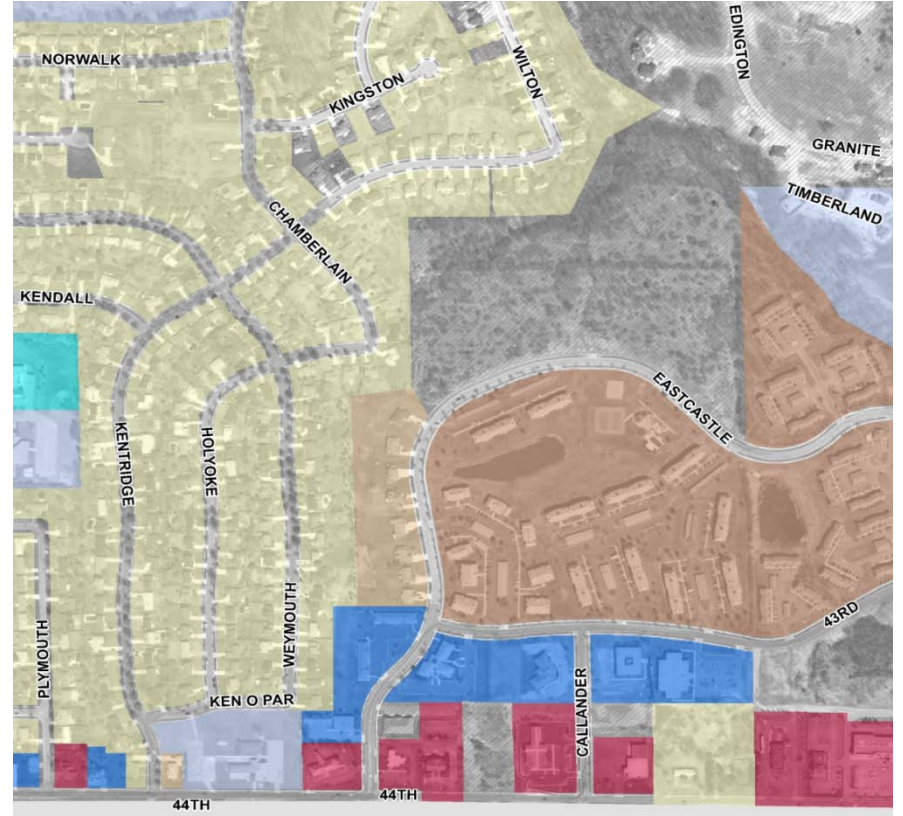




# Land Use Patterns



- Traditional



- Modern



# Zone Districts

## TN - Traditional Neighborhoods

<b>TN – LDR</b>	<b>Low-Density Residential</b>	<b>5.5.02.A.</b>
<b>TN – MDR</b>	<b>Mixed-Density Residential</b>	<b>5.5.02.B.</b>
<b>TN – CC</b>	<b>City Center</b>	<b>5.6.02.A.</b>
<b>TN – TCC</b>	<b>Transitional City Center</b>	<b>5.6.02.B.</b>
<b>TN – TBA</b>	<b>Traditional Business Area</b>	<b>5.6.02.C.</b>
<b>TN – TOD</b>	<b>Transit-Oriented Development</b>	<b>5.6.02.D.</b>

## MCN - Mid-20th Century Neighborhoods

<b>MCN – LDR</b>	<b>Low-Density Residential</b>	<b>5.5.03.A.</b>
<b>MCN - MDR</b>	<b>Mixed-Density Residential</b>	<b>5.5.03.B.</b>
<b>MCN – C</b>	<b>Commercial</b>	<b>5.6.03.A.</b>
<b>MCN – TOD</b>	<b>Transit-Oriented Development</b>	<b>5.6.03.B.</b>

## MON - Modern Era Neighborhoods

<b>MON – LDR</b>	<b>Low-Density Residential</b>	<b>5.5.04.A.</b>
<b>MON – MDR</b>	<b>Mixed-Density Residential</b>	<b>5.5.04.B.</b>
<b>MON - C</b>	<b>Commercial</b>	<b>5.6.04.A.</b>
<b>MON - TOD</b>	<b>Transit-Oriented Development</b>	<b>5.6.04.B.</b>



# High Density Housing and Mixed-Use



# Zoning Ordinance Requirements

## Minimum Required Greenspace

- *Purpose: The minimum greenspace requirements are designed to ensure a sufficient amount of area for recreation, nature, and greenspace as well as to provide a pervious surface to assist in stormwater management.*
- Applies to each lot in its entirety.
- Calibrated to land use density.
- Lawn, landscaping or other plant materials with soil is “greenspace”.
- Permanent structures, sidewalks, or pavement of any type is not.
- Landscape buffers, planters, rain gardens, vegetated walls and green roofs may be include in greenspace calculations.
- Stormwater credit is available up to 25% for use of grass pavers, brick pavers with sand base, pervious concrete and asphalt.
- A 50% reduction is available in requirements if 100% of all stormwater is retained on-site and a LEED checklist is submitted; or
- Payment in lieu to the Grand Valley Regional Biosolids Authority for contribution to the Kent County Farmland Purchase of Development Rights program.



# Zoning Ordinance Requirements

## Environmental Protection

- *Purpose: Reduce stormwater impacts and costs associated with the movement of earth, expansion of impervious surface areas and removal of vegetation, including flooding and erosion*
- Cites Chapter 32 Stormwater Management
- Wetlands, woodlands, wild life areas, steep slopes and streams shall be delineated on final plats, condo documents or site plans with a clear notation of use restrictions.
- All non-built surfaces shall be planted with living vegetation, stabilized and maintained.
- At least 70% of new plantings shall be native species.
- Grading of steep slopes of 20% or greater is not permitted.
- No grading, removal of vegetative cover within 25' of an intermittent stream, 50' of a perennial stream or 75' of a wetland or other water body.
- Structural soils required for tree plantings, including street trees.

# Zoning Ordinance Requirements

## LUDS Review and Inspection

- Any site work requires a plan. And
- Inspections are used to insure compliance
- No action before LUDS permit – no removal of vegetation, ground cover or trees shall be undertaken prior to the issuance of a LUDS permit.
- Fines and penalties can be used.







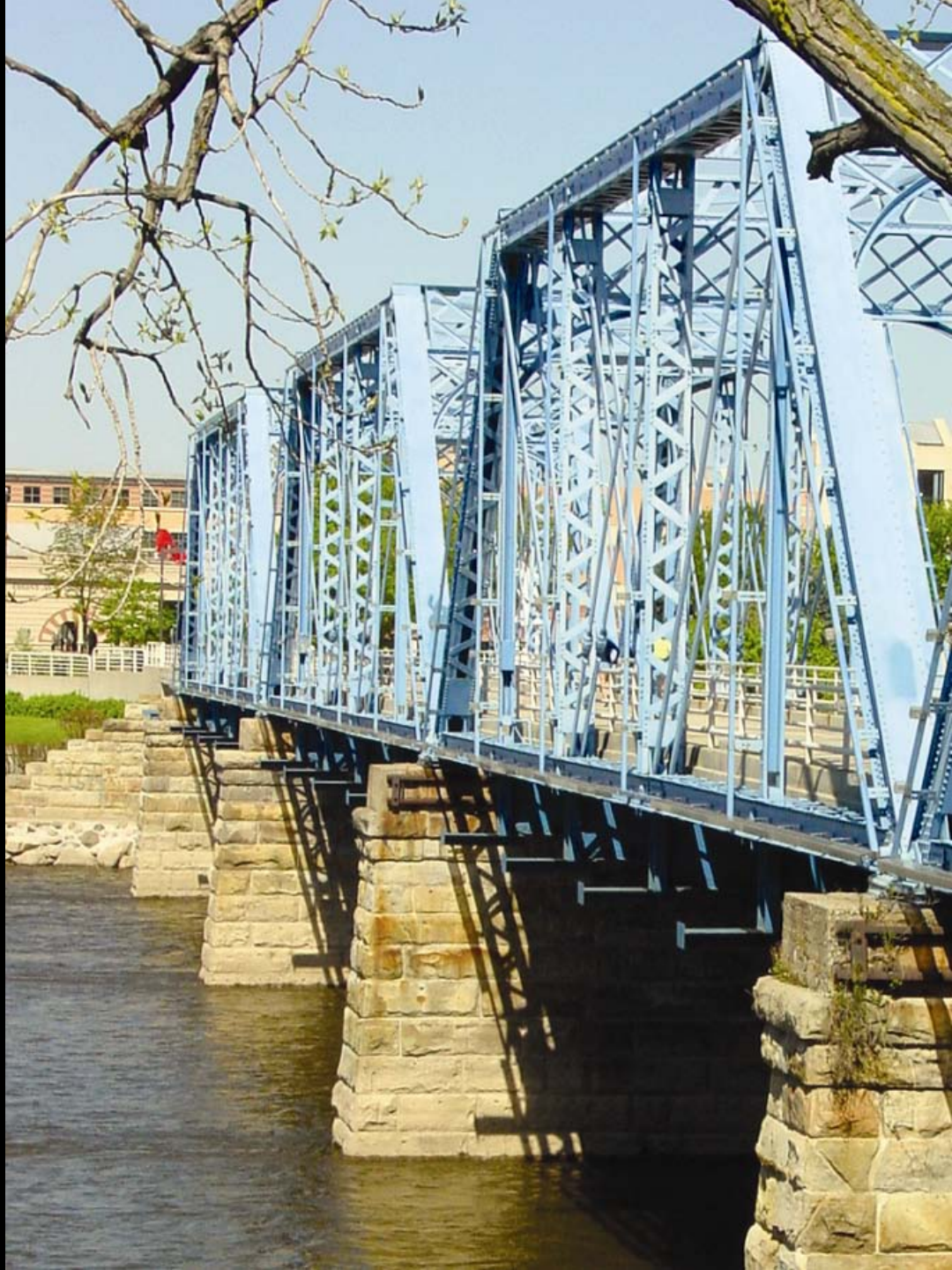
# GREEN GRAND RAPIDS



# Green Grand Rapids

## Basis of Project Need

- Decreasing amount of vacant land
- Downsizing of GRPS
- Emerald Ash Borer
- Awareness of tree canopy benefits
- Requests for bike lanes
- Stormwater management issues
- Underutilization of Grand River
- Rising requests for community gardens and farmers markets
- Economic development strategy
- Shrinking city resources
- Re-tool government





# Green Grand Rapids

## City-Wide Topics

- Parks + Recreation
- Greening
- Connections
- Natural Systems
- Grand River
- Local Food



# Green Grand Rapids Priorities

PRIORITY STRATEGIES/TOPICS	Grand River	Natural Systems	Greening	Connections	Parks & Rec	Food
Improve river ecosystem (water quality)	X	X	X	X	X	
Expand urban forest canopy	X	X	X	X		
Complete streets		X	X	X		X
Provide a continuous Riverwalk	X	X	X	X	X	
Accessible park within ¼ mile	X		X	X	X	X
Expand river recreation	X	X	X	X	X	X

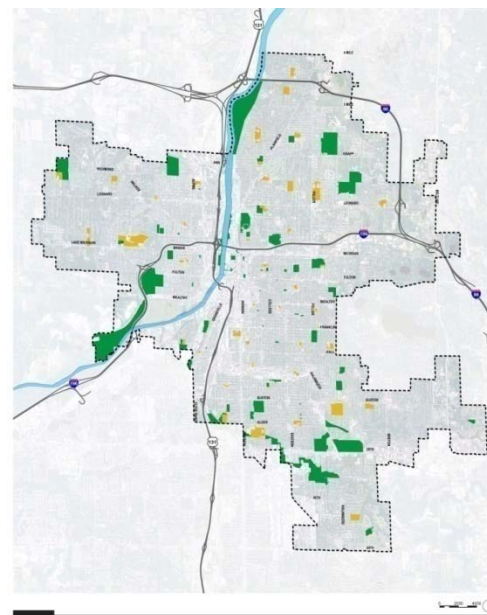


# Green Grand Rapids

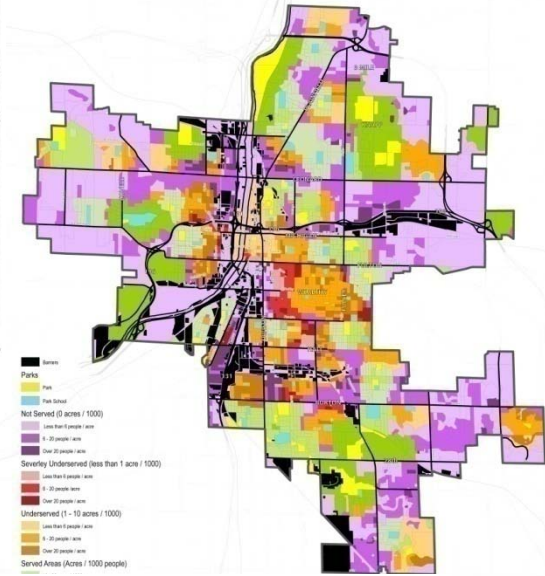
## Topics

- Parks + Recreation
- Greening
- Connections
- Natural Systems
- Grand River
- Local Food

## Park Inventory



## Park Accessibility



## Park Concepts

### LOW IMPACT DEVELOPMENT STRATEGIES

- RECLAIM/RESTORE NATURAL HABITATS
  - NATURE PLANTINGS
  - UPLAND AND WET MEADOW PRAIRIE
  - WETLAND ENHANCEMENT
  - NATURALIZED RIVER EDGE TREATMENT
- STORMWATER BMPs**
- RAIN GARDENS
  - FILTER STRIPS
  - RECEPTIVE DITCHES
- OTHER**
- RAIN HARVESTING
  - WIND HARVESTING: SMALL WIND TURBINES
  - SOLAR: PHOTOVOLTAIC PANELS



- BOAT LAUNCH
- CANOE PORTAGE AND LIVERY
- LANDFILL ECOLOGY
- RESTORATIVE AREA
- FARMER'S MARKET
- COMMUNITY GARDENS
- GREENHOUSES
- PRAIRIE RESTORATION AREA
- ENTRY DRIVE
- LANDSCAPE BUFFER AND UTILITY CORRIDOR
- HANGAR GARDENS AND BIOWALES
- RESTROOM BUILDING
- PICKNIC AREA WITH BELTHER
- PARKS DEPARTMENT GREENHOUSES
- PARKS DEPARTMENT MAINTENANCE BUILDING
- SERVICE DRIVE
- SPECIAL EVENT FESTIVAL SPACE
- DOG PARK
- PUMP TRACK
- RECREATIONAL SPORTS FIELDS
- ARCHERY
- KATE PARK
- MULTI-AGE PLAYGROUND

JJR fitch JJR



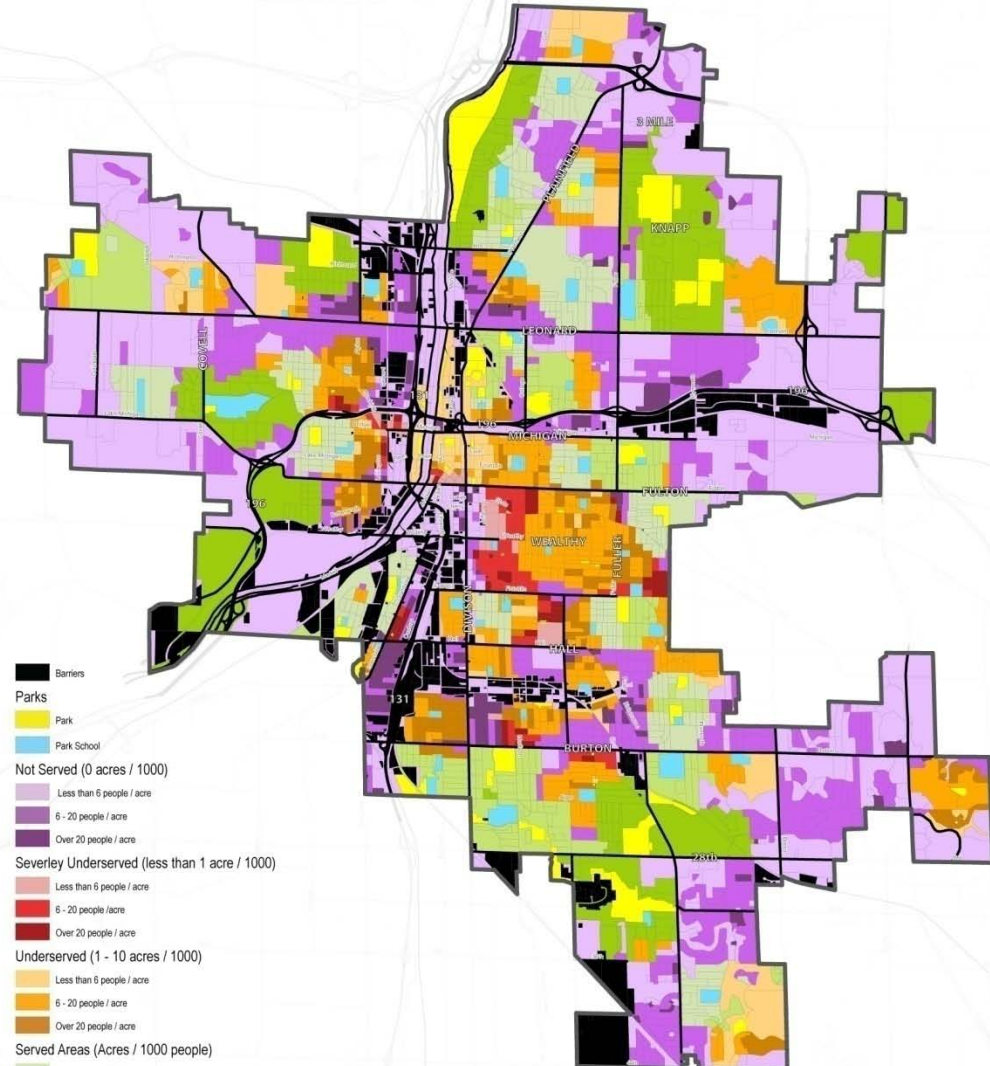
# Parks & Recreation

An accessible park within ¼ mile of all residents

- Black = Identified barriers
- Green = served
- Orange = underserved
- Red = severely underserved
- Purple = not served



**MAP DESCRIPTION:**  
 This map illustrates how well residents within each city block are served. Within deficit areas (not served, severely underserved, and underserved), possible priorities for improvements are identified by areas with higher population densities. These are the areas where relatively more people are not adequately served by existing parks.



- Barriers
- Parks**
  - Park
  - Park School
- Not Served (0 acres / 1000)**
  - Less than 6 people / acre
  - 6 - 20 people / acre
  - Over 20 people / acre
- Severley Underserved (less than 1 acre / 1000)**
  - Less than 6 people / acre
  - 6 - 20 people / acre
  - Over 20 people / acre
- Underserved (1 - 10 acres / 1000)**
  - Less than 6 people / acre
  - 6 - 20 people / acre
  - Over 20 people / acre
- Served Areas (Acres / 1000 people)**
  - 10 - 20 acres / 1000
  - 20 - 50 acres / 1000
  - Over 50 acres / 1000



# Park Concept Study

## Joe Taylor Park



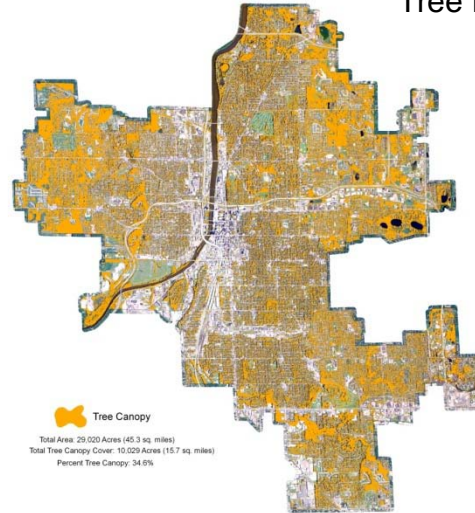
# Green Grand Rapids

## Topics

- Parks + Recreation
- **Greening**
- Connections
- Natural Systems
- Grand River
- Local Food

### Urban Forest Canopy City of Grand Rapids Kent County, Michigan

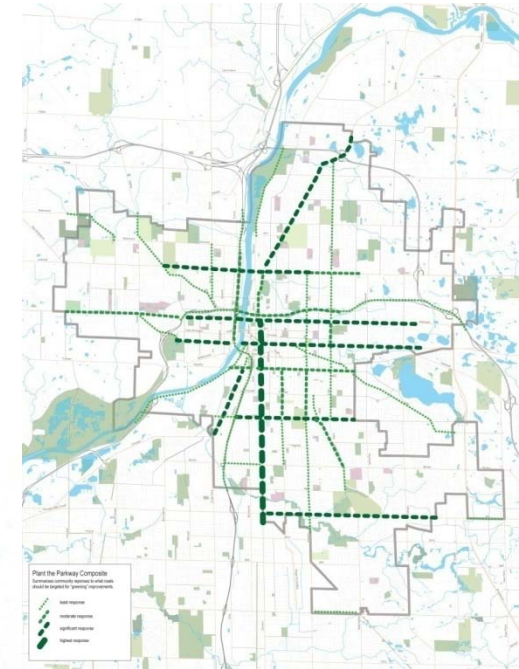
### Tree Inventory



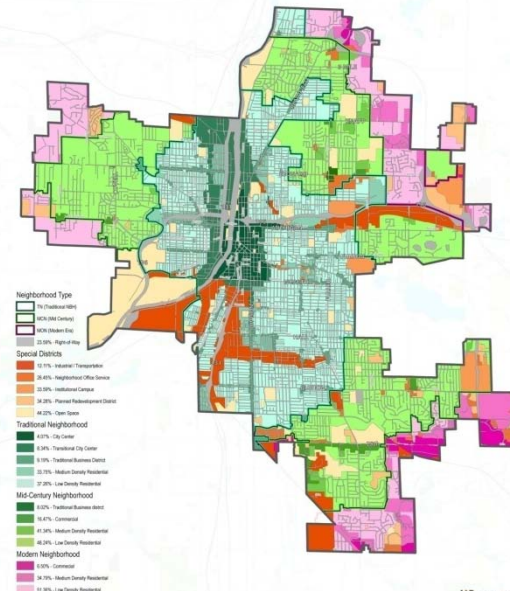
Scale: 1:18,000  
0 0.25 0.5 1 1.5 2 Miles

Grand Rapids, Michigan  
City of Grand Rapids  
City Planning Department  
Information Services Center  
Map Created Aug. 2008

### Deficiencies



### Zone Districts



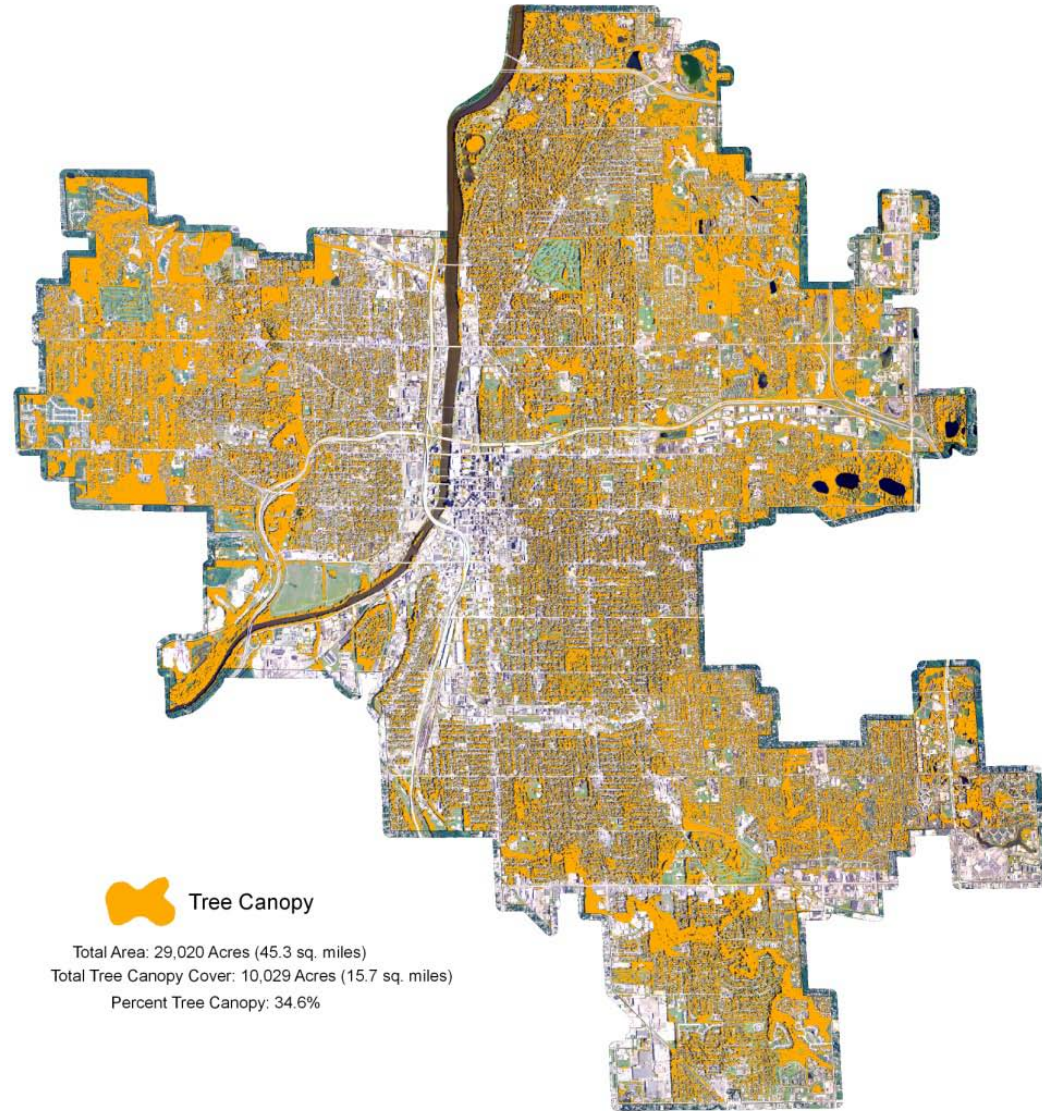


# Greening

## Priority Strategies

1. Protect/expand the tree canopy.
2. Design streets to minimize irrigation and focus maintenance efforts.
3. Promote the use of sustainable materials.
4. Use LID principles in all park development.

## Urban Forest Canopy City of Grand Rapids Kent County, Michigan



Scale: 1:19,000

0 0.25 0.5 1 1.5 2 Miles

Grand Valley State University  
Annis Water Resources Institute  
Information Services Center

Map Created Aug. 2008

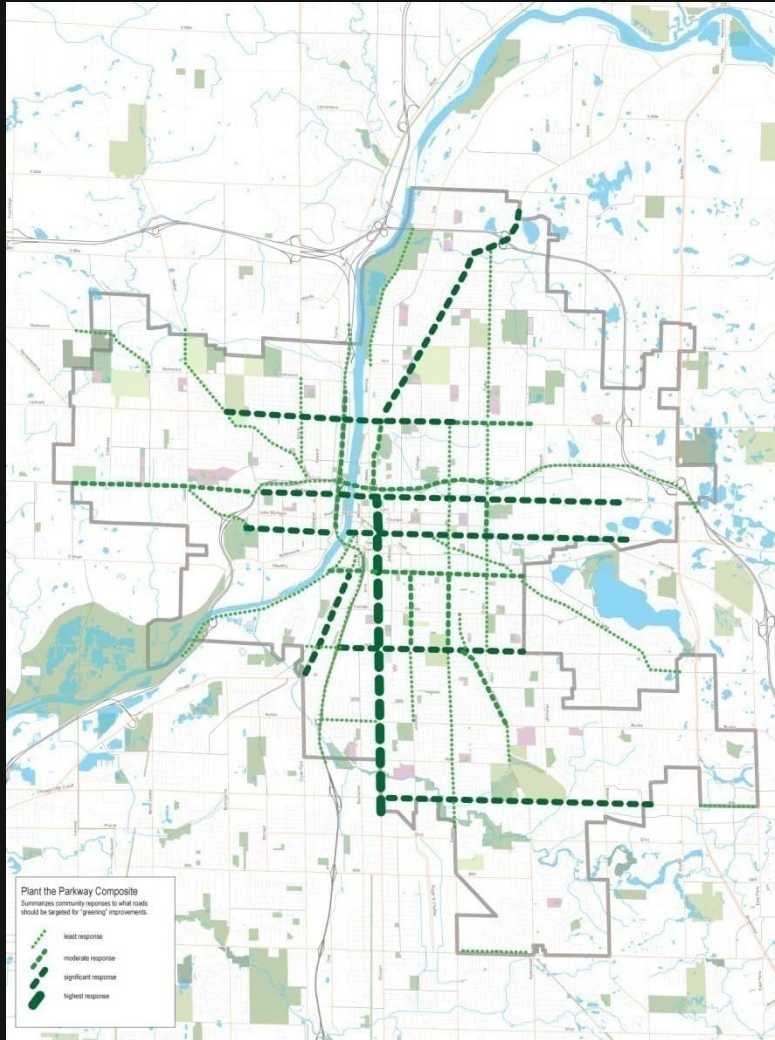
# Greening

## GREEN GRAND RAPIDS

URBAN FOREST . Arterial ROW Canopy Cover



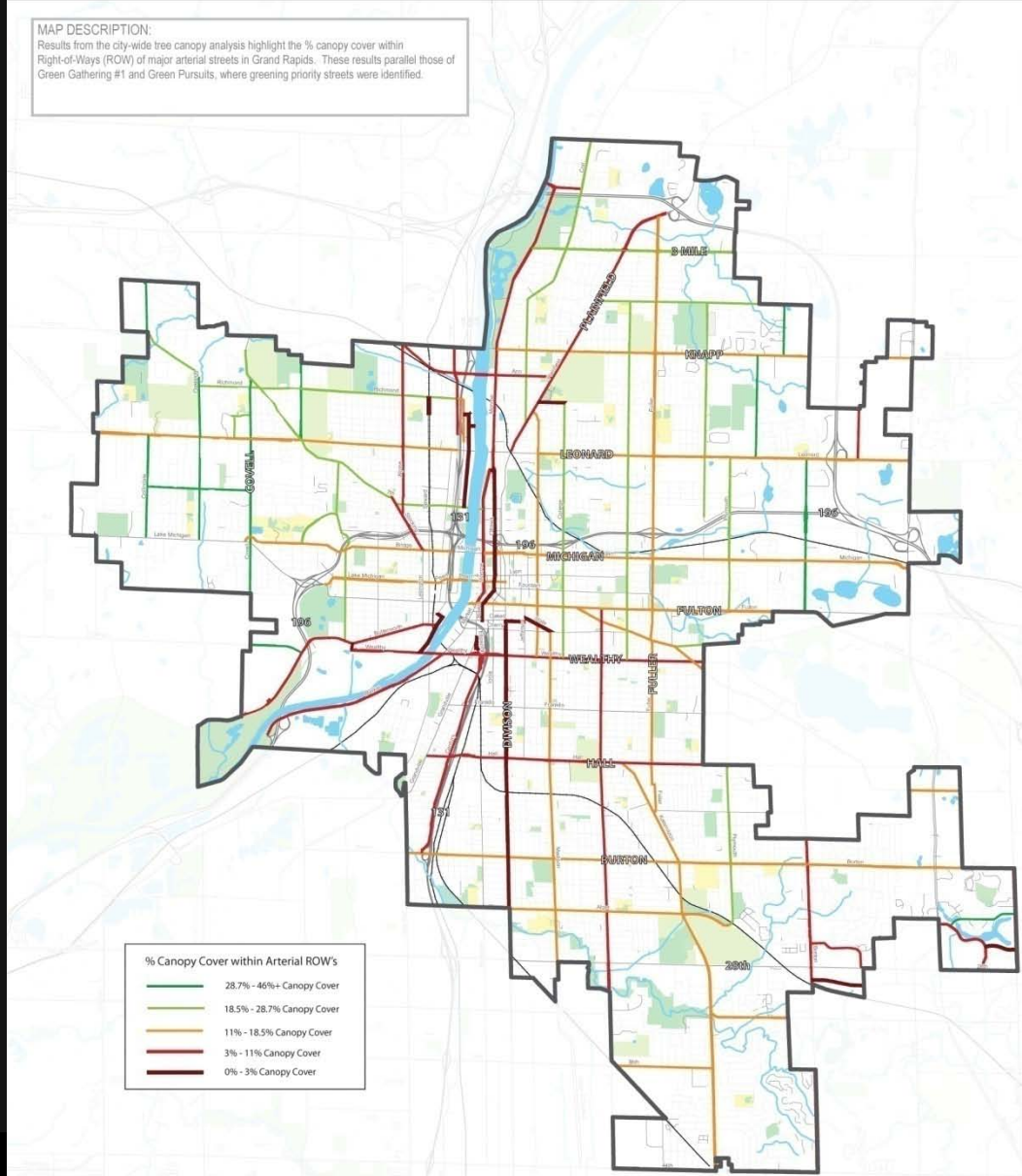
2008 . 10 . 22



**Plant the Parkway Composite**  
Summarizes community responses to what roads should be targeted for 'greening' improvements.

- light response
- moderate response
- significant response
- highest response

**MAP DESCRIPTION:**  
Results from the city-wide tree canopy analysis highlight the % canopy cover within Right-of-Ways (ROW) of major arterial streets in Grand Rapids. These results parallel those of Green Gathering #1 and Green Pursuits, where greening priority streets were identified.



**% Canopy Cover within Arterial ROW's**

- 28.7% - 46%+ Canopy Cover
- 18.5% - 28.7% Canopy Cover
- 11% - 18.5% Canopy Cover
- 3% - 11% Canopy Cover
- 0% - 3% Canopy Cover



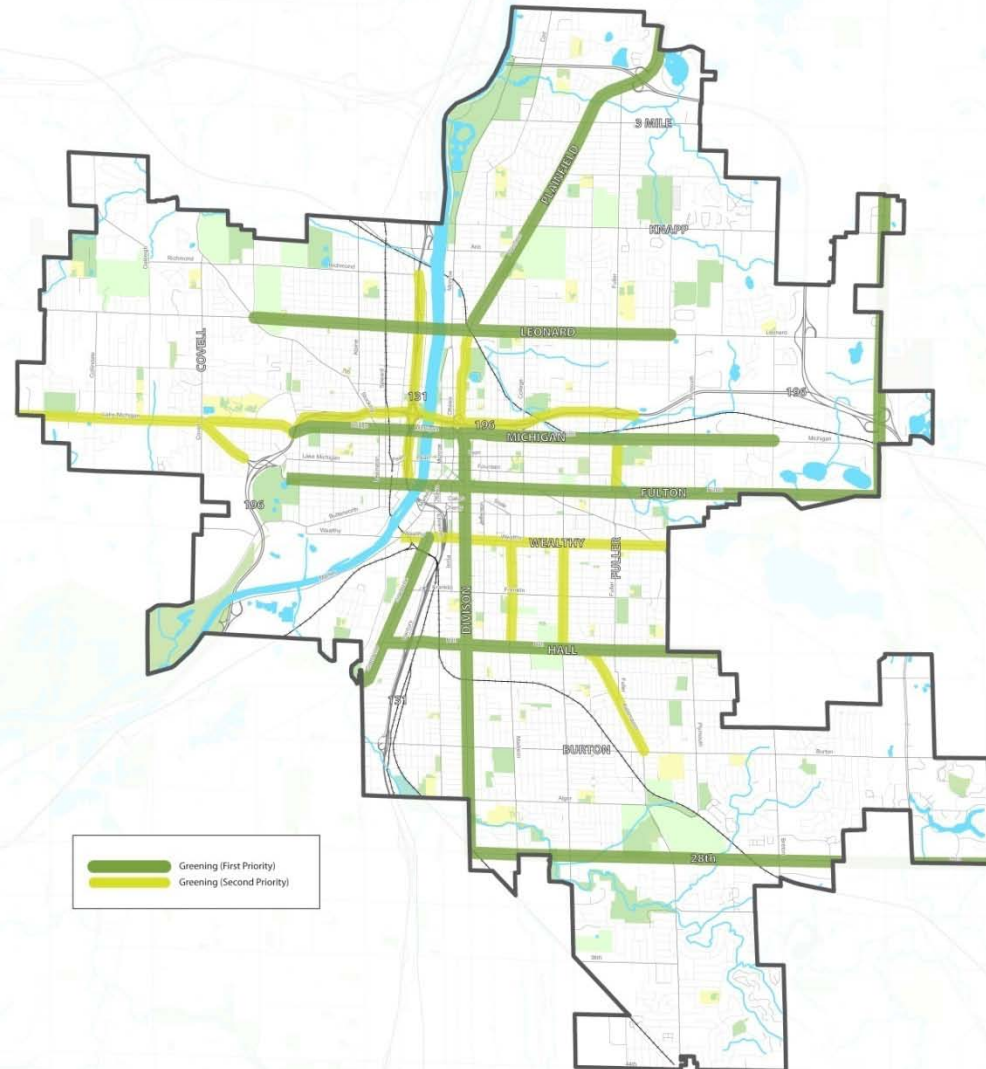
# Greening

## Protect and expand the tree canopy

- Adopt 40% city-wide canopy goal
- Establish sub-area canopy targets through zoning
- Develop an inventory of existing trees as the basis for detailed planting and mgt
- Enhance tree preservation and landscape ordinance requirements and incentives
- Augment Urban Forestry Department resources
- Encourage private revegetation efforts in already built areas through education and incentives

## Greening priority streets

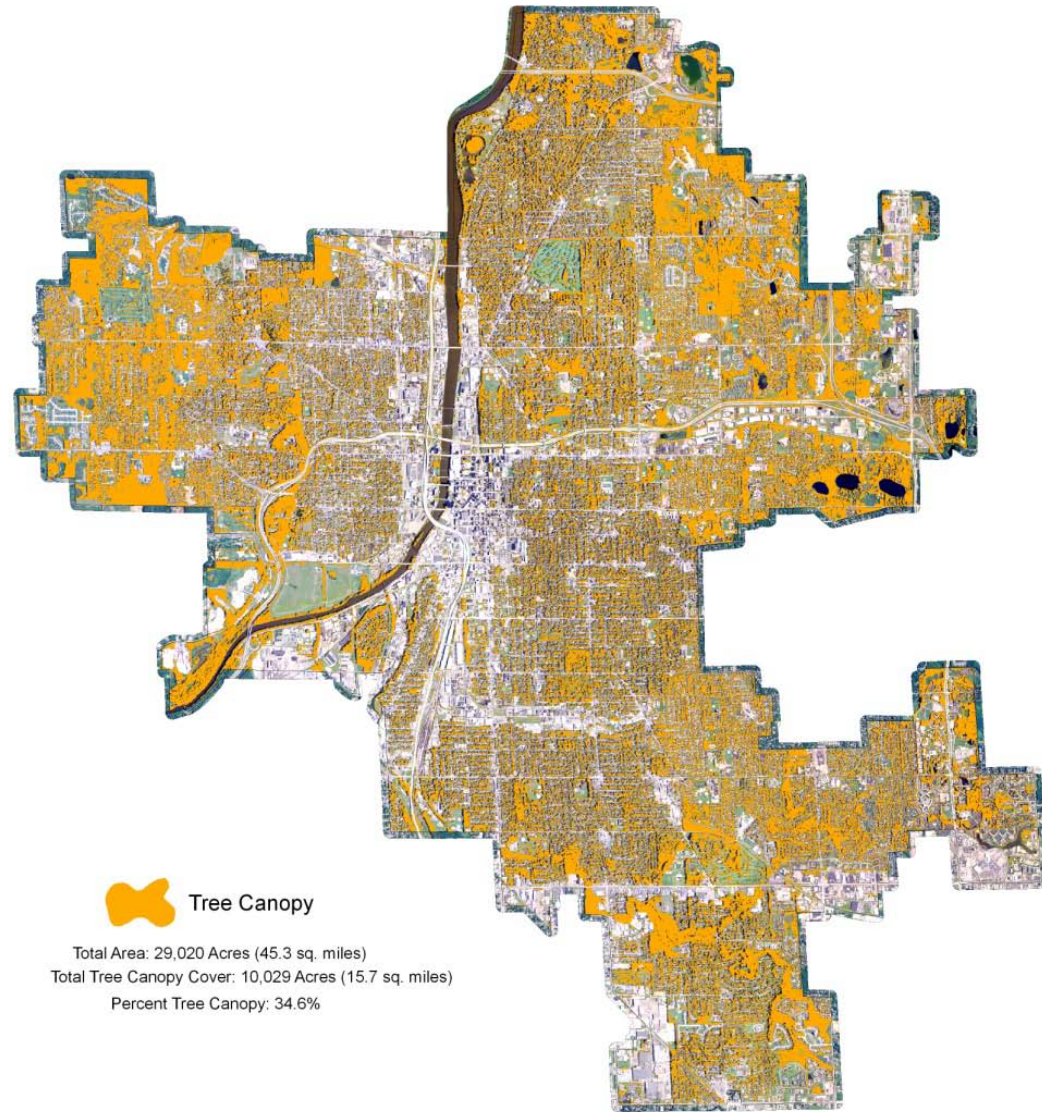
MAP DESCRIPTION:  
Composite results from the Green Pursuits and Green Gathering #1 indicate first and second priority streets for greening improvements. These streets are important gateway streets and major thoroughfares that have relatively few street trees and other landscaping.



# Greening

- City has been planting about 500 trees per year, plus ash tree replacements.
- Initial recommendations formulated by Urban Forestry Committee
- East Hills Urban Forest Plan, including inventory
- WMEAC Save Your Ash program

## Urban Forest Canopy City of Grand Rapids Kent County, Michigan





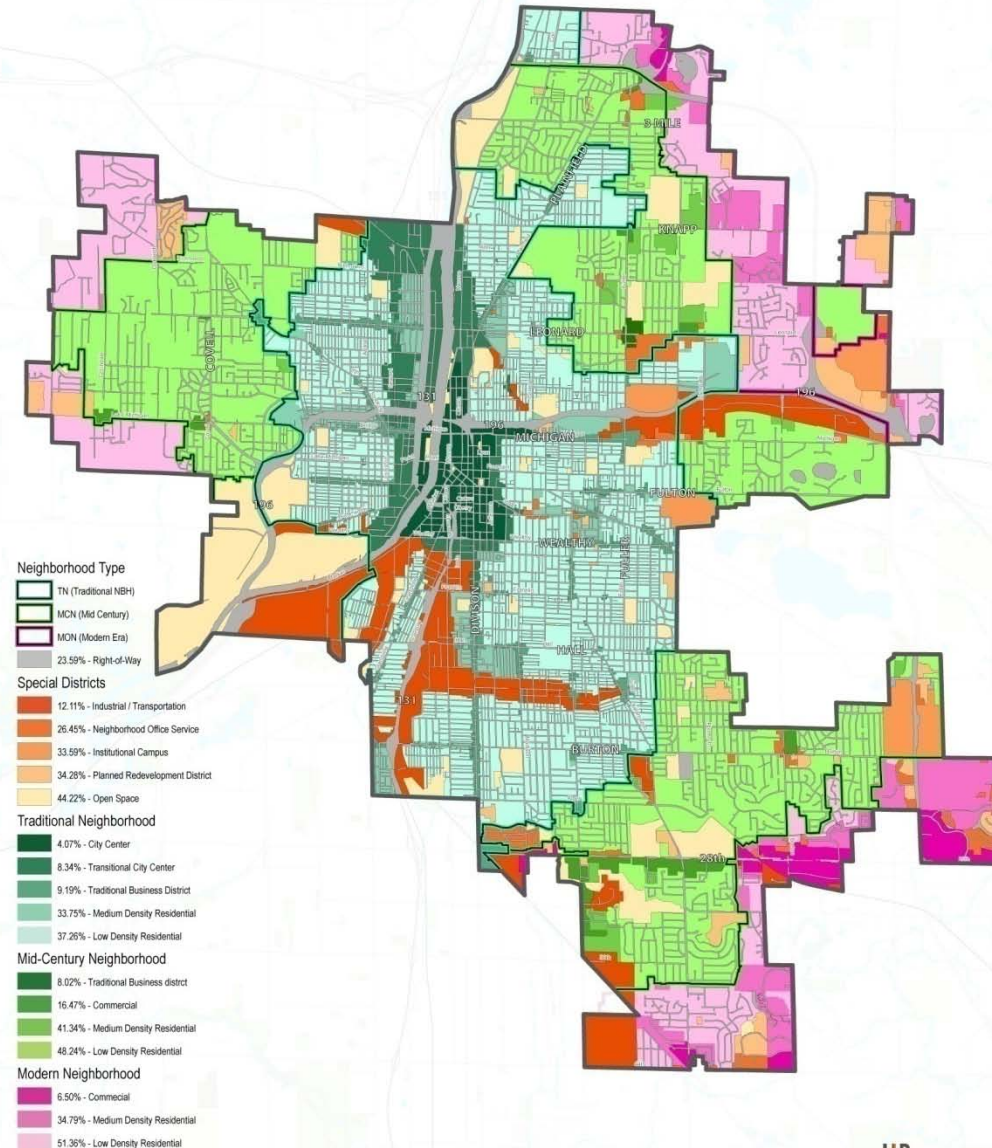
# Greening

- Revise ordinances and policies to strengthen tree protection and planting
- Education on benefits of tree protection/planting and incentives for taking action (e.g., bulk purchases)
- Explore strategies for augmenting funding to support Forestry Division activities (for tree inventory; tree planting; pruning)

Mid-Century Neighborhoods (46.86%)  
Modern Neighborhoods (42.88%)  
Special Districts (30.34%)  
Traditional Neighborhoods (30.15%)  
Right-of-Way (23.59%)

## % tree canopy cover by zoning class

MAP DESCRIPTION:  
Existing tree cover percentages are shown for each neighborhood type and zoning category in the City of Grand Rapids.

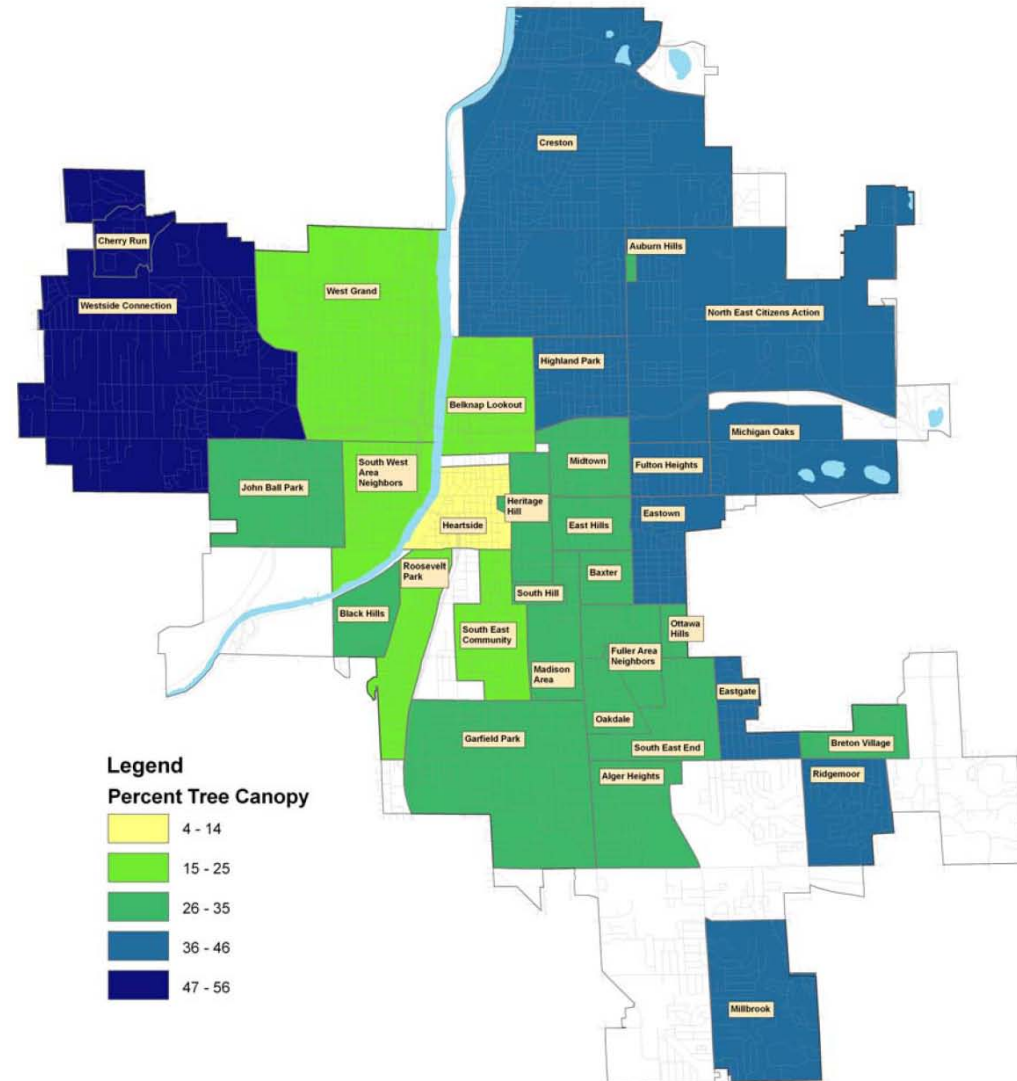


# Greening

- Citizens can plant a tree
- Organize a neighborhood (or business area) group to provide volunteer planting labor and apply for a tree planting grant (Michigan Global ReLeaf)
- Volunteer to monitor and maintain new trees planted by City to improve survival rate
- Work with an existing non-profit, or organize a new tree-centered non-profit, to provide education, training, advocacy and funding

## Percent Urban Tree Canopy By Neighborhood Associations

City of Grand Rapids - Kent County, Michigan

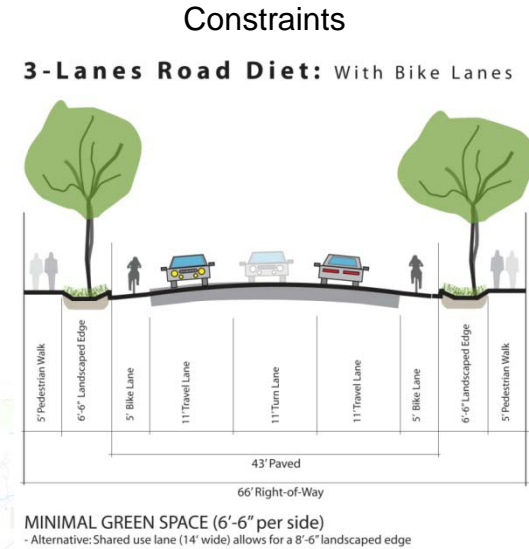
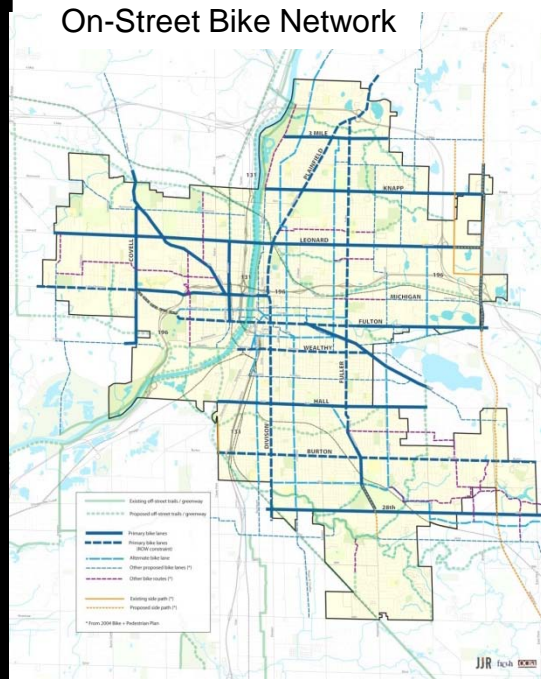
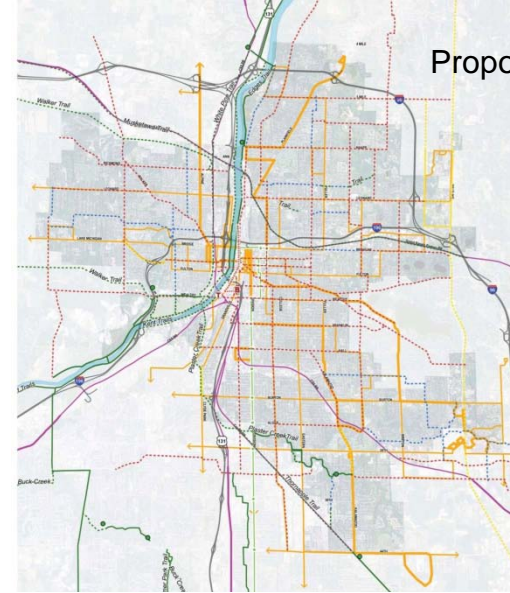




# Green Grand Rapids

## Topics

- Parks + Recreation
- Greening
- **Connections**
- Natural Systems
- Grand River
- Local Food

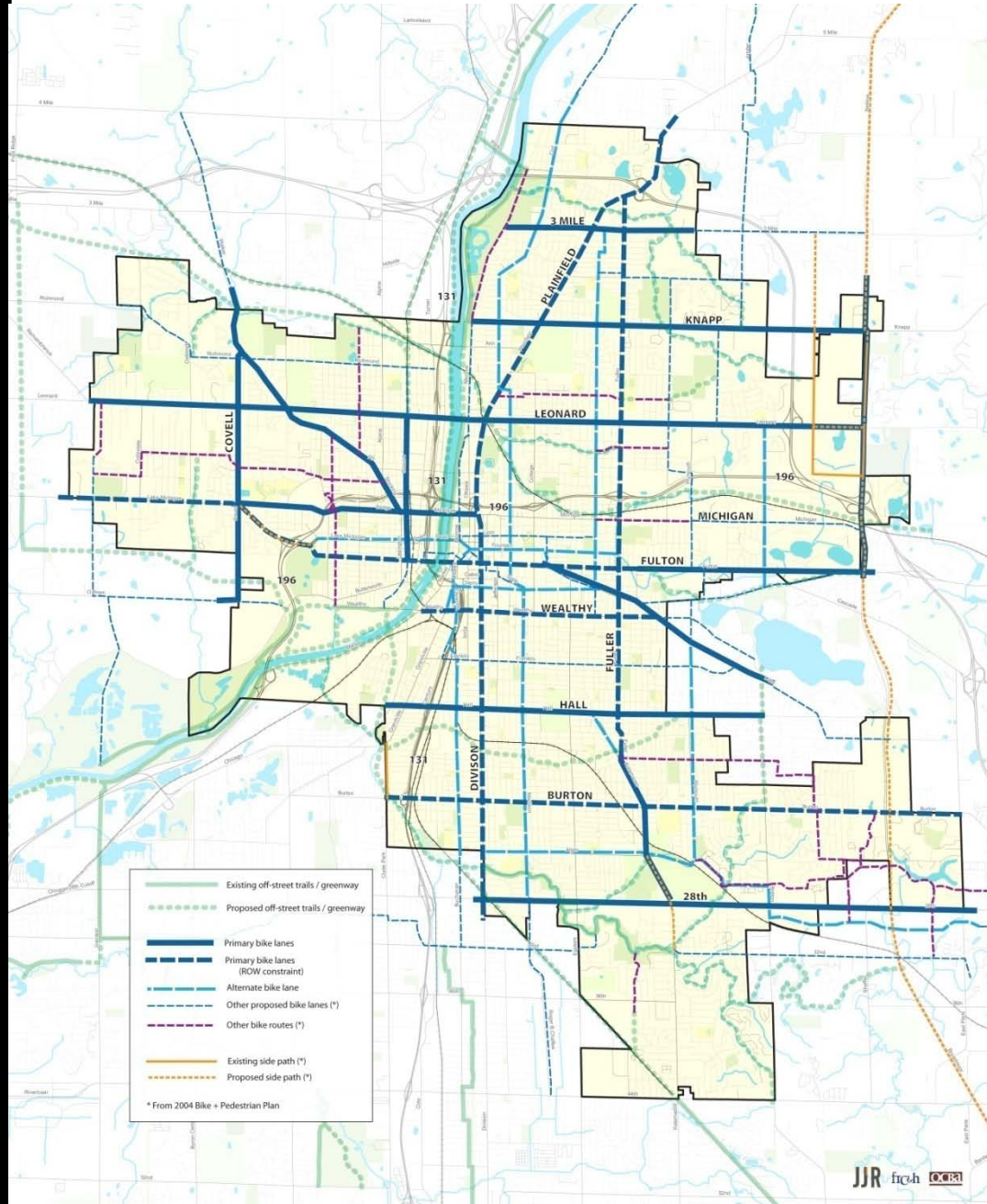


# Connections

On-street bike network

Adopt and implement an on-street bike route plan.

Appoint a Complete Streets Committee, adopt a Complete Streets policy and draft an ordinance

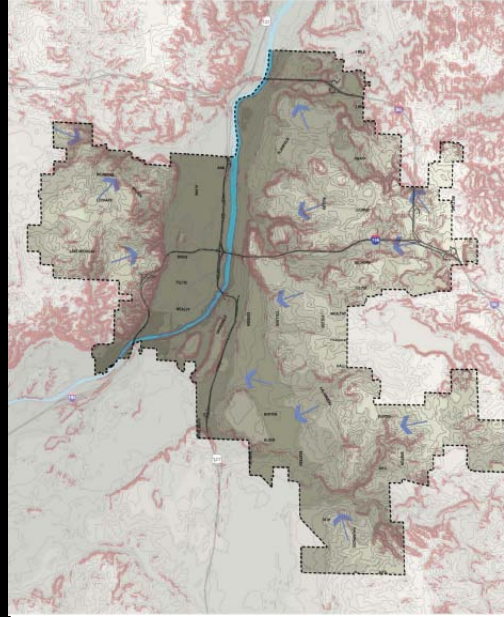




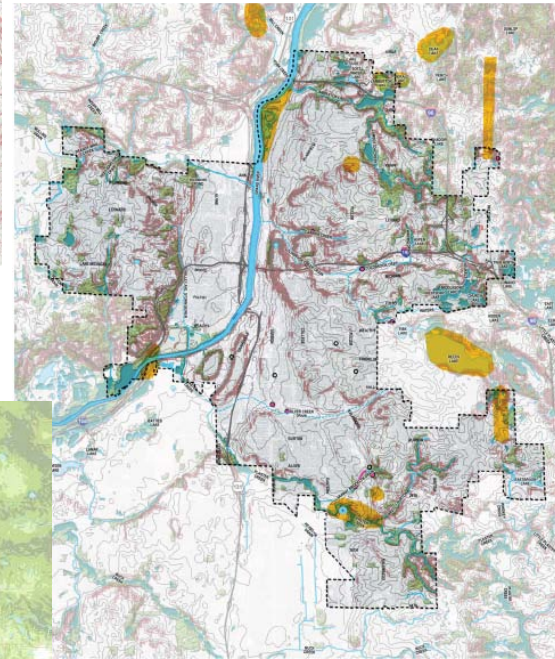
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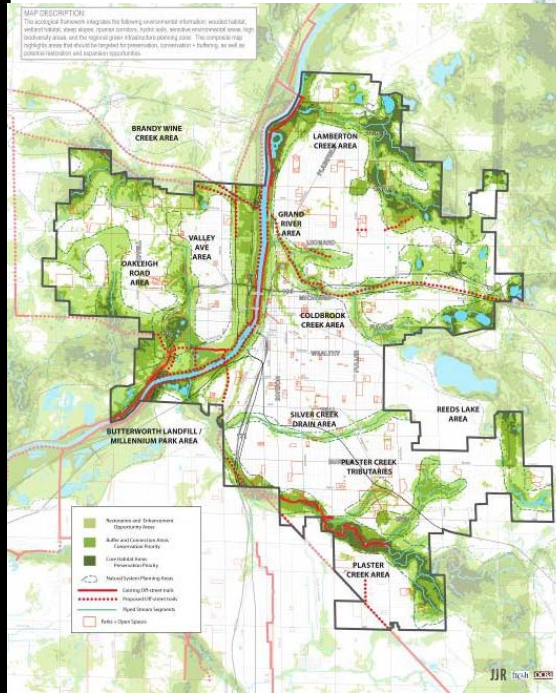


Contours



Composite Inventory

Ecological Framework

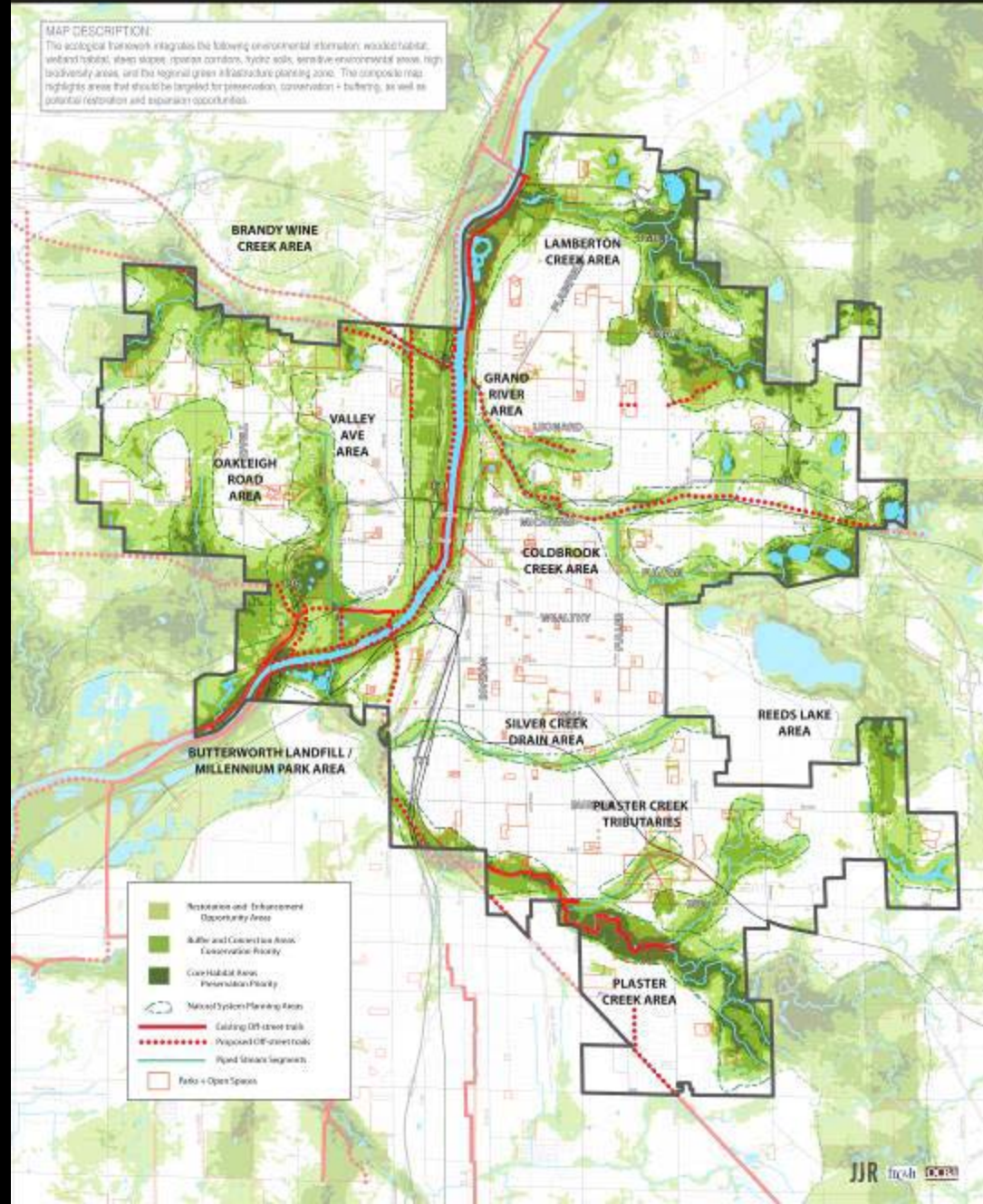


# Natural Systems



## Priority Strategies

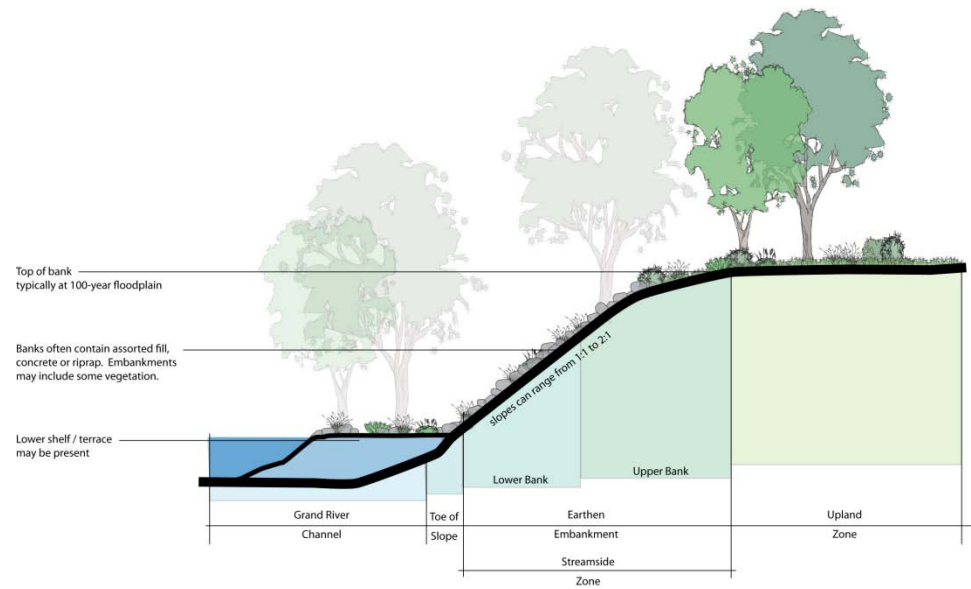
1. Promote sustainable growth management.
2. Adopt an ecological framework plan.
3. Reduce stormwater runoff and improve water quality by increasing infiltration.
2. Pursue river and stream daylighting and restoration projects.



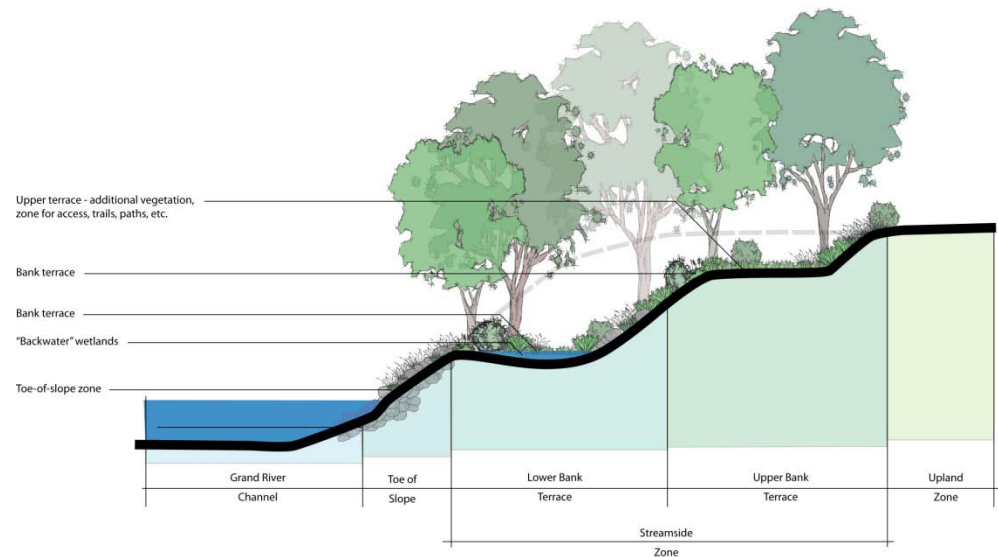


# Natural Systems

- FGRP volunteer and funding support for implementing (and maintaining) LID practices/projects in parks
- Join WMEAC for hands-on education and project implementation
- Implement LID practices (retro-fit) on residential properties (reduction of impervious surface, rain gardens, rain barrels, native landscaping)
- Neighborhood and business organizations can apply for grants to implement projects (East Hills MDEQ non-point source pollution grant under Cool Cities – still available?)
- Volunteer to help maintain infiltration areas on public ROWs (medians, bump-outs, parkways)



Earth embankment river edge - existing condition



Earth embankment river edge - restoration condition

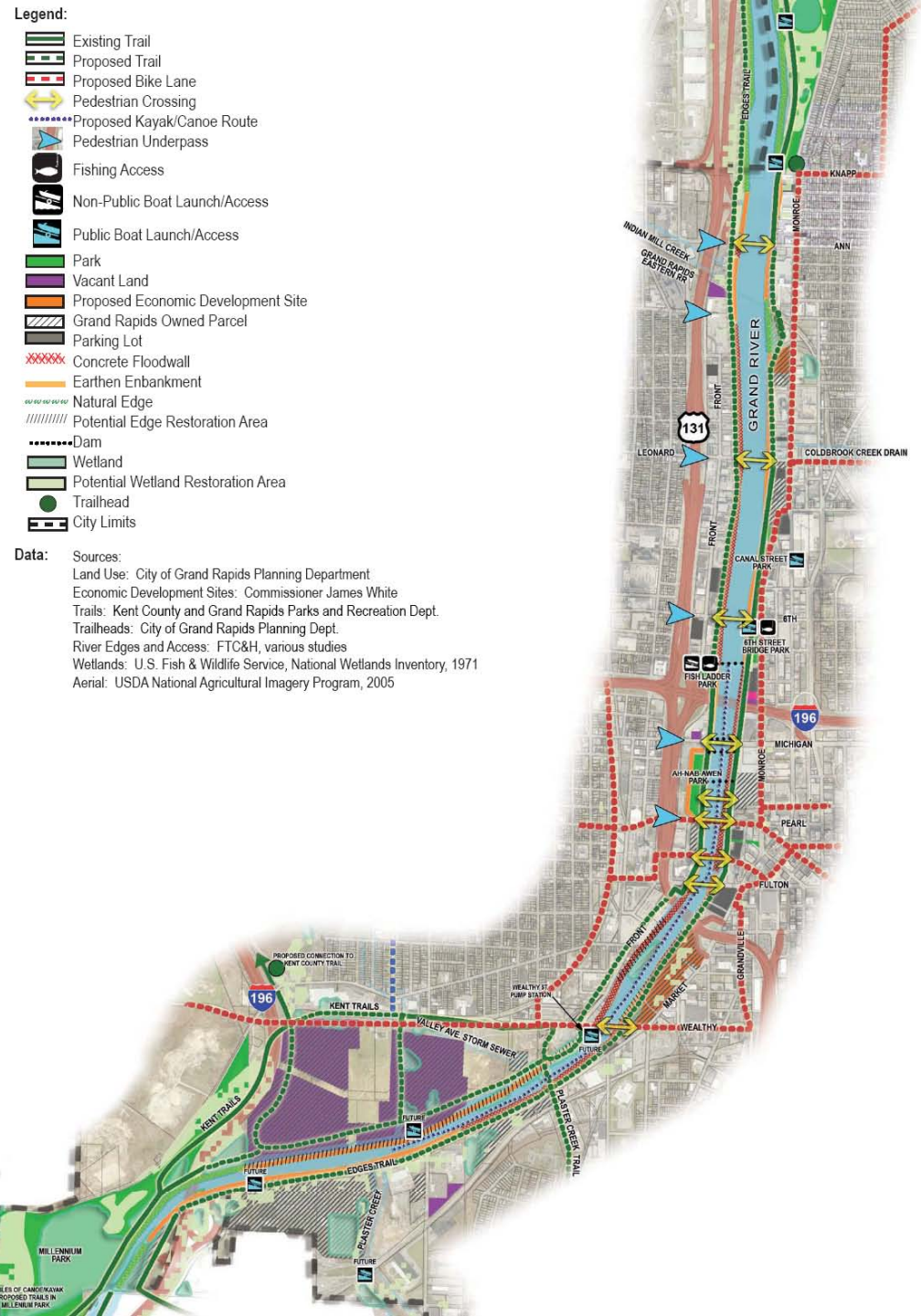




# Grand River

## Priority Strategies

1. Expand the range of recreational opportunities on/adjacent to the river.
2. Identify and pursue opportunities for adding riverfront parks on underused property.
3. Use riverfront parks and the riverwalk/greenways to protect the quality of stream and river corridors.
4. Evaluate the feasibility of returning the rapids to the river.



# Grand River

Link to the region's green infrastructure network

Improve the health of the river ecosystem

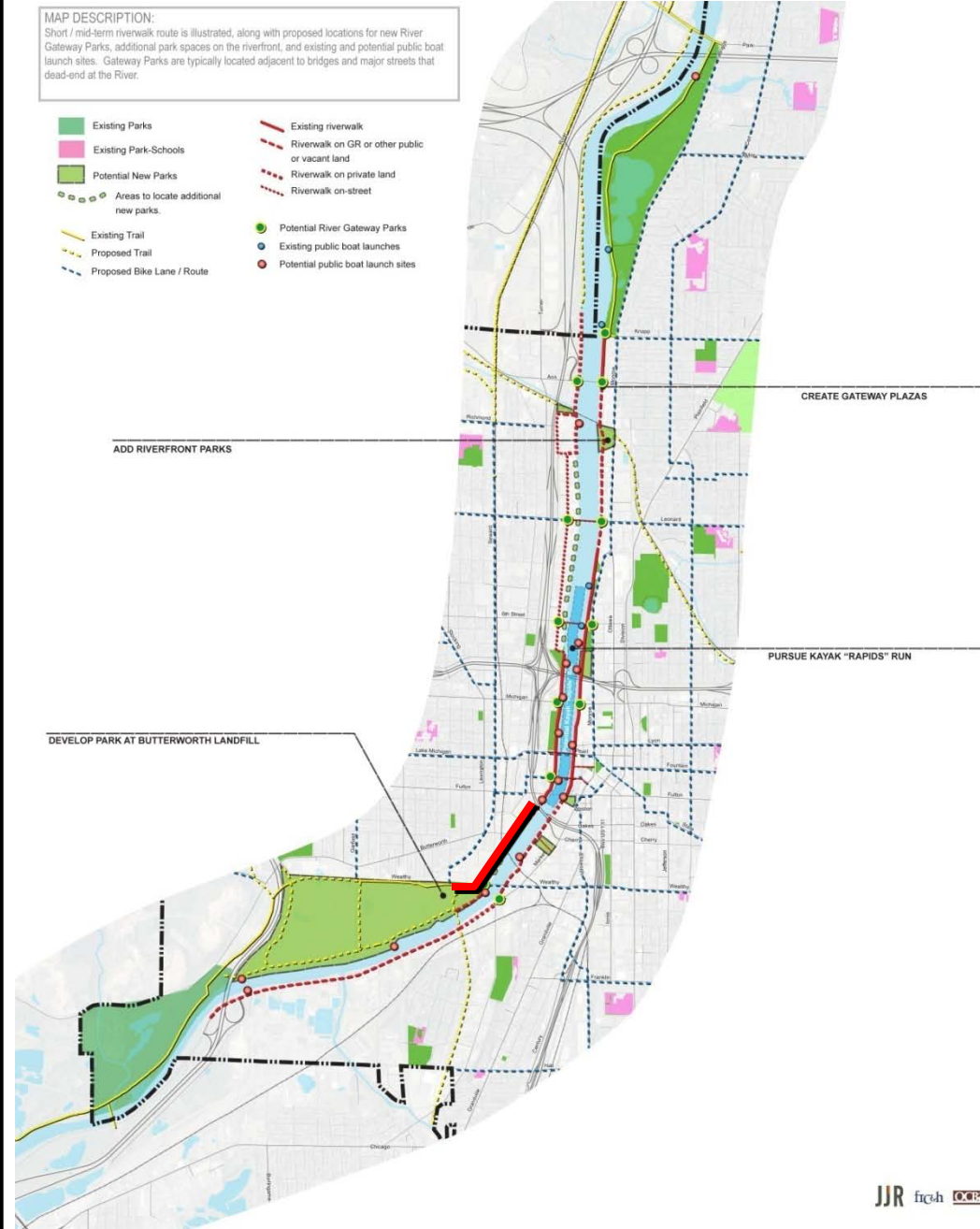
- ✓ Add open space
- ✓ Improve riparian buffers
- ✓ Filter/infiltrate stormwater
- ✓ Expand tree canopy

Expand the range of river-related recreation opportunities

## Grand River recreation opportunities

**MAP DESCRIPTION:**  
Short / mid-term riverwalk route is illustrated, along with proposed locations for new River Gateway Parks, additional park spaces on the riverfront, and existing and potential public boat launch sites. Gateway Parks are typically located adjacent to bridges and major streets that dead-end at the River.

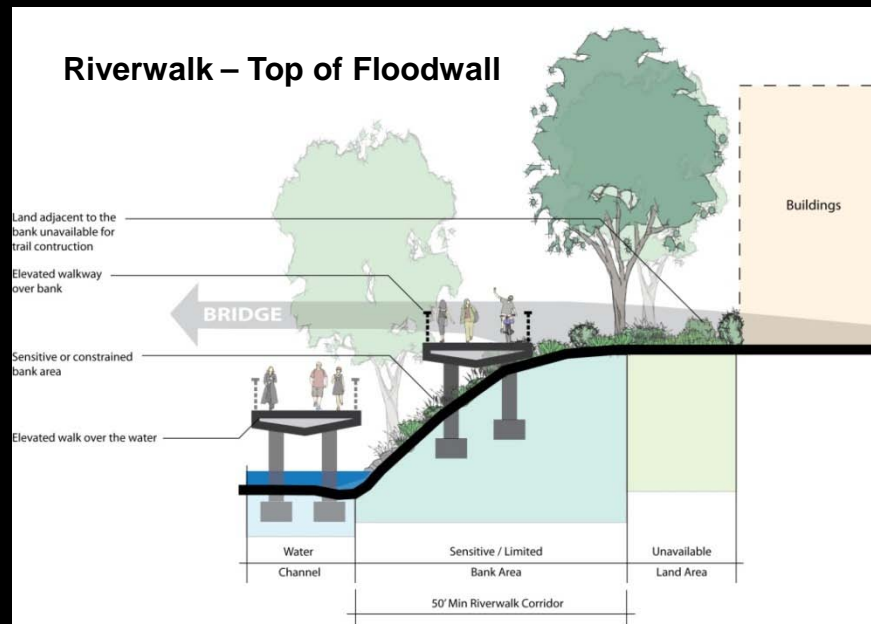
- |                                       |  |
|---------------------------------------|--|
| Existing Parks                        | Existing riverwalk                             |
| Existing Park-Schools                 | Riverwalk on GR or other public or vacant land |
| Potential New Parks                   | Riverwalk on private land                      |
| Areas to locate additional new parks. | Riverwalk on-street                            |
| Existing Trail                        | Potential River Gateway Parks                  |
| Proposed Trail                        | Existing public boat launches                  |
| Proposed Bike Lane / Route            | Potential public boat launch sites             |



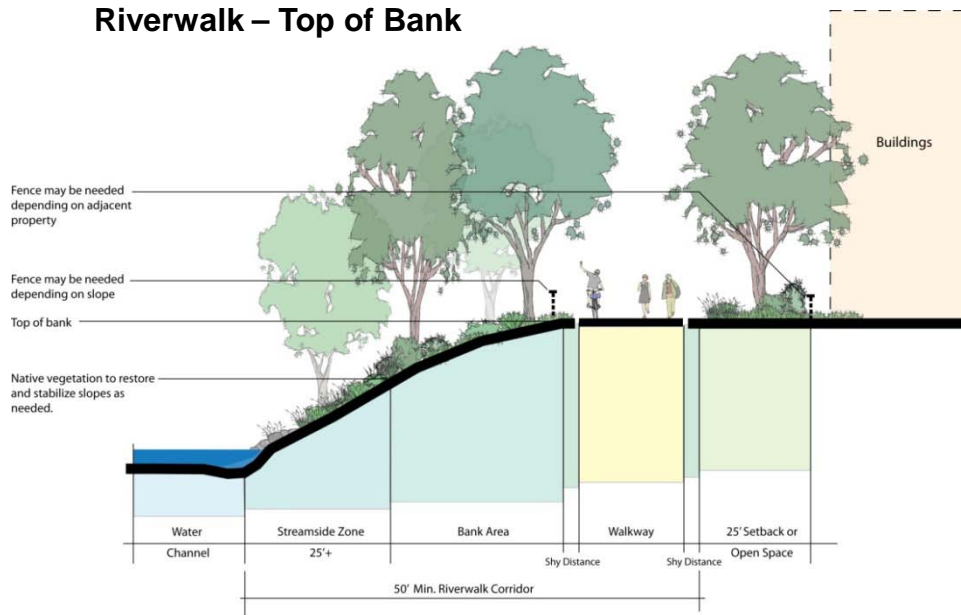


# Bank Restoration and Riverwalk Extension

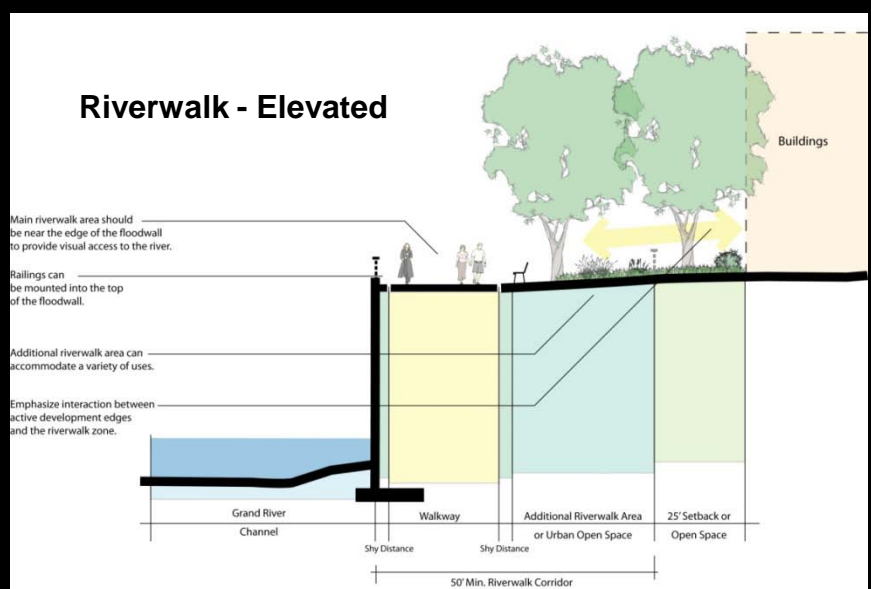
## Riverwalk – Top of Floodwall



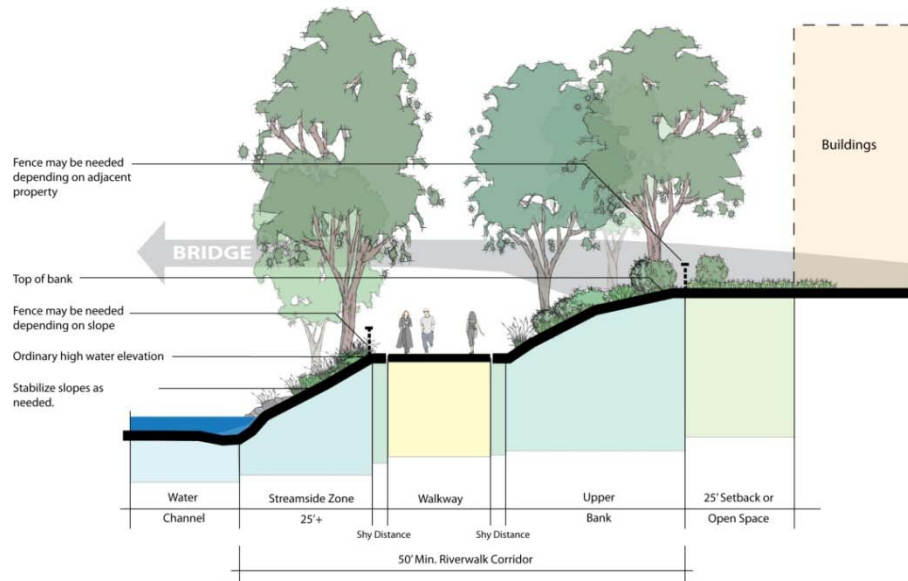
## Riverwalk – Top of Bank



## Riverwalk - Elevated



## Riverwalk – Mid-Bank



# GGR Implementation

## Tools for Decision-Making

- Park accessibility analysis
- River Corridor Guidelines
- Ecological Framework
- Urban forest analyses
- Urban trees ordinance and policy analysis



implementation