

Harrisburg Master Transportation Plan (MTP)

Plan Presentation



Master Transportation Plan Process















Public / Stakeholder Input





Public Input – November 2021

- Public Open House
- 30 Attendees
- Emphasis areas:
 - Safety is Important
 - Identify Strategies for Less
 Congestion
 - Pave Gravel Roads
 - Add More Bicycle and Pedestrian Connections
 - Maintain Current System





Plan Goal Priorities Public and Stakeholder Feedback

Provide a Safe Transportation System

Minimize Travel Congestion

Solution Stress Improve Pedestrian and Bicycle Connections

6

Maintain the Current Street System



Public Survey: Nov-Dec 2021

- 433 responses
- Asked for Public Input on Goals and Needs
- Top 3 Goals
 - Efficiency and Reliability
 - Safety
 - Economic
- Top 3 Issues

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The Road to a New Plan

arrisburg Master Transportation Plan

- Improve traffic flow on area streets during rush hour
- Ease of travelling to work, school, shopping, and recreational areas in Harrisburg
- Adding/improving sidewalks and pedestrian crossings

Public Input – March 2022

- Public Open House
- 35 Attendees

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- Feedback Received:
 - Short-Term Improvements Needed to Cliff and Willow
 - Pave Gravel Roads
 - Safety for Vehicles and Pedestrians / Bicyclists are Important



Baseline Conditions Overview



Traffic Operations (Congestion) – Today and 2045



Traffic Safety



Bicycle and Pedestrian Connections





Daily Traffic Volumes (Today and 2045) and Future Congestion



Traffic Crashes, 2016 - 2020



LEGEND

Crashes

 Top Crash Frequency Intersections

Rank	Intersection	Crash Frequency
1	Highway 115 / 271st Street	31
2	Cliff Avenue / 271st Street	28
3	472 nd Avenue / 271st Street	18
3	Highway 11 / 273rd Street	18
5	Highway 115 / 276th Street	17
6	Cliff Avenue / Willow Street	14
7	472 nd Avenue / 273rd Street	11
7	Highway 11 / 271st Street	11
9	Highway 115 / 272nd Street	10
10	471 st Avenue / 271st Street	9

Existing Bicycle and Pedestrian Facilities



Example Origin-Destination Data: Willow St I-29 Interchange



Future Conditions - Growth

23,911 25,000 20,000 15,000 9,512 8.925 8,361 10,000 3,566 3.071 5,000 0 Population Employment Households 2018 2045

Harrisburg Community Growth

Population + 168%
Households + 172%
Employment + 167%



Standards Development Overview









Urban vs. Rural Cross Sections

Urban Cross Section

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- Curb and gutter with storm sewers for drainage
- Parking and pedestrian access from street to adjacent housing and businesses
- Typically requires less public right-of-way than rural roads

Rural Cross Section



- Ditches to manage drainage
- Pedestrian facilities, housing, and businesses set back beyond ditches
- Typically requires more public right-ofway than urban streets

3-Lane Rural Cross Section







Example Right-of-Way: 160' Expandable to 5-lanes 40'+ greenspace separation between pedestrian way and roadway

5-Lane Rural Cross Section







Example Right-of-Way: 160' 30' greenspace separation between pedestrian way and roadway Sidepath or sidewalk elements will vary by location

4-Lane Divided Rural Cross Section







Example Right-of-Way: 160' 30' greenspace separation between pedestrian way and roadway Sidepath or sidewalk elements will vary by location

3-Lane Urban Cross Section







Example Right-of-Way: 100' Expandable to 5-lanes Pedestrian space closer to street

5-Lane Urban Cross Section





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Example Right-of-Way: 100' Pedestrian space closer to street

4-Lane Divided Urban Cross Section







Example Right-of-Way: 100' Pedestrian space closer to street

3-Lane Cross Section (Downtown – 100')





Example Right-of-Way: 100'
Provides for on-street parking (or bike lanes if desired)
Pedestrian space closer to street
Easy Access from Street to Adjacent Land Development

3-Lane Cross Section (Downtown – 80')





Example Right-of-Way: 80'
Provides for on-street parking (or bike lanes if desired)
Pedestrian space closer to street
Easy Access from Street to Adjacent Land Development

Access Standards

• As Harrisburg grows and streets are improved, update access management standards



Example Sioux Falls Arterial Spacing Standards (Arterial II)



Bicycle and Pedestrian Standards Overview









Mid-Block Crossings

- Found at locations with high pedestrian activity (parks and schools)
- Common elements include
 - Crosswalk markings
 - Signage

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- Pedestrian signals
- Curb extensions



Rectangular Rapid Flashing Beacons (RRFB)

- Pedestrian activated device for enhancing crossing visibility
- For mid-block and uncontrolled crossings
- Common elements include:
 - Crosswalk markings
 - Signal
 - Signage



Source: Delaware Center for Transportation



Concrete Median Islands with Refuge

- Crossing area for pedestrians on high volume roads
- Suitable for mid-block crossings with high traffic volumes
- Common elements include:
 - Crosswalk markings
 - Median
 - Pedestrian signals
 - Signage





Source: Broward MPO

Implementation Example

FHWA Guide for Pedestrian Improvements at Uncontrolled Crossings

	_												-														
		Posted Speed Limit and AADT																									
	Vehicle AADT <9,000								Vehicle AADT 9,000-15,000								Vehicle AADT >15,000										
Roadway Configuration		≤30 mph		35 mph			≥40 mph		≤30 mph			35 mph			≥40 mph			≤30 mph			35 mph			≥40 mph			
	0	2		0			1			0			0			1			0			1			1		
2 lanes (1 lane in each direction)	4	5	6		5	6		5	6	4	5	6		5	6		5	6	4	5	6		5	6		5	6
(Thate in each arection)				7		9	0		0				7		9	0		0	7		9	7		9			0
O loss of white an in a dimension	0	2	3	0		8	1		6	1		3	1		6	1		6	1		6	1		6	1		6
3 lanes with raised median (1 lane in each direction)	4	5			5			5		4	5			5			5		4	5			5			5	
(Trane in each direction)				7		9	0		0	7		9	0		0	0		0	7		9	0		0			0
3 lanes w/o raised median	0	2	3	0		8	1		8	1		3	1		8	1		8	1		8	1		6	1		8
(1 lane in each direction with a	4	5	6		5	6		5	6	4	5	6		5	6		5	6	4	5	6		5	6	5	6	
two-way left-turn lane)	7		9	7		9			0	7		9	0		0			0	7		9			0			0
	0		8	0		8	1		8	1		8	1		8	1		8	1		8	1		6	1		6
4+ lanes with raised median (2 or more lanes in each direction)		5			5			5			5			5			5			5			5			5	
(2 of more runes in edch direction)	7	8	9	7	8	9		8	0	7	8	9	0	8	0		8	0	0	8	0		8	0		8	0
	0		8	1		8	1		8	1		8	1		8	1		8	1		8	1		6	1		8
4+ lanes w/o raised median (2 or more lanes in each direction)		5	6		5	6		5	6		5	0		5	6		5	6		5	6		5	0		5	6
		8	9	7	8	9		8	0	7	8	9	0	8	0		8	0	0	8	0		8	0		8	0

- Given the set of conditions in a cell,
- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- O Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)**
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB)**



Crosswalks with

pedestrian refuge

Example pedestrian

Funding Projections

Revenue Source	Short-term (2026 – 2030)	Mid-term (2031 – 2037)	Long-term (2038 – 2045)	Total	
General Fund	\$5,500,000	\$9,500,000	\$14,000,000	\$29,000,000	
Arterial Street Fees	\$1,700,000	\$2,900,000	\$4,200,000	\$8,800,000	
Maintenance Revenues	\$4,400,000	\$7,700,000	\$11,300,000	\$23,400,000	
STP Funds	\$1,400,000	\$2,500,000	\$4,000,000	\$7,900,000	
TAP Funds	\$300,000	\$600,000	\$1,000,000	\$1,900,000	
Total	\$13,300,000	\$23,200,000	\$34,500,000	\$71,000,000	



Total Transportation Budget: \$71M (in Year of Expenditure Dollars)

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2045 Recommended Street Network Improvements



2045 Recommended Bicycle and Pedestrian Improvements



Future Planned Master Street Network



Thank You

Questions?



