March 30, 2016

# MGO 3.14 Review

*City Engineering*

*Robert Phillips, P.E.*
*City Engineer*

*Traffic Engineering & Parking*

*David Dryer, P.E.*
*City Traffic Engineer & Parking*

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David Dryer, P.E. CAPP
ddryer@cityofmadison.com

# CE & TE

**Are…**

1. Frontline service delivery agencies—two of the City's core Public Works agencies
2. We are considered essential emergency agencies
3. TE is largely a maintenance agency, everything that is necessary to operate the surface transportation system
4. CE is the construction arm of the City
5. TE is one component in the design of streets: maintain, replace & upgrade--street lights, traffic signals, pavement markings, signing, parking system management etc.
6. CE design/builds roadway surface, sewer and water, horiz & vertical geometry
7. With our partners in Planning & Metro we plan, design and build your public works projects.

# TE/Parking maintains and operates?

Emergency and PW Communications

Signing and marking of Bike Paths

300+ Traffic Signals

911 Equip.

Safety studies

Safety Projects

Bicycle Operations

RP3 Permits

Pavement Markings

Data collection/analysis

Access Mgt

Neighborhood Plan/Design

Fiber Optic Networks

Traffic Control

Permits

1400 parking meters

Reconstruction

Mad Metro

School Zones

ITS components

Parking Ramps

Work Zones

Traffic Cameras

Pedestrian operations

Plan and Development Review

Traffic Calming

13,000+ Street Lights

Roundabouts

60,00+ Signs

Site design

Radio Towers

Special events

….and much more.

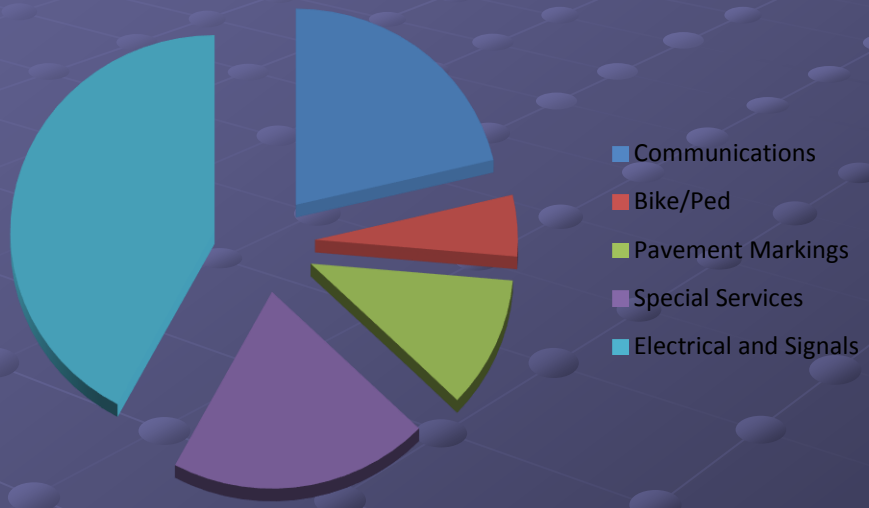
# Who is TE and Parking?

- 132 Employees

- 11 Engineers

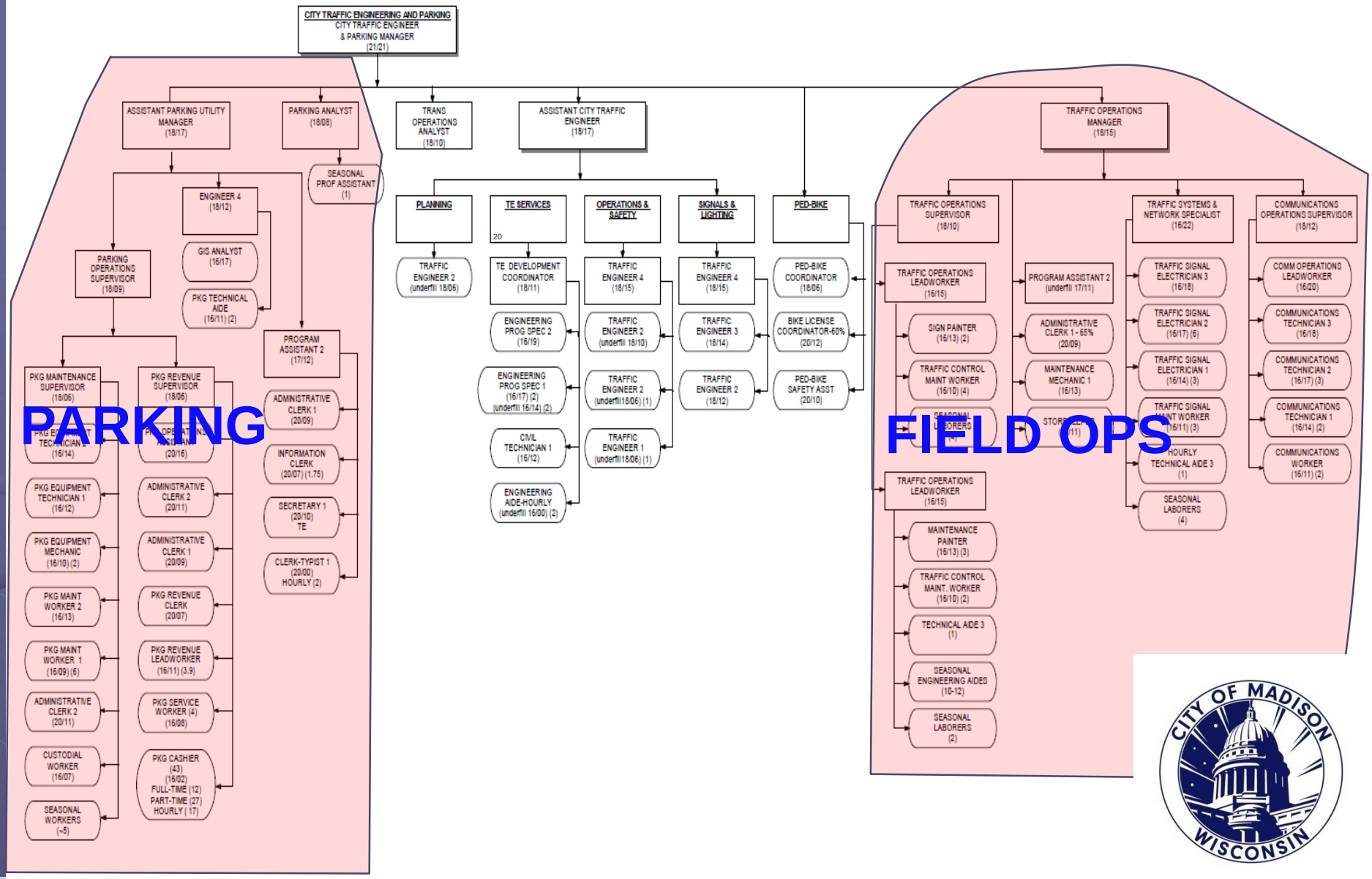
- 121 Field, Maintenance & Support Employees

# How is TE funded?




$5,655,264 2016 Op Budget

# TRAFFIC ENGINEERING AND PARKING UTILITY ORGANIZATIONAL CHART 04/27/15

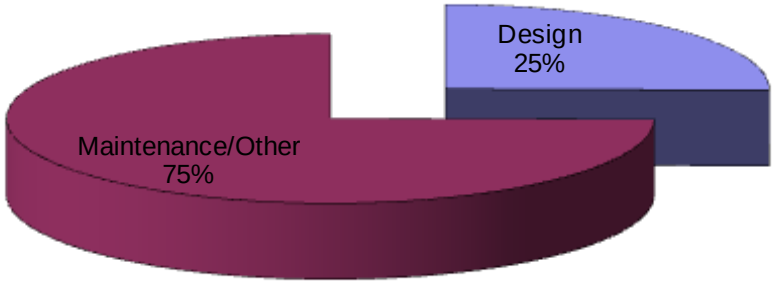


# How is TE/Parking organized?

Eight Sections:

- Administration
- Parking
- Communications
- Electrical
- Field Operations and Maintenance
- Operations and Safety
- Ped/Bike
- Planning and Design

# How are we organized?



# CE maintains and operates?

Design new streets

Design Storm Sewers and Sanitary Sewers.

Clean out Sanitary Sewers

Maintain greenways and ponds

Erosion Control

Design bike paths

Transportation Improvement Program

Inspect construction

Emergency response

Asset management

Adopt a median program

Median Landscaping

Bid Public Works Projects

Permits

Closed landfills

Sewer Capacity Studies

Street Reconstruction

Land Surveys

Sewer Capacity Studies

Rain gardens

City Addressing

Repair sidewalks

Plan and Development Review

Utility Permits

Board of Public Works

Winter maintenance of bike paths

Brownfields assessment

Design City Facilities

Televise sewers

Provide custodial services

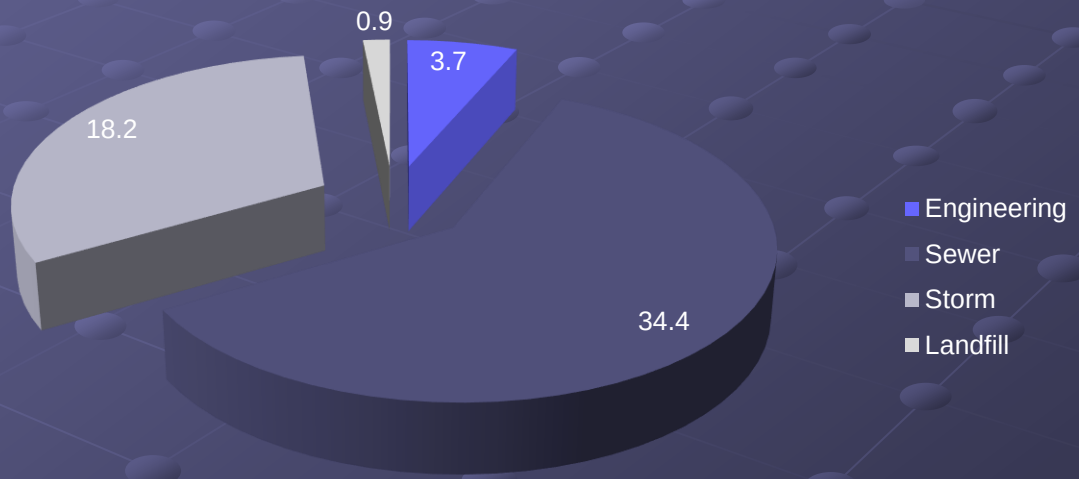
Maintain City Official Map

….and much more.

# City Engineering Sections

- Street, Bridges, Bike Paths and Sidewalks
- Mapping and GIS
- Environmental and Closed Landfills
- Storm and Sanitary Sewer Design
- City Facilities and Sustainability
- Construction
- Operations

# How is CE funded?




$57.2 M 2016 Op Budget

# Engineering Section Involvement in Transportation

- Streets Bridges Bike Paths and Sidewalks Section -
  - Programming
  - Coordination
  - Public Involvement
  - Civil Engineering
  - Assembly of Plans and Specifications

# Engineering Section Involvement in Transportation

- Mapping and GIS Section -
  - Surveys
  - Determining existing right of way
  - Acquisition of new right of way
  - Official Map

# Engineering Section Involvement in Transportation

- Environmental and closed landfills Section -
  - Contaminated soils in right of ways

# Engineering Section Involvement in Transportation

- Storm and Sanitary Design Section -
  - Permitting
  - Pavement drainage
  - Storm water management
    - Pollution reduction
    - Infiltration
    - Detention
  - Median landscaping contracts
  - Adopt a median program

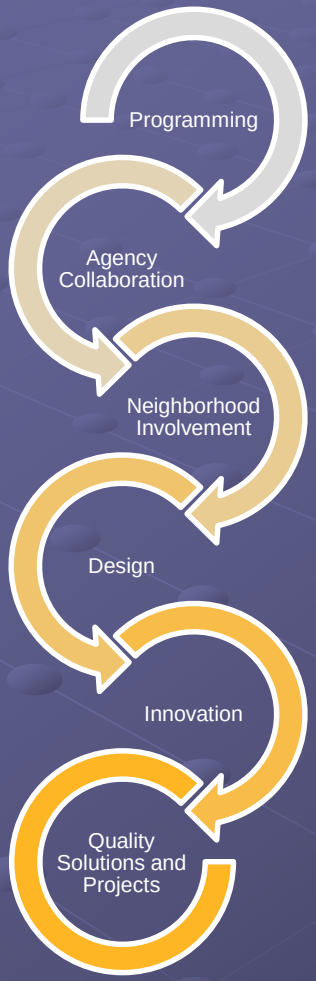
# Engineering Section Involvement in Transportation

- Construction Section-
  - Prequlification of contractors
  - Bidding
  - Construction inspection (along with other departments)
  - Construction oversight

# Engineering Section Involvement in Transportation

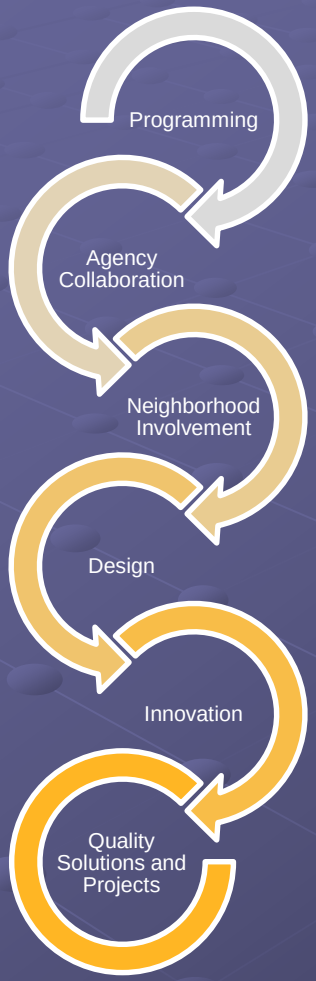
- Operations Section-
  - Maintenance of pavement drainage (storm sewer, detention ponds, etc)
  - Plowing of certain Bike Paths
  - Snow removal at certain bus stops and sidewalks
  - Maintenance of landscaping (certain areas)

# Transportation Solutions
# Exceptional Neighborhoods




The vision for the City of Madison is to be a safe and healthy place to live, work learn and play….

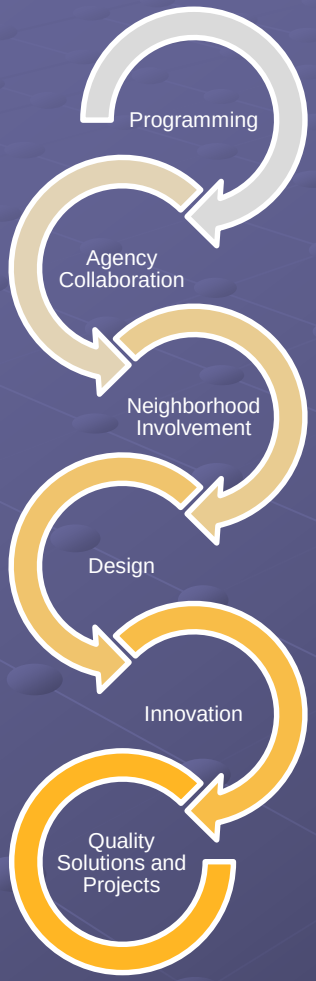
# Transportation Solutions
# Exceptional Neighborhoods



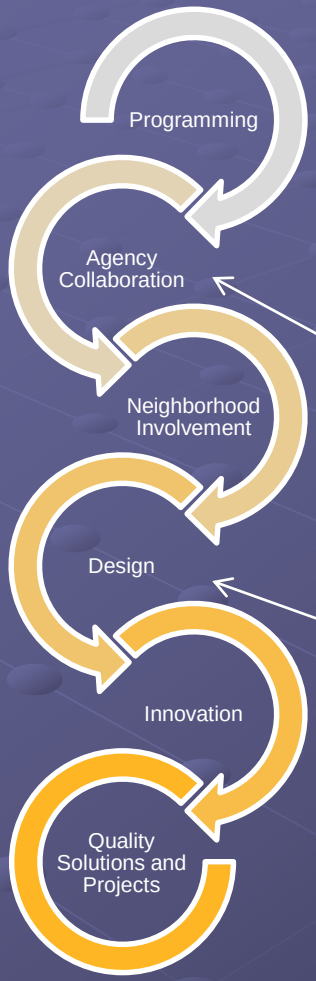

**<u>What do we strive to do</u>?**

**Implement transportation programs and projects that enhance mobility and our neighborhoods.**

# Transportation Solutions
# Exceptional Neighborhoods



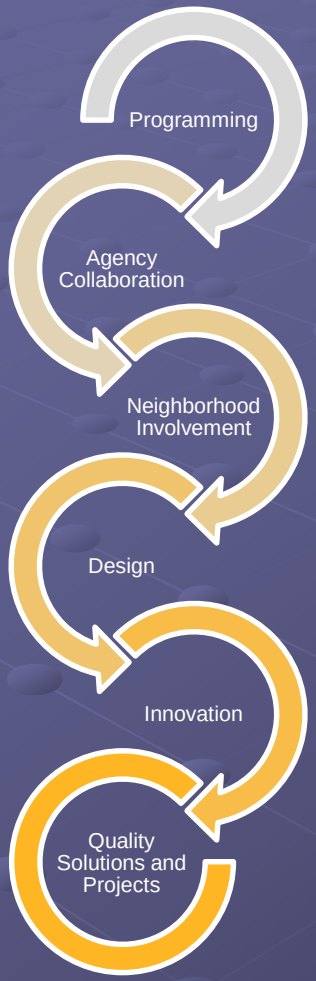

# Transportation Solutions Exceptional Neighborhoods




Quality Solutions and Projects are accomplished by:

- Programming
- Agency Collaboration
- Neighborhood Involvement
- Quality Design
- Innovation

# Transportation Solutions
# Exceptional Neighborhoods




Transportation Programs that shape our City

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WISCONSIN


CITY OF MADISON
WISCONSIN

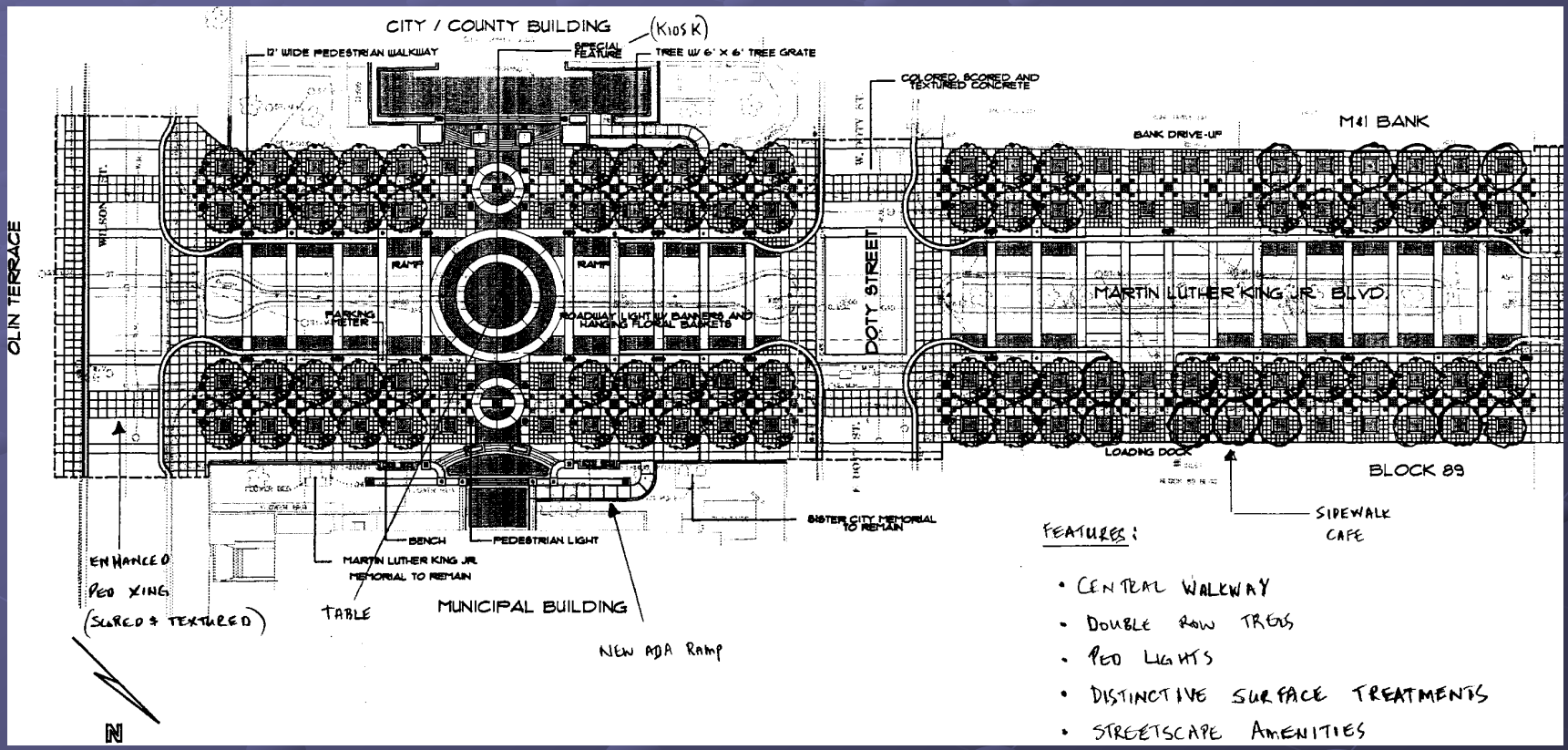
CITY OF MADISON
WISCONSIN

# Streets

Regent St at West High

# Street Reconstruction

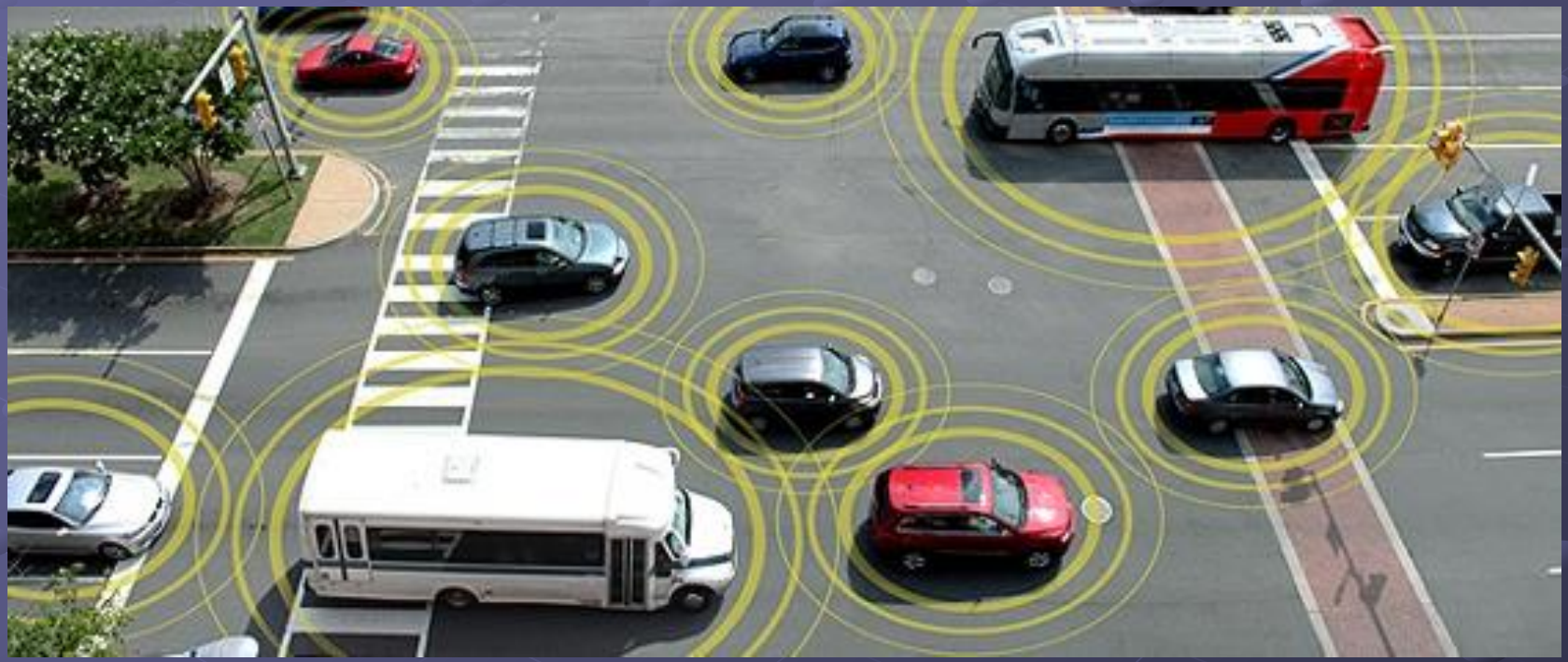
## MLK Jr. Blvd



# Street Monitoring & Operation

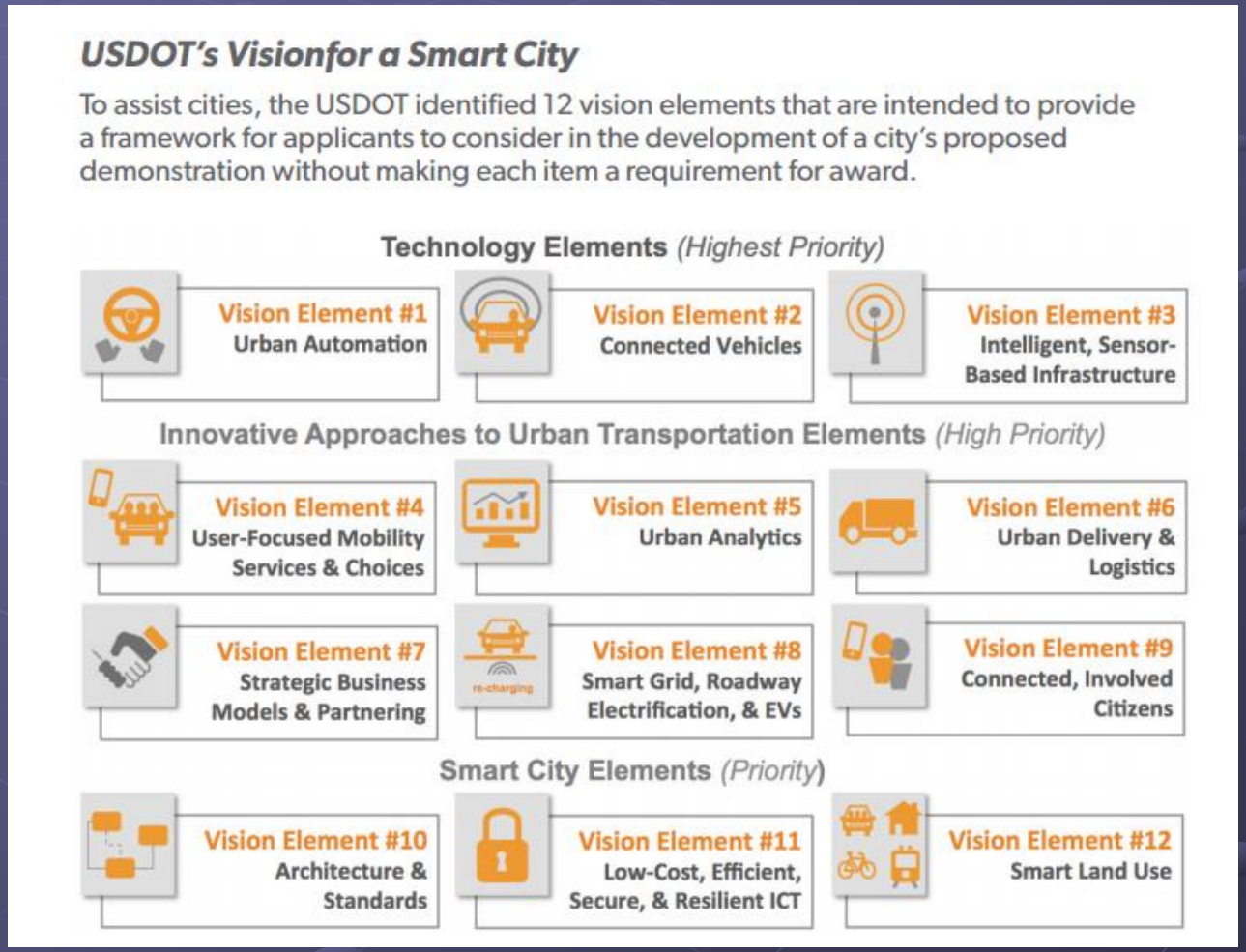
# Intelligent Transportation Systems (ITS)

Vehicle 2 Vehicle Communications (V2V)



Dedicated Short Range Communications

# Intelligent Transportation Systems (ITS)

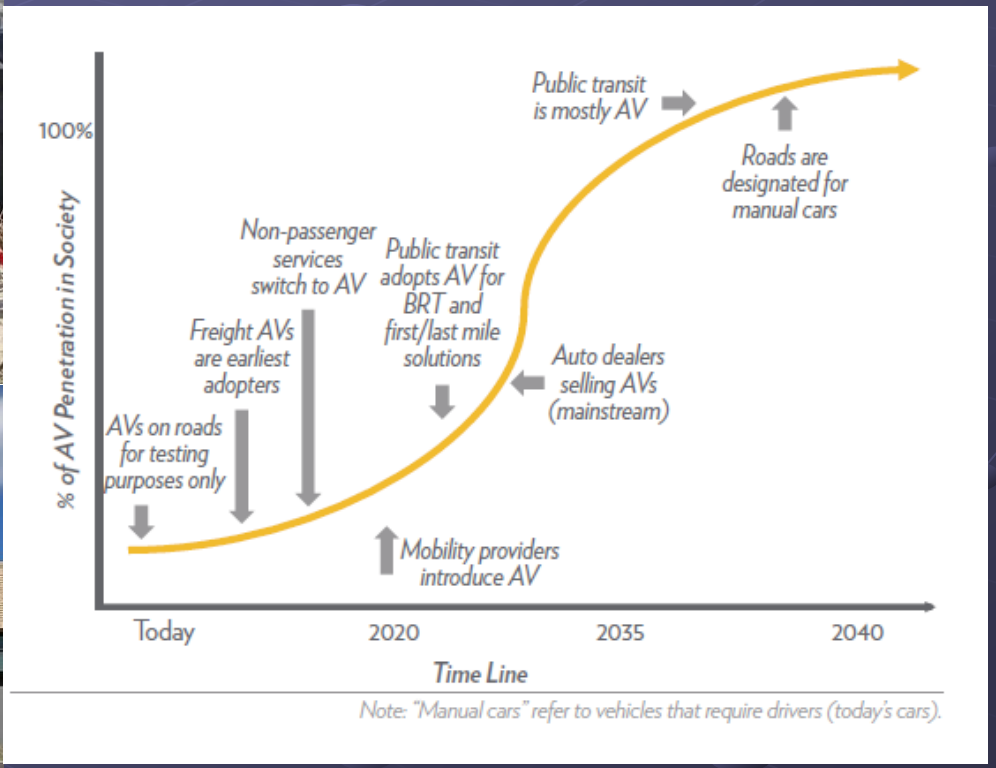


# Intelligent Transportation Systems (ITS)

Vehicle 2 Vehicle Communications (V2V)

# Intelligent Transportation Systems (ITS)





# Traffic Calming

**Improve Livability**

# Bicycle


Source:Capital Newspapers

# Bicycle

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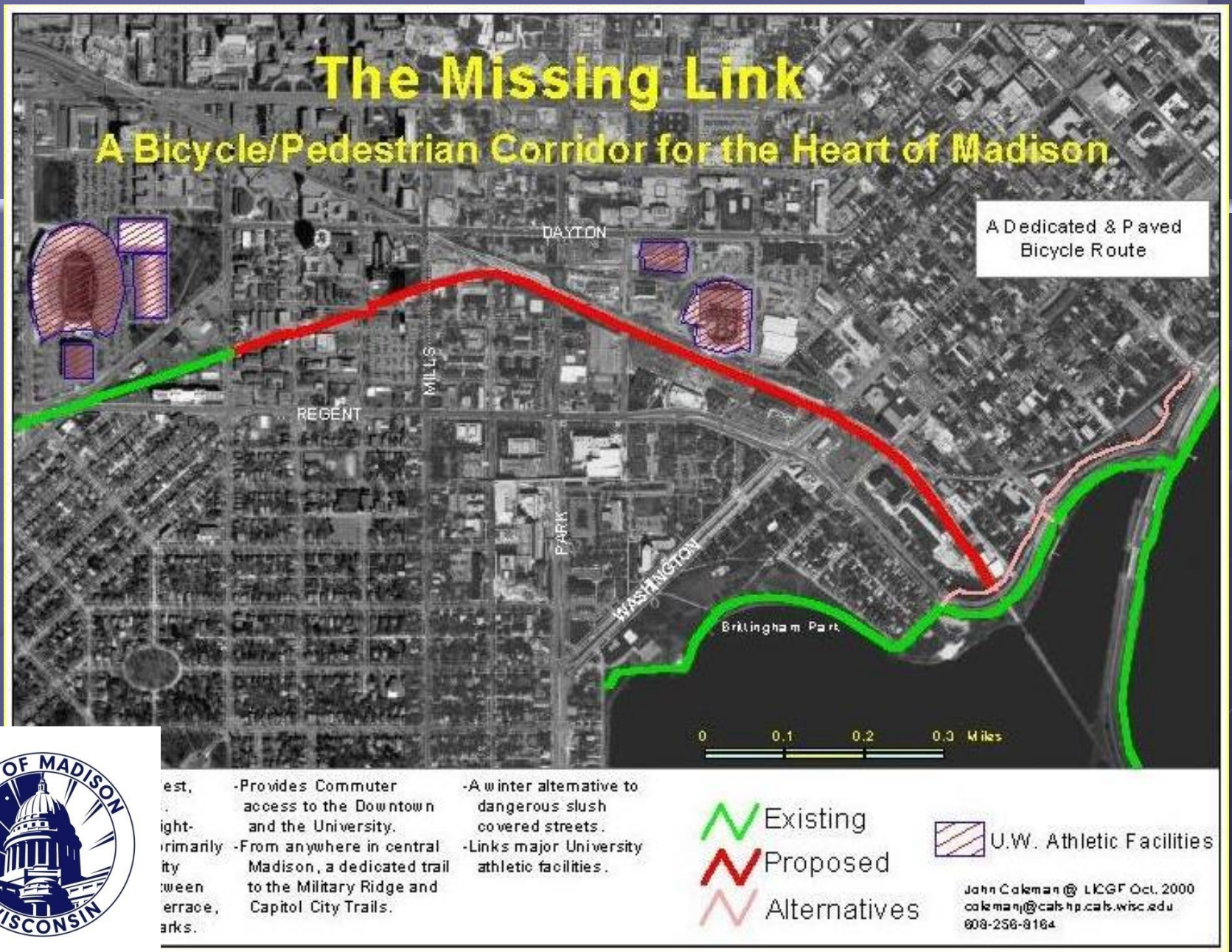
The Missing Link
A Bicycle/Pedestrian Corridor for the Heart of Madison
A Dedicated & Paved Bicycle Route
DAYTON
MILLS
REGENT
PARK
WASHINGTON
Brittingham Park
0 0.1 0.2 0.3 Miles
-Provides Commuter access to the Downtown and the University.
-From anywhere in central Madison, a dedicated trail to the Military Ridge and Capitol City Trails.
-A winter alternative to dangerous slush covered streets.
-Links major University athletic facilities.
Existing
Proposed
Alternatives
U.W. Athletic Facilities
John Coleman @ LICGF Oct. 2000
colemanj@calshp.cals.wisc.edu
608-256-8164

# Bicycle




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# Bicycle

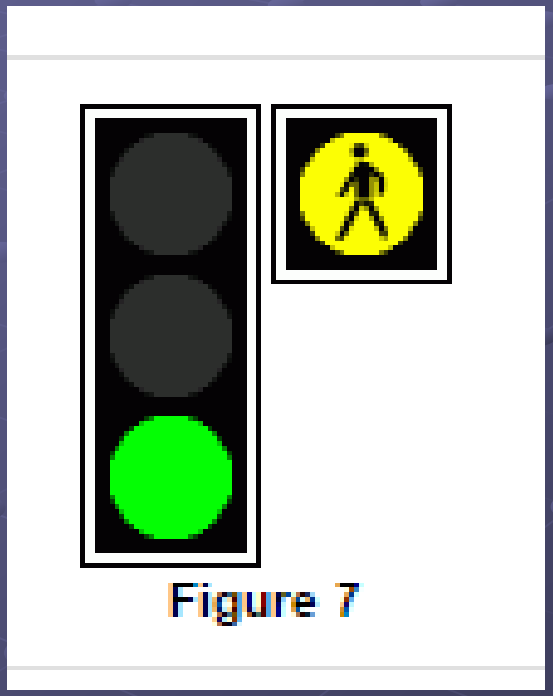


CITY OF MADISON WISCONSIN

# Bicycle

# Pedestrian

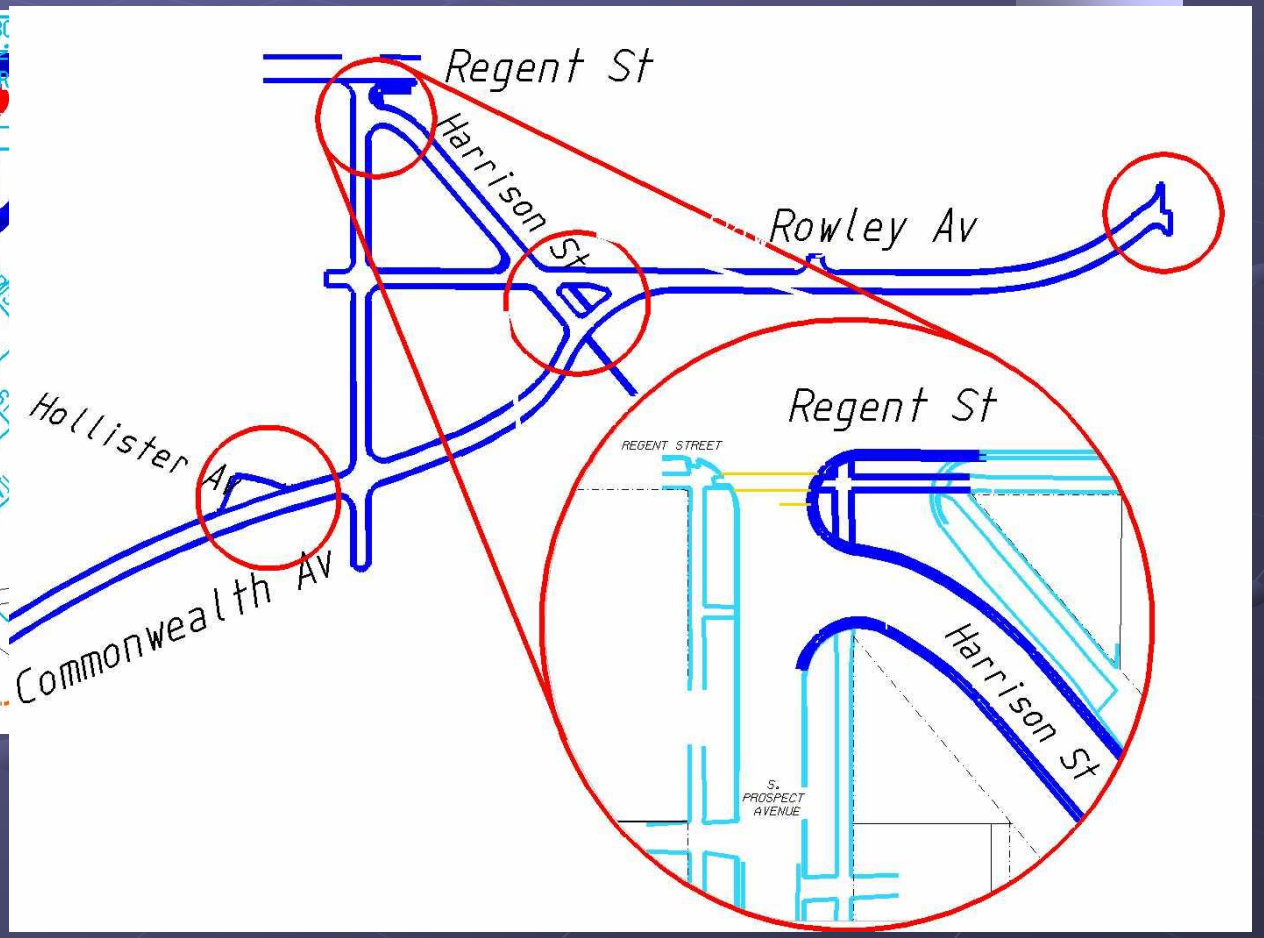

# Pedestrian



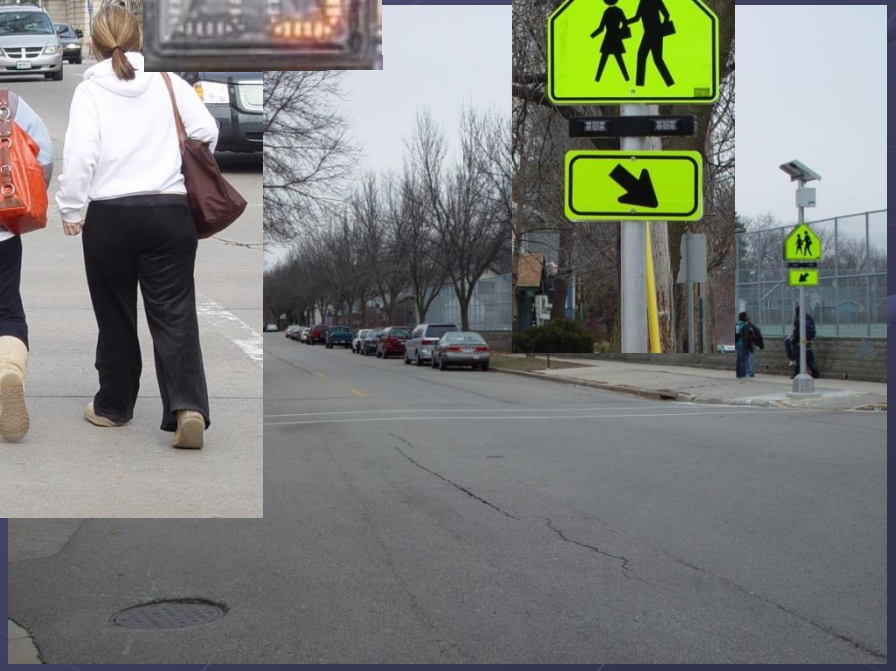

German pedestrian warning signal

# Pedestrian


REGENT ST
ROWLEY AVE
HOLLISTER AVE
ETON RIDGE
RUGBY ROW
HILLINGTON GREEN
VISTA RD
S ALLEN ST
S PROSPECT AVE
ROBERTS CT
COMMONWEALTH
FOX AVE
KEYES AVE
WEST LAWN AVE
LEONARD ST
MONROE ST
VIRGINIA TER
NORWOOD PL
COMMONWEALTH AVE
SHELDON ST
TERRY PL
WOODROW ST
EDGEWOOD COLLEGE DR
EDGEWOOD AV
EDGEWOOD DR
LINCOLN ST
VAN BUREN ST
CHAD


Regent St
Harrison St
Rowley Av
Hollister Av
Commonwealth Av
Regent St
REGENT STREET
Harrison St
S. PROSPECT AVENUE

# Pedestrian

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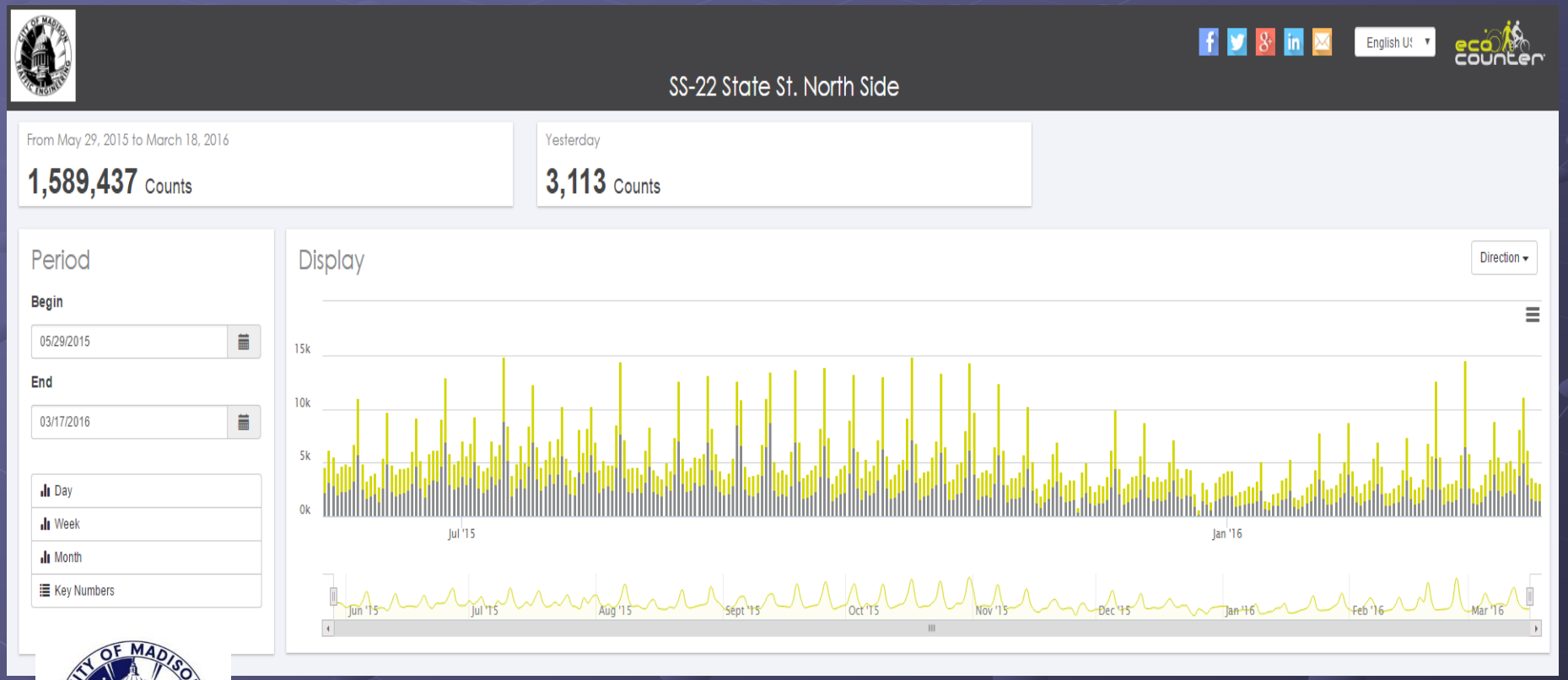
# Blair at Mifflin
# Pedestrian Hybrid Beacon
# Mifflin Street bicyclist & pedestrian signals

# Pedestrian

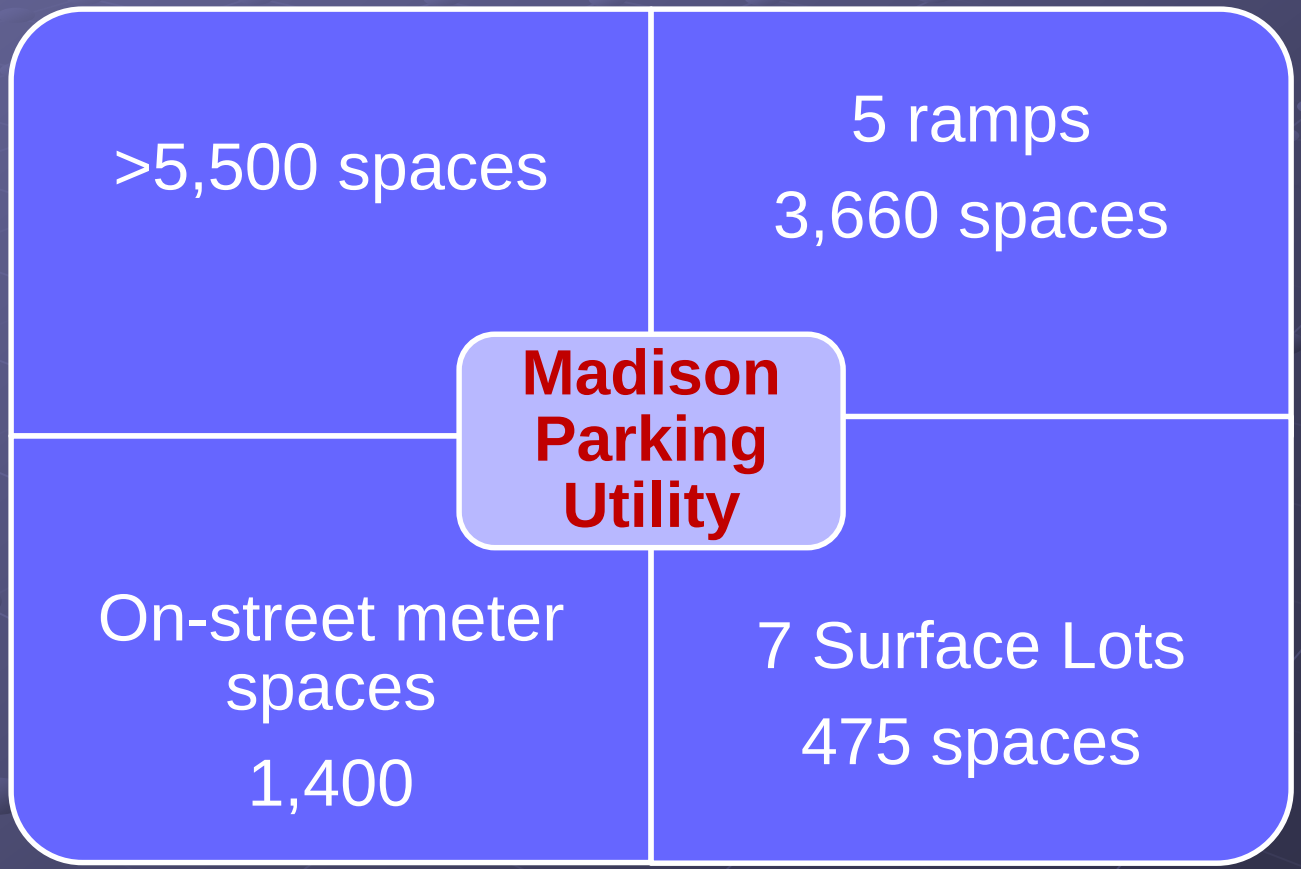
# Pedestrian

# Pedestrian/Bike



# Parking


# Parking

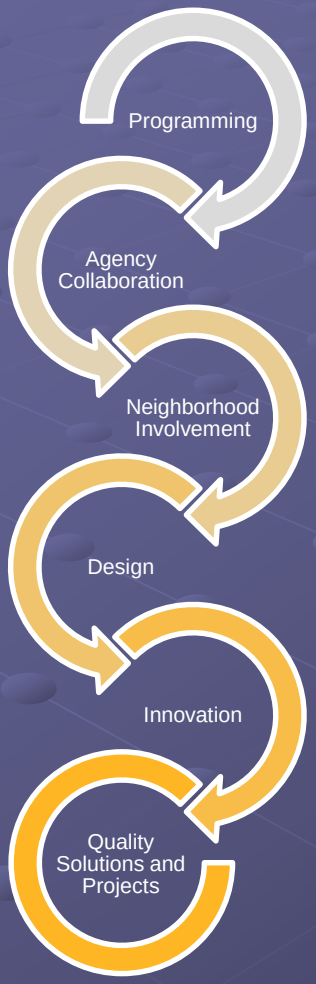

>5,500 spaces
5 ramps
3,660 spaces
Madison Parking Utility
On-street meter spaces
1,400
7 Surface Lots
475 spaces

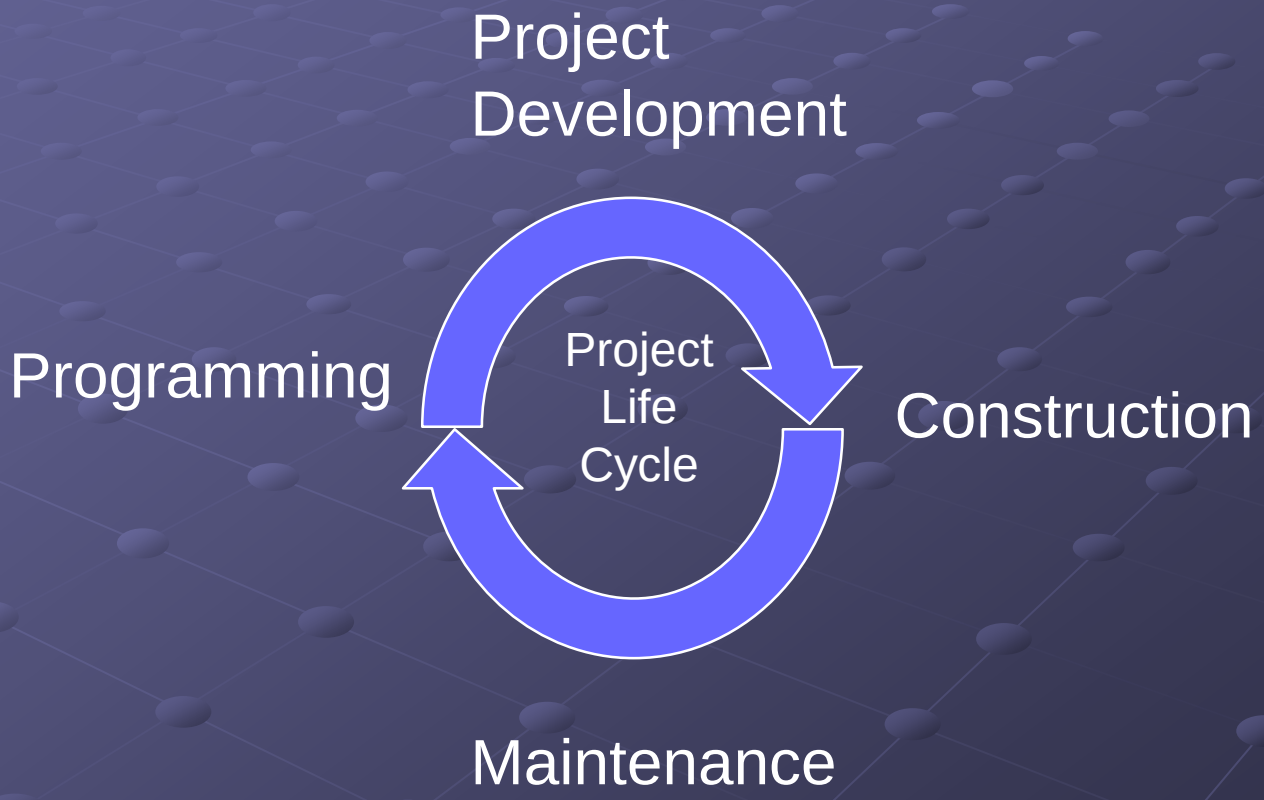
# Public Pass. Vehicles



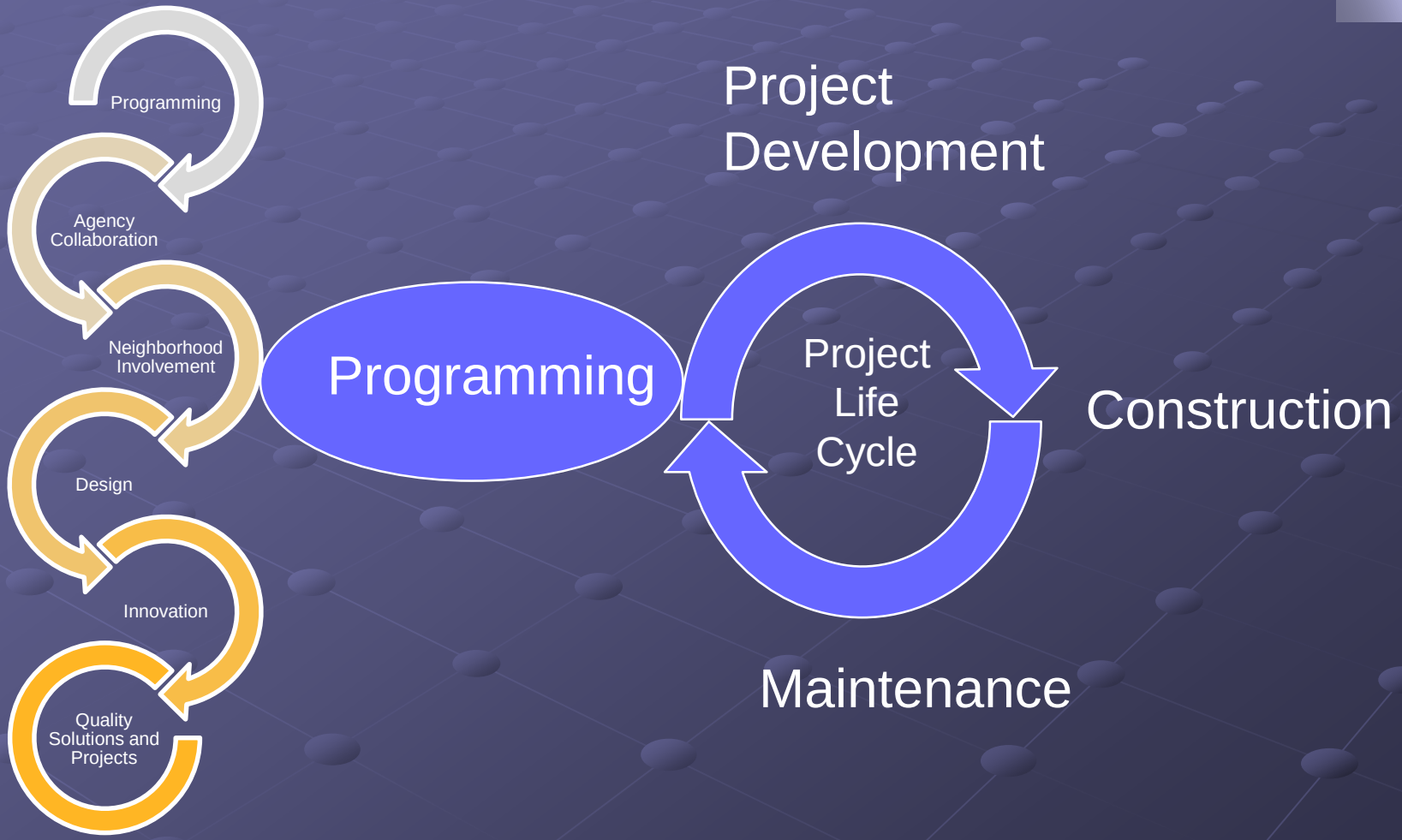

CITY OF MADISON WISCONSIN

# Transportation Solutions
# Exceptional Neighborhoods

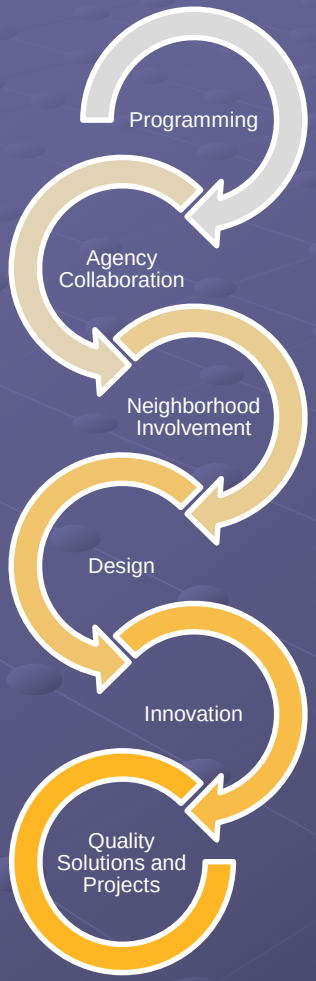


# Transportation Solutions
# Exceptional Neighborhoods



# Programming



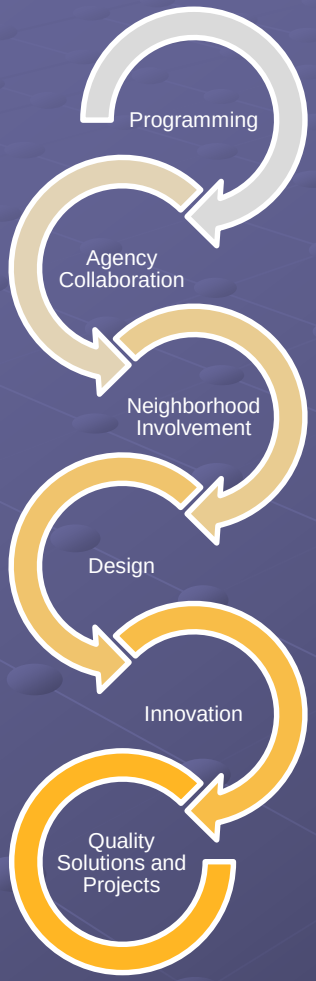

TIP = BUDGET

Transportation Adopted

Improvement = Capital

Program Budget

# Programming




## How does a project get into the TIP?

### Transportation Corridors: Improvements to East Washington Avenue and Vehicular and Pedestrian Movement Improvements

#### East Washington Avenue

neighborhood because it serves as the spine uniting the areas neighborhood associations and provides local gathering and shopping areas for its residents. Public and private investment in the East Washington Avenue corridor, especially those that improve the movement of pedestrians, will enhance the livability of the neighborhood.

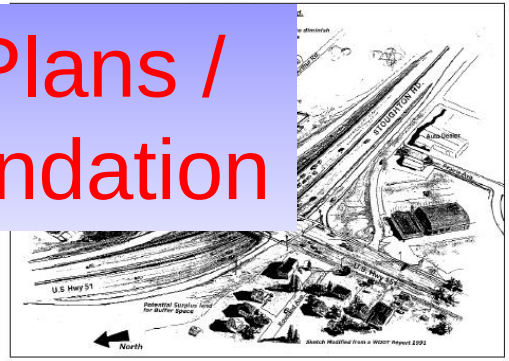
**Neighborhood Goals**

✔ Enhance the aesthetics of East Washington Avenue by installing streetscape amenities, approving high design standards for public infrastructure improvements, and encouraging private enterprises to upgrade their properties to showcase this major gateway into Madison.

✔ Enhance pedestrian and bicycle networks that improve the safety and connections to frequently traveled locations.

**Neighborhood Objectives, Issues, and Strategies**

The Carpenter-Hawthorne-Ridgeway-Sycamore-Truax Neighborhood has identified three major public improvements that would enhance the stretch of East Washington Avenue from Highway 30 to North Stoughton Road:

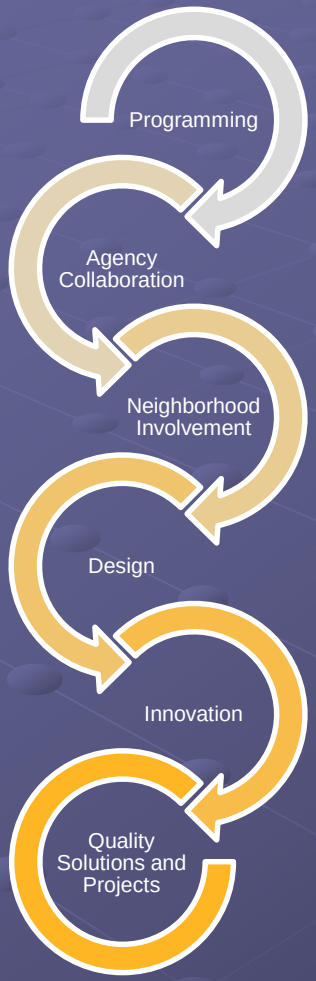



*Map 14: Proposed East Washington-North Stoughton Road diamond interchange*

✔ Continue to explore the likelihood of a North Stoughton Road underpass at the intersection of East Washington Avenue and North Stoughton Road. Construction of an underpass would facilitate safe pedestrian crossing at the intersection as well as improve the overall appearance of this six-lane intersection (see Map 14).

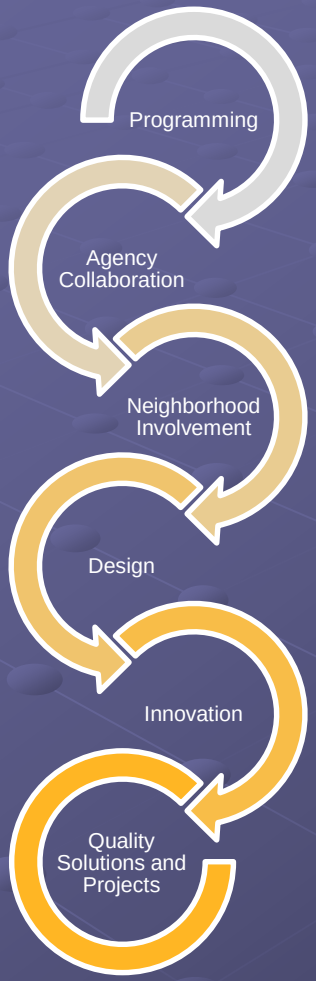
Neighborhood Plans / NRT Recommendation

# Programming




## How does a project get into the TIP?

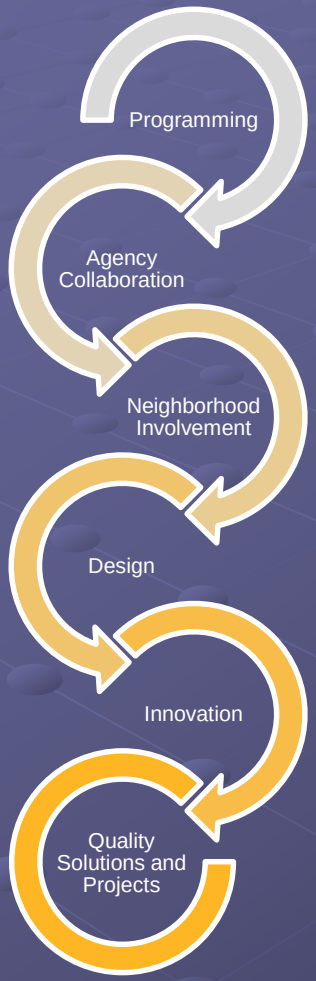
# Programming




## How does a project get into the TIP?

Facilitate Development

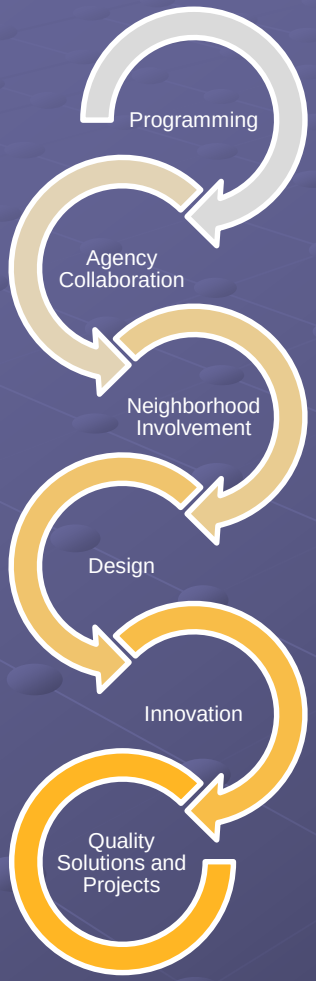
# Programming




## How does a project get into the TIP?

Traffic Congestion Problem

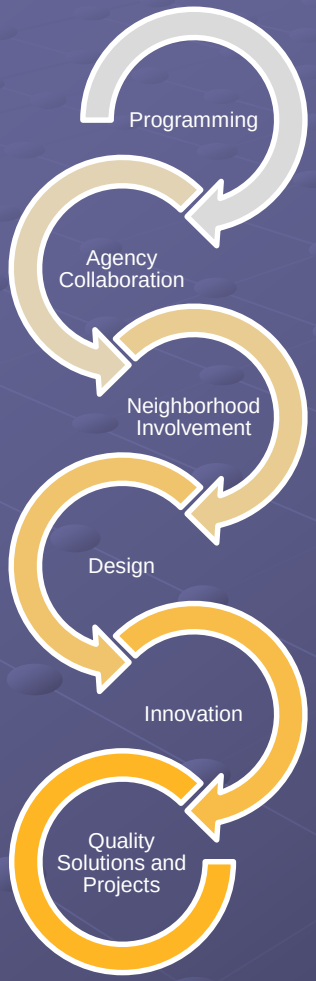
# Programming




## How does a project get into the TIP?

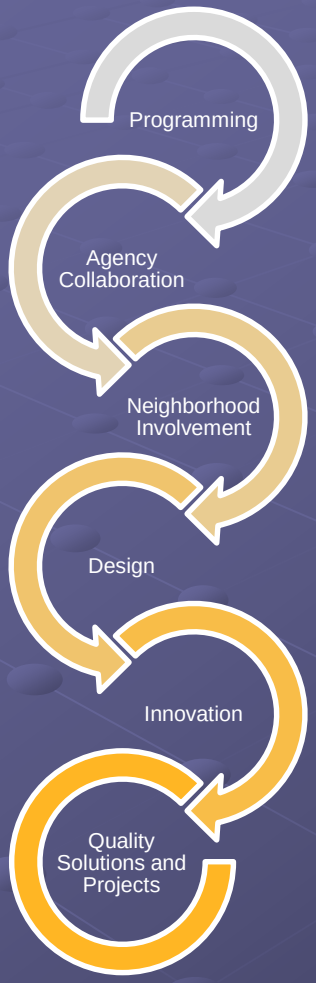

Utility failure or utility maintenance problem

# Programming

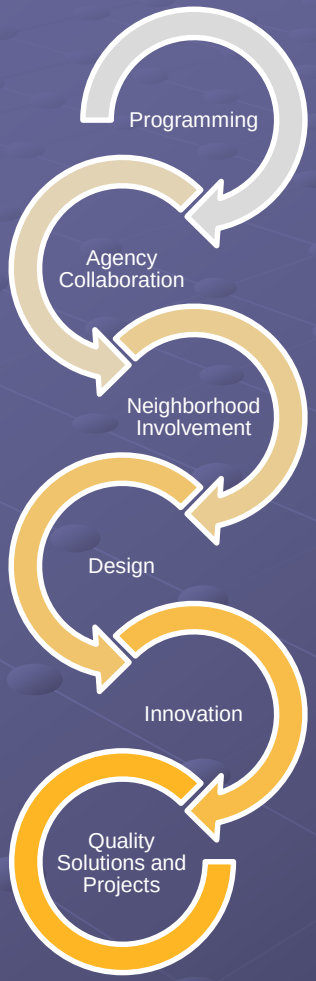



What is the number one reason a project gets into the TIP?

# Programming




# Programming

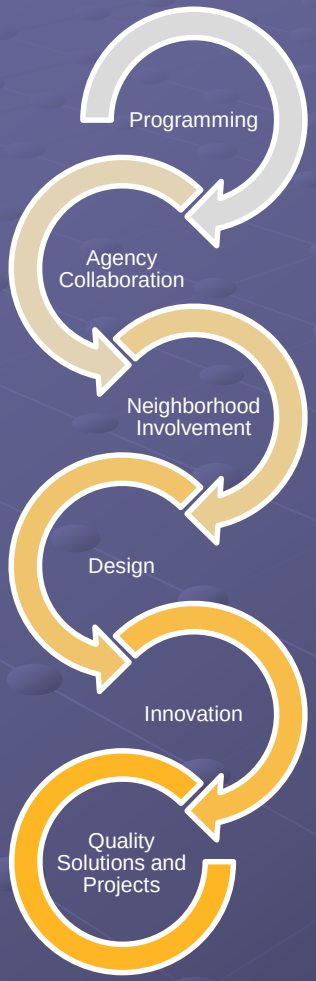



## How does a project get into the TIP?

- Neighborhood Plan / NRT Recommendation
- Known safety problem
- Facilitate Development
- Traffic congestion problem
- Utility failure or maintenance problem
- Pavement Condition

Projects often hit more than one

# Programming

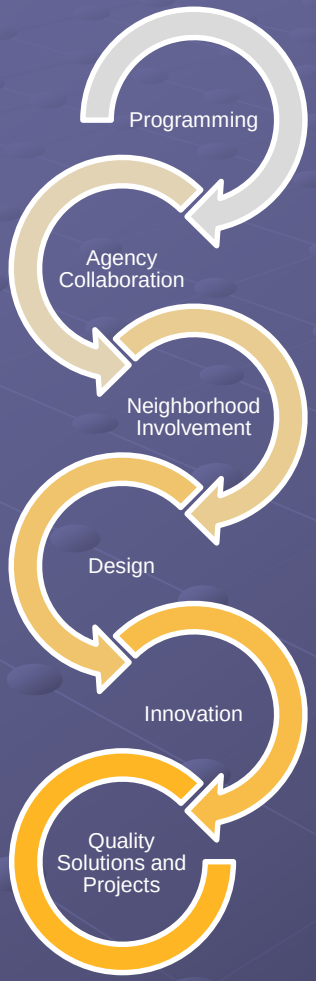



The Draft TIP is brought to various groups for comments

- PBMVC
- LRTPC
- BPW
- Small Business Advisory Council
- BID
- CC

Comments are used to finalize TIP

# Programming

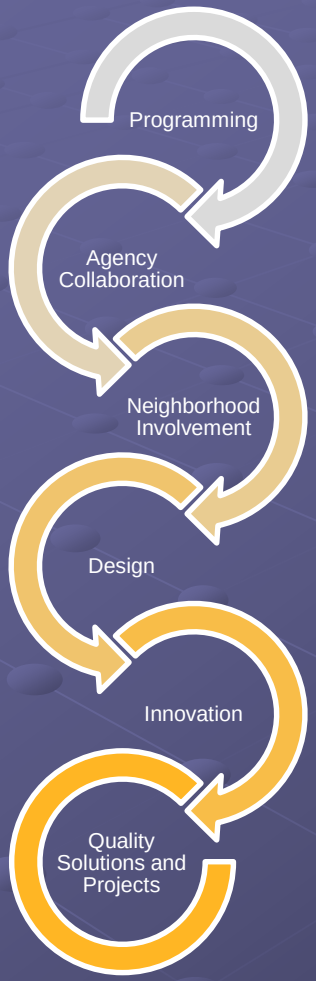



The TIP is reviewed by other agencies.

- Engineering
- Traffic Engineering
- Planning
- Metro

Comments are used to finalize TIP

# Programming




The Draft TIP is submitted to Finance in the form of the Capital Budget

**McKee Road (CTH PD)** 10245

GO $ 1,000,000
Other -
$ 1,000,000

This project provides funding to … roadway with bike lanes and sid… proposed. The project budge… east of CTH M at Meriter Wa… the construction year is 2017.

**McKenna Boulevard Reconstruc…**

GO $ 1,900,000
Other -
$ 1,900,000

This project will improve safety by … of a median to assist pedestrian crossings a… stallation project limits are from Morraine View to Ha… included from Schroeder Road to Pilgrim Road. 2016 construction will include resurfacing McKenna Boulevard from Hammersley Road to Schroeder Road, including the construction of a median from Morraine View to Hammersley Road. 2017 construction will include resurfacing of McKenna Boulevard from Hammersley Road to Pilgrim Road.

**Mineral Point Road (West Beltline to High Point)** Project No. 11131

GO $ 130,000
Other -
$ 130,000

This project will replace the existing pavement and replace sidewalk as necessary. The project limits are the West Beltline Highway to High Point Road. The construction year is 2020.

Ultimately approved by Mayor and Common Council

# Programming

2016 Major Street Budget

24 Projects and Programs

$33.3 Million

Agency Name: Engineering - Major Streets

| | Project Name | Executive |
|---|---|---|
| 1 | Anderson Street (Wright to Stoughton) | - |
| 2 | Atwood Ave (Fair Oaks to Cottage Grove) | 217,500 |
| 3 | Atwood Avenue (Schenks Corners) | - |
| 4 | Atwood Avenue (Utility Underground) | - |
| 5 | Bridge Repair | 50,000 |
| 6 | Buckeye Rd Improvements | 165,000 |
| 7 | Capitol Square Pavement Replacement | 1,695,000 |
| 8 | City View Drive | 2,760,000 |
| 9 | Cottage Grove Road | 530,000 |
| 10 | CTH M (CTH PD Area) | 3,000,000 |
| 11 | CTH M (Midtown Road Area) | 3,000,000 |
| 12 | Darbo Webb Connection | - |
| 13 | Gammon Road, North | - |
| 14 | Gammon Road, South | - |
| 15 | High Point Rd Bridge Over Beltline | 1,150,000 |
| 16 | Jeffy Trail | 510,000 |
| 17 | John Nolen Dr / Blair St Corridor Study | 100,000 |
| 18 | Johnson Street, East Reconstruction (Baldwin) | 80,000 |
| 19 | Johnson Street, East (Undergrounding Utilities) | 750,000 |
| 20 | Martin Luther King Jr Boulevard | - |
| 21 | McKee Road (CTH PD) | 1,000,000 |
| 22 | McKenna Boulevard Reconstruction | 2,650,000 |
| 23 | Mineral Point Road (Beltline to High Point) | 130,000 |
| 24 | Mineral Point Road (S Point to Pleasant View) | - |
| 25 | Monroe Street | 200,000 |
| 26 | Neighborhood Traffic Management | 100,000 |
| 27 | Outer Capitol Loop Southeast | - |
| 28 | Park Street, South (Olin to Railroad) | - |
| 29 | Park St, S (W Wash to Olin, RR to Badger) | - |
| 30 | Pavement Management | 5,959,370 |
| 31 | Pleasant View Road | 200,000 |
| 32 | Railroad Crossings & Quiet Zones | 420,000 |
| 33 | Reconstruction Streets | 2,184,520 |
| 34 | Royster Clark Development Phase 2 | 3,770,000 |
| 35 | Rural To Urban Streets | 2,676,925 |
| 36 | University Ave (Shorewood to Univ Bay) | - |
| 37 | Washington Avenue, East Streetscape | - |
| 38 | Washington Ave, W (Regent to Bedford) | - |
| 39 | Wilson/Williamson St (Franklin to Blount) | - |
| | Total | $ 33,298,315 |

# Major Streets Through 2021

Agency Name: Engineering - Major Streets

| Project | Reauth | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|
| 1 Anderson Street (Wright to Stoughton) | - | - | - | - | - | 440,000 | - |
| 2 Atwood Ave (Fair Oaks to Cottage Grove) | - | 217,500 | 652,500 | - | 500,000 | 2,144,000 | 1,336,000 |
| 3 Atwood Avenue (Schenks Corners) | - | - | - | 2,420,000 | - | - | - |
| 4 Atwood Avenue (Utility Underground) | - | 400,000 | - | - | - | - | - |
| 5 Bridge Repair | - | 50,000 | 130,000 | 140,000 | 150,000 | 160,000 | 170,000 |
| 6 Buckeye Road | - | 165,000 | 200,000 | 1,035,000 | - | - | - |
| 7 Capitol Square Pavement Replacement | - | 1,695,000 | 1,695,000 | - | - | - | - |
| 8 City View Drive | - | 2,760,000 | - | - | - | - | - |
| 9 Cottage Grove Road | 306,000 | 224,000 | 1,000,000 | 2,640,000 | - | - | - |
| 10 CTH M (CTH PD Area) | 1,500,000 | 1,500,000 | 8,300,000 | - | - | - | - |
| 11 CTH M (Midtown Road Area) | 3,000,000 | - | 6,400,000 | - | - | - | - |
| 12 Darbo Webb Connection | - | - | - | - | 780,000 | - | - |
| 13 Gammon Road, North | - | - | - | - | - | - | 50,000 |
| 14 Gammon Road, South | - | - | 260,000 | 2,550,000 | - | - | - |
| 15 High Point Road Bridge Over Beltline | - | 1,150,000 | - | - | - | - | - |
| 16 Jeffy Trail | - | - | 510,000 | - | - | - | - |
| 17 John Nolen Dr / Blair St Corridor Study | - | 100,000 | - | - | - | - | - |
| 18 Johnson St, East Reconstruction (Baldwin) | - | 80,000 | - | 200,000 | 2,185,000 | - | - |
| 19 Johnson St, East (Underground Utilities) | - | 750,000 | 750,000 | - | - | - | - |
| 20 Martin Luther King Jr Boulevard | - | - | - | - | 2,000,000 | - | - |
| 21 McKee Road (CTH PD) | - | 1,000,000 | 6,080,000 | - | - | - | - |
| 22 McKenna Boulevard Reconstruction | - | 1,900,000 | 750,000 | - | - | - | - |
| 23 Mineral Point Rd (Beltline to High Point) | - | 130,000 | - | - | - | 665,000 | - |
| 24 Mineral Pt Rd (S Point to Pleasant View) | - | - | 270,000 | 270,000 | - | - | - |
| 25 Monroe Street | - | 150,000 | 600,000 | 10,090,000 | - | - | - |
| 26 Neighborhood Traffic Management | - | 300,000 | 310,000 | 320,000 | 330,000 | 340,000 | 350,000 |
| 27 Outer Capitol Loop Southeast | - | - | 1,770,000 | - | - | - | - |
| 28 Park Street, South (Olin to Railroad) | - | - | - | 300,000 | - | 3,005,000 | - |
| 29 Park St, S (W Wash to Olin, RR to Badger) | - | - | - | - | 3,090,000 | - | - |
| 30 Pavement Management | 700,000 | 5,259,370 | 6,375,000 | 11,025,000 | 11,325,000 | 11,625,000 | 11,925,000 |
| 31 Pleasant View Road | 88,000 | 112,000 | 200,000 | 785,000 | 1,060,000 | - | - |
| 32 Railroad Crossings & Quiet Zones | 18,000 | 402,000 | 1,200,000 | 1,020,000 | 130,000 | 140,000 | 150,000 |
| 33 Reconstruction Streets | 600,000 | 1,584,520 | 2,815,000 | 4,815,000 | 4,815,000 | 4,815,000 | 4,815,000 |
| 34 Royster Clark Development Phase 2 | 2,658,000 | 1,112,000 | - | - | - | - | - |
| 35 Rural To Urban Streets | - | 4,026,925 | 4,400,000 | 4,600,000 | 4,800,000 | 5,000,000 | 5,200,000 |
| 36 University Ave (Shorewood to Univ Bay) | - | - | 270,000 | 270,000 | - | - | - |
| 37 Washington Avenue, East Streetscape | - | - | - | - | - | - | 200,000 |
| 38 Washington Ave, W (Regent to Bedford) | - | - | - | 1,950,000 | - | - | - |
| 39 Wilson/Williamson St (Franklin to Blount) | - | - | - | 1,650,000 | - | - | - |
| **Total** | $ 8,870,000 | $ 25,068,315 | $ 44,937,500 | $ 46,080,000 | $ 31,165,000 | $ 28,334,000 | $ 24,196,000 |

# Programming

2016 Pedestrian and Bike Capital Budget

12 Projects

$7.4 M

Agency Name: Engineering - Bicycle and Pedestrian

| | Project Name | Executive |
|---|---|---|
| 1 | Bike Station | 1,000,000 |
| 2 | Bikeways Program | 680,000 |
| 3 | Cannonball Path | - |
| 4 | Capital City Trail | 520,000 |
| 5 | Goodman Path | 490,000 |
| 6 | Ice Age Junction | 470,000 |
| 7 | Ped/Bike Enhancements | 210,000 |
| 8 | Safe Routes to School | 83,000 |
| 9 | Safe Routes Grants Program | 150,000 |
| 10 | Sidewalk Program | 2,685,000 |
| 11 | State Street 700/800 Blocks | 500,000 |
| 12 | West Towne Path | 590,000 |
| 13 | Whitney Way Bike Crossing | 25,000 |
| | Total | $ 7,403,000 |

# Programming

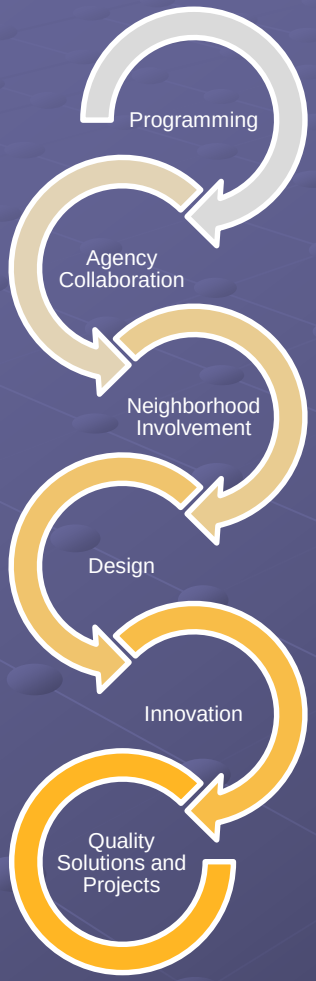
## Ped / Bike through 2021

2016
Capital Budget
Capital Improvement Program

Agency Name: Engineering - Bicycle and Pedestrian

| | Project | Reauth | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|
| 1 | Bike Station | - | 1,000,000 | - | - | - | - | - |
| 2 | Bikeways Program | 129,000 | 551,000 | 779,000 | 751,000 | 630,000 | 670,000 | 703,000 |
| 3 | Cannonball Path | - | - | - | - | - | 990,000 | - |
| 4 | Capital City Trail | 100,000 | 420,000 | 1,090,000 | 130,000 | 360,000 | 770,000 | - |
| 5 | Goodman Path | - | 490,000 | 350,000 | 560,000 | - | - | - |
| 6 | Ice Age Junction | 470,000 | - | 2,900,000 | 1,660,000 | 300,000 | - | - |
| 7 | Ped/Bike Enhancements | - | 210,000 | 216,000 | 222,000 | 229,000 | 230,000 | 243,000 |
| 8 | Safe Routes to School | - | 83,000 | 87,000 | 91,000 | 96,000 | 101,000 | 106,000 |
| 9 | Safe Routes Grants Program | - | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 |
| 10 | Sidewalk Program | - | 2,685,000 | 2,316,000 | 2,432,000 | 2,554,000 | 2,682,000 | 2,816,000 |
| 11 | State Street 700/800 Blocks | 500,000 | - | - | - | - | - | - |
| 12 | West Towne Path | - | 590,000 | 1,580,000 | 2,620,000 | 1,400,000 | - | - |
| 13 | Whitney Way Bike Crossing | - | 25,000 | - | - | - | - | - |
| | Total | $ 1,199,000 | $ 6,204,000 | $ 9,468,000 | $ 8,616,000 | $ 5,719,000 | $ 5,593,000 | $ 4,018,000 |

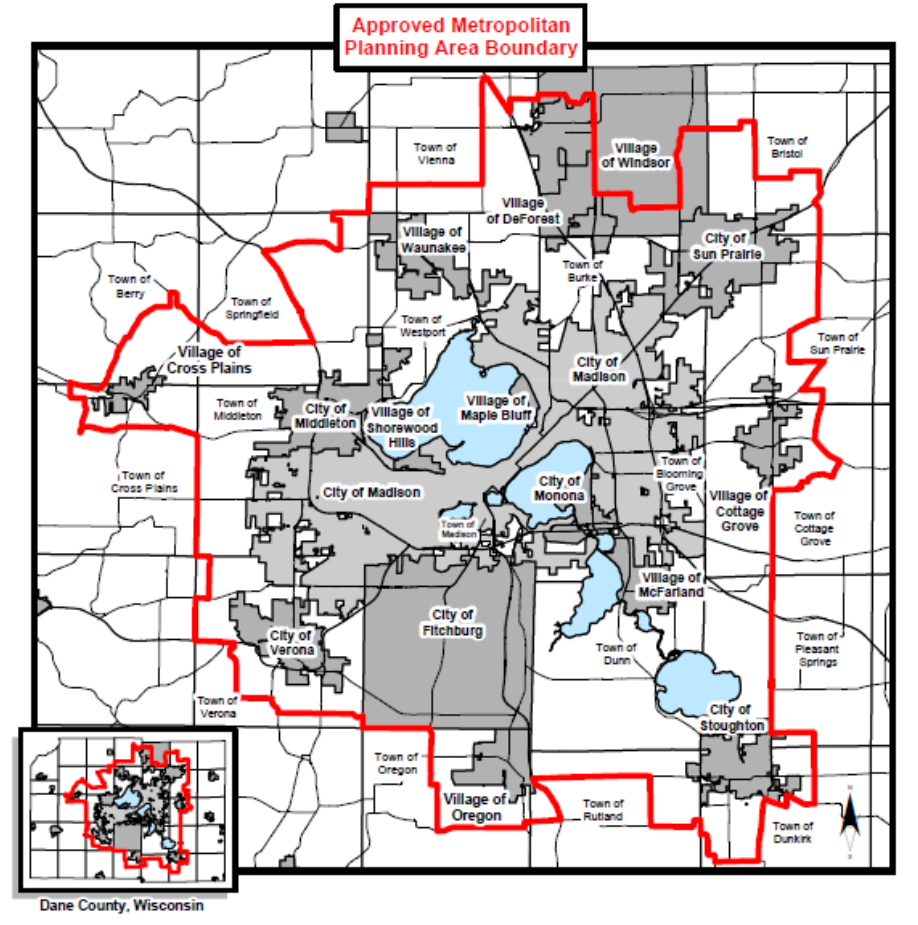
# Programming




The TIP is separately approved by the Madison Area Transportation Planning Board


The Planning Board is the Federally designated Metropolitan Planning Organization (MPO)

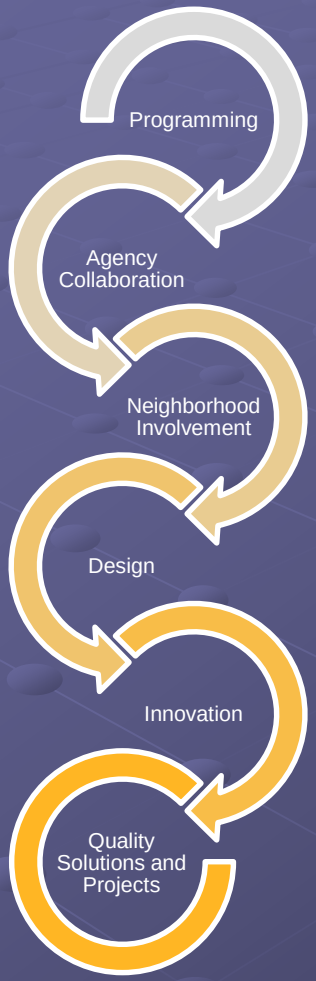
# Programming – MPO AREA




Currently consists of:

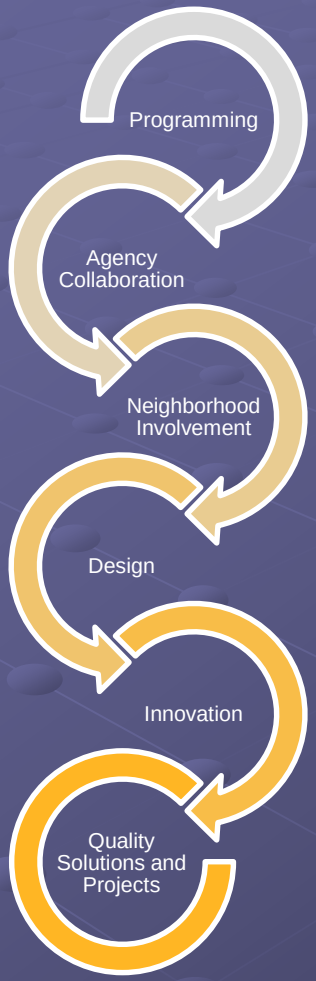
- Cities of Madison, Fitchburg, Middleton, Monona, Stoughton, Sun Prairie, and Verona.
- Villages of Cottage Grove, Cross Plains, DeForest, Maple Bluff, McFarland, Oregon, Shorewood Hills, Waunakee, and Windsor.
- Towns of Blooming Grove, Burke, Dunn, Madison, Middleton, Westport, and a portion of the Towns of Berry, Bristol, Cottage Grove, Cross Plains, Dunkirk, Oregon, Pleasant Springs, Rutland, Springfield, Sun Prairie, Verona, and Vienna.

# Programming




Who determines what projects and programs Federal Funds are used on?

# Programming

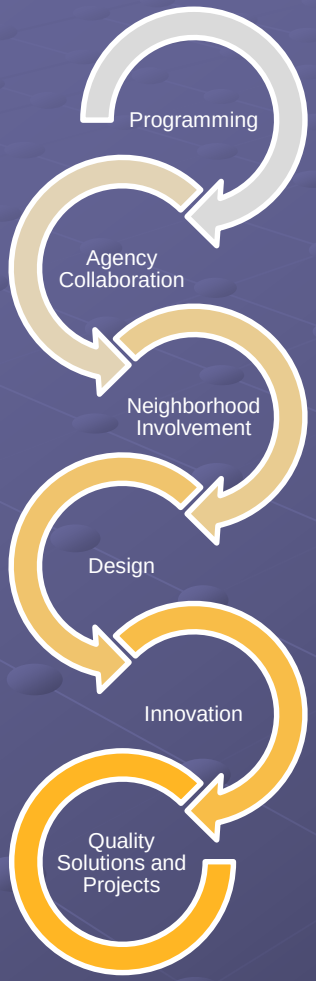



Who determines what projects and programs Federal Funds are used on?


**The MPO**

Federal Funds are provided to the Madison Area by formula

# Programming

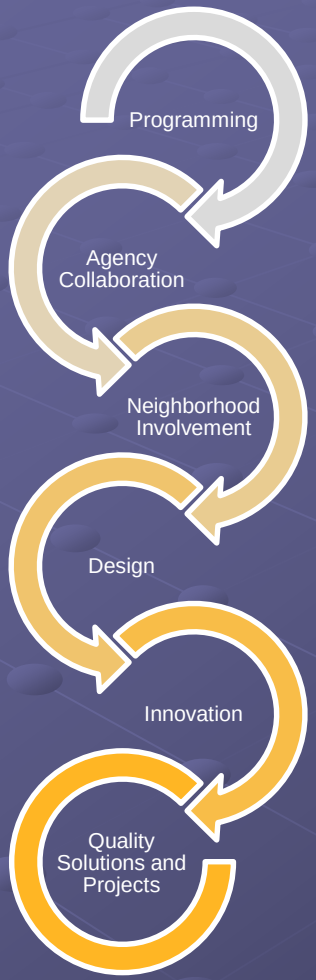


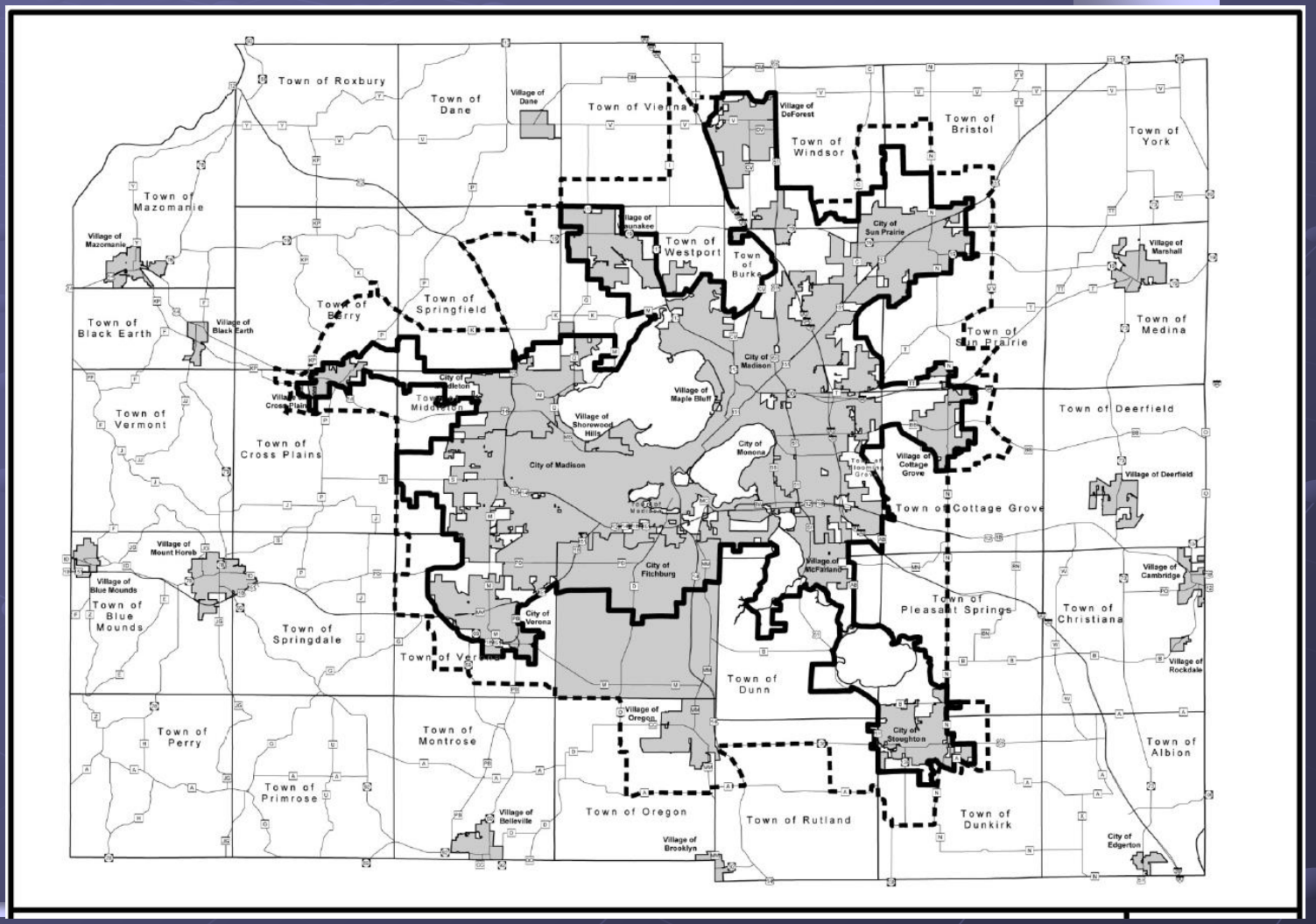

Federal General Transportation Funds ~ $7 Million per year (STP Urban)

Federal Ped/Bike Funds ~ $500,000 per year (Transp Alternative Projects)

There are other State and Federal Funds used in the Madison Area that are not under control of the MPO but are reflected in the adopted TIP

# Programming – MPO Urban Area

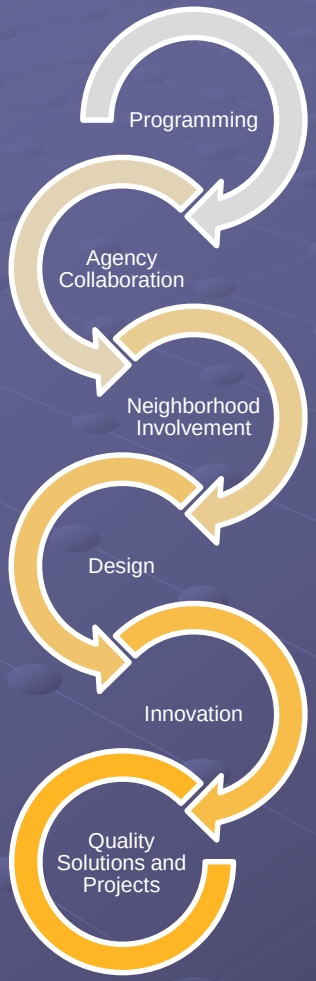


## 2016 - 2020 Madison Area STP Urban Priority Projects

| Project | Project ID | Score | Construction/ Project Calendar Year | State Fiscal Year | Total Cost (thousands) | Percent (Fed $) | Federal Funds Currently Approved (thousands) | Proposed Federal Funds (thousands) |
|---|---|---|---|---|---|---|---|---|
| **Approved Priority Projects (2016-2018)** | | | | | | | | |
| MPO Rideshare Program | 5992-08-20,30-32 | | 2016-2018 | 2016-2018 | $315 | 80 | $253 | $253 |
| City of Madison Ped/Bike Safety Education Program | 5992-08-29,33-35 | | 2016-2018 | 2016-2018 | $366 | 80 | $293 | $293 |
| Metro Transit Bus Replacements (Up to 7) | 5992-10-00 | | 2016-2017 | 2016-2017 | $3,690 | 50 | $1,845 | $1,845 |
| YWCA JobRide Program Van Replacements (6) | 5992-10-01 | | 2016 | 2016 | $90 | 80 | $72 | $72 |
| CTH M (Cross Country Rd. to 2,500' N of CTH PD) AND | 5992-09-82 | | 2016 | 2017 | | | | |
| CTH M (2,500' N of CTH PD to 1,000 S of Valley View Road) | 5992-09-85 | | 2016 | 2017 | $35,800 | 50 | $14,700 | $17,451 |
| McKee Rd./CTH PD (Meriter Way to Maple Grove Rd.) | 5992-09-31 | | 2017 | 2017 | $13,485 | 50 | $6,080 | $6,080 |
| Lacy Rd. (City Hall to Syene Rd.) | 5849-00-11 | | 2017 | 2017 | $6,139 | 50 | $2,000 | $2,854 |
| Buckeye Rd./CTH AB (Monona Dr. to Stoughton Rd./USH 51) | 5992-09-41 | | 2018 | 2018 | $2,130 | 50 | $920 | $920 |
| | | | | | | | | $29,768 |
| **New Priority Projects (2019-2020)** | | | | | | | | |
| MPO Rideshare Program | Ongoing | N/A | 2019-2020 | 2019-2020 | $226 | 80 | | $181 |
| City of Madison Ped/Bike Safety Education Program | Ongoing | N/A | 2019-2020 | 2019-2020 | $200 | 80 | | $160 |
| E. Johnson St. (Baldwin St. to First St.) Phase 2 | 5992-09-14 | 73 | 2019 | 2019 | $4,370 | 60 | | $2,622 |
| University Ave. (Allen/CTH Q to Univ Bay) Adaptive Signal System | New | 64 | 2018 | 2019 | $456 | 70 | | $317 |
| McKee Rd./CTH PD (Commerce Park Dr to Seminole Hwy.) | New | 63 | 2019 | 2020 | $5,809 | 60 | | $3,485 |
| Mineral Point Rd. (USH 12 to High Point Rd.) | New | 61 | 2020 | 2020 | $1,330 | 60 | | $798 |
| Atwood Ave. (Fair Oaks Ave. to Walter St.) Phase 1 | New | 60 | 2020 | 2020 | $5,360 | 60 | | $3,216 |
| Cottage Grove Rd/CTH BB (North Star Dr to Sprecher Rd) | 5992-09-26 | 56 | 2018 | 2019 | $5,750 | 60 | | $3,450 |
| | | | | | | | | $14,229 |
| **Candidate Future Projects (2021-2022)** | | | | | | | | |
| Pleasant View Rd. (USH 14 to Greenway Blvd.) Phase 1 | New | 61 | 2021 | 2021 | $17,120 | 60 | | |
| Atwood Ave. (Walter St. to Cottage Grove Rd.) Phase 2 | New | 60 | 2021 | 2022 | $3,432 | 60 | | |
| Mineral Point Rd./CTH S (Pleasant View Rd. to Veritas Dr.) | New | 59 | | | $5,360 | 60 | | |
| Hoepker Rd. (USH 51 to I-39/90) | New | 54 | | | $2,000 | 60 | | |
| Sprecher Rd. (Milwaukee St. to CTH T) | New | 48 | | | $3,320 | 60 | | |
| Troy Dr. RR Bridge & Street Imp. (Marcy Rd. to School Rd.) | New | 36 | | | $4,640 | 60 | | |
| | | | | | | | | |

# Transportation Solutions
# Exceptional Neighborhoods




Project Development

Timeline Varies from 3 months to several years

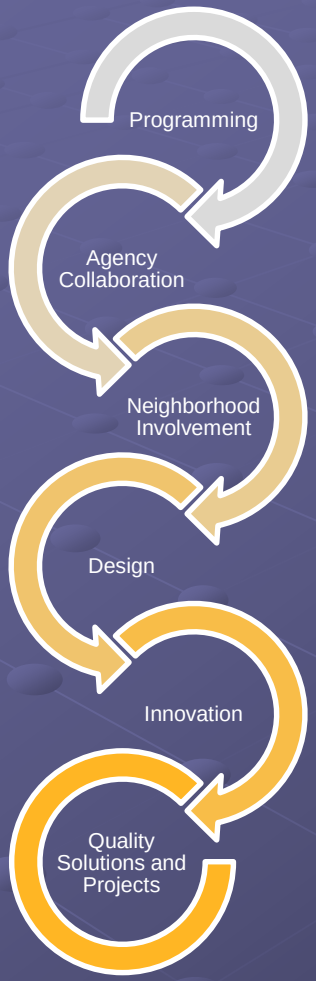
Programming

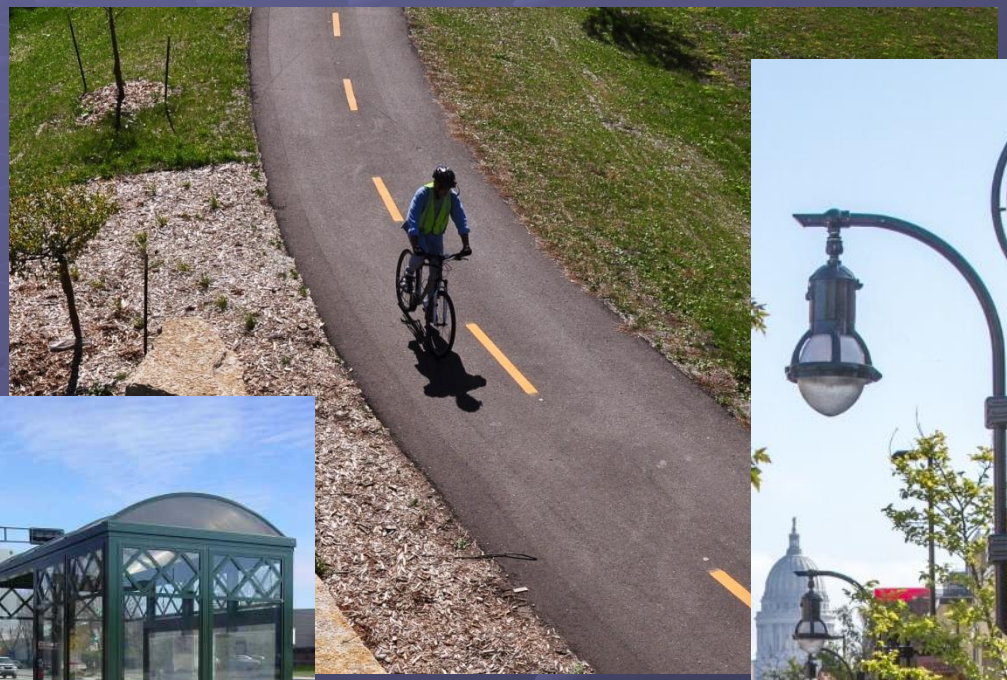
Project Life Cycle

Construction

Maintenance

# Project Development
# Agency Collaboration

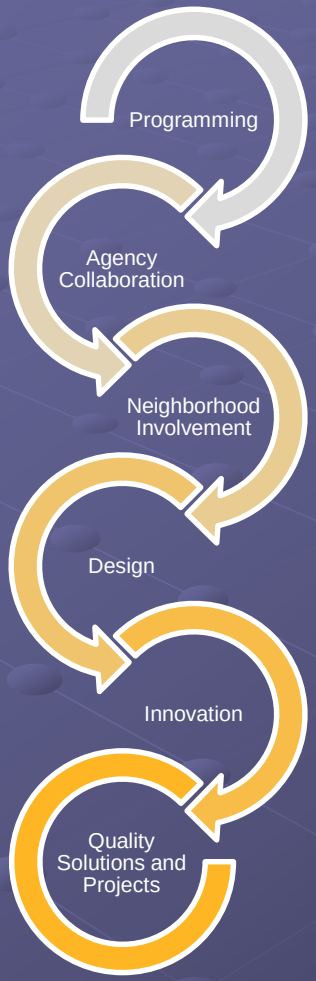



Many Components

Much Coordination

# Project Development
# Agency Collaboration




TE / CE monthly Pedestrian and Bike Coordination Meetings.

TE / CE Monthly Roadways Project Coordination Meetings

TE / Metro monthly
Coordination Meetings.

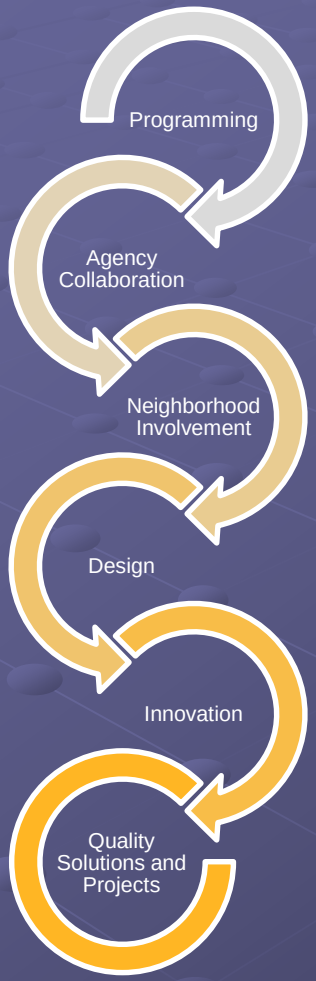
Regular project collaboration on issues such as traffic modeling, lighting, signals, signing, parking, street trees, Bikes/Ped, Metro & traffic control.

City Planners assigned to assist designers

Detailed involvement with Metro for transit facilities.

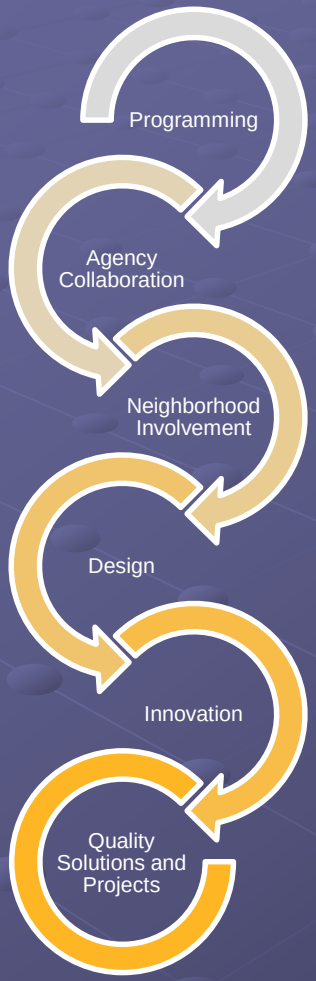
Sanitary Sewer, Water Main, Storm Sewer, and Private Utilities

# Project Development
# Neighborhood Involvement





# Project Development
# Neighborhood Involvement




At least one neighborhood meeting for every street and bike path project. Multiple opportunities for comments on larger projects.

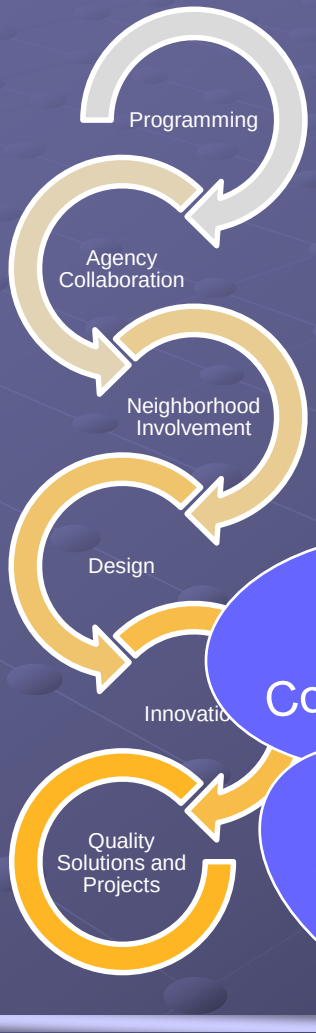
Public involvement plans on complex projects

Meeting facilitators on large projects

City team approach, involving Engineering, Traffic Engineering, Planning, Parks, and Metro Transit.

Surveys provide feedback

# Project Development Design

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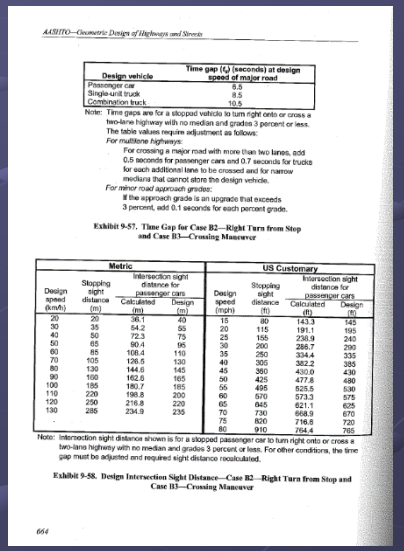


AASHTO—Geometric Design of Highways and Streets

| Design vehicle | Time gap ($t_g$) (seconds) at design speed of major road |
|---|---|
| Passenger car | 6.5 |
| Single-unit truck | 8.5 |
| Combination truck | 10.5 |

Note: Time gaps are for a stopped vehicle to turn right onto or cross a two-lane highway with no median and grades 3 percent or less. The table values require adjustment as follows:

*For multilane highways:*

For crossing a major road with more than two lanes, add 0.5 seconds for passenger cars and 0.7 seconds for trucks for each additional lane to be crossed and for narrow medians that cannot store the design vehicle.

*For minor road approach grades:*

If the approach grade is an upgrade that exceeds 3 percent, add 0.1 seconds for each percent grade.

**Exhibit 9-57. Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Maneuver**

| Metric | | | | US Customary | | | |
|---|---|---|---|---|---|---|---|
| Design speed (km/h) | Stopping sight distance (m) | Intersection sight distance for passenger cars Calculated (m) | Intersection sight distance for passenger cars Design (m) | Design speed (mph) | Stopping sight distance (ft) | Intersection sight distance for passenger cars Calculated (ft) | Intersection sight distance for passenger cars Design (ft) |
| 20 | 20 | 36.1 | 40 | 15 | 80 | 143.3 | 145 |
| 30 | 35 | 54.2 | 55 | 20 | 115 | 191.1 | 195 |
| 40 | 50 | 72.3 | 75 | 25 | 155 | 238.9 | 240 |
| 50 | 65 | 90.4 | 95 | 30 | 200 | 286.7 | 290 |
| 60 | 85 | 108.4 | 110 | 35 | 250 | 334.4 | 335 |
| 70 | 105 | 126.5 | 130 | 40 | 305 | 382.2 | 385 |
| 80 | 130 | 144.6 | 145 | 45 | 360 | 430.0 | 430 |
| 90 | 160 | 162.6 | 165 | 50 | 425 | 477.8 | 480 |
| 100 | 185 | 180.7 | 185 | 55 | 495 | 525.5 | 530 |
| 110 | 220 | 198.8 | 200 | 60 | 570 | 573.3 | 575 |
| 120 | 250 | 216.8 | 220 | 65 | 645 | 621.1 | 625 |
| 130 | 285 | 234.9 | 235 | 70 | 730 | 668.9 | 670 |
| | | | | 75 | 820 | 716.8 | 720 |
| | | | | 80 | 910 | 764.4 | 765 |

Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or cross a two-lane highway with no median and grades 3 percent or less. For other conditions, the time gap must be adjusted and required sight distance recalculated.

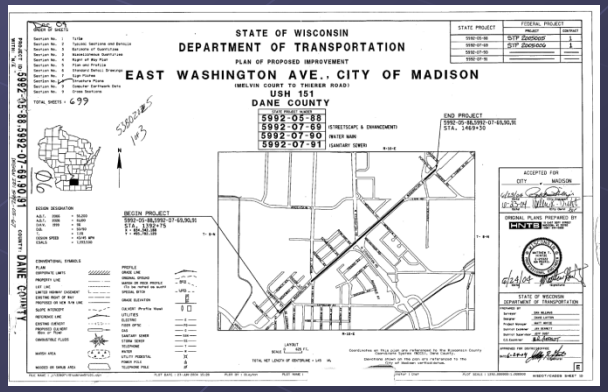
**Exhibit 9-58. Design Intersection Sight Distance—Case B2—Right Turn from Stop and Case B3—Crossing Maneuver**

664

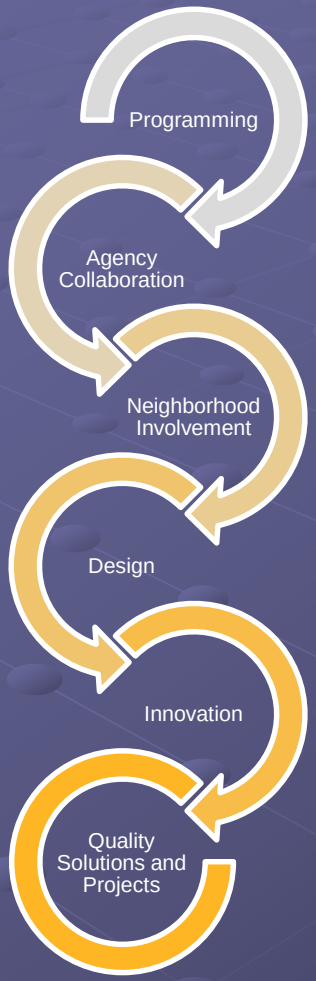
Add Compromise

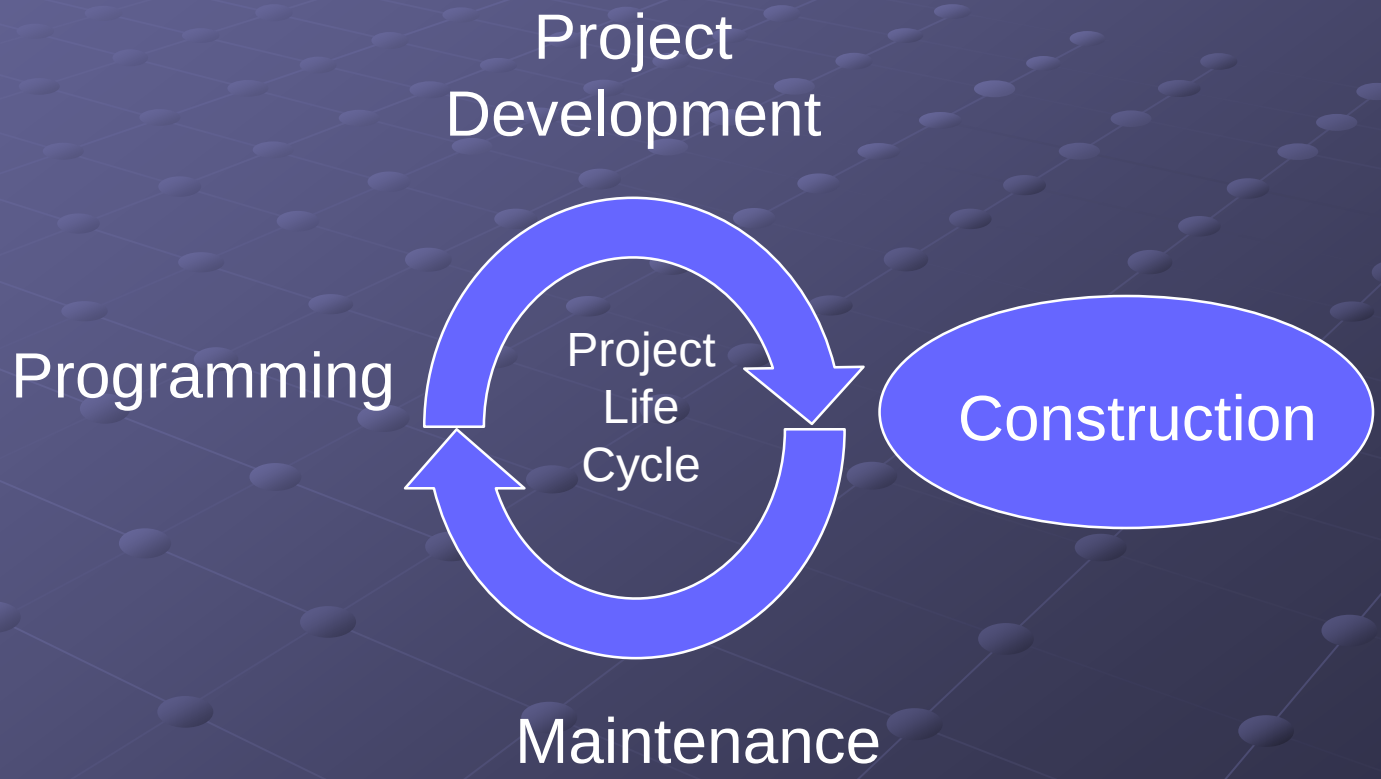
Add Innovation

=

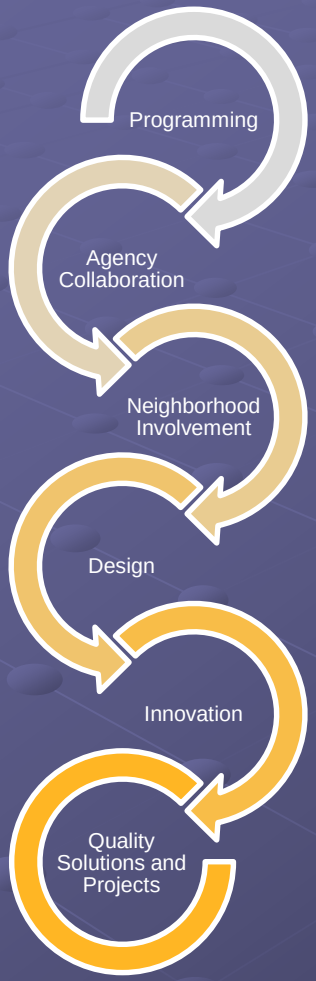


# Transportation Solutions
# Exceptional Neighborhoods

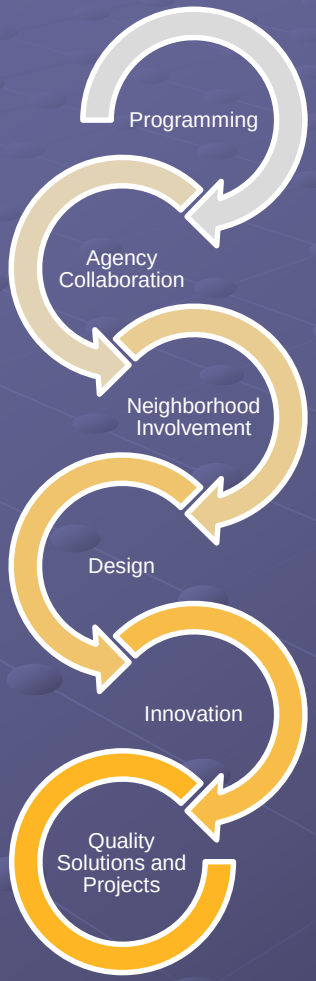


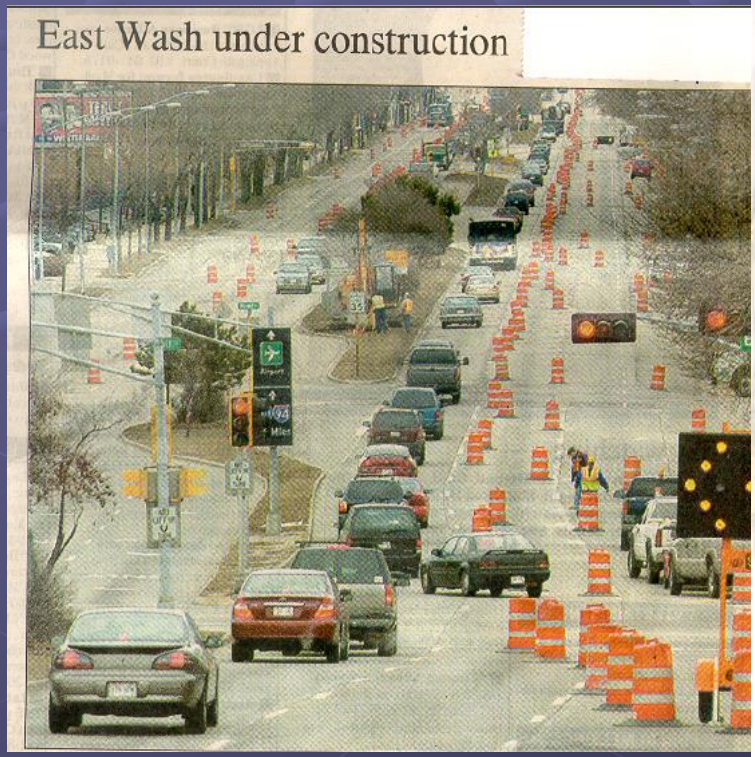



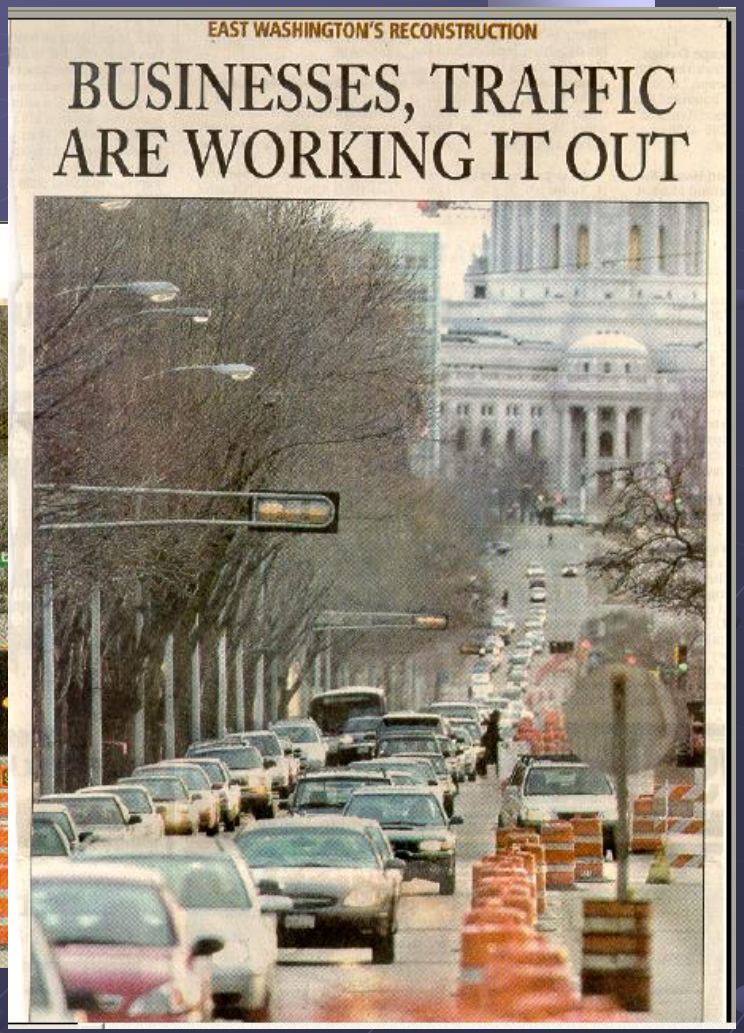
# Project Development
# Construction




# Project Development
# Construction

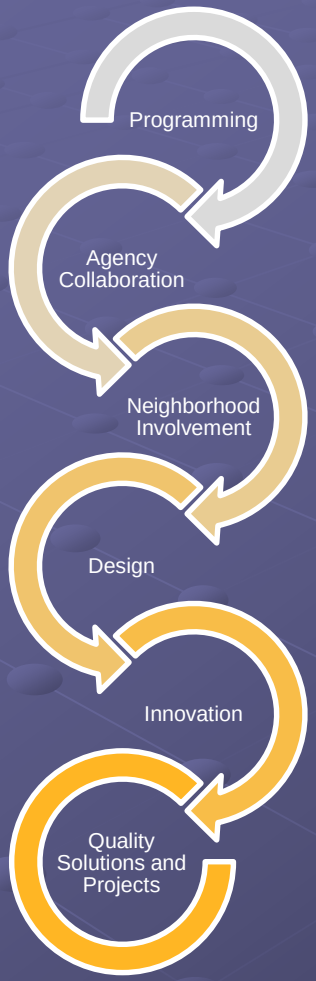


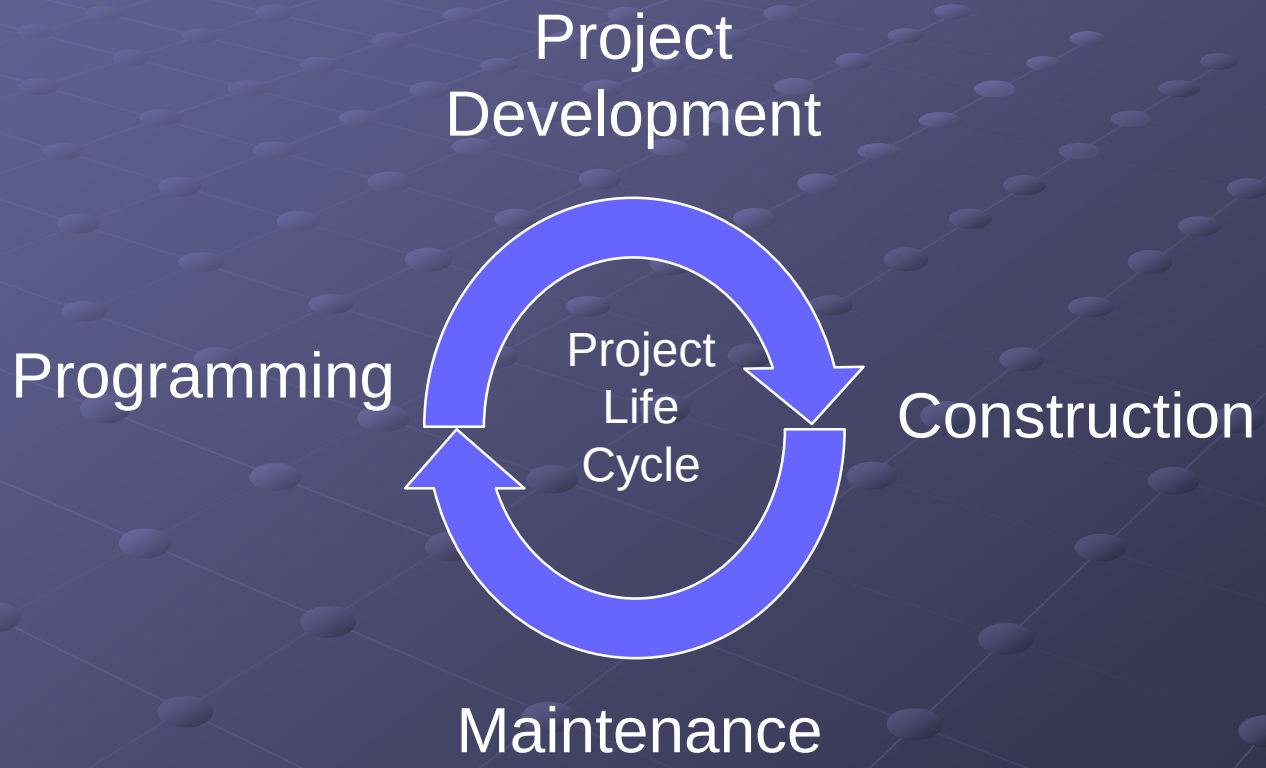


East Wash under construction


EAST WASHINGTON'S RECONSTRUCTION

BUSINESSES, TRAFFIC ARE WORKING IT OUT

# Transportation Solutions
# Exceptional Neighborhoods



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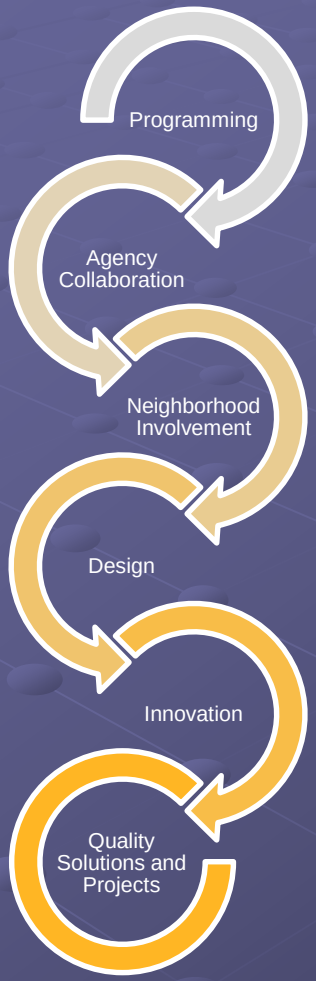


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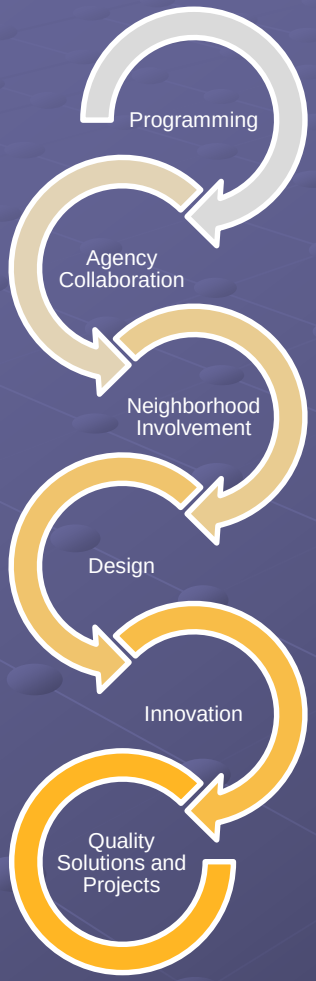


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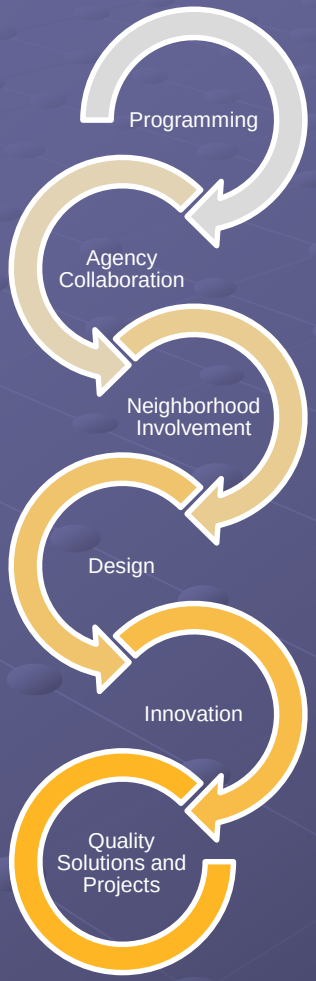


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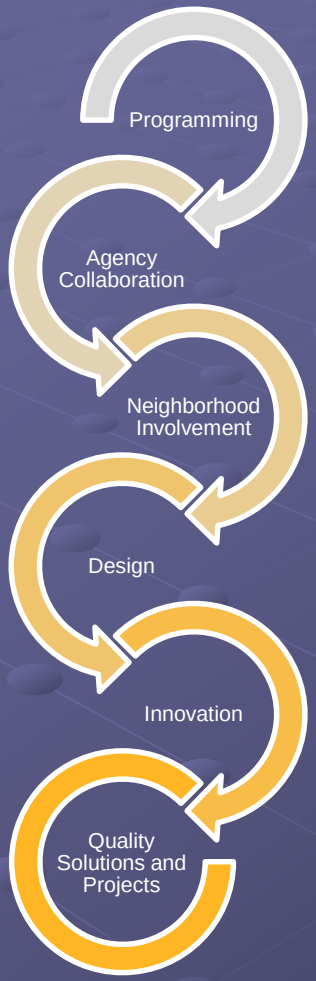


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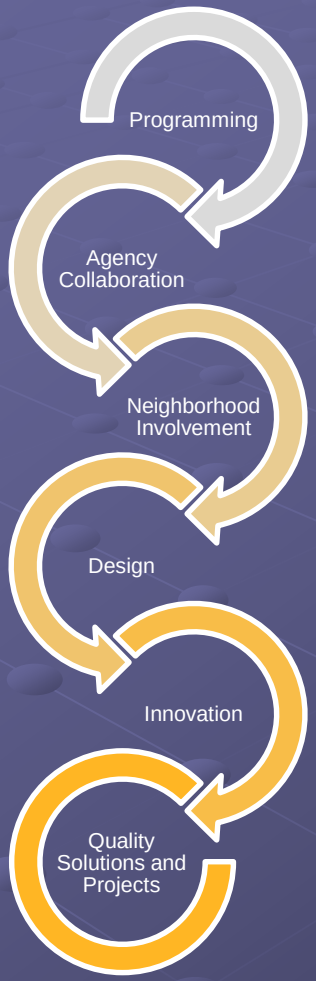
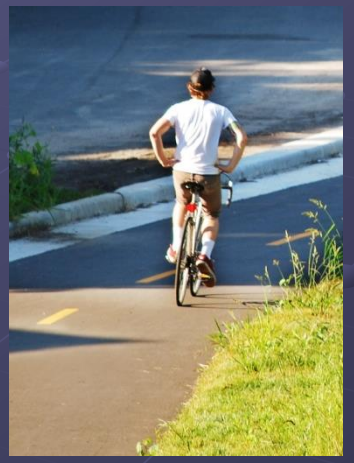



# Transportation Solutions. Exceptional Neighborhoods

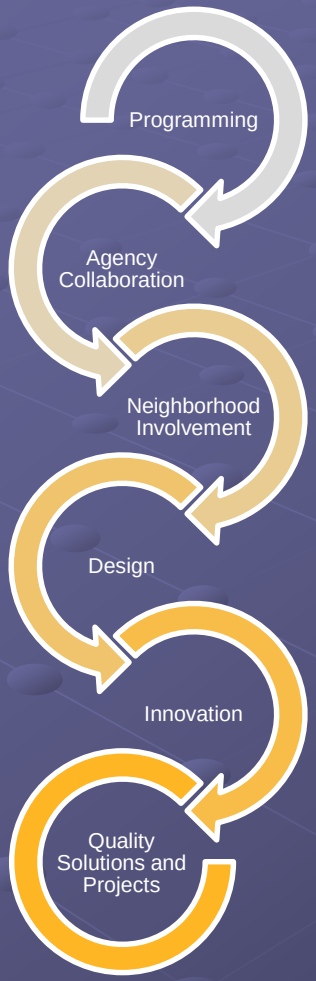
What started in the 1970's as a policy has become the culture of the City



We build balanced transportation projects.


Mode share is accomplished through convenience.

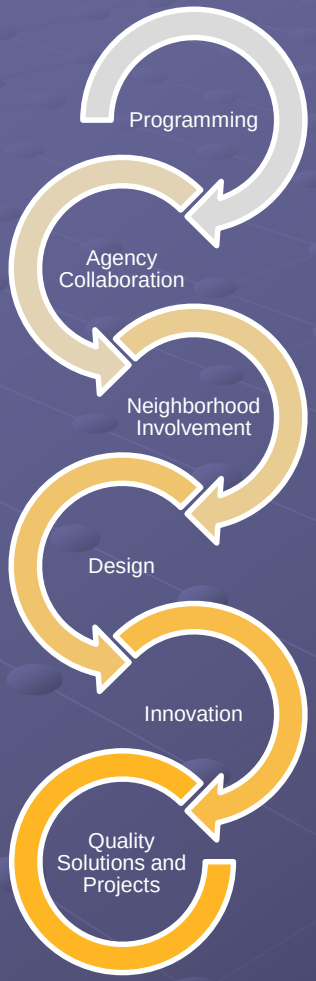
# Transportation Solutions
# Exceptional Neighborhoods




## How are we doing?

| | | Arterial, Collector and Local | 2001 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|
| | | % Miles at or below Cond State 10 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| | | % Miles at or below Cond State 9 | 94.5% | 97.4% | 96.6% | 97.1% | 98.3% | 98.5% | 97.7% |
| | | % Miles at or below Cond State 8 | 87.7% | 89.9% | 87.3% | 89.4% | 90.9% | 92.2% | 93.4% |
| | | % Miles at or below Cond State 7 | 65.0% | 53.2% | 48.0% | 55.7% | 55.6% | 68.2% | 62.0% |
| | | % Miles at or below Cond State 6 | 57.2% | 37.4% | 34.1% | 34.6% | 33.8% | 38.4% | 40.7% |
| Goal | 26% | % Miles at or below Cond State 5 | 32.1% | 25.0% | 24.1% | 24.0% | 24.6% | 25.2% | 24.6% |
| | | % Miles at or below Cond State 4 | 9.3% | 6.5% | 7.7% | 9.9% | 10.8% | 13.9% | 14.4% |
| | | % Miles at or below Cond State 3 | 1.8% | 0.7% | 0.9% | 0.9% | 1.0% | 3.1% | 2.7% |
| | | % Miles at or below Cond State 2 | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% |
| | | % Miles at or below Cond State 1 | 0.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| | | % Miles at or below Cond State 0 | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

# Transportation Solutions
# Exceptional Neighborhoods

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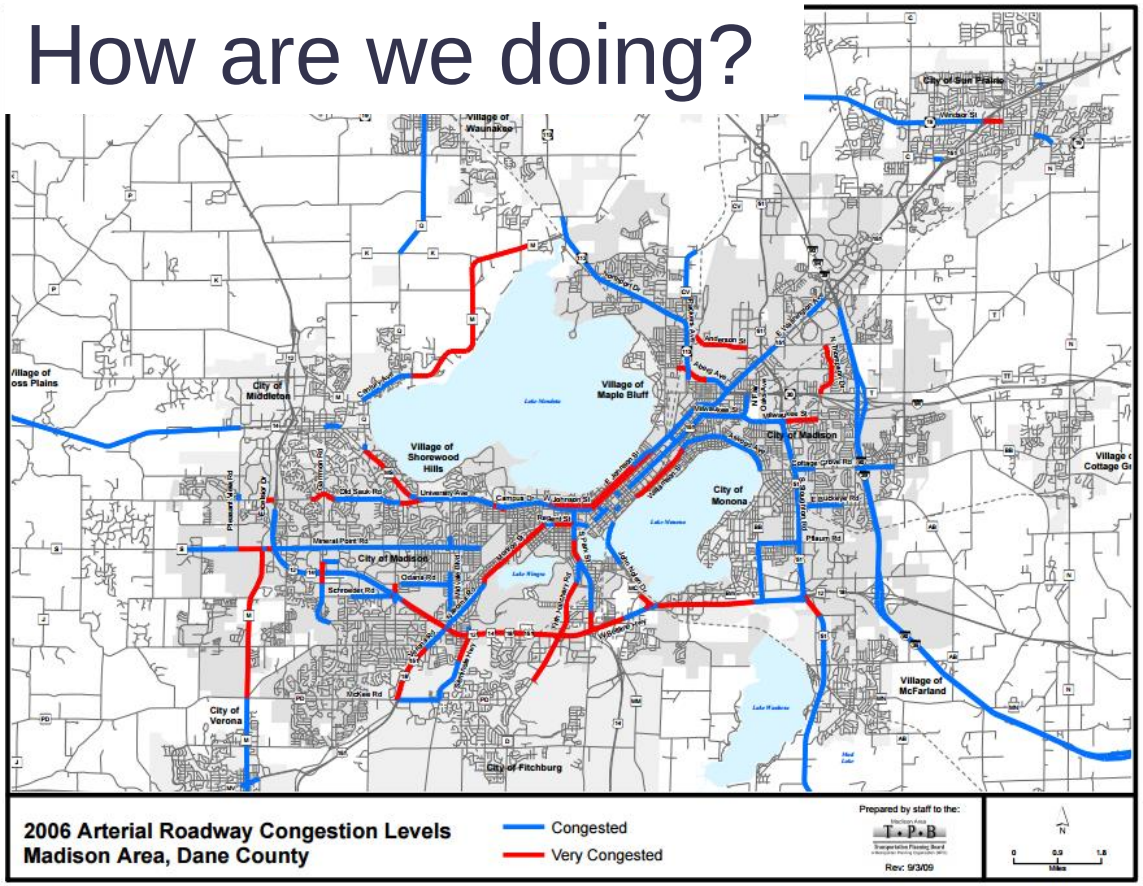

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# Exceptional Neighborhoods

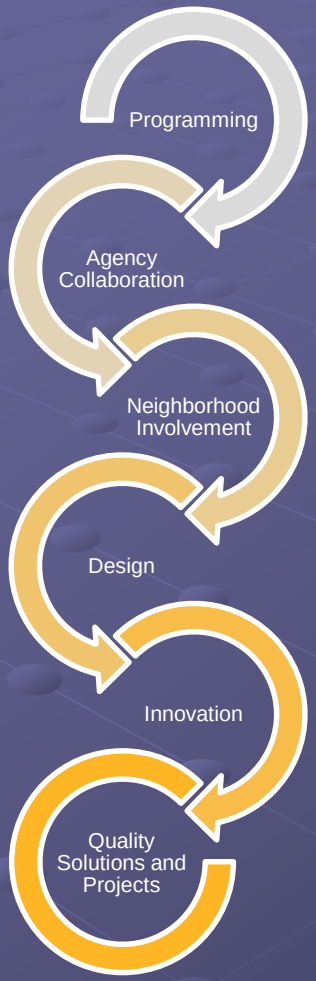
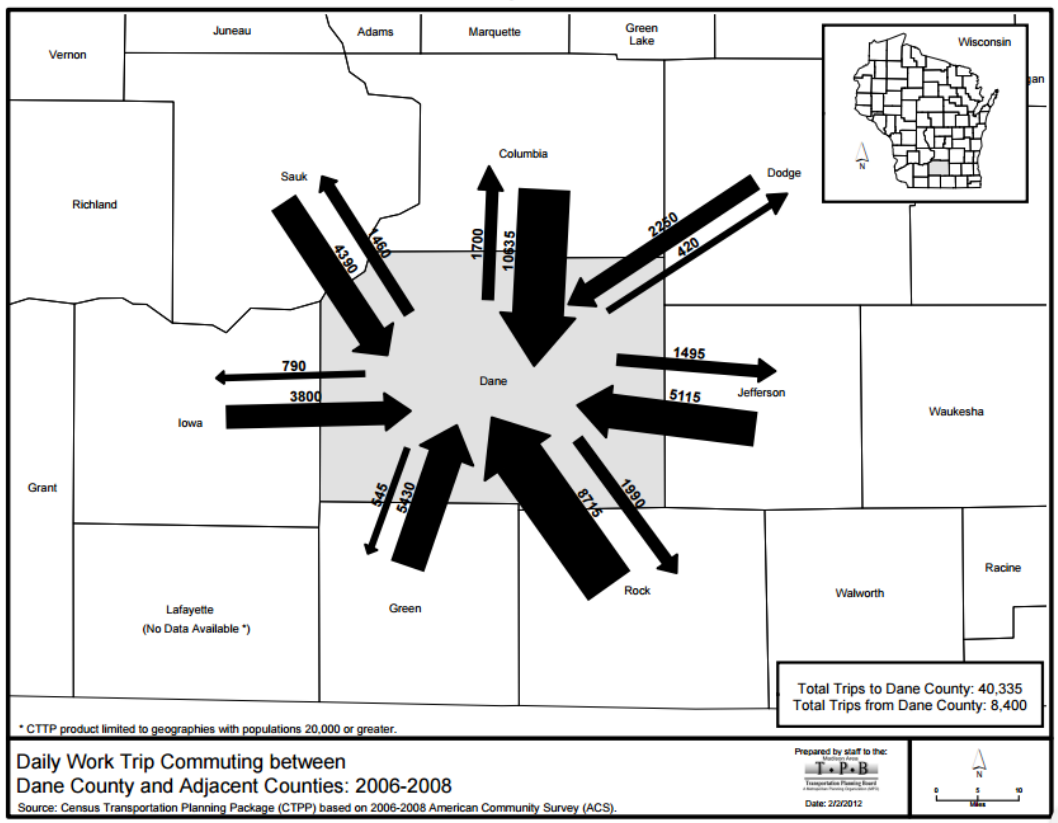




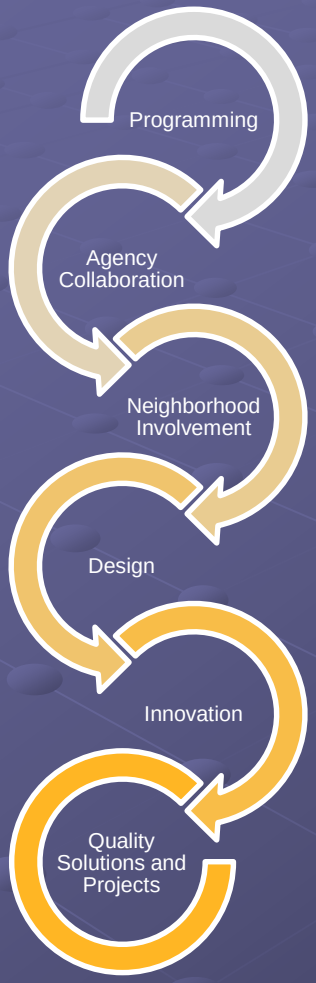


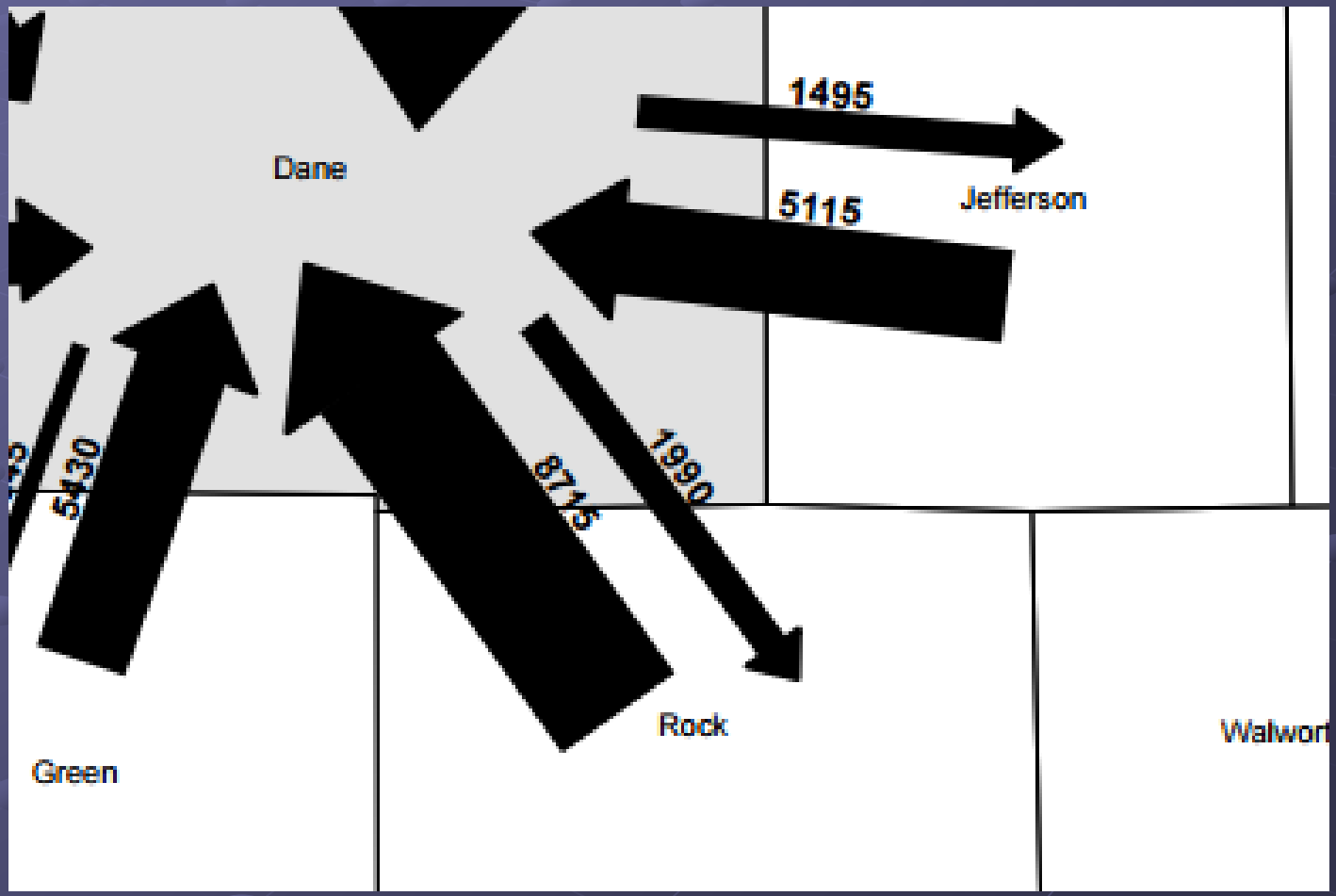



Figure 7



# Transportation Solutions
## Exceptional Neighborhoods



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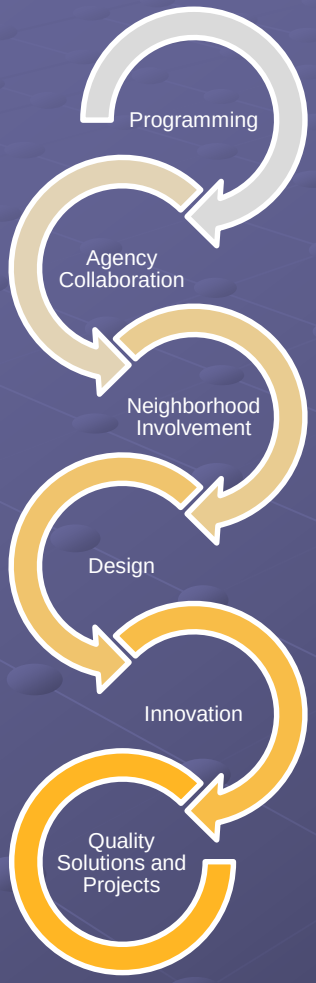



## Dane County had highest population growth in state last year, says Census Bureau

AMANDA FINN afinn@madison.com, 608-252-6139 Mar 24, 2016 4


Wisconsin has had a 1.5 percent population growth rate since 2010.

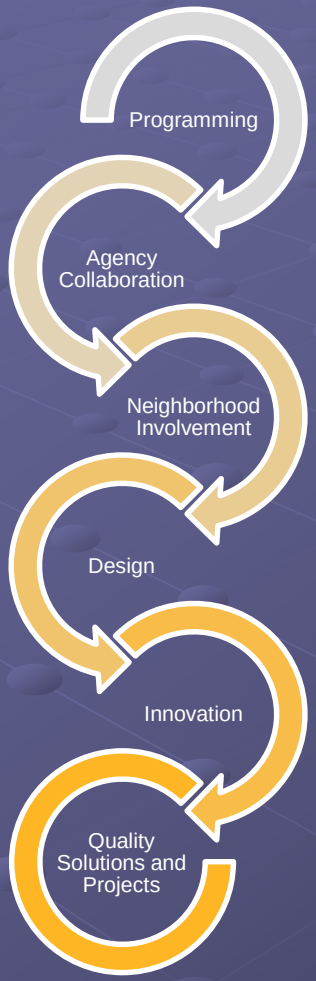
POPULAR IN NEWS

1. UW Professor James Baughman getting his day on Saturday, mayor proclaims
2. 1 killed, 6 injured when limo carrying passengers from Madison area overturns near Chicago
3. Man spared prison sentence after shooting at cars on Beltline
4. Ted Cruz scores more Wisconsin GOP endorsements; Hillary Clinton arrives next week

Dane County had the highest rate of population growth of any county in Wisconsin in the last year, the U.S. Census Bureau said Thursday.

The county's population rose 1.3 percent between July 1, 2014, and July 1, 2015, the bureau said.

# Transportation Solutions
# Exceptional Neighborhoods

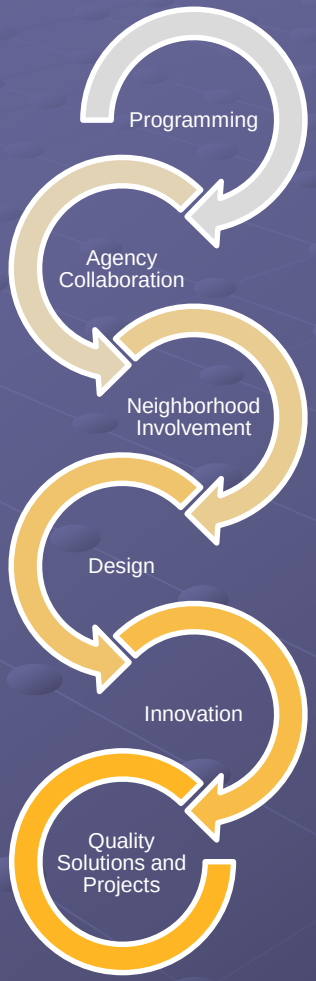


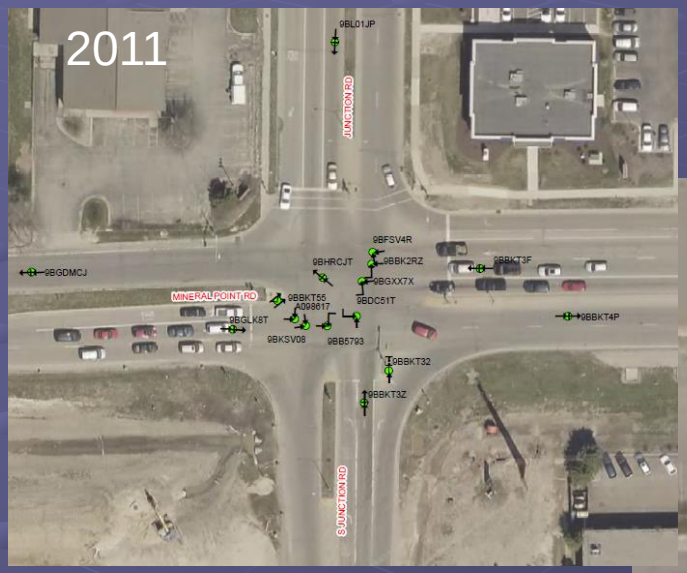

**Madison city, Wisconsin**

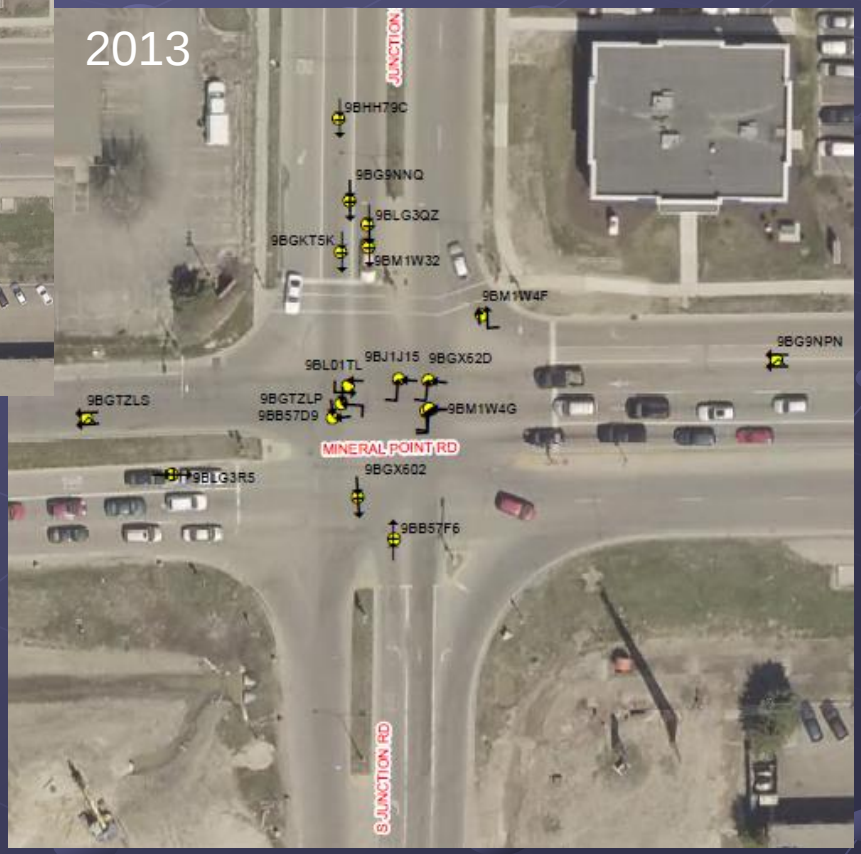
| Subject | 2014 Total | | 2011-2013 3 year average | |
|---|---|---|---|---|
| | Estimate | Margin of Error | Estimate | Margin of Error |
| Workers 16 years and over | 139,244 | +/-3,645 | 134,951 | +/-2,031 |
| MEANS OF TRANSPORTATION TO WORK | | | | |
| Car, truck, or van | 69.5% | +/-2.4 | 71.7% | +/-1.3 |
| Drove alone | 62.1% | +/-2.6 | 63.5% | +/-1.4 |
| Carpooled | 7.4% | +/-1.5 | 8.3% | +/-0.9 |
| In 2-person carpool | 5.6% | +/-1.3 | 6.6% | +/-0.8 |
| In 3-person carpool | 1.2% | +/-0.5 | 1.3% | +/-0.3 |
| In 4-or-more person carpool | 0.7% | +/-0.5 | 0.4% | +/-0.2 |
| Workers per car, truck, or van | 1.06 | +/-0.01 | 1.07 | +/-0.01 |
| Public transportation (excluding taxicab) | 10.1% | +/-1.6 | 9.1% | +/-0.8 |
| Walked | 10.3% | +/-1.6 | 9.5% | +/-1.0 |
| Bicycle | 5.3% | +/-1.0 | 5.2% | +/-0.7 |
| Taxicab, motorcycle, or other means | 1.0% | +/-0.4 | 0.7% | +/-0.2 |
| Worked at home | 3.9% | +/-0.7 | 3.8% | +/-0.4 |

Source: American Community Survey (ACS)

# Transportation Solutions
# Exceptional Neighborhoods



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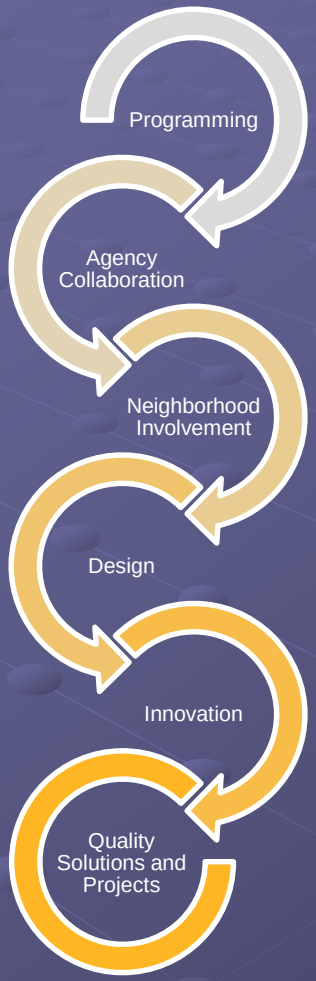
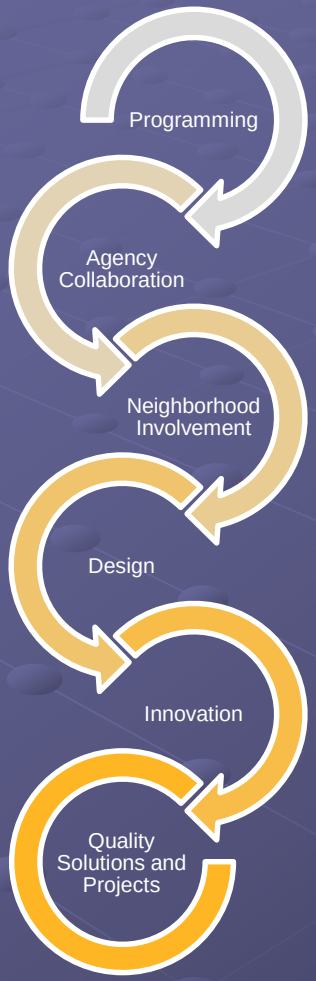
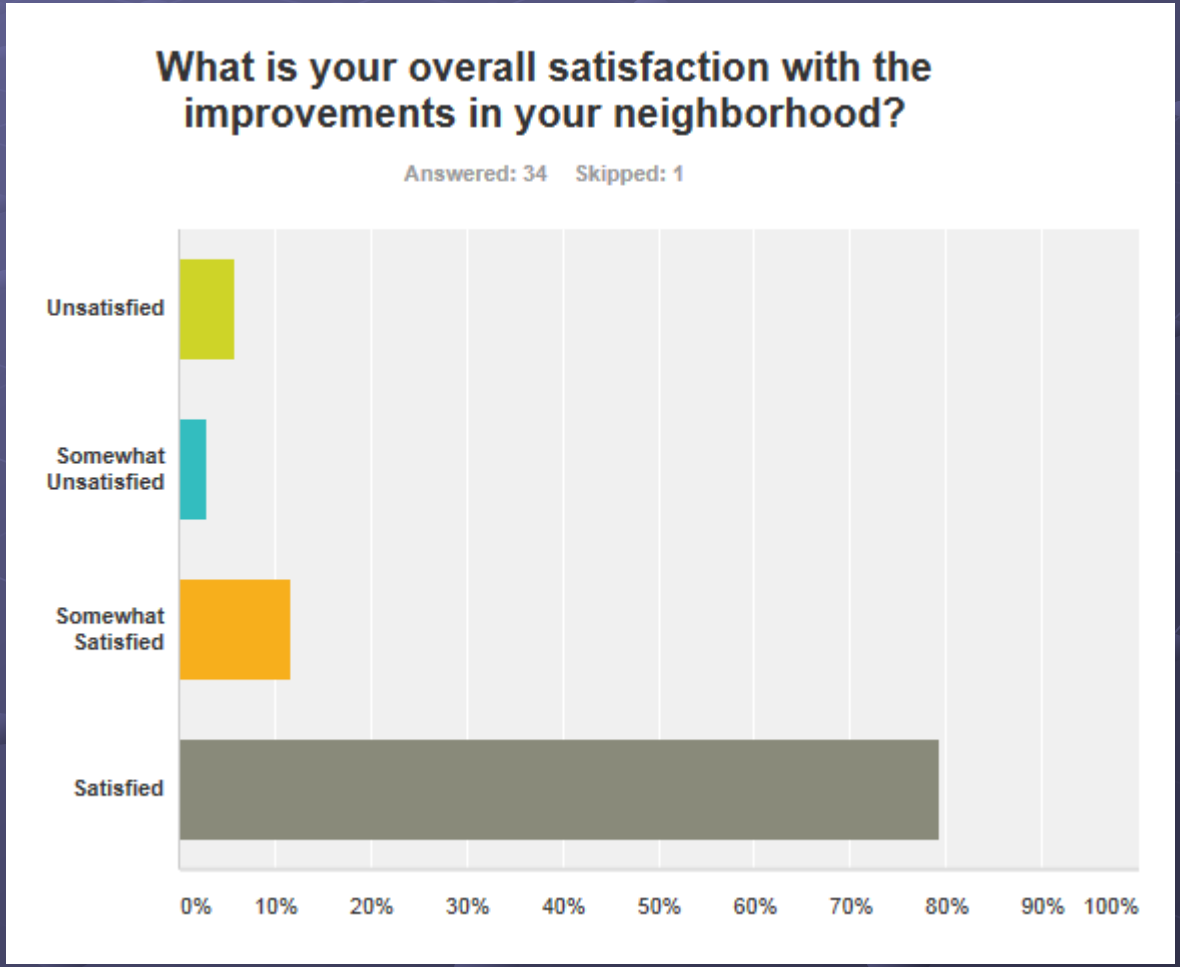



## Traffic Crashes Before/After

| | Junction Rd-Mineral Pt Intersection | Jug Handle |
|---|---|---|
| 2011 | 16 | N/A |
| 2012 | 10 | N/A |
| 2013 | 18 | N/A |
| 2014 | 15 | 3 |
| 2015 (till Nov) | 4 | 5 |

# Transportation Solutions
# Exceptional Neighborhoods



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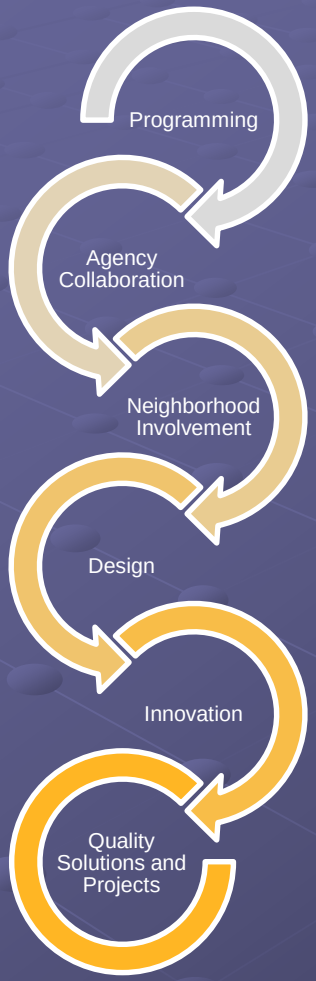


## How are we doing?

BICYCLE FRIENDLY COMMUNITY
PLATINUM
THE LEAGUE OF AMERICAN BICYCLISTS
MADISON
237395 RESIDENTS
THE LEAGUE OF AMERICAN BICYCLISTS
since 1880

Madison one of only 5 Communities Nationwide to be awarded Platinum.

Only City East of the Mississippi River awarded Platinum

CITY OF MADISON
WISCONSIN

# Transportation Solutions
# Exceptional Neighborhoods

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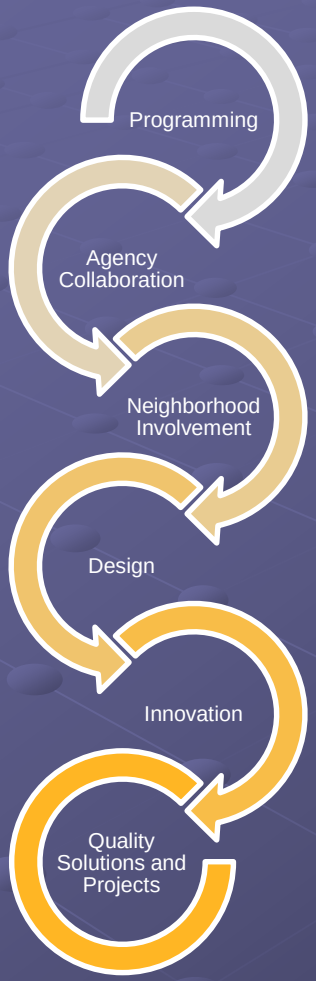


- **Madison Ranked One of the 13 Hottest American Cities for 2016** *January 2016*
  Business Insider
- **Madison Ranked U.S. Growth City #4** *February 2016*
  by U-Haul
- **Madison Ranked #7 Best Metro Area for STEM Professionals** *January 2016*
  by WalletHub
- **Madison Ranked the 10th Best City for an Active Lifestyle** *January 2016*
  by WalletHub
- **Madison Ranked 5 Stars** *December 2015*
  by Yelp.com
- **Madison Ranked the 3rd Healthiest City** *April 2015*
  by Livability.com
- **Madison Ranked #1 for Successful Aging among big cities and small cities** *November 2014*
  by Forbes.com
- **Madison Ranked the #1 Most Livable City in America** *September 2014*
  by Livability.com
- **Madison Ranked the 11th Best City for Families** *June 2014*
  by WalletHub

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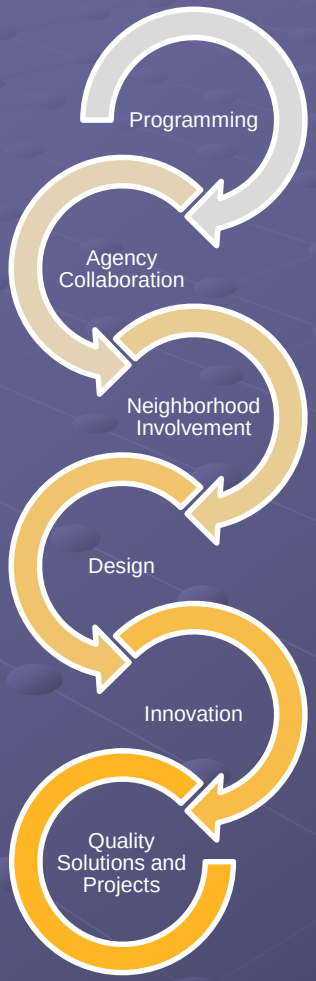


#1 Most Compact Mid-Sized City in U.S. (13th in U.S. Overall)

**Smartgrowthamerica.org**

- **Madison Ranked One of the Top 10 Happiest Cities** *January 2015*
  by National Geographic

- **Madison Ranked the 2nd Best Midwest City for Green Commuting** *May 2014*
  by HomeownersInsurance.com

- **Madison Ranked Among Top Healthiest Cities** *September 2013*
  A national accolade for Madison from Huffington Post for being one of the country's 25 healthiest cities.

- **Madison Ranked #5 in Best Places to Live** *November 2013*
  by Livability.com

The Best Cities on Earth for Biking

**Yahoo Travel, June 2015**

#1 Greenest City in America

**Nerdwallet, April 2014**

- **Madison Ranked #5 in America's Best Cities for Young Professionals** *August 2014*
  by Forbes.com

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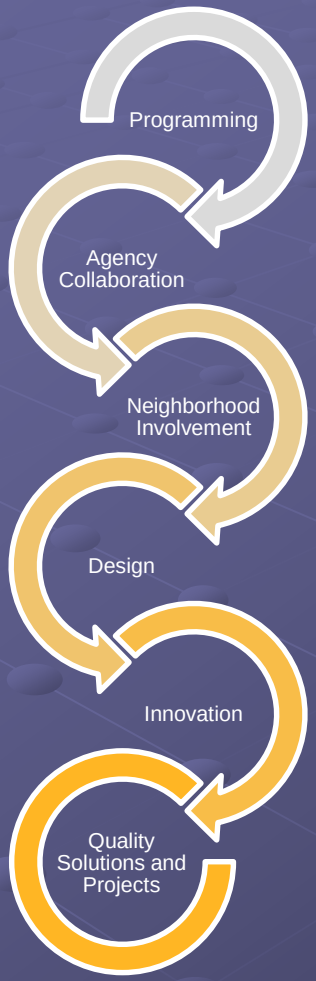


"7 reasons why Madison, Wisconsin is the best place to live in America"

**Business Insider, September 2014**

#3 in Top 100 Best Places to Live 2016

**Livability.com, September 2015**

#1 in Top 100 Places to Live

**Livability.com, September 2014**

Most Livable Cities in America

**Forbes, April 20, 2015**

10 Most Livable Neighborhoods in the U.S.

**AARP, April 16, 2015**

5 Reasons Madison, WI Might be the World's Best Place to Retire

**Huffington Post, February 27, 2015**

#1 Best U.S. Cities for Quality of Life

**NerdWallet.com, August 2014**

#1 Best Small Cities to Live

**Credit Donkey, August 2013**