

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



Rob Phillips, P.E.

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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 Access Mgt Data collection/analysis
Neighborhood Plan/Design Traffic Control Fiber Optic Networks
Permits Reconstruction Mad Metro 1400 parking meters
ITS components Parking Ramps Work Zones School Zones
Pedestrian operations Plan and Development Review Traffic Cameras
60,00+ Signs 13,000+ Street Lights Traffic Calming Roundabouts
Site design Radio Towers
Special events

....and much more.



Who is TE and Parking?

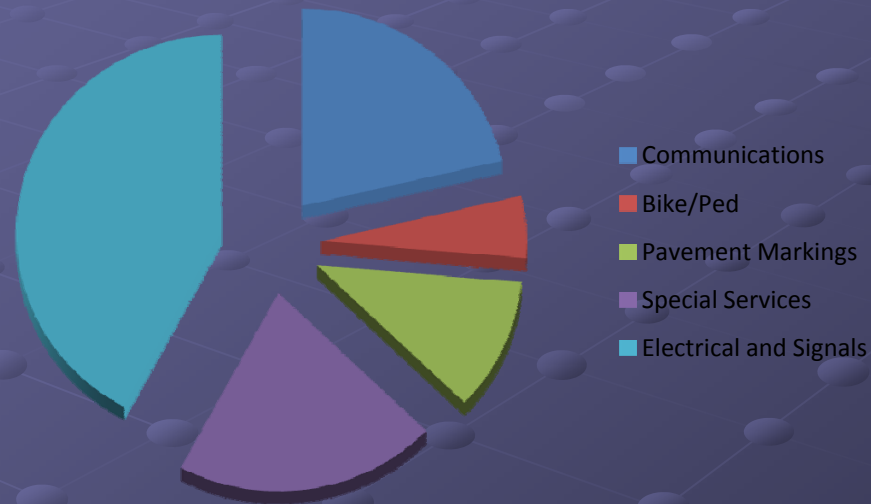
- 132 Employees

- 11 Engineers

- 121 Field, Maintenance & Support Employees



How is TE funded?

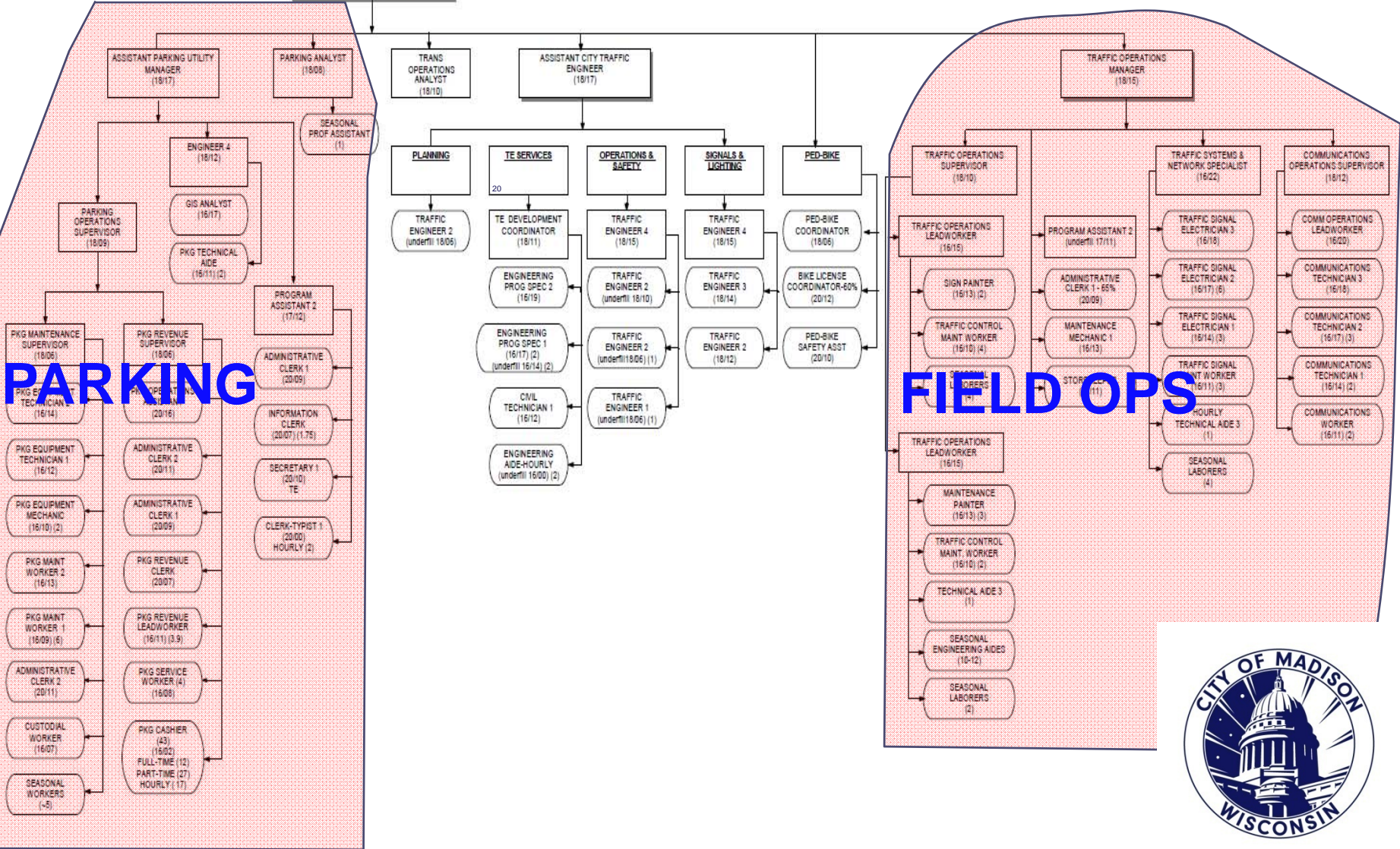


\$5,655,264 2016 Op Budget



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

CITY TRAFFIC ENGINEERING AND PARKING
CITY TRAFFIC ENGINEER
& PARKING MANAGER
(21/21)



PARKING

FIELD OPS



How is TE/Parking organized?

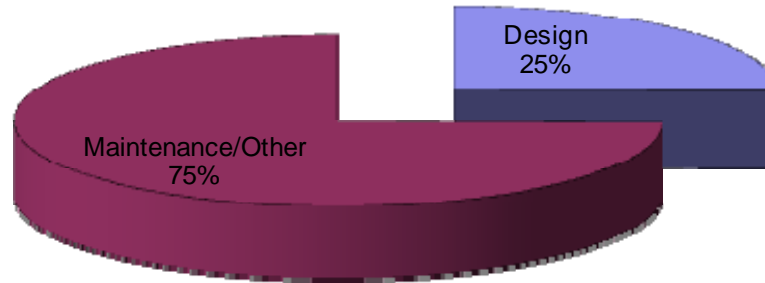
Eight Sections:

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



How are we organized?

TE FTEs by
Maintenance & Design



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 Street Reconstruction Closed landfills
Sewer Capacity Studies Sewer Capacity Studies Rain gardens Land Surveys
City Addressing Plan and Development Review Utility Permits
Repair sidewalks 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.

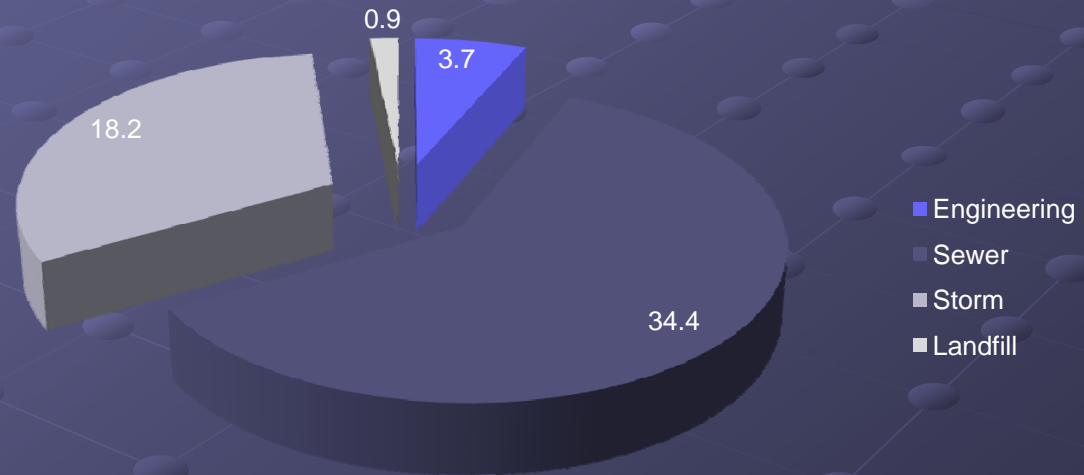


City Engineering Sections

- 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-

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



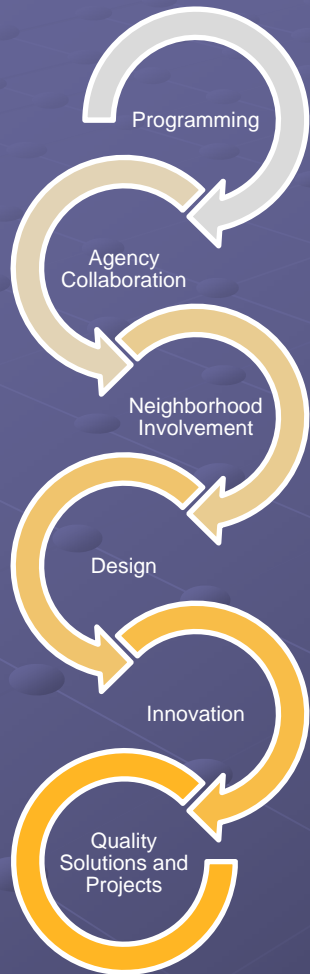
Engineering Section Involvement in Transportation

•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



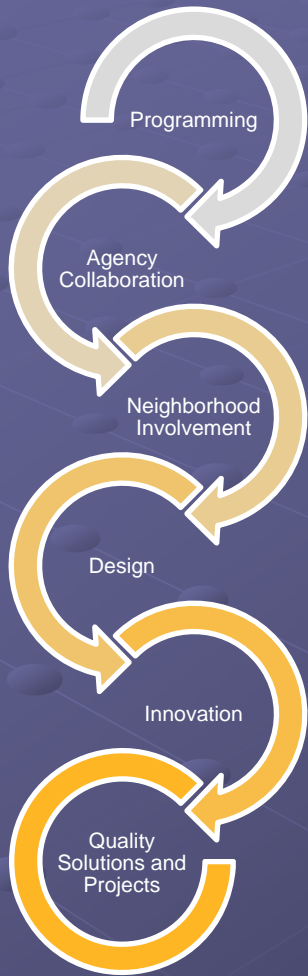
The vision for the City
of Madison is to be a
safe and healthy
place to live, work
learn and play....

Transportation Solutions Exceptional Neighborhoods

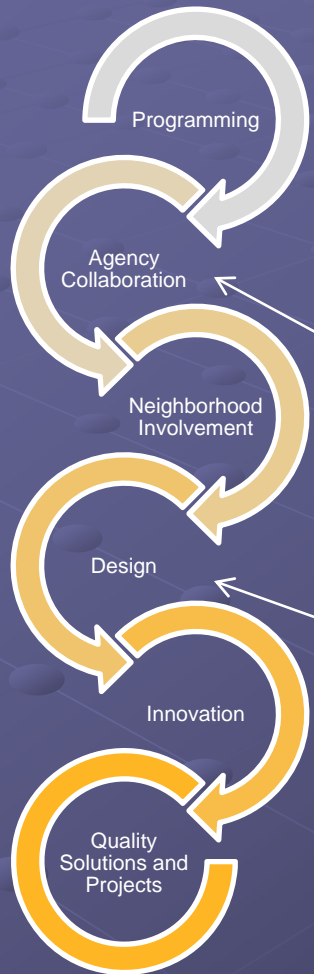


What do we strive to do?
Implement transportation programs and projects that enhance mobility and our neighborhoods.

Transportation Solutions Exceptional Neighborhoods



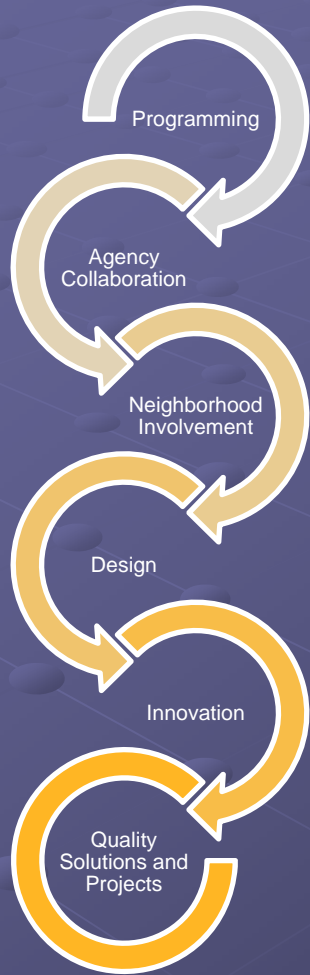
Transportation Solutions Exceptional Neighborhoods



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











Streets

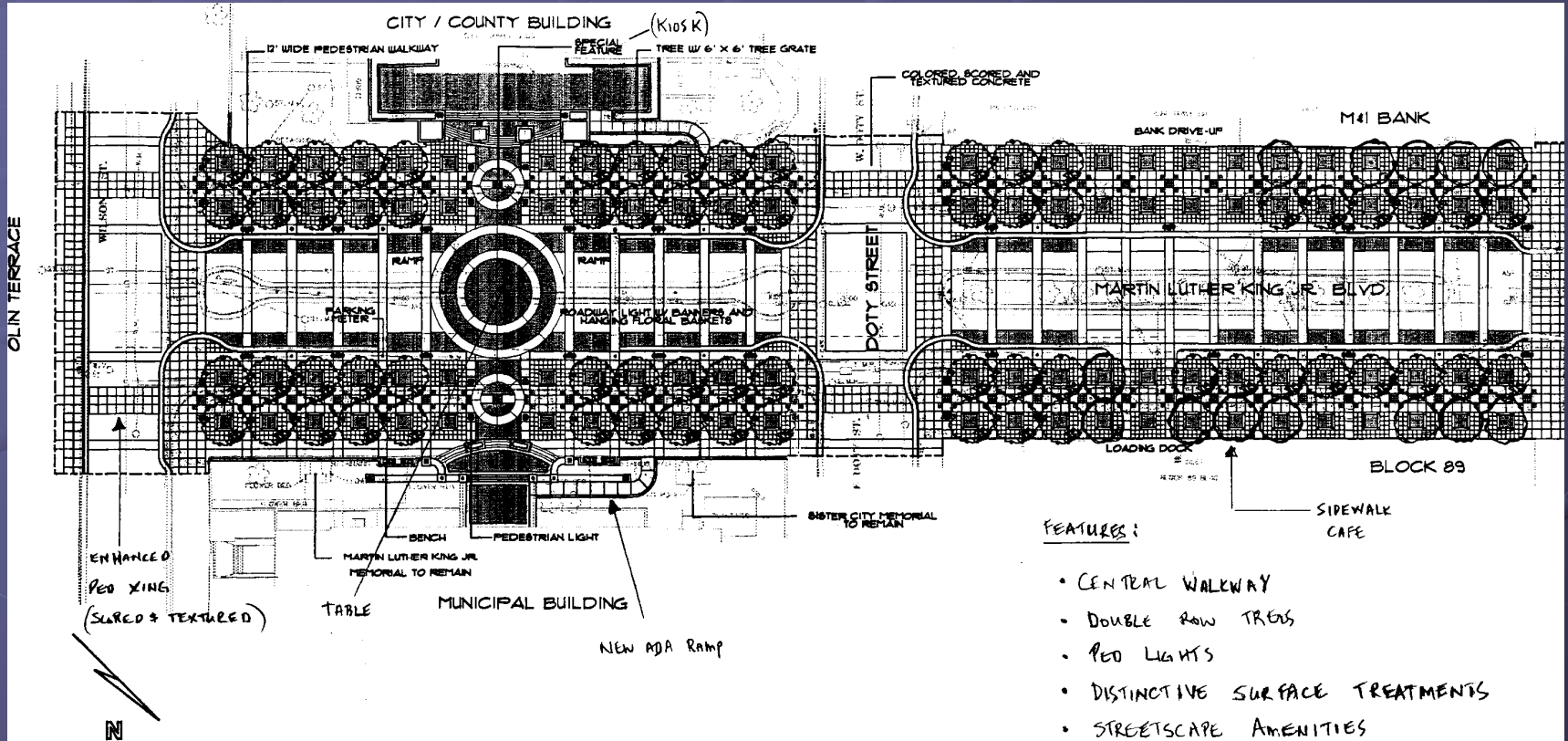


Regent St at West High



Street Reconstruction

MLK Jr. Blvd

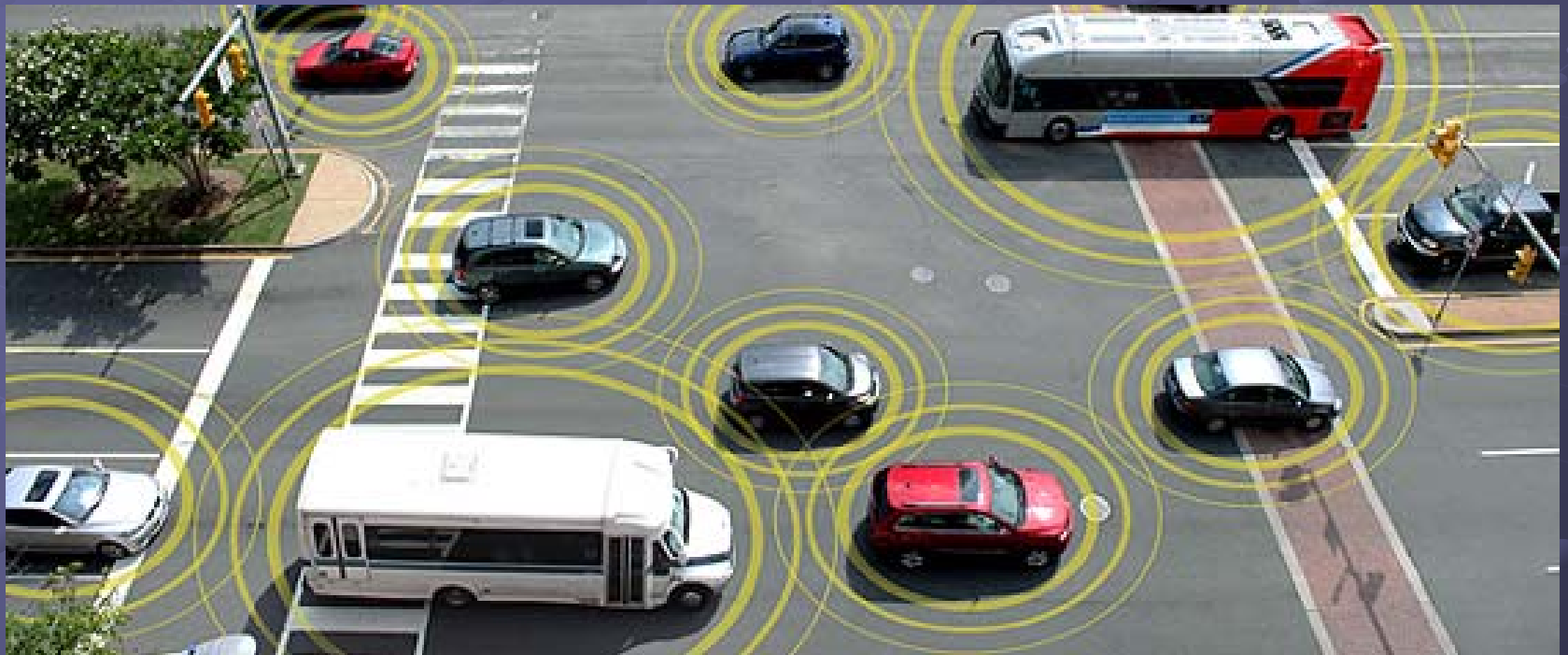


Street Monitoring & Operation



Intelligent Transportation Systems (ITS)

Vehicle 2 Vehicle Communications (V2V)



Dedicated Short Range Communications

Intelligent Transportation Systems (ITS)

USDOT's Vision for a Smart City

To assist cities, the USDOT identified 12 vision elements that are intended to provide a framework for applicants to consider in the development of a city's proposed demonstration without making each item a requirement for award.

Technology Elements (*Highest Priority*)



Innovative Approaches to Urban Transportation Elements (*High Priority*)



Smart City Elements (*Priority*)

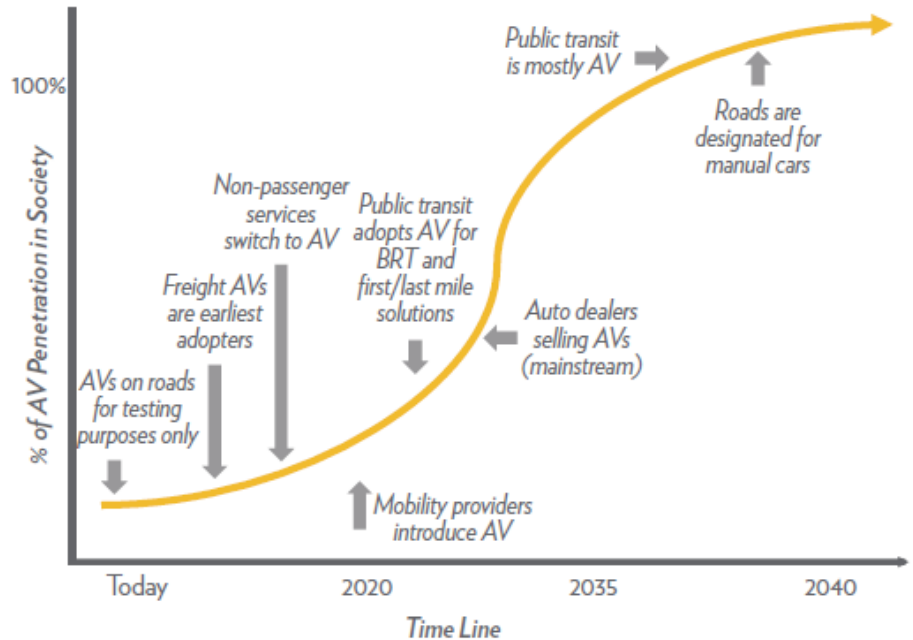


Intelligent Transportation Systems (ITS)

Vehicle 2 Vehicle Communications (V2V)



Intelligent Transportation Systems (ITS)



Note: "Manual cars" refer to vehicles that require drivers (today's cars).

Traffic Calming

Improve
Livability



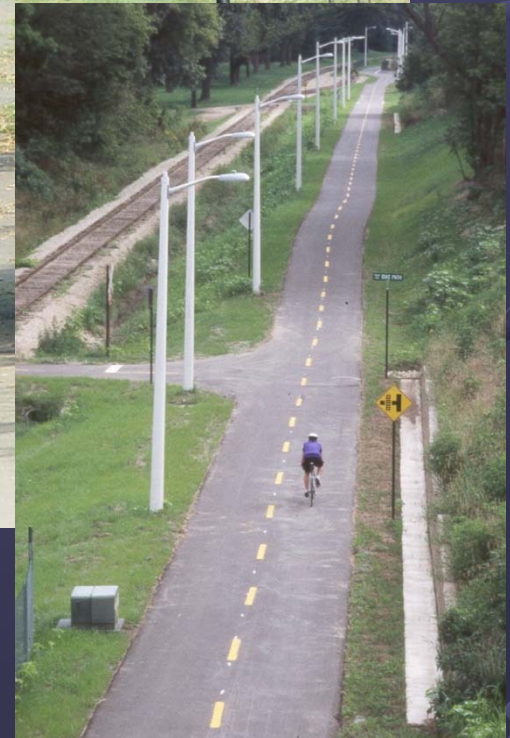
Bicycle



Source:Capital Newspapers



Bicycle



The Missing Link

A Bicycle/Pedestrian Corridor for the Heart of Madison



A Dedicated & Paved Bicycle Route



- 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.cab.wisc.edu
 608-256-8164

Bicycle



Bicycle



Bicycle



Pedestrian



Pedestrian

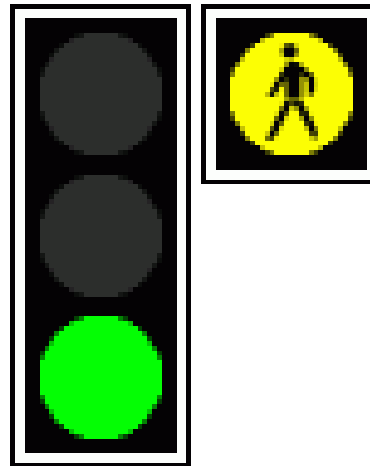
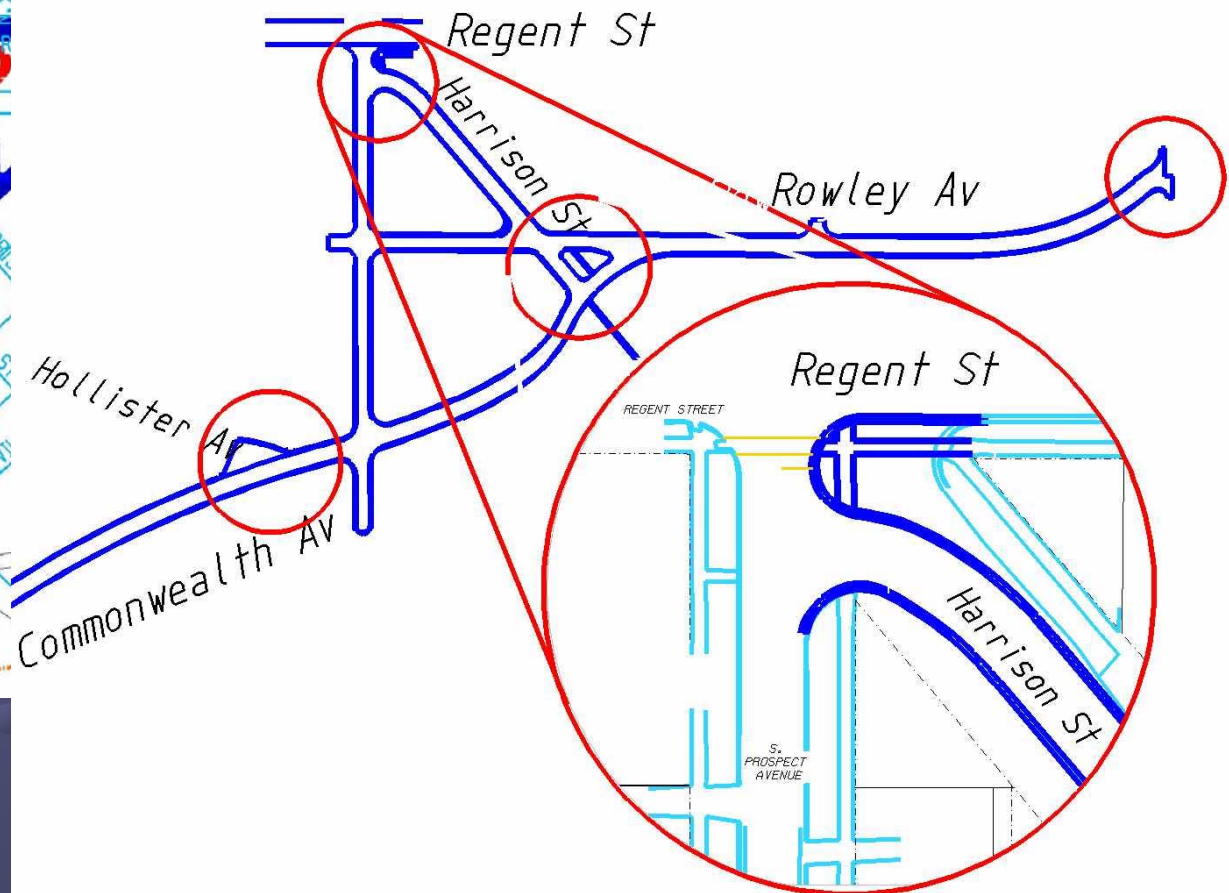


Figure 7

German pedestrian warning signal



Pedestrian



Pedestrian





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



Pedestrian



Pedestrian



Pedestrian/Bike



English US



SS-22 State St. North Side

From May 29, 2015 to March 18, 2016

Yesterday

1,589,437 Counts

3,113 Counts

Period

Begin

05/29/2015

End

03/17/2016

Day

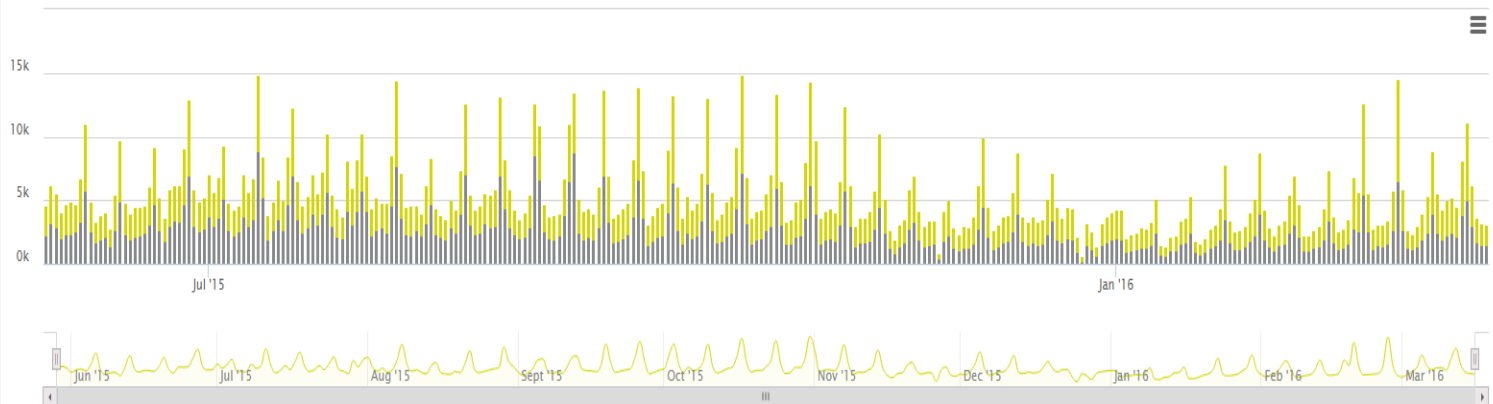
Week

Month

Key Numbers

Display

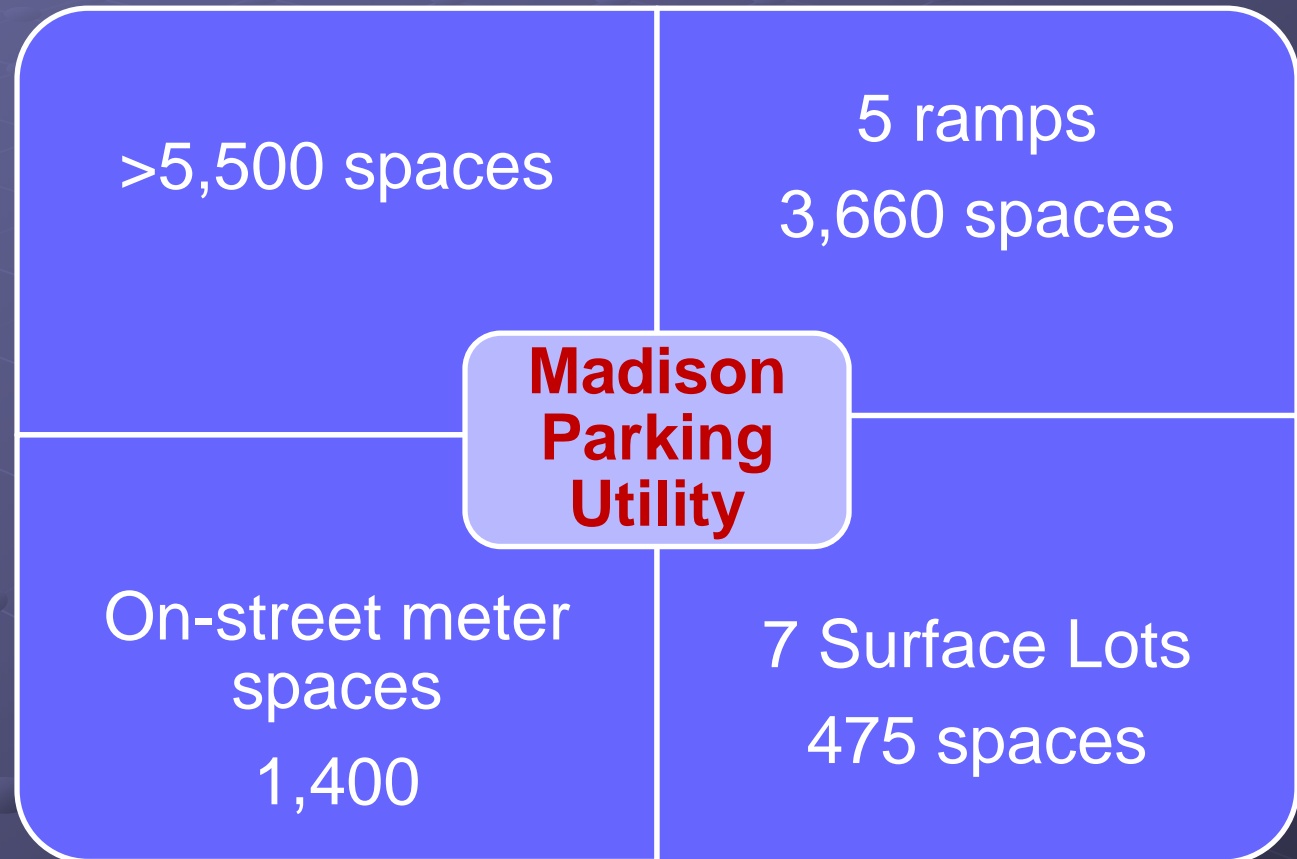
Direction



Parking



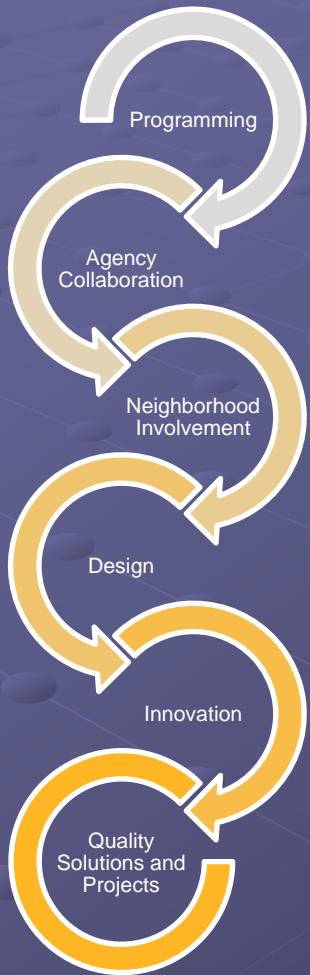
Parking



Public Pass. Vehicles

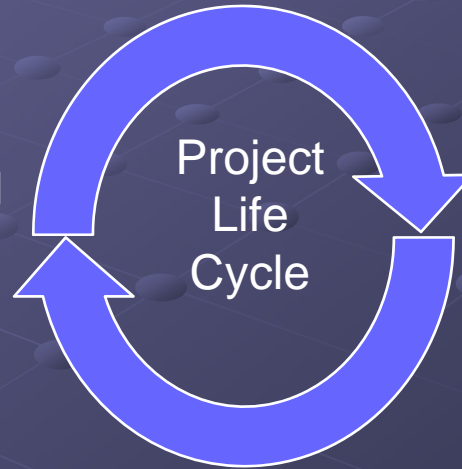


Transportation Solutions Exceptional Neighborhoods



Programming

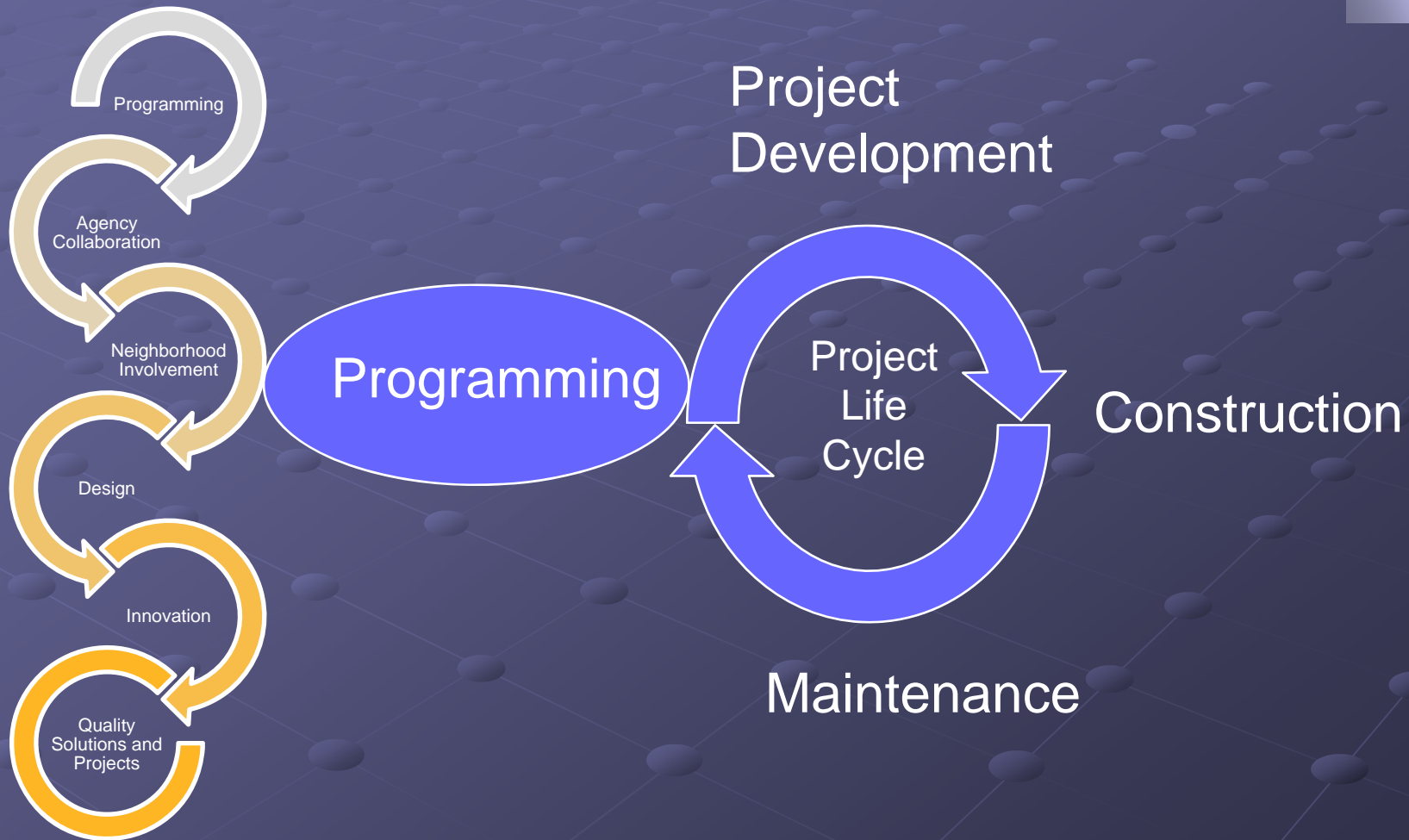
Project
Development



Construction

Maintenance

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

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

Neighborhood Objectives, Issues, and Strategies

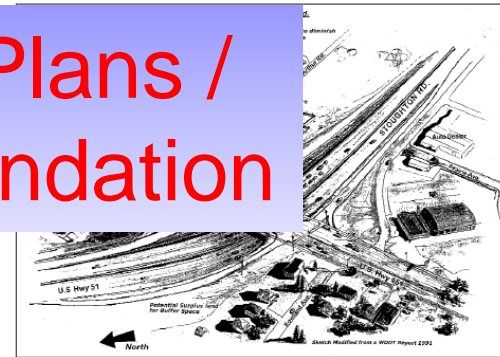
The Carpenter-Hawthorne-Ridgeway-Sycamore-Truax Neighborhood has identified three major public improvements that would enhance the stretch of East Washington Avenue from Highway 30 to North Stoughton Road:

Neighborhood Plans / NRT Recommendation

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.

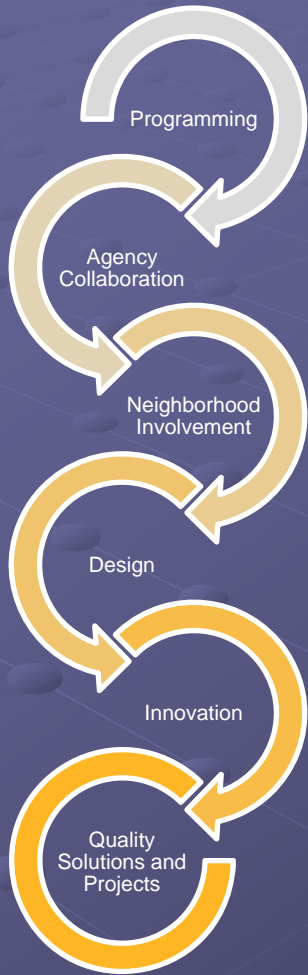


Map 14: Proposed East Washington-North Stoughton Road diamond interchange

- ✓ 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).

Programming

How does a project get into the TIP?



Known Safety Problem



Programming

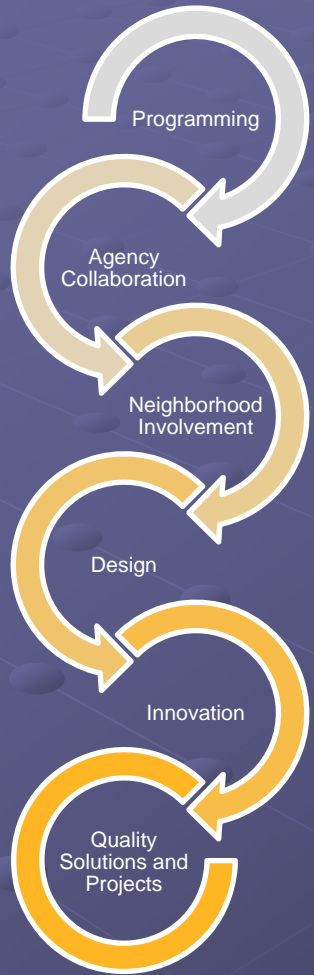
How does a project get into the TIP?



Facilitate Development



Programming

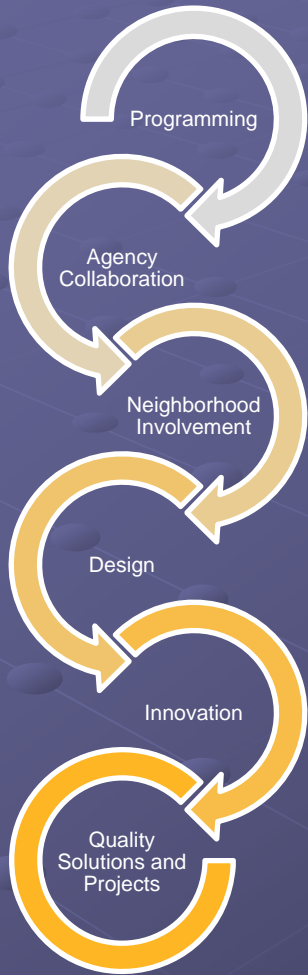


How does a project get into the TIP?

Traffic Congestion Problem



Programming



How does a project get into the TIP?



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	This project provides funding to	
Other		- roadway with bike lanes and sidewalk	
		proposed. The project budget	
	<u>\$ 1,000,000</u>	east of CTH M at Meriter Way	
		the construction year is 2017.	
		McKenna Boulevard Reconstruction	
GO	\$ 1,900,000	This project will improve safety by	
Other		- median to assist pedestrian crossings and	
		project limits are from Morraine View to High	
	<u>\$ 1,900,000</u>	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	This project will replace the existing pavement and replace sidewalk as necessary. The project limits	
Other		- are the West Beltline Highway to High Point Road. The construction year is 2020.	
	<u>\$ 130,000</u>		

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

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

2016
Pedestrian
and Bike
Capital
Budget

12 Projects

\$7.4 M

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

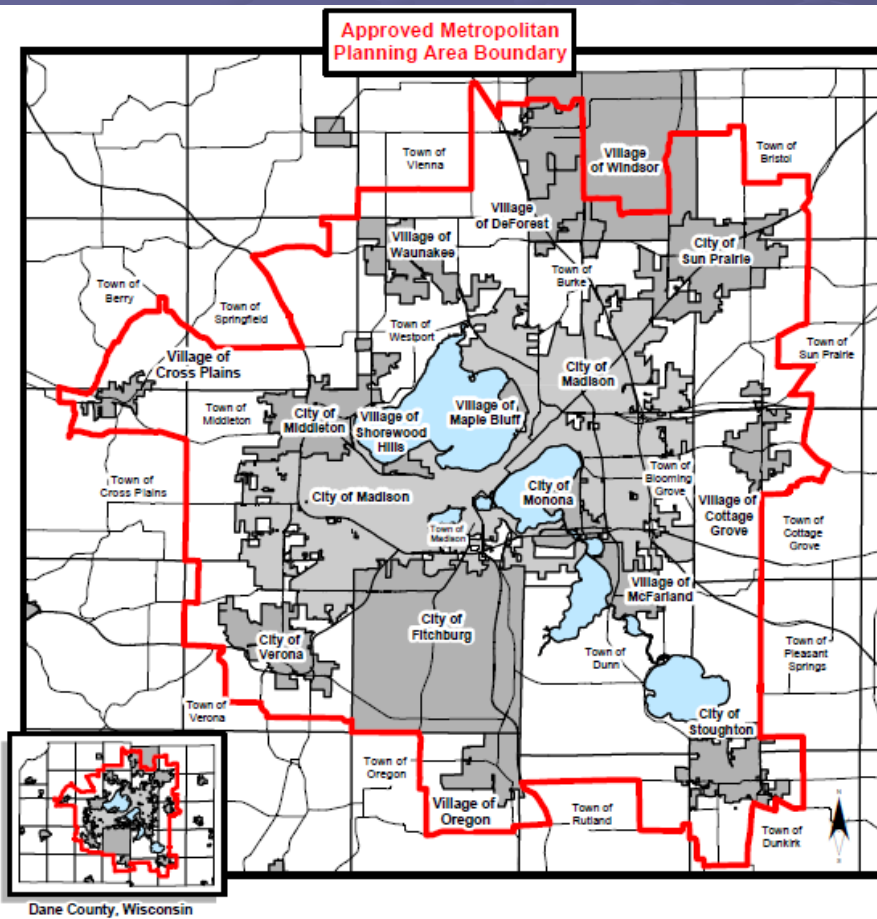


The TIP is separately approved by the Madison Area Transportation Planning Board



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.

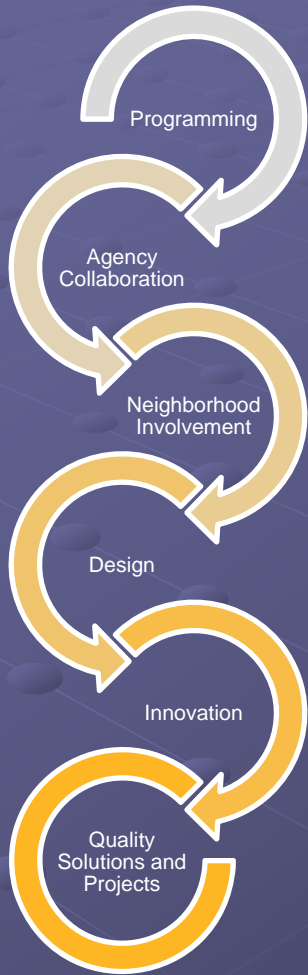
Programming

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



Programming

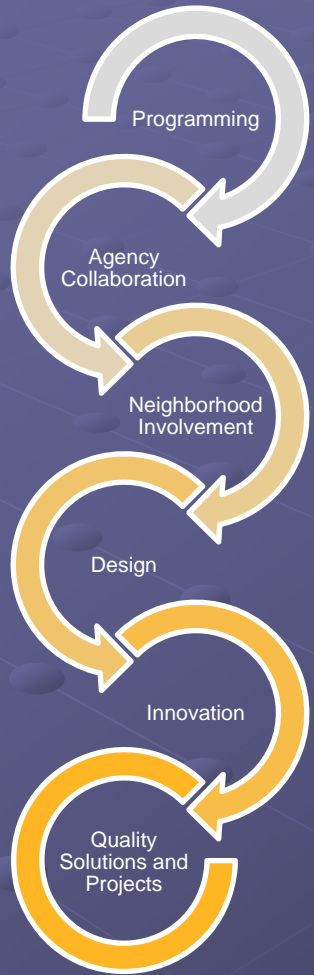
Who determines what projects and programs Federal Funds are used on?



**The
MPO**

Federal Funds are provided to the **Madison Area** by formula

Programming

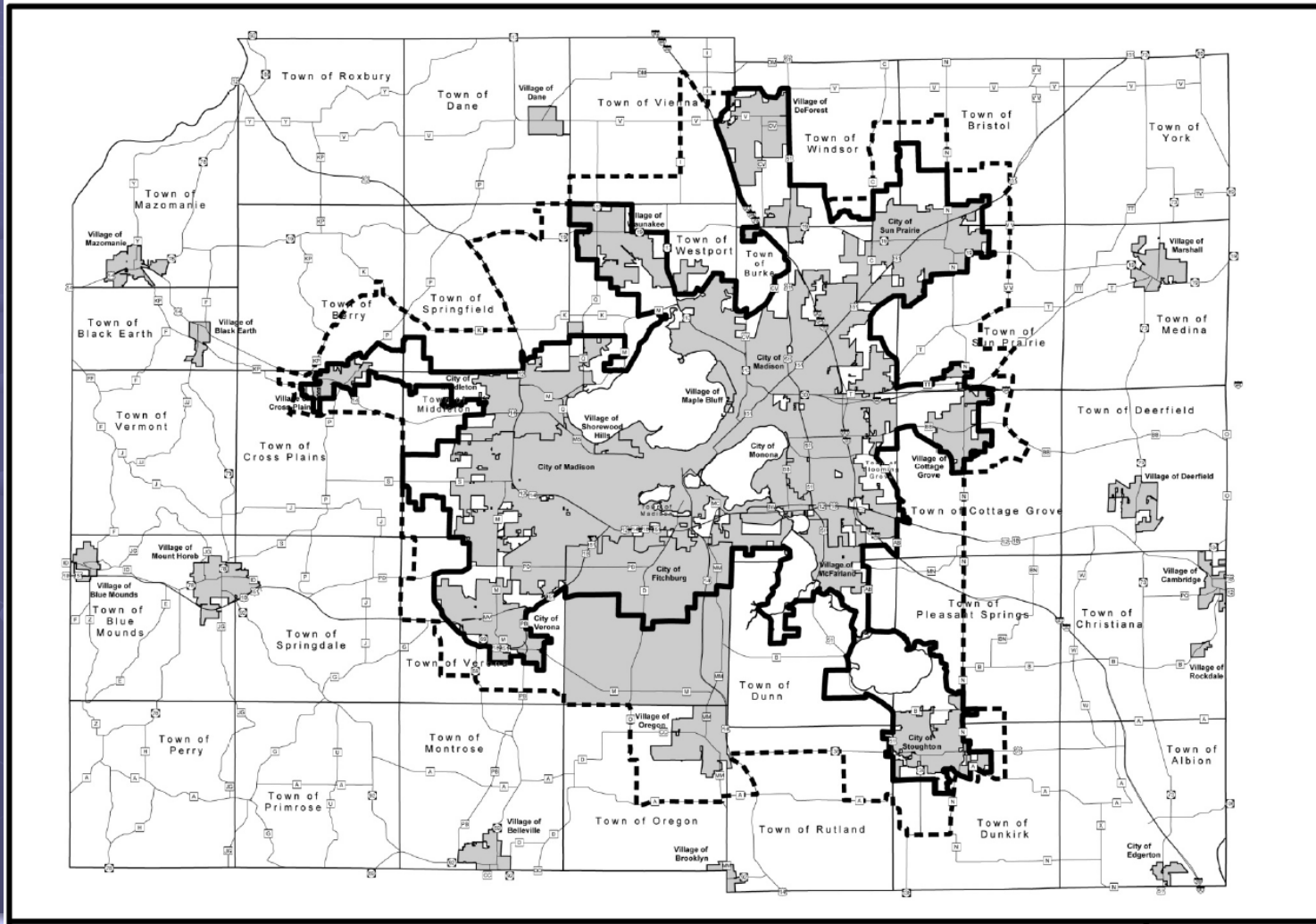
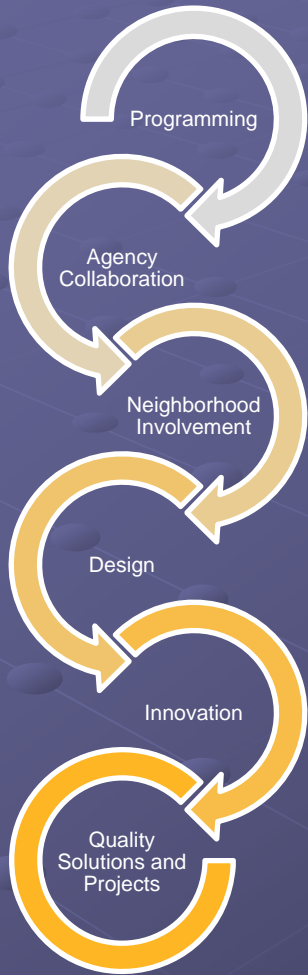


Federal General Transportation Funds
~ \$7 Million per year (STP Urban)

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 Transportation Improvement Program (Major Roadway Projects in the Madison Metropolitan Planning Area)

Year Programmed

- █ 2016
- █ 2017
- █ 2018
- █ 2019
- █ 2020

--- MPO Planning Boundary

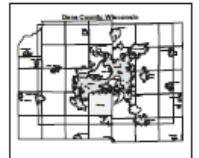
Study

Programmed
Federal Funding

State and/or Local
Funding Only

Red Text Denotes
Planned Major Capacity
Expansion Project

Note: Year of construction shown.
See project listings for information
on obligation of federal funding.

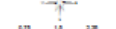


Presented to staff in the
Madison Area



Metropolitan Planning Commission
Division of Transportation Planning

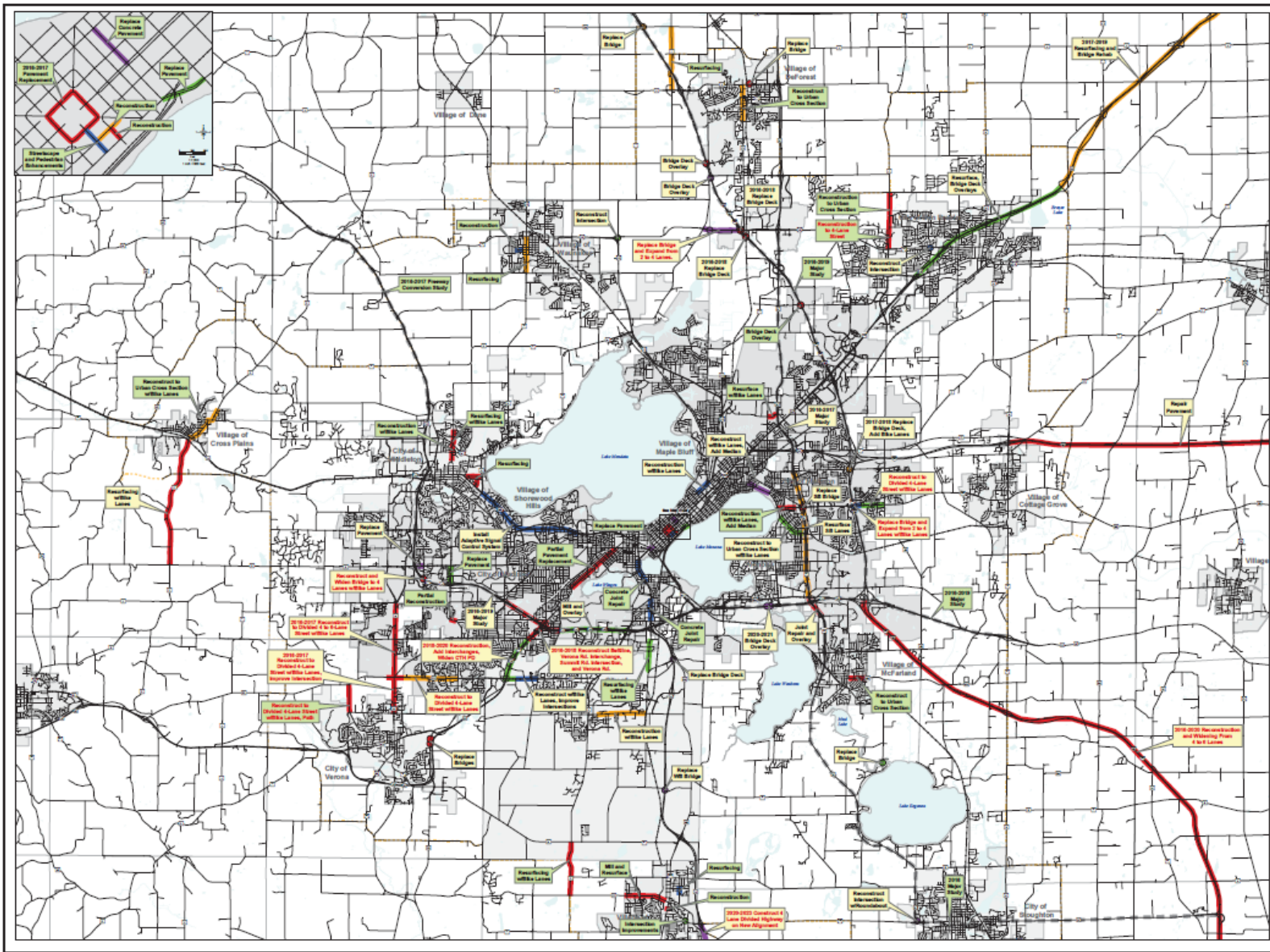
Date Revised: 10/21/2015



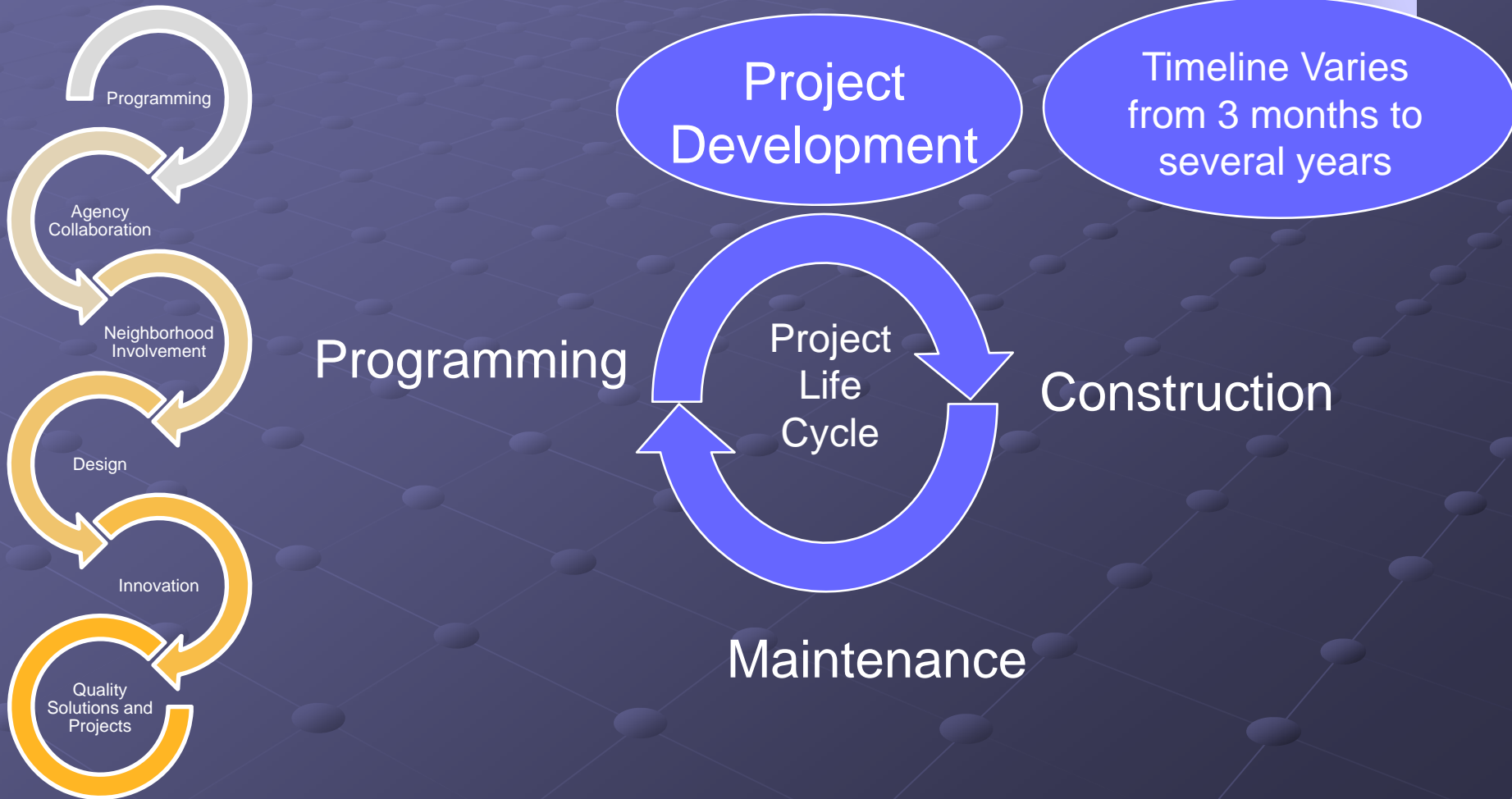
147,470
Scale

Coordinate System: NAD 83 UTM 18Q UTM Zone 18Q
Projection: Lambert Conformal Conic

Source:
Map Data: © 2015 Google Earth
Aerial Imagery: © 2015 Google Earth
Street View Imagery: © 2015 Google Earth
Map Labels: © 2015 Google Earth

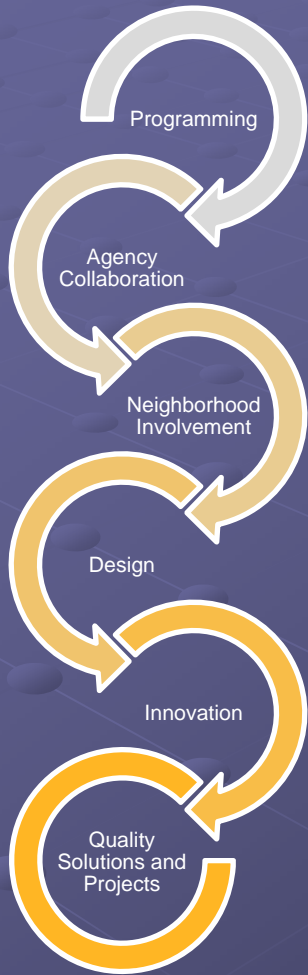


Transportation Solutions Exceptional Neighborhoods



Project Development

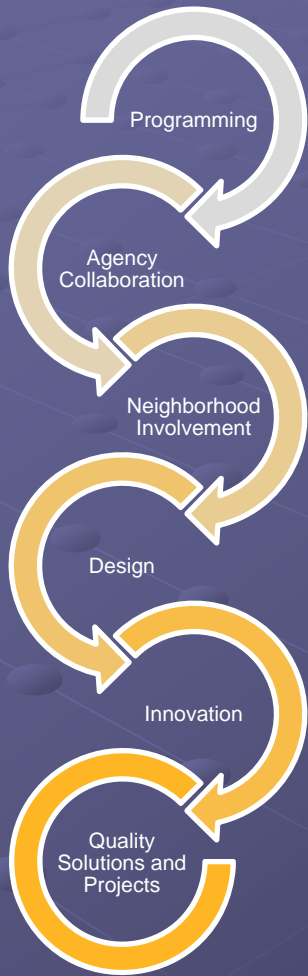
Agency Collaboration



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.

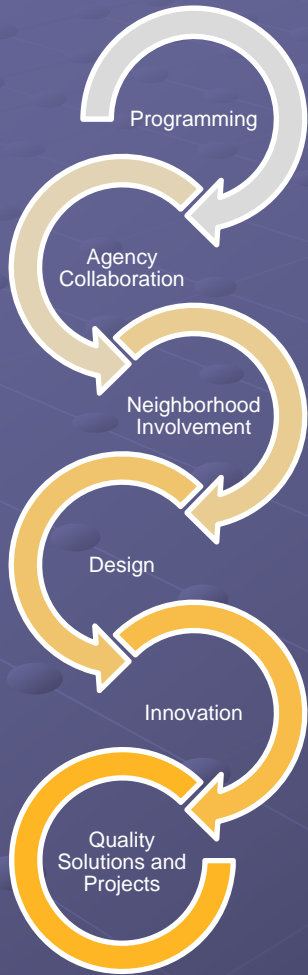
City Planners assigned to assist designers

Detailed involvement with Metro for transit facilities.

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

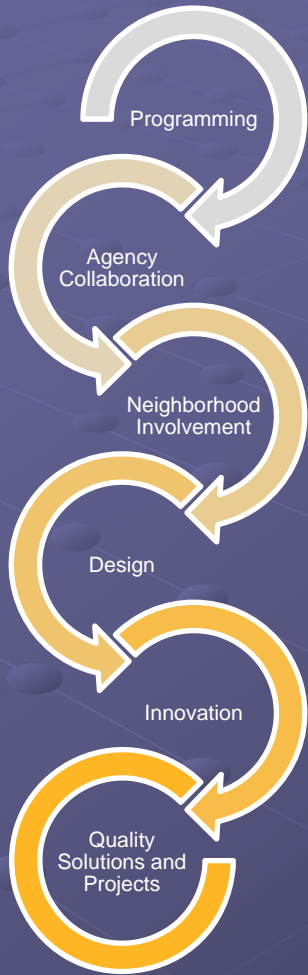
Project Development

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.

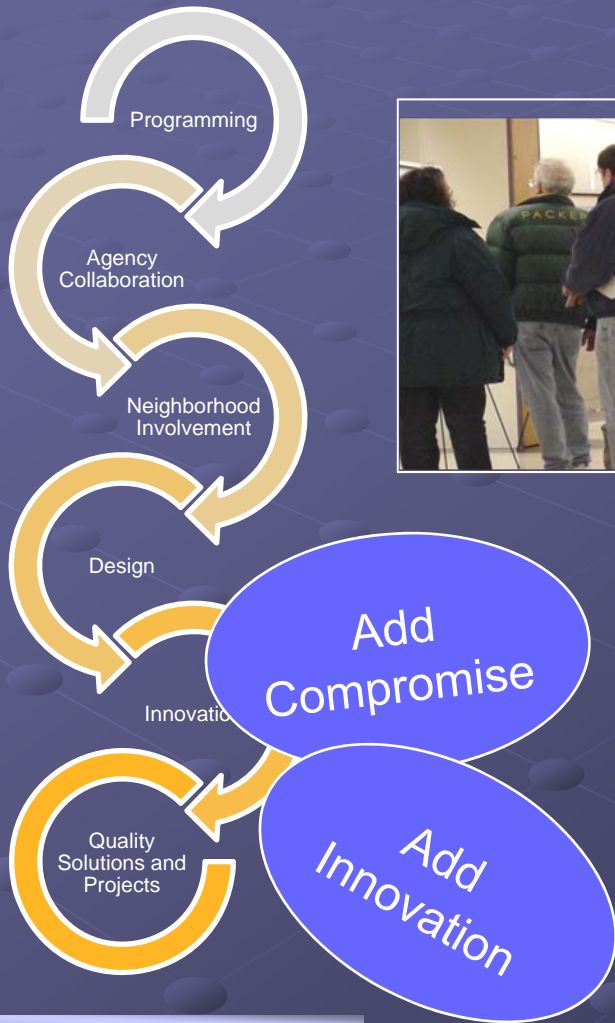
Public involvement plans on complex projects

Meeting facilitators on large projects

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

Surveys provide feedback

Project Development Design



AASHTO—Conceptual Design of Highways and Streets

Design vehicle	Time gap (t _g) (seconds) at design speed of major road
Passenger car	0.5
Single unit truck	0.5
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 abate 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.

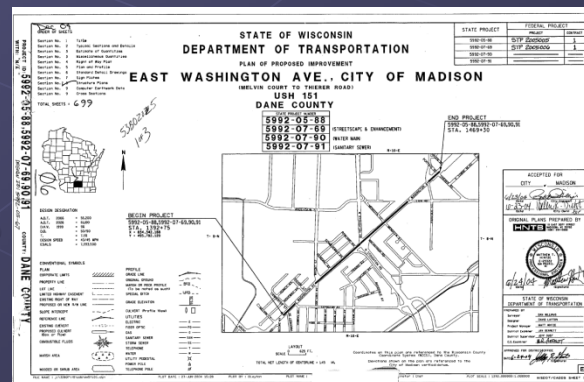
Exhibit 9-57. Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Manoeuvr

Metric			US Customary		
Design speed (mi/h)	Stopping sight distance (ft)	Intersection sight distance for passenger cars (ft)	Design speed (mi/h)	Stopping sight distance (ft)	Intersection sight distance for passenger cars (ft)
20	25	38.1	40	15	80
30	35	54.2	50	20	110
40	50	72.3	60	25	150
50	65	90.4	70	30	200
60	80	108.4	80	35	250
70	105	126.5	90	40	300
80	130	144.6	100	45	350
90	150	162.6	110	50	400
100	180	180.7	120	55	450
110	200	198.8	130	60	500
120	250	216.8	140	65	550
130	280	234.9	150	70	600
			160	75	650
			170	80	700
			180	85	750
			190	90	800
			200	95	850

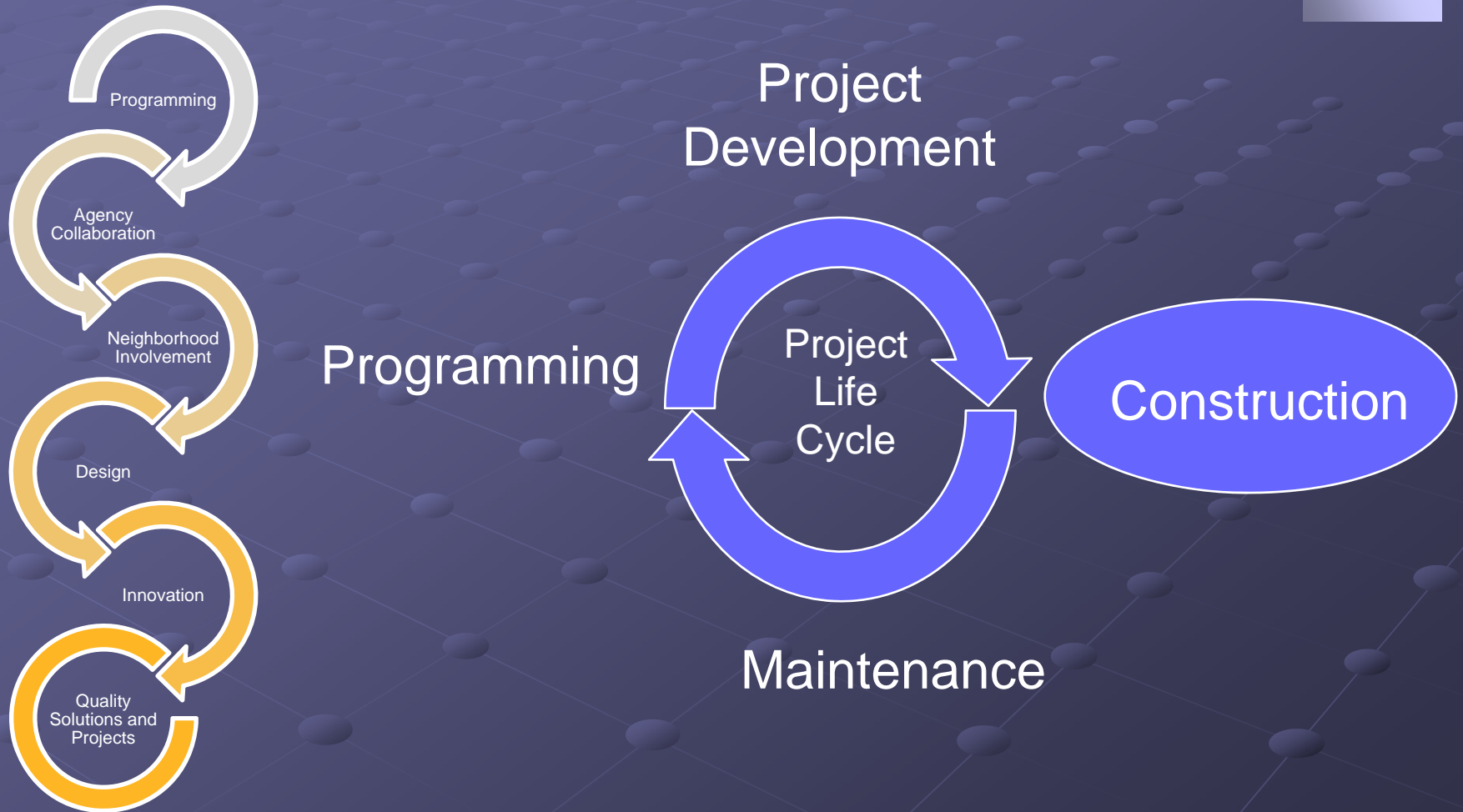
Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or cross a two-lane highway with no median and grades 3 percent or less. For other conditions, the time gap must be adjusted and required sight distance recalculated.

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

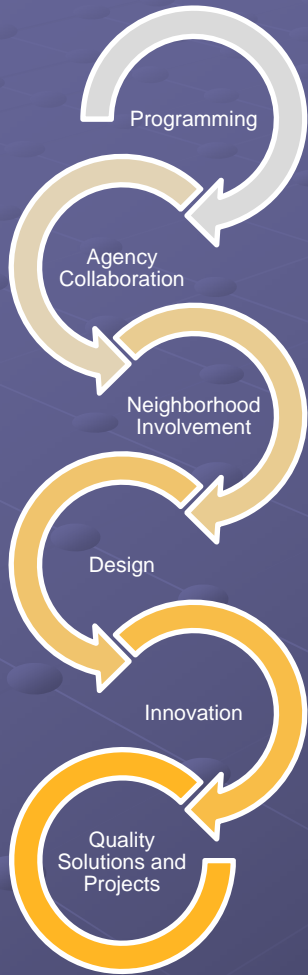
654



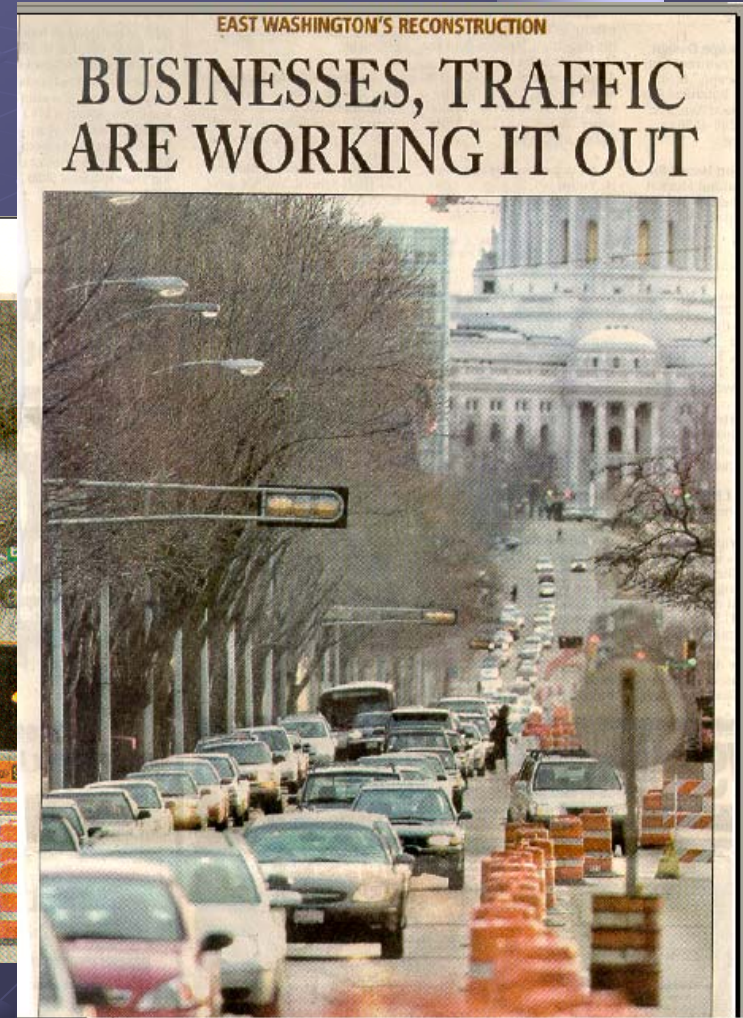
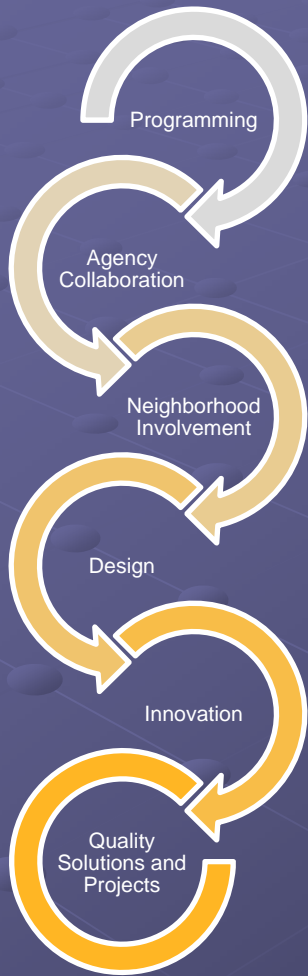
Transportation Solutions Exceptional Neighborhoods



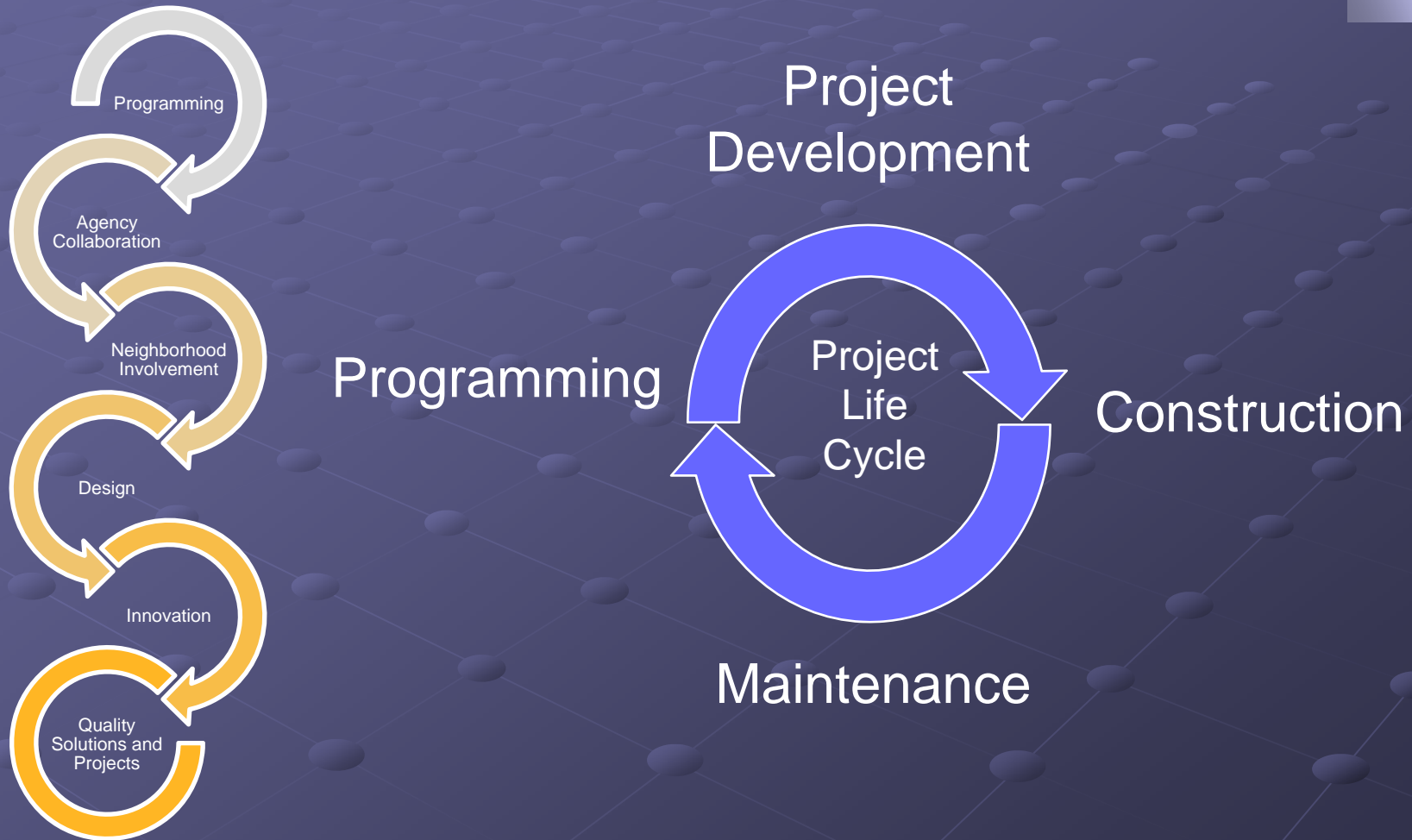
Project Development Construction



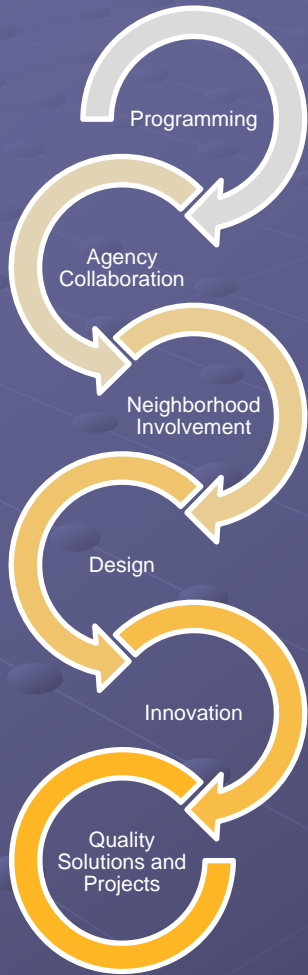
Project Development Construction



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Transportation Solutions Exceptional Neighborhoods



Transportation Solutions Exceptional Neighborhoods



Photo by Peter Patau

Transportation Solutions Exceptional Neighborhoods

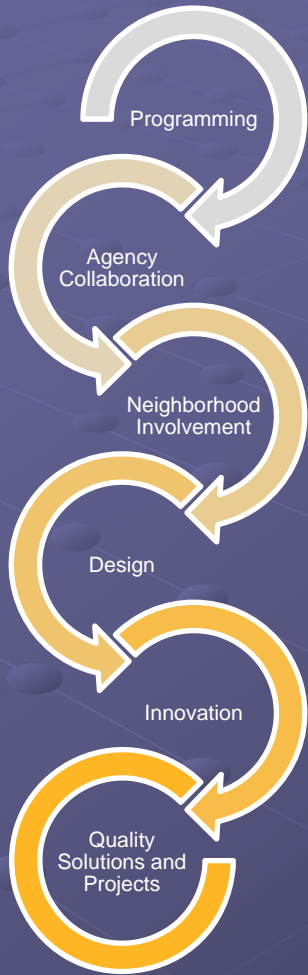
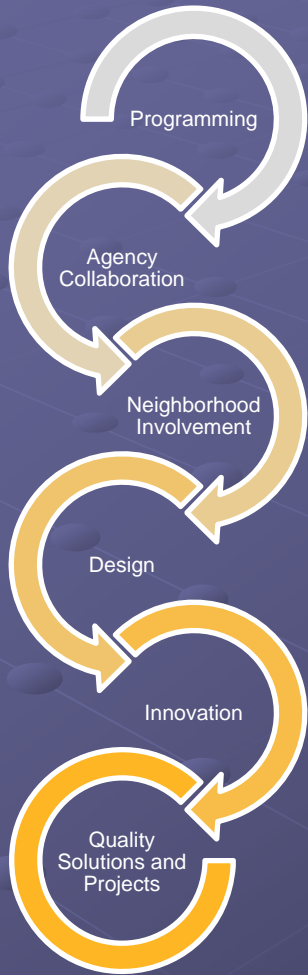
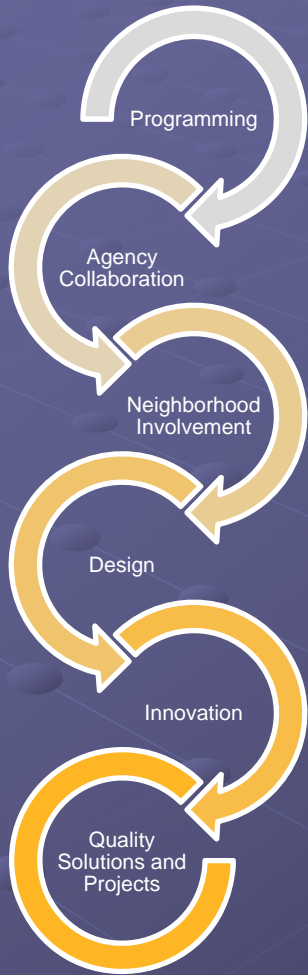


Photo by Archie Nicolette

Transportation Solutions Exceptional Neighborhoods



Transportation Solutions Exceptional Neighborhoods



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.

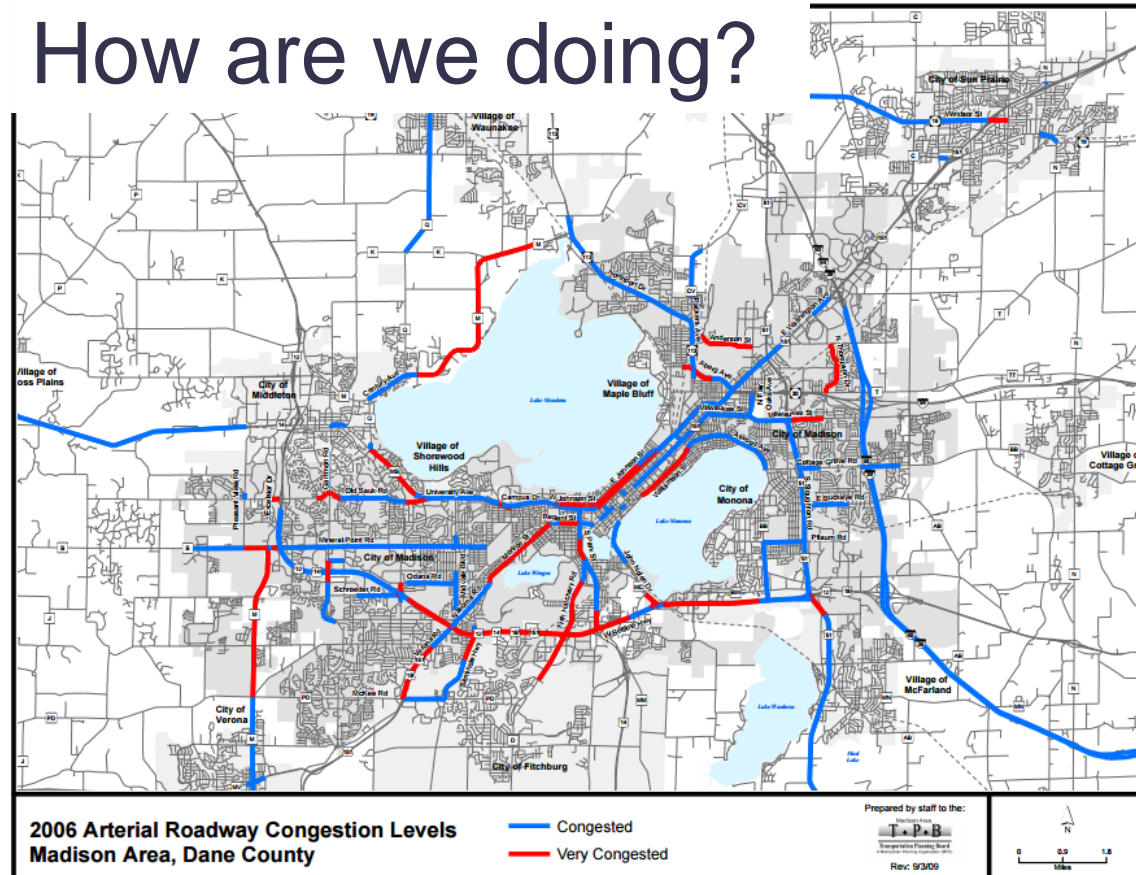


Mode share is accomplished
through convenience.

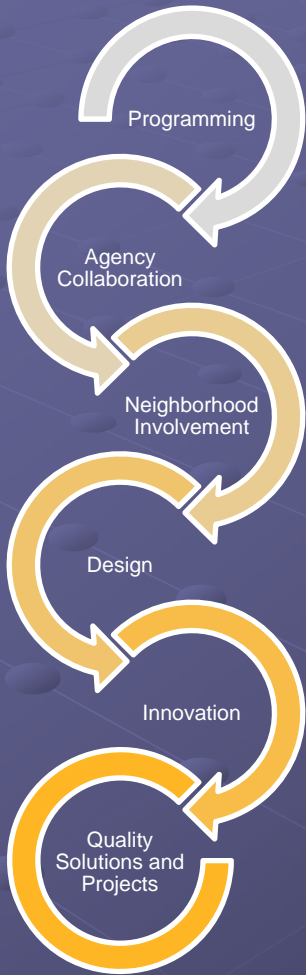
Transportation Solutions Exceptional Neighborhoods



How are we doing?



Transportation Solutions Exceptional Neighborhoods

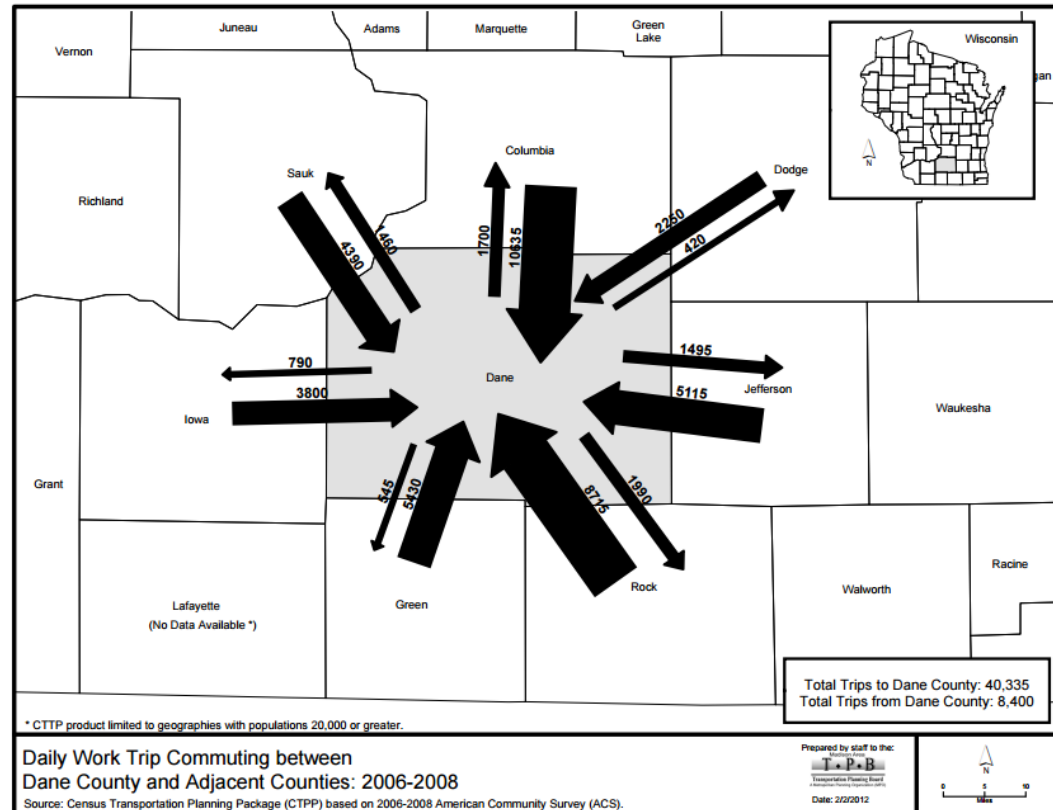


2035 Regional Transportation Plan Update

24

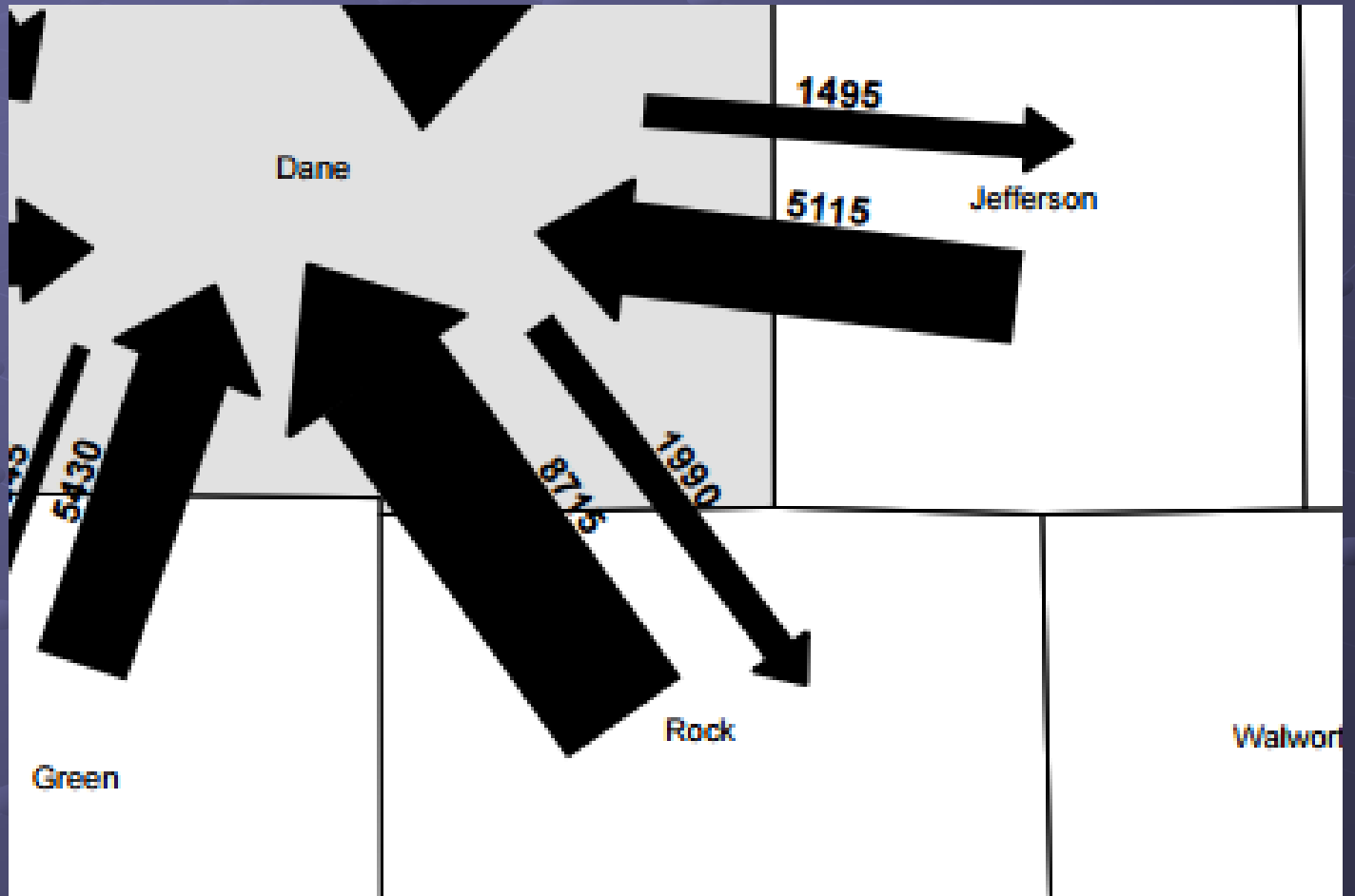
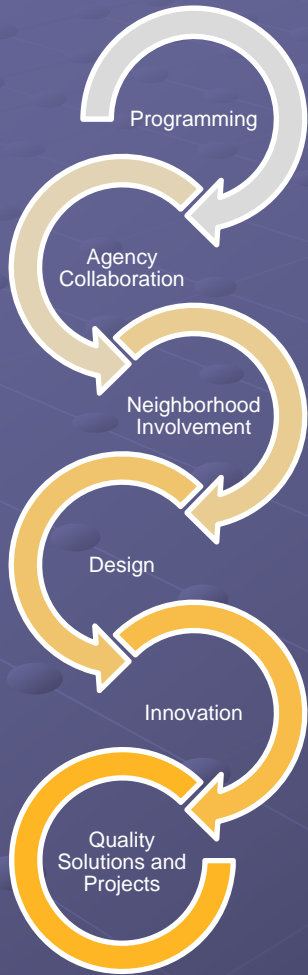
March 2012

Figure 7

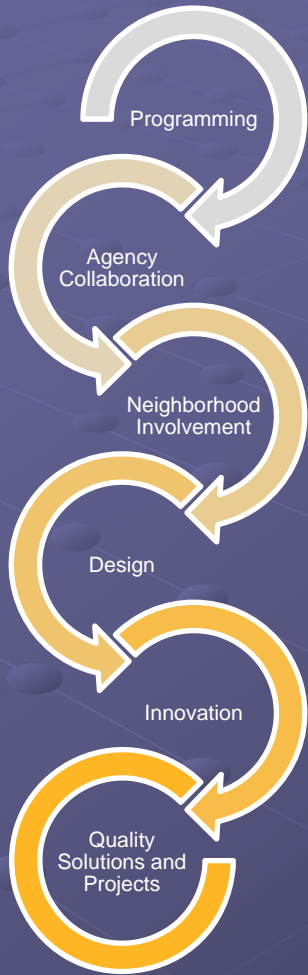


J.L.P.

Transportation Solutions Exceptional Neighborhoods



Transportation Solutions Exceptional Neighborhoods



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

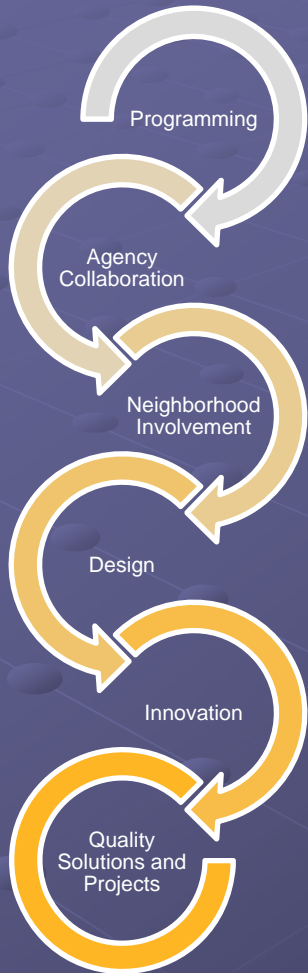
- 1** UW Professor James Baughman getting his day on Saturday, mayor proclaims
- 2** 1 killed, 6 injured when limo carrying passengers from Madison area overturns near Chicago
- 3** Man spared prison sentence after shooting at cars on Beltline
- 4** Ted Cruz scores more Wisconsin GOP endorsements; Hillary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

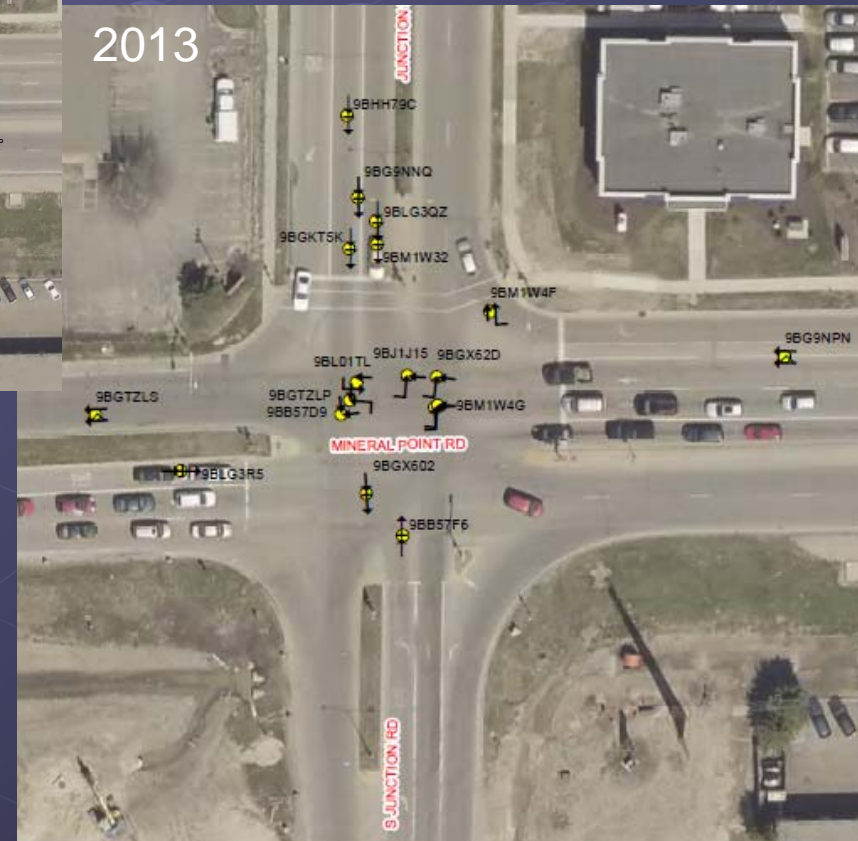
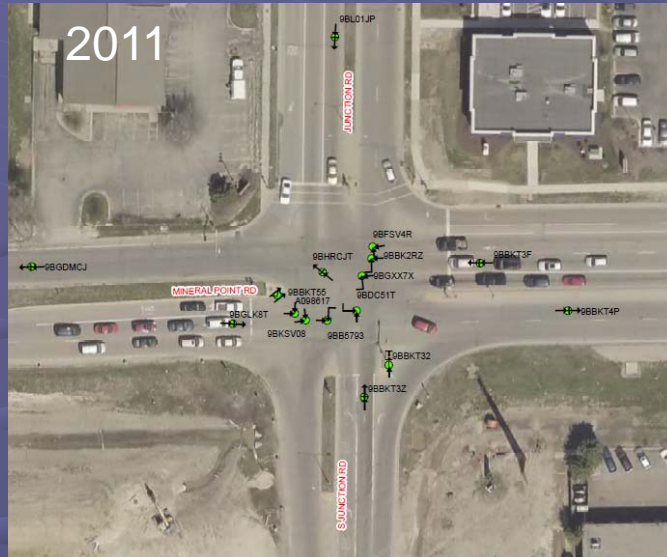
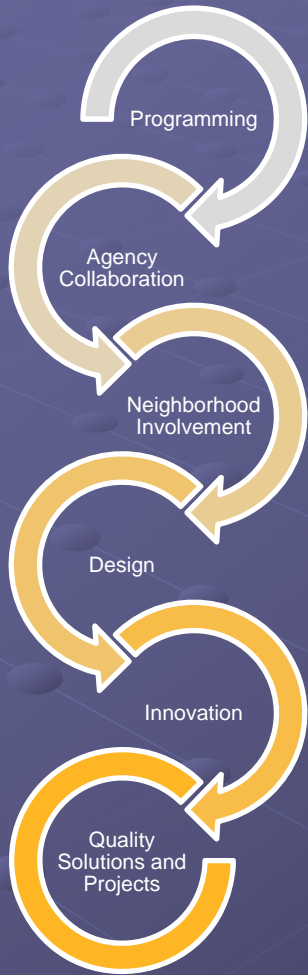


Madison city, Wisconsin

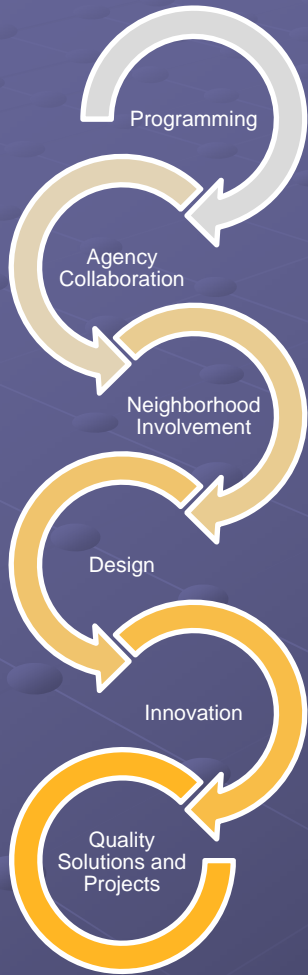
Subject	2014		2011-2013 3 year average	
	Total	Margin of Error	Total	Margin of Error
	Estimate	Margin of Error	Estimate	Margin of Error
Workers 16 years and over	139,244	+/-3,645	134,951	+/-2,031
MEANS OF TRANSPORTATION TO WORK				
Car, truck, or van	69.5%	+/-2.4	71.7%	+/-1.3
Drove alone	62.1%	+/-2.6	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)

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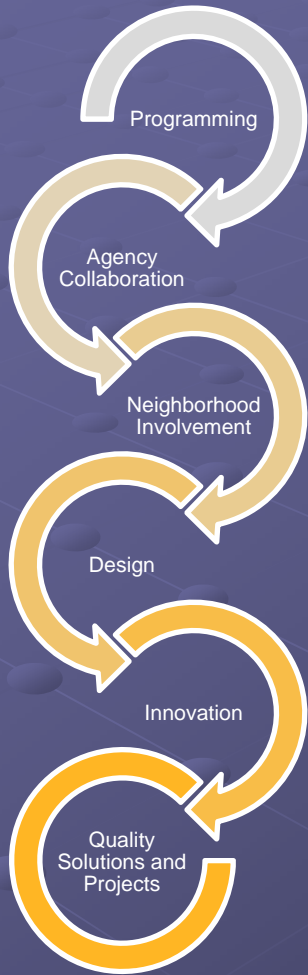
Transportation Solutions Exceptional Neighborhoods



Traffic Crashes Before/After

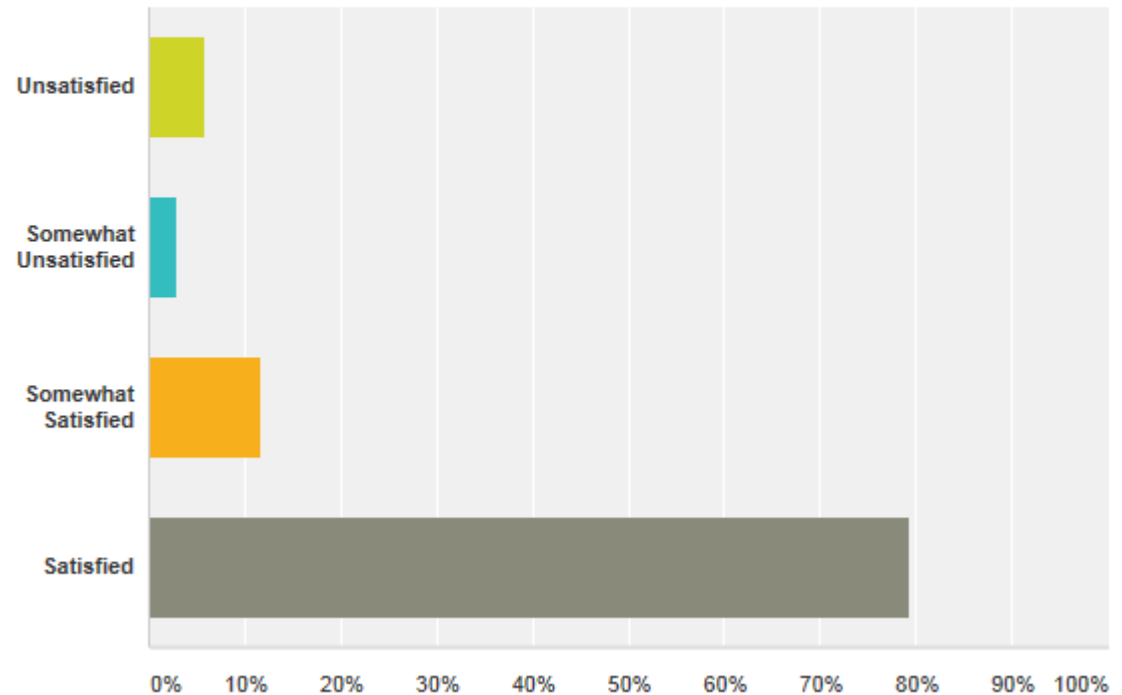
	Junction Rd-Mineral Pt Intersection	Jug Handle
2011	16	N/A
2012	10	N/A
2013	18	N/A
2014	15	3
2015 (till Nov)	4	5

Transportation Solutions Exceptional Neighborhoods



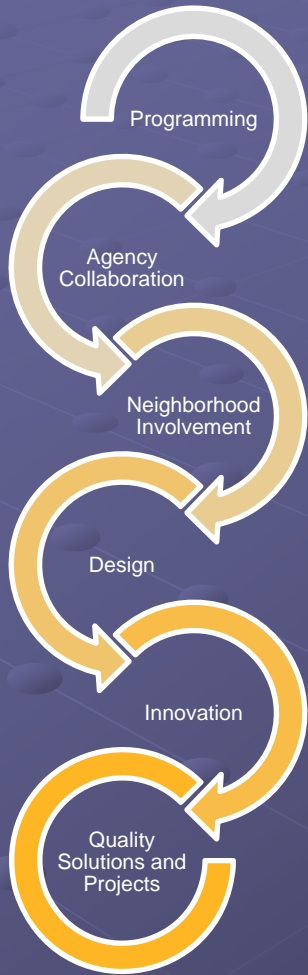
What is your overall satisfaction with the improvements in your neighborhood?

Answered: 34 Skipped: 1



Transportation Solutions Exceptional Neighborhoods

How are we doing?



MADISON
237395 RESIDENTS



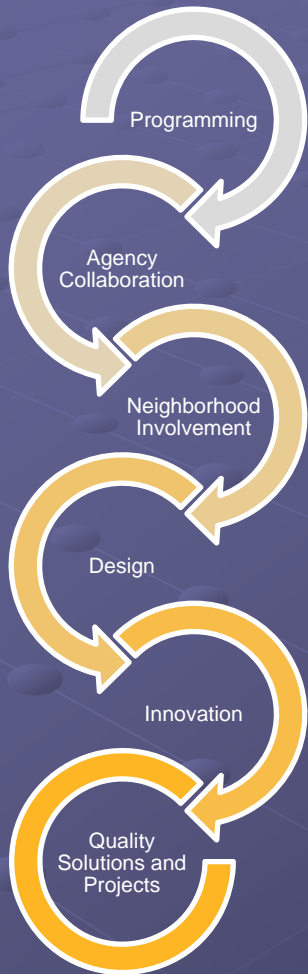
Madison one of only 5 Communities Nationwide to be awarded Platinum.

Only City East of the Mississippi River awarded Platinum



Transportation Solutions Exceptional Neighborhoods

How we do it?



- **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

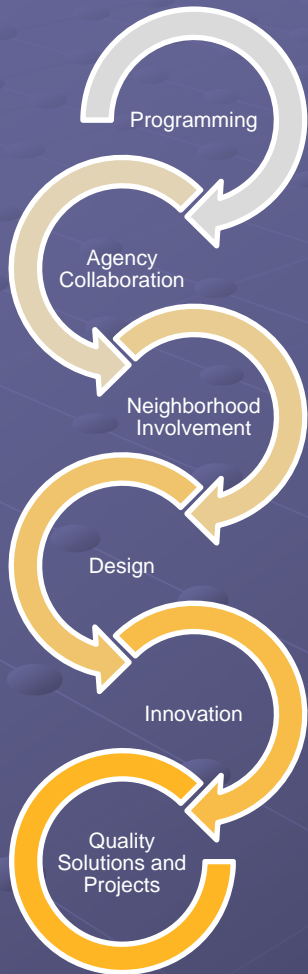
- **Madison Ranked #1 for Successful Aging among big cities and small cities** [📄 November 2014](#)
by Forbes.com

- **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

Transportation Solutions Exceptional Neighborhoods

How we doing?



#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

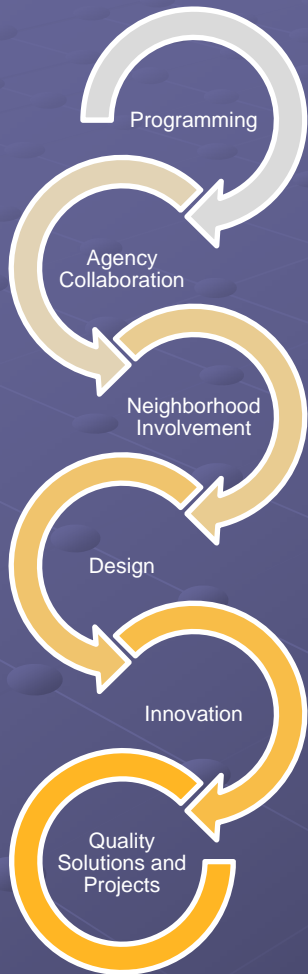
The Best Cities on Earth for Biking
[Yahoo Travel, June 2015](#)

#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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How we doing?



"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

