Center Avenue

Red River to 8th Street

Planning & Preliminary Engineering Study

Public Input Meeting #2

City of Moorhead

April 25, 2018

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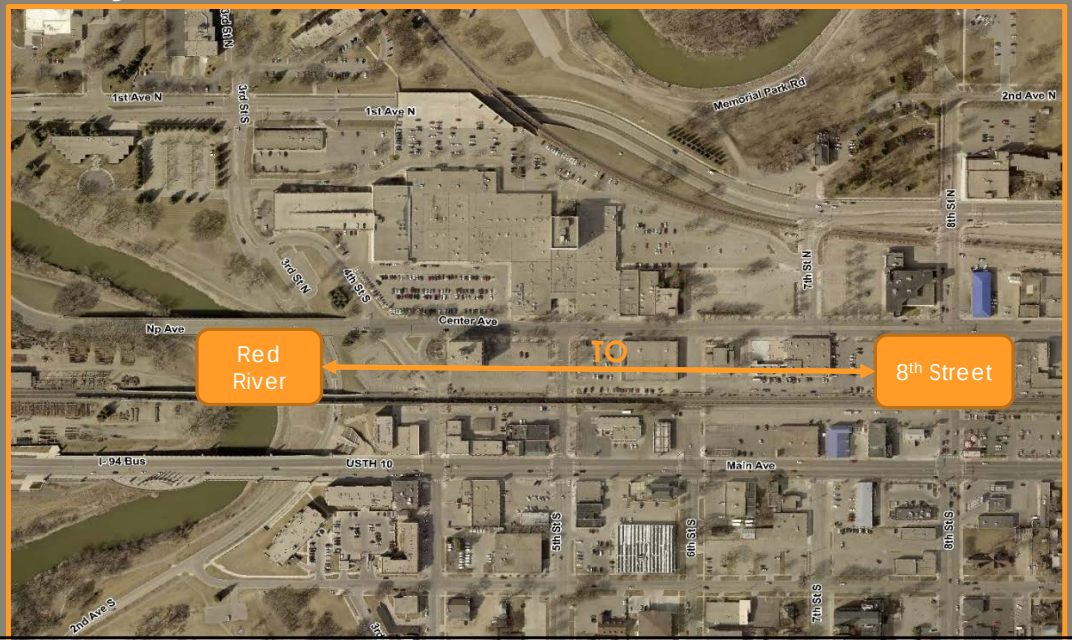
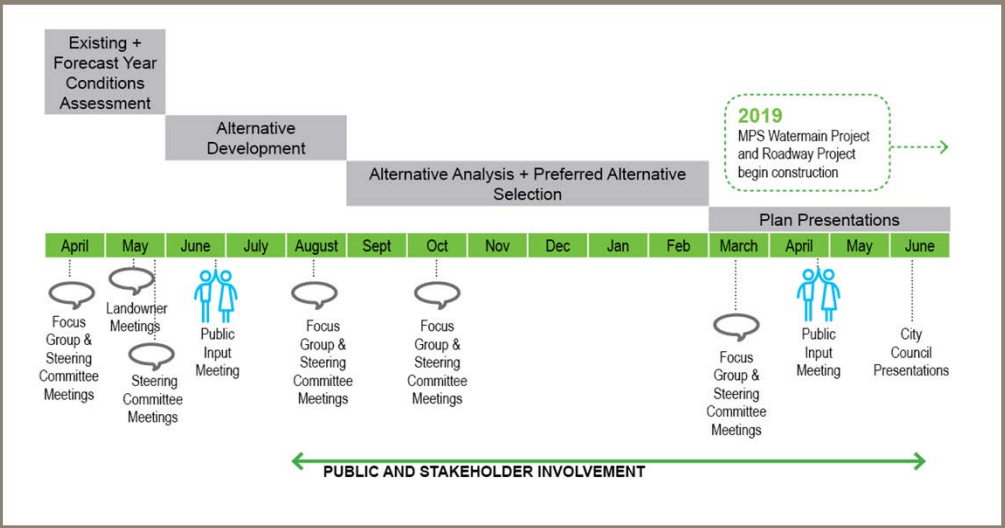
Project Location



Project Schedule

WHAT HAVE WE DONE?



2018 FALL/WINTER ROADWAY DESIGN
2019 MSP WATERMAIN PROJECT & ROADWAY CONSTRUCTION

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Needs Assessment

- Poor Pavement Condition ← Driving the Project's Need
- High crash rates along the corridor
- High volume of access points with limited left turn lanes
- Lack of designated east-west bicycle facilities
- Sight distance issues for some accesses
- Roadway alignment shifts

Center Ave & 4th Street

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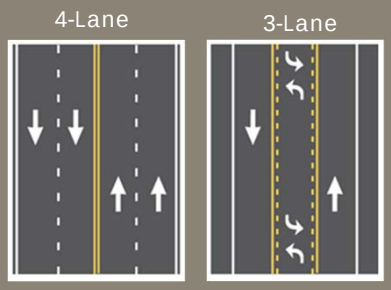
Alternative Development

- Developed 4 Base Alternatives & 2 Additive Alternatives
- All Alternatives fix project need for existing pavement issues
- Alternatives respond to needs assessment
- Alternative D was recently added

WHAT IS RIGHT FOR CENTER AVENUE?



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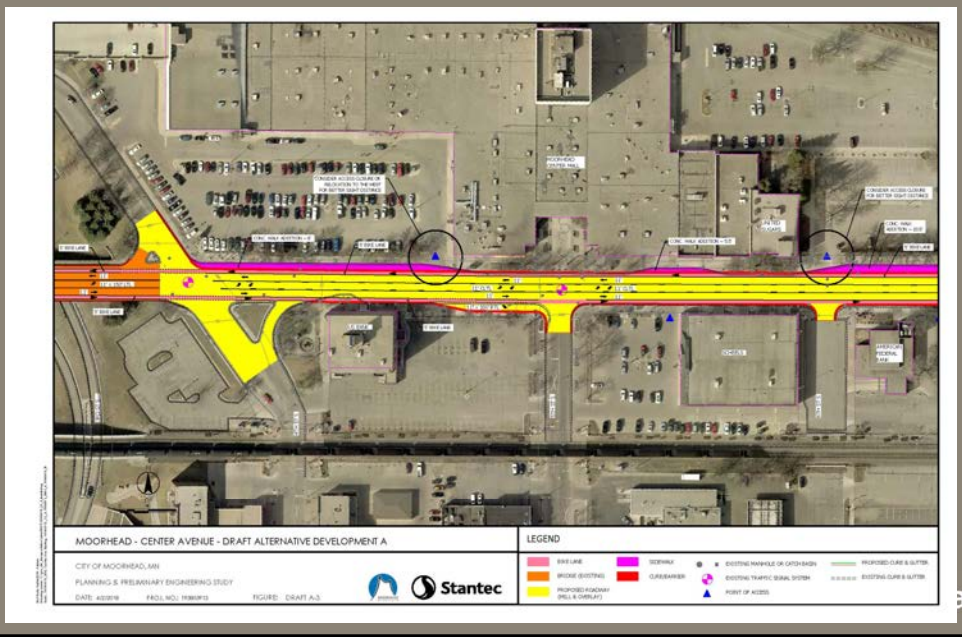
Alternative A

Mill & Overlay + 3-Lane Section + Designated Bike Lanes



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Alternative A

Mill & Overlay + 3-Lane Section + Designated Bike Lanes

Alternative Improvements	Issued Addressed/Impacts
Mill & Overlay	Fixes pavement deficiencies
Roadway Section (3-Lanes)	Serves 2040 traffic volumes Eliminates alignment shifts Estimated corridor crash reduction of 24% Removes 4 Trees
Bike Facilities Across Bridge	Creates bike connection across bridge
Bike Facilities Along Center Ave	Provides on-street dedicated bicycle facilities
Transit	Removes transit pullout per request Maintains existing transit routes Creates vehicle delays when bus is stopped
Removal of 7th Street Signal	Allows coordination between signals Signal is not warranted
Pedestrians	Removes conflict between bikes and peds Improves ADA compliance
Access	Options to do nothing, relocate or close accesses
Parking	No Changes
Preliminary Cost	$975,000

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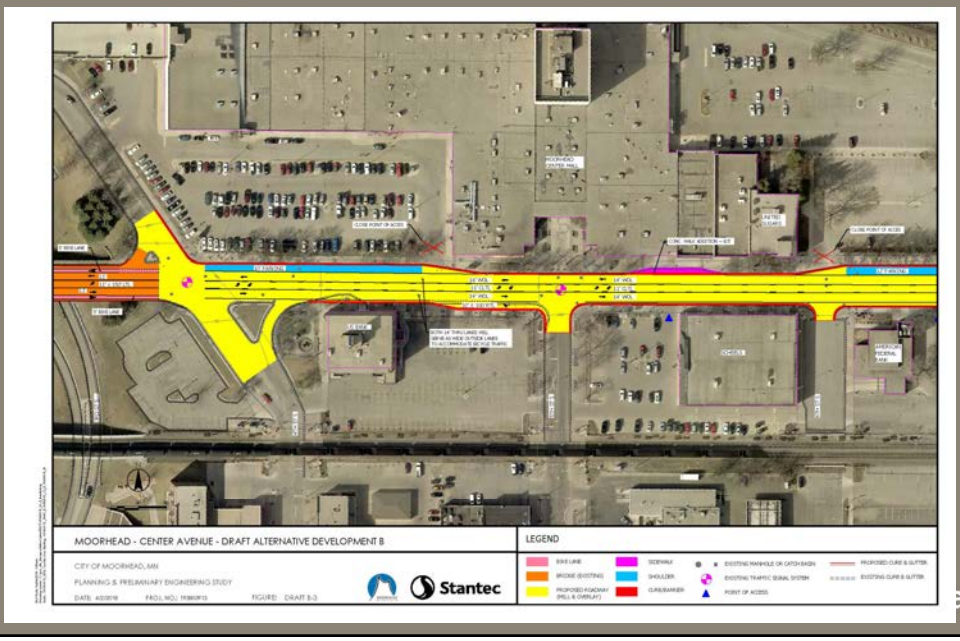
Alternative B

Mill & Overlay + 3-Lane Section + On-Street Parking/Wide Outside Lanes



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Alternative B

Mill & Overlay + 3-Lane Section +
On-Street Parking/Wide Outside Lanes

Alternative Improvements	Issued Addressed/Impacts
Mill & Overlay	Fixes pavement deficiencies
Roadway Section (3-Lanes)	Serves 2040 traffic volumes Eliminates alignment shifts Estimated corridor crash reduction of 24% Removes 4 trees
Bike Facilities Across Center Bridge	Creates bike connection across bridge
Bike Facilities Along Center Ave	Provides wide outside lane for bicycles
Transit	Removes transit pullout per request Maintains existing transit routes Creates vehicle delays when bus is stopped
Removal of 7th Street Signal	Allows coordination between signals Signal is not warranted
Pedestrians	Removes conflict between bikes and peds Improves ADA compliance
Access	Options to do nothing, relocate or close accesses
Parking	Adds on-street parking
Preliminary Cost	$816,000

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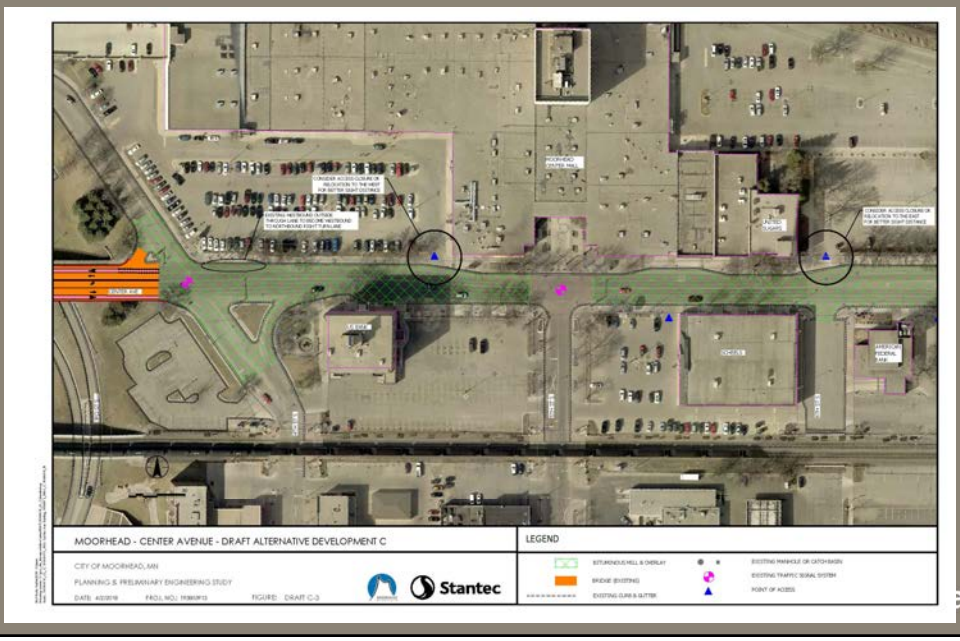
Alternative C

Mill & Overlay +
Re-stripe to Existing Lane Configuration



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Alternative C

Mill & Overlay +
Re-stripe to Existing Lane Configuration

Alternative Improvements	Issued Addressed/Impacts
Mill & Overlay	Fixes pavement deficiencies
Roadway Section (4-Lanes)	Serves 2040 traffic volumes No corridor crash reduction
Bike Facilities Across Bridge	Creates bike connection across bridge
Bike Facilities Along Center Ave	No Changes
Transit	Maintains existing transit routes
Removal of 7th Street Signal	Allows coordination between signals Signal is not warranted
Pedestrians	No Changes
Access	No Changes
Parking	No Changes
Preliminary Cost	$556,000

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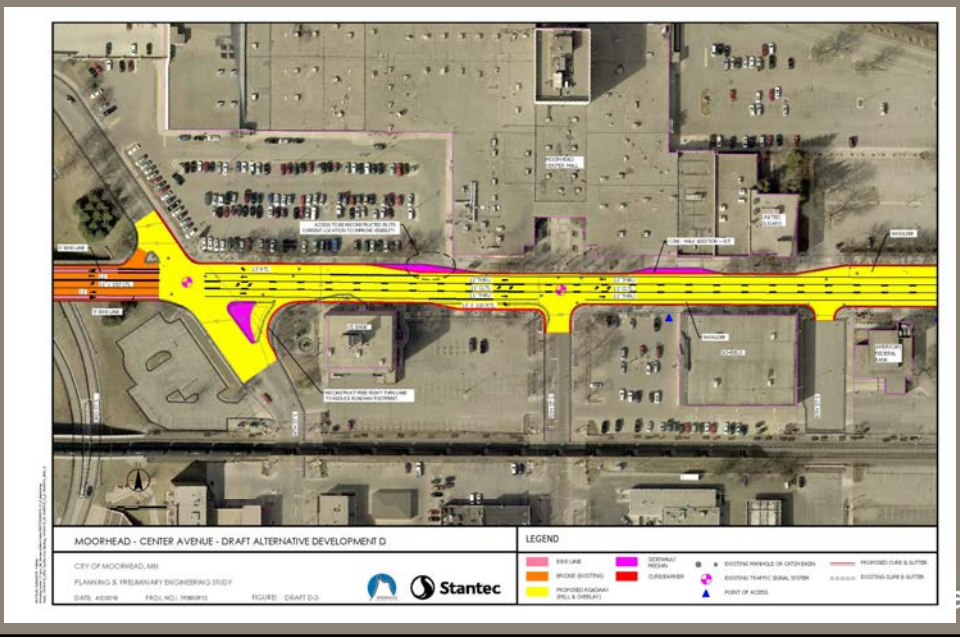
Alternative D

Mill & Overlay + 3-Lane Section +
Roadway Shoulders



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Alternative D

Mill & Overlay + 3-Lane Section + Roadway Shoulders

Alternative Improvements	Issued Addressed/Impacts
Mill & Overlay	Fixes pavement deficiencies
Roadway Section (3-Lanes)	Serves 2040 traffic volumes Eliminates alignment shifts Estimated corridor crash reduction of 24% Removes 4 trees
Bike Facilities Across Bridge	Creates bike connection across bridge
Bike Facilities Along Center Ave	No Changes
Transit	Removes transit pullout per request Maintains existing transit routes Creates vehicle delays when bus is stopped
Removal of 7th Street Signal	Allows coordination between signals Signal is not warranted
Pedestrians	Sidewalk improvements Improves ADA compliance
Access	Consideration to Reconstruct Thai Orchid Access in its Current Location
Parking	No Changes
Preliminary Cost	$948,000

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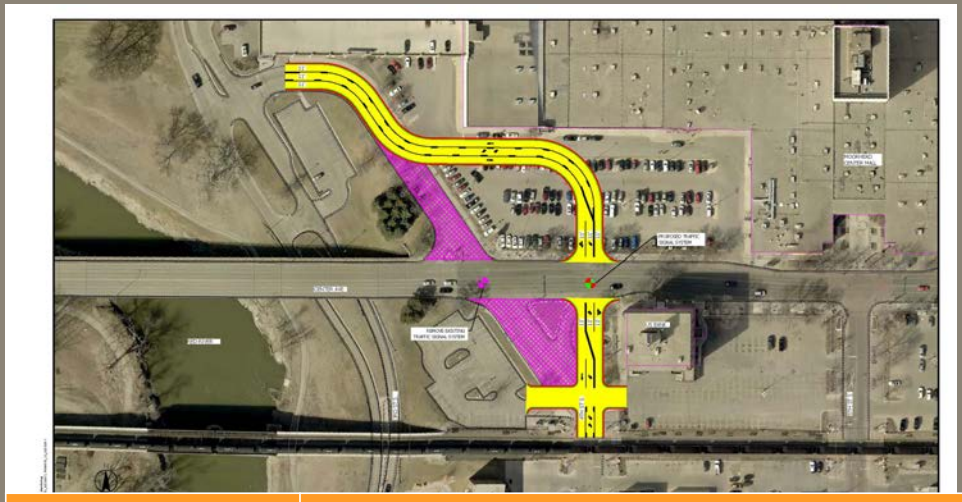
Additive Alternative 1

4th Street Realignment



Alternative Improvements	Issued Addressed/Impacts
Transit	Maintains existing transit routes
Access	Changes the 4th Street intersection and mall accesses
Preliminary Cost	$774,000

FHWA Road Diet Facts

- FHWA = Federal Highway Administration
  - Agency within the U.S. Department of Transportation
  - Support State and local governments in the design, construction, and maintenance of the Nation's highway system
  - Is responsible for ensuring that America's roads and highways are among the safest and most technologically sound in the world.

U.S. Department of Transportation
Federal Highway Administration

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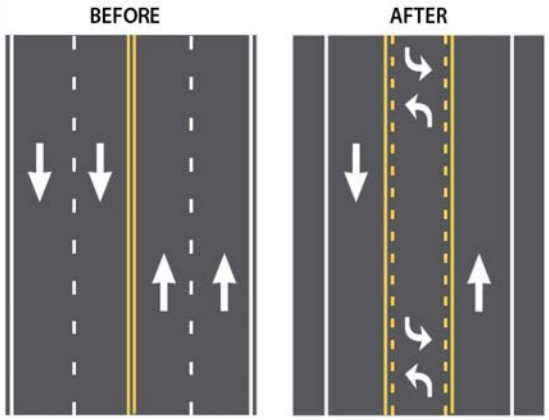
What is a Typical Road Diet?



Removing or reconfiguring travel lanes and utilizing the space for other uses

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A Typical Road Diet

Photo Source: Virginia DOT

- *Four-lane undivided highways have relatively high crash rates*
- *Inside lanes are shared by higher speed through traffic and left-turning vehicles*

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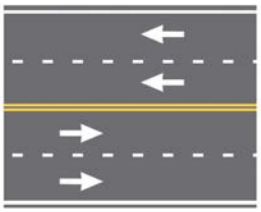
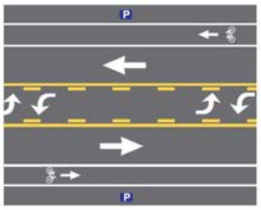
Common Characteristics

- Utilize existing footprint
- Rebalance / reallocate street space to add features such as:
  - Two-way left-turn lane (TWLTL)
  - Bike Lanes
  - On-street Parking
  - Buffer Zones
  - Landscaping
  - Etc.…





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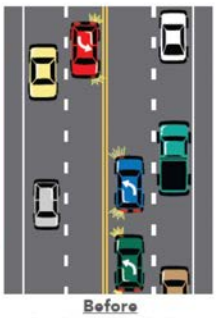
A four-lane roadway may already operate like a three-lane road.

Some four-lane roads operate essentially like a three-lane road (defacto one lane in each direction) and do not experience a reduction in capacity.



Before
A four-lane undivided road operating as a de facto three-lane cross section.

After
A Road Diet providing a two-way left-turn lane.

When a corridor contains a large number of access points (driveways) the majority of through traffic will tend to utilize the outside lanes to avoid being delayed by left-turning vehicles slowing and stopping in the inside lanes.

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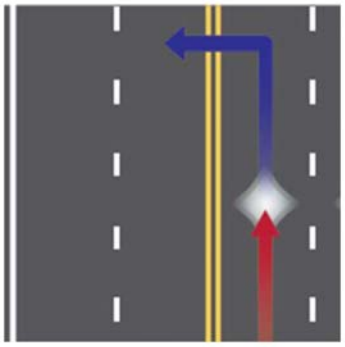
Safety Concerns on 4-lane Undivided Highways

- Left-turning vehicles stopped in the inside travel lane (Rear-End Collisions)



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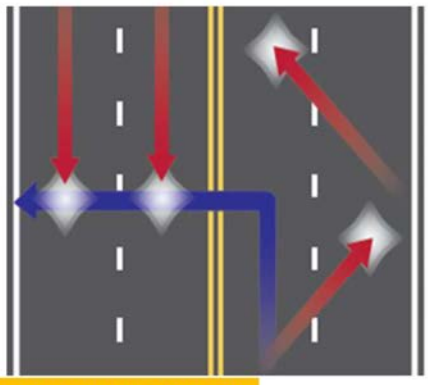
Safety Concerns on 4-lane Undivided Highways

- Frequent and sudden lane changing between two through lanes (Sideswipe & Rear-End)
- Mainline left-turning motorists making poor gap judgements or feeling pressure to depart the shared through/left lane (Angle)



These safety problems become more evident as traffic volumes and turning movements increase

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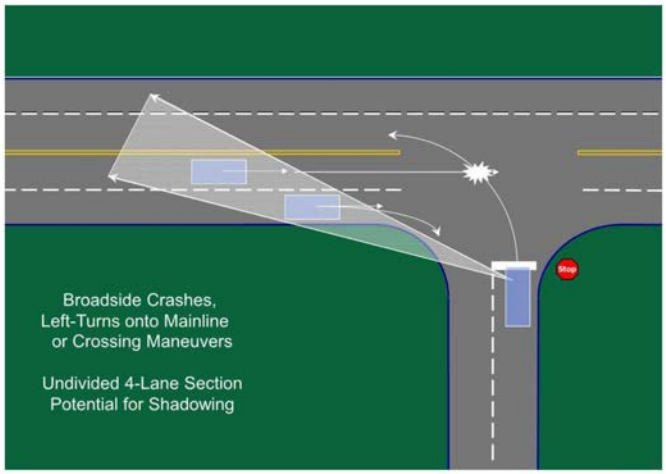
Sight Line – Left Turn from Minor Street



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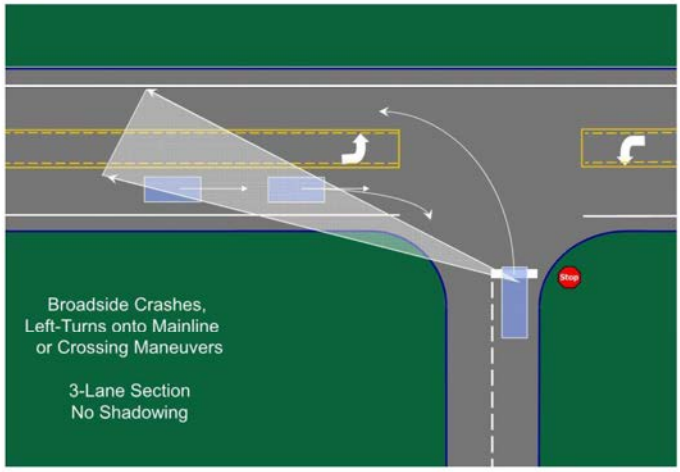
Sight Line – Left Turn from Minor Street



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Safety Benefits

Based on safety studies, installing a Road Diet has an expected crash reduction of 19-47% *

* Variables affecting safety effectiveness include pre-installation crash history, installation details, traffic volumes, and the urban or rural nature of the corridor

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ROAD DIET

Safety | Livability | Low Cost

M·Y·T·H·B·U·S·T·E·R·S

Myth: Road Diets are only applicable to "low" volume roads.

FACT: Road Diets can be successful for a broad range of traffic volumes.

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General Guidelines for Traffic Volumes

LESS THAN 10,000 ADT	10,000 – 15,000 ADT	15,000 – 20,000 ADT	GREATER THAN 20,000 ADT
Great candidate for Road Diet	Very good candidate for Road Diet	Good candidate for Road Diet	Potential candidate for Road Diet
In most instances traffic will likely not be negatively affected.	Agencies should conduct intersection analysis to study potential traffic operational effects and consider signal retiming as needed.	Agencies should conduct a corridor analysis since traffic operations may be affected at this volume depending on the "before" condition.	Agencies should complete a feasibility study to determine whether this is a good location for a Road Diet. Operations may be affected at this volume.

There are several examples across the country where Road Diets have been successful with ADTs as high as 26,000.

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Traffic Volumes Sustained

Roadway Section	Change	ADT (Before)	(After)	Notes
1. Lake Washington Blvd., Kirkland, Washington South of 83	4 lanes to 2 + TWLTL + bike lanes	23,000	25,913	
2. Lake Washington Blvd, Kirkland, Washington Near downtown	4 lanes to 2 + TWLTL + bike lanes	11,000	12,610	
3. Electric Avenue, Lewistown, Pennsylvania	4 lanes to 2 + TWLTL + bike lanes	13,000	14,500	
4. Burcham Road, East Lansing, Michigan	4 lanes to 2 + TWLTL + bike lanes	11-14,000	11-14,000	
5. Grand River Boulevard, East Lansing, Michigan	4 lanes to 2 + TWLTL + bike lanes	23,000	23,000	
6. St. George Street, Toronto, Ontario, Canada	4 lanes to 2 + bike lanes + wide sidewalks	15,000	15,000	
7. 120th Avenue, NE Bellevue, Washington	4 lanes to 2 + TWLTL	16,900	16,900	
8. Montana (commecial street) Bellevue, Washington	4 lanes to 2 lanes + TWLTL 4 lanes to 2 + median + bike lanes	18,500	18,500	
9. Main Street Santa Monica, California	4 lanes to 2 lanes + TWLTL 4 lanes to 2 + median + bike lanes	20,000	18,000	

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ROAD DIET

Safety | Livability | Low Cost

M·Y·T·H·B·U·S·T·E·R·S

Myth: Road Diets increase emergency response times.

FACT: Road Diets can improve emergency response times.

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Emergency Response Vehicles

Before

A fire truck struggling to find a path.

After

An easily navigable two-way left-turn lane.

Four-lane undivided roads can be awkward for emergency responders and can slow response times.

Drivers in inside lanes are often uncertain about where to go to allow emergency responders to pass.

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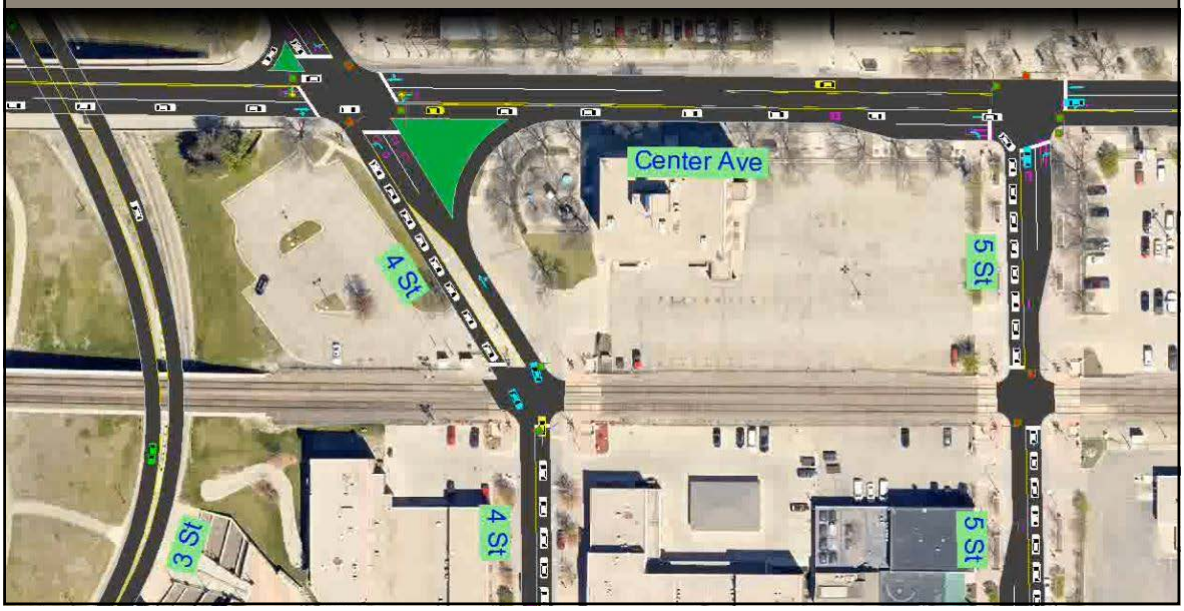
Traffic Analysis



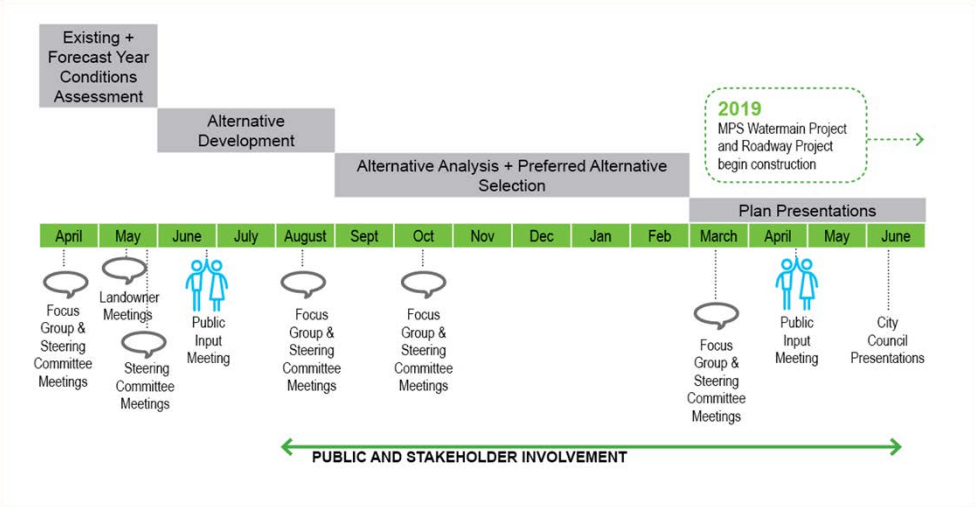
Landscape Opportunities

Landscape Opportunities

Landscape Opportunities

Project Schedule

WHERE DO WE GO FROM HERE?



2018 ROADWAY DESIGN

2019 MSP WATERMAIN PROJECT & ROADWAY CONSTRUCTION

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We Want Your Input!

- Fill Out a Comment Form - Leave It Tonight or Mail It In Until May 2, 2018
- Talk to The Project Representatives Here Tonight
- Check Out The Project Website At:

  www.cityofmoorhead.com/departments/engineering/current-projects/center-ave-project

Questions or Comments?

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Special Assessments

Special Assessments

- Uniform rates City-wide based on type of project
- Primary benefit rate: $25 per adjusted front foot
  - Applied to properties that front on a local street or have direct access to a minor arterial or collector street
- Secondary benefit rate: $500 per 0.25 acre
  - Minimum $500
  - Applied to minor arterial & collector streets that provide service to a larger area
  - Every property is included in the assessment district for one N-S & one E-W minor arterial or collector street

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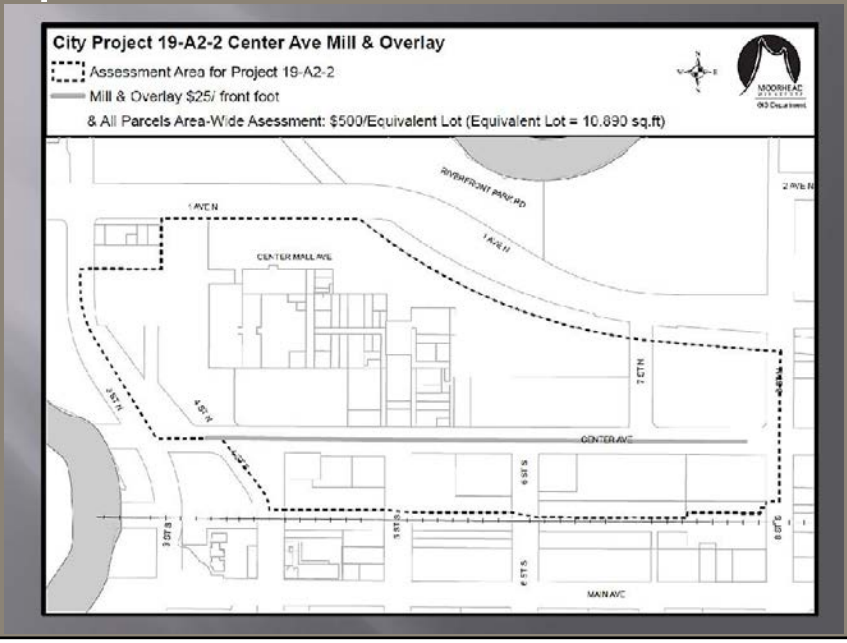
Special Assessments



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Special Assessments

Project Financing

- Center Ave is a minor arterial street
- Estimated special assessments computed
  - Includes primary & secondary rates
  - Based on 2018 rates
  - Subject to change for 2019 projects
  - Payable over 20 years after Council adoption
- Estimated special assessment total: $114,900

Alternative selected will not change the proposed special assessment

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