



WELCOME

PUBLIC INPUT MEETING

MEDORA BUSINESS LOOP AND CITY SECTION

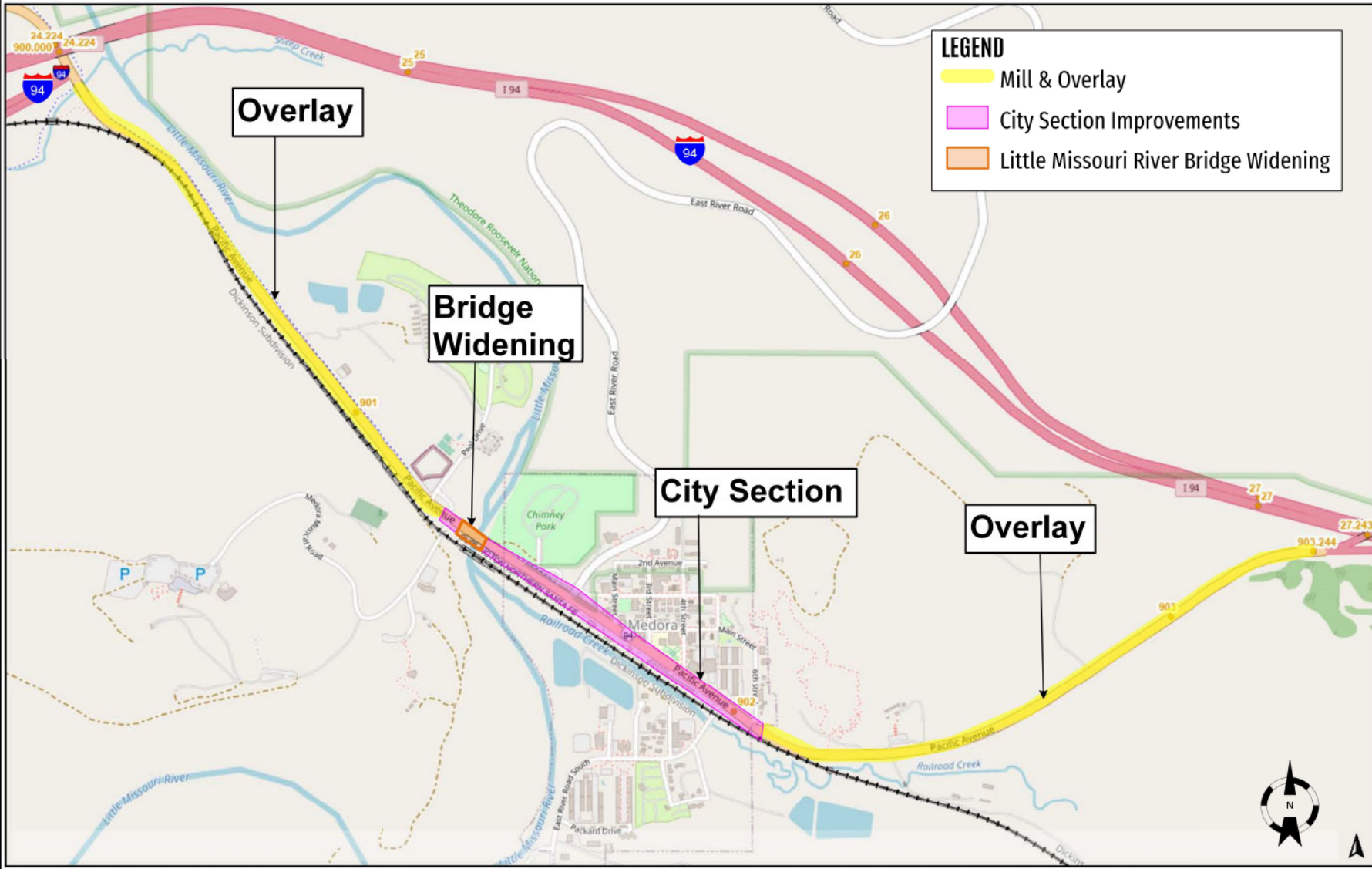
5-094(152)900, PCN 23114

July 27, 2023



PROJECT OVERVIEW

Dakota Transportation 5-094(152)900, PCN 23114, Medora Business Loop and City Section



PROJECT LOCATION MAP

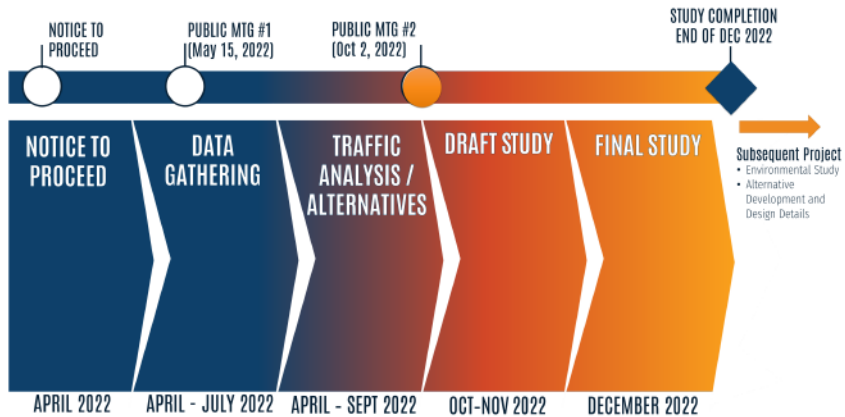
BILLINGS COUNTY
 Sections: 21, 22, 25, 26, 27
 Township: 140 N
 Range: 102 W

Notes

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

PROJECT TIMELINE

PREVIOUS TRANSPORTATION STUDY SCHEDULE

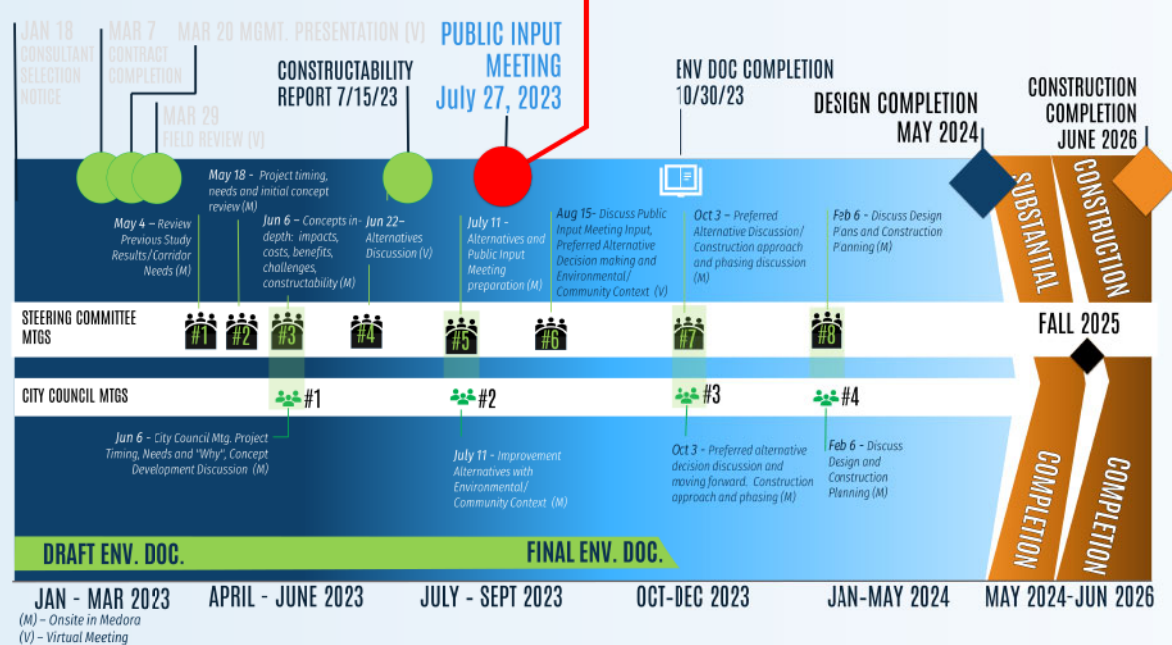


CURRENT PROJECT SCHEDULE

PUBLIC ENGAGEMENT



WE ARE HERE



PREVIOUS TRANSPORTATION STUDY CONCEPT EVOLUTION

STUDY GOALS:

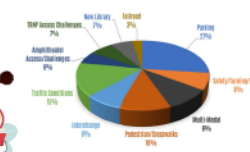
1. Complete a collaborative and inclusive planning process
2. Evaluate multi-modal alternatives for Pacific Avenue that effectively balance needs, opportunities, and challenges
3. Incorporate interchange reconfiguration evaluations with any potential changes to Pacific Avenue
4. Delineate Presidential Library access and Pacific Avenue access points
5. Provide transportation recommendations that can be incorporated into a project that will be completed ahead of the Presidential Library grand opening in 2026

PUBLIC MEETING #1 MAY 2022

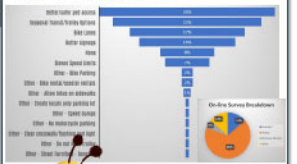


COMMENTS
RECEIVED

DATA COLLECTION / ANALYSIS



ON-LINE SURVEYS -



INPUT &
REFINEMENT

INDIVIDUAL MEETINGS AUG 2022 (# 25)



STAKEHOLDER MEETINGS (# 4)

Held in conjunction with Area Planning Study, seeking solutions for future...

ON-STREET SURVEYS JULY 2022



DATA ANALYSIS

- Historic July & August monthly traffic volumes by day of week and time of day



- Historic August average daily traffic (ADT) on Pacific Avenue near 3rd Street
- Saturdays: +3% per year between 2016 & 2021
- Abnormal peak in volume in 2020

PUBLIC MEETING #2 OCT 2022



TRANSPORTATION STUDY
RECOMMENDATIONS
PRESENTED / COMMENTS RECEIVED

INPUT &
REFINEMENT



TRANSPORTATION STUDY
RECOMMENDATIONS
FINALIZED

PREVIOUS TRANSPORTATION STUDY

WHAT WE HEARD/STUDY RECOMMENDATIONS

 Focus on Improved Safety and Usability

 Provide for Parking and Accessibility

 Implement Aesthetics that Enhance/Highlight Western Heritage

Initial Study Recommendations:



Pacific Avenue intersections will not meet traffic demands by 2045
Evaluation of potential intersection improvements included:

- Stop control was found to not address existing and future Level of Service deficiencies.
- Preliminary signal warrant analysis indicated that warrants would not be met throughout the year with the forecasted traffic volumes.
- Roundabouts were identified as an improvement concept to consider for more detailed evaluation and discussion, as they would provide:
 - Improved traffic operations
 - Speed control
 - The ability to theme the downtown area with visual or wayfinding features.



Pedestrian crossings need to be improved – Bulb-outs and crosswalk improvements were recommended

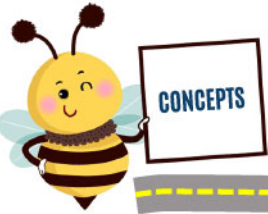


Topic	Comments	Preference
PACIFIC AVENUE CONFIGURATION	No Build (blue)	18
	1a. Roundabouts - 2 Lane Flex Transit Lane (Parking removed north side/peak season) (orange)	6
	1b. Roundabouts - 3 Lane, Bulb-outs, Sharrows, crosswalks (matching existing cross section) (green)	3
	Two respondents asked to consider 3-lanes with bulbouts/crosswalks, but no roundabouts (yellow)	2
Common Themes:		
<ul style="list-style-type: none"> • No Roundabouts - not needed • Roundabouts don't fit in historic town - they look too modern • Like crosswalks/bulbouts for pedestrian safety • No transit are needed/desired • Questions on maintenance of roundabouts • Concerns that roundabouts will work with big rigs/semi's/airload • Tourists prefer the look of a "not modern" town - No Roundabouts • Want more options, not roundabouts 		



CURRENT DESIGN PROJECT CONCEPT EVOLUTION TO ALTERNATIVES

TRANSPORTATION STUDY RECOMMENDATIONS



CONCEPTS

FIELD REVIEW MEETING
Pedestrian Safety
Intersection Improvements
Bridge Concepts

RESEARCH/DATA ANALYSIS

- Pedestrian Safety
- Traffic Forecasts
- Environmental Constraints
- Right-of-Way Boundaries
- Parking Alternatives
- Intersection Improvements

REFINE PROJECT PURPOSE AND NEED

Project Purpose and Need - The Why

Purpose:
Provide for project improvements that address project needs and integrate the unique western heritage context of Medora.

Needs:

- Maximize or increase parking in the downtown area
- Improve consistency of the Pacific Avenue roadway cross section and the Little Missouri River bridge section
- Address pedestrian and vehicular conflict conditions
- Address forecasted traffic operational deficiencies at the E River Road intersection
- Improvements that are consistent with the local western heritage theme

CITY COUNCIL PRESENTATIONS (# 2 TO DATE)
Jun 6 – Project Timing, Needs & Why, initial concepts
July 11 – Initial Alternatives, seeking Community Context

MOVED FORWARD

- Pedestrian Safety – Bulb-Outs/ Crosswalks
- Chateau Road Pedestrian Connection
- Cross Section Extension to Bridge
- Intersection Alternatives

AESTHETIC CONCEPTS	RIGHT-OF-WAY/DESIGN CONSTRAINTS
CROSS SECTION CONCEPTS	PEDESTRIAN CONCEPTS
INTERSECTION CONCEPTS	BRIDGE CONCEPTS

STEERING COMMITTEE MEETINGS (# 5 TO DATE)
Discuss concepts, options, look at context sensitive solutions

RULED OUT

- ✗ Transit Flex Lane
- ✗ Downtown Roundabouts



ALTERNATIVES

ANALYSIS

- Impact Analysis
- Avoidance
- Minimization
- Mitigation

WE ARE HERE CURRENTLY
PUBLIC INPUT MEETING

PRESENTED ALTERNATIVES SEEKING PUBLIC INPUT / COMMENTS



Environmental Document Completion








BALANCING MEETING THE NEEDS

PROJECT PURPOSE:

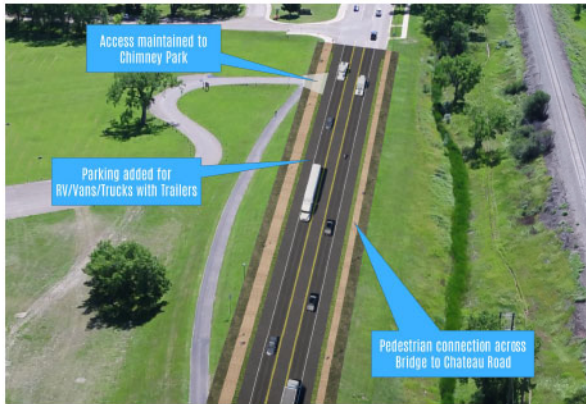
Project improvements that address project needs and integrate the unique western heritage context of Medora.



PROJECT NEEDS:

-  Maintain or increase parking in the downtown area
-  Improve consistency of the Pacific Avenue roadway cross section and the Little Missouri River bridge section
-  Address pedestrian and vehicular conflict conditions
-  Address forecasted traffic operational deficiencies at the E River Road N intersection
-  Improvements that are consistent with the local western heritage theme

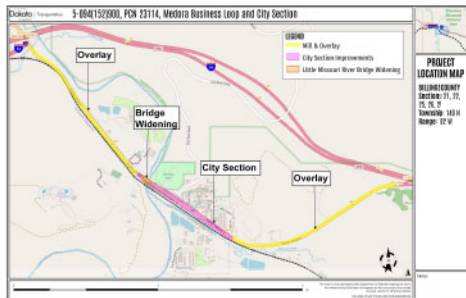
PROJECT BASE ELEMENTS



- Extend Downtown Cross Section from East River Rd N to Chateau Road
 - Three lane cross section with shoulders
 - Added pedestrian sidewalk connection (south side) from downtown to Chateau Road
 - Added parking, including area for larger vehicles



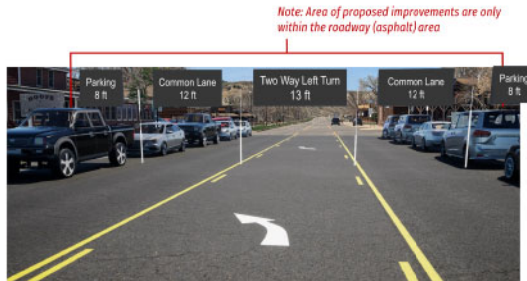
- Bridge Widening (Little Missouri River Bridge)
 - Three lane cross section with shoulders
 - Added pedestrian connections on south side of Bridge to Chateau Rd



- Mill & Asphalt Overlay
 - Throughout project length – including downtown

PACIFIC AVE CROSS SECTION IMPROVEMENTS

ALTERNATIVE IMPROVEMENTS

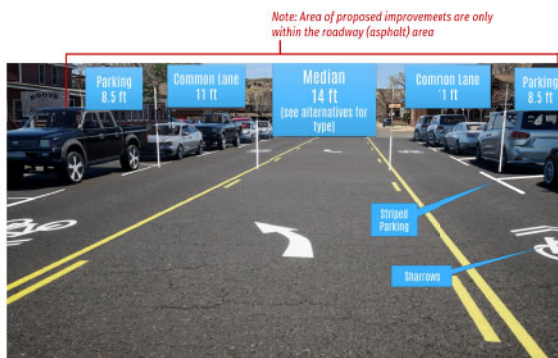


- Alternative 1 – No Build



- Alternative 2, Option 1 – 12-foot Travel Lanes with Sharrows

- Matching existing travel lane width (12-feet)
- Sharrows - identifying sharing the road with bicycles
- No change in lane striping



- Alternative 2, Option 2 – 11-foot Travel Lanes, Sharrows & Parking Improvements

- Narrowed lane widths and wider parking stalls result in slower speeds and more room for parking
- Increased parking – Add more efficient striped parking stalls

PACIFIC AVENUE CROSS SECTION

ALTERNATIVE 1- NO BUILD

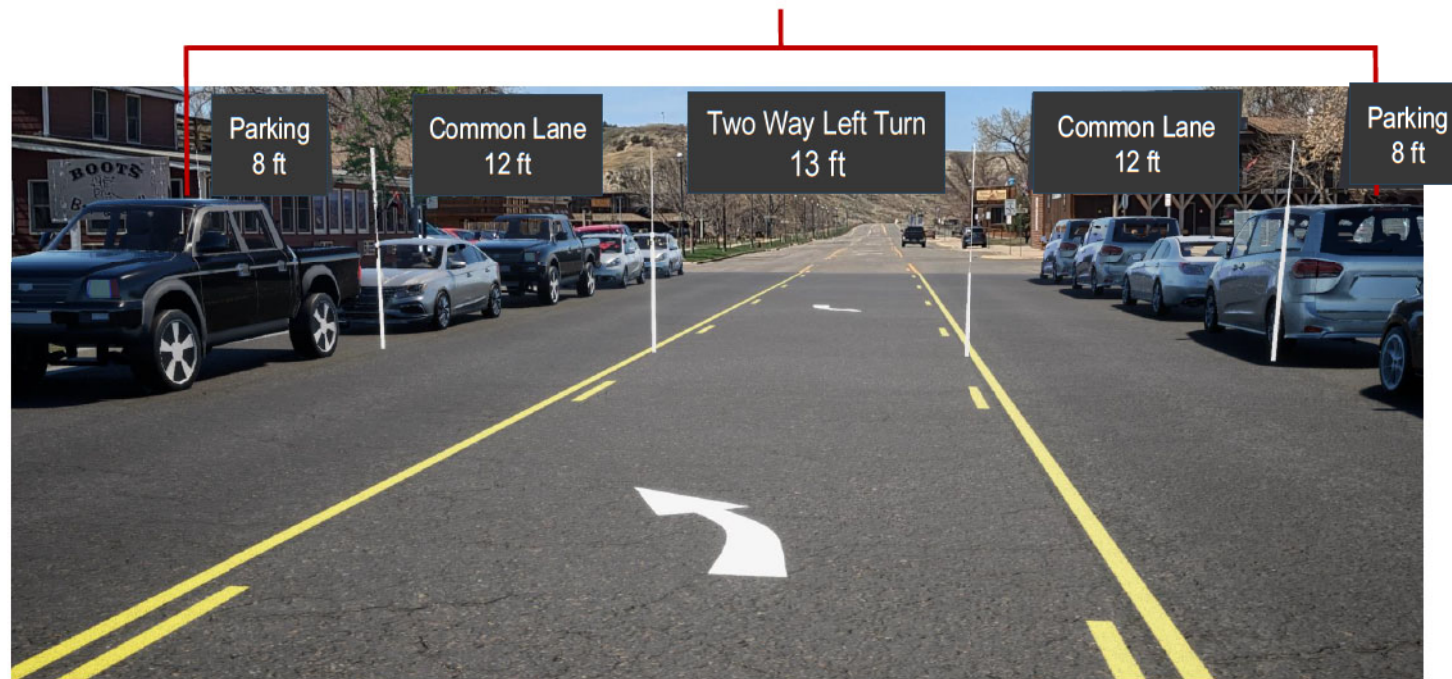
Purpose & Need Compatibility



Note: Proposed improvements are only within the roadway (asphalt) area

Overview:

- **Maintain** current cross section
- **Maintain** current parking



ADVANTAGES:

- No additional cost

DISADVANTAGES:

- Does not alert drivers to bicycles
- Continued speed concerns
- Inefficient parking in downtown

SAFETY

ACCESSIBILITY

Vehicles

Goods & Services

Businesses

Parking

BALANCE



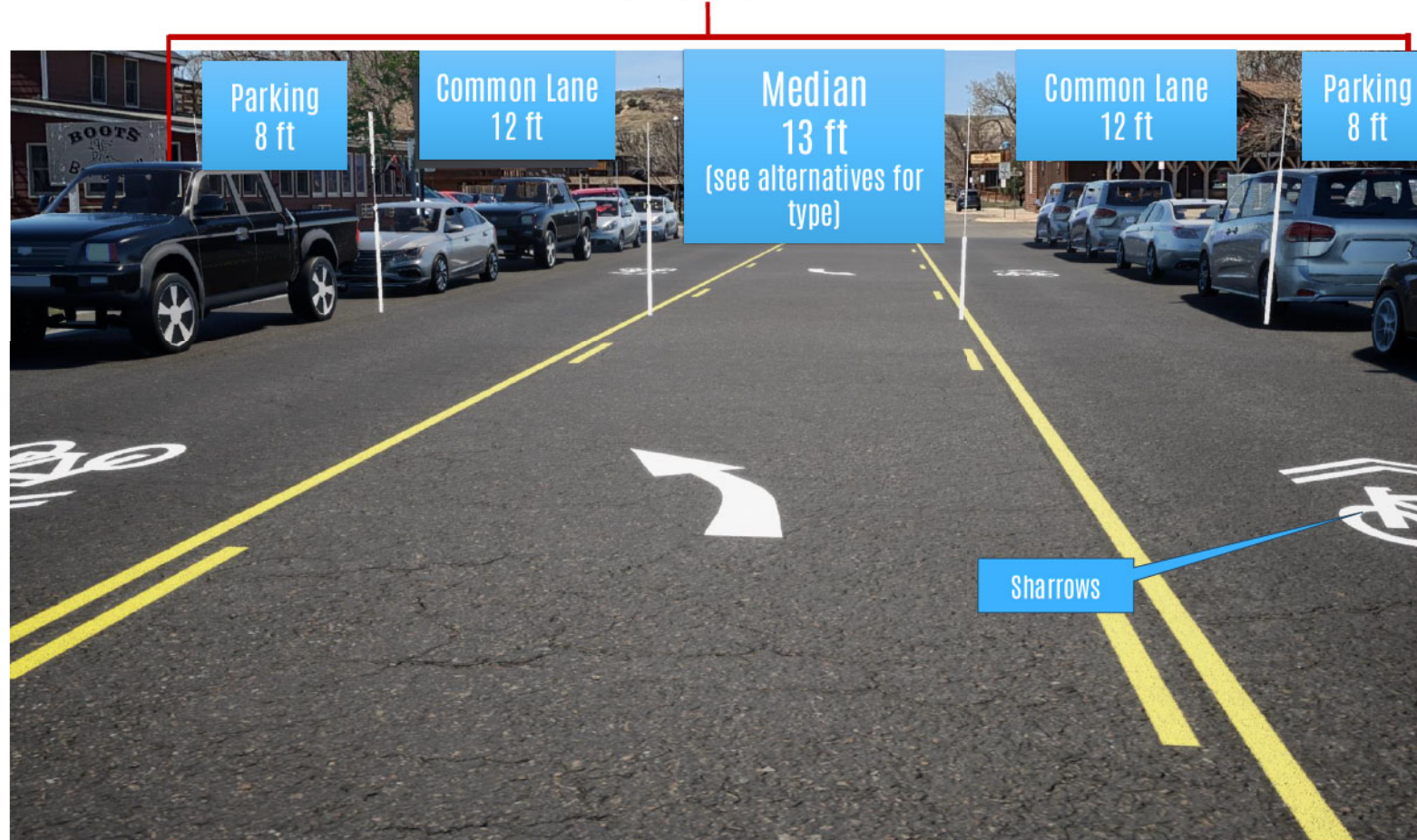
PACIFIC AVENUE CROSS SECTION

ALTERNATIVE 2, *OPTION 1* - 12 FOOT TRAVEL LANES WITH SHARROWS

Note: Proposed improvements are only within the roadway (asphalt) area

Overview:

- **Match** current cross section and lane widths
- **Sharrows:** Pavement markings that indicate bicycles and cars share the road
- **Multi-modal** - Bikes will share roadway, other (scooters, segways, etc.) would stay the same



ADVANTAGES:

- Maintains current parking
- Better identification of bicycle use

DISADVANTAGES:

- None

SAFETY

ACCESSIBILITY





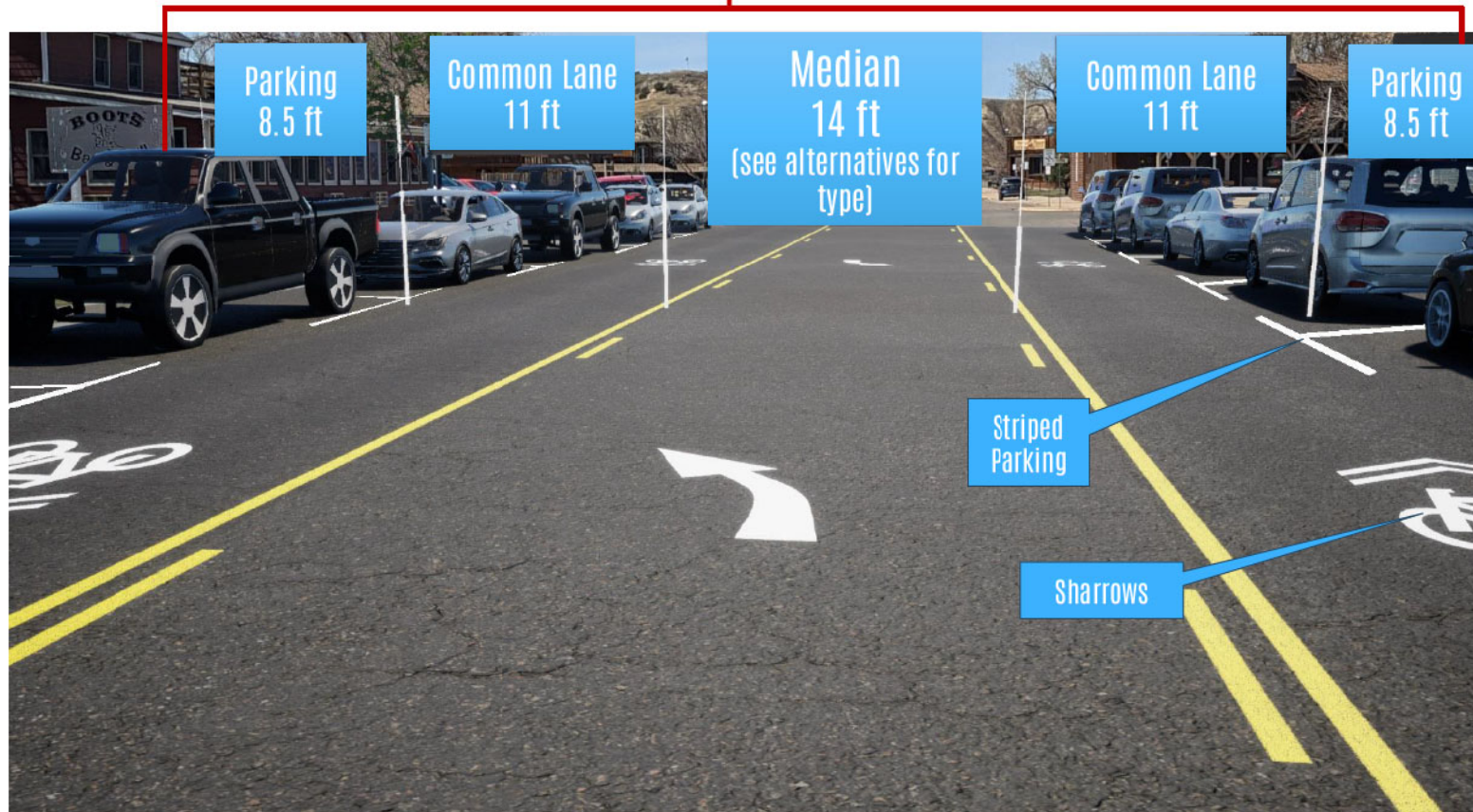
PACIFIC AVENUE CROSS SECTION

ALTERNATIVE 2, OPTION 2 - 11-FOOT TRAVEL LANES, SHARROWS & PARKING IMPROVEMENTS

Note: Proposed improvements are only within the roadway (asphalt) area

Overview:

- **Change striping** – Narrow Lane widths to 11-feet from existing 12-foot width
- **Sharrows:** Pavement markings that indicate bicycles and cars share the road
- **Parking-** Painting parking lines would allow for more parking downtown



ADVANTAGES:

- Increased number of parking stalls in downtown area
- Allows for Bike traffic to share the road
- Speed reduction with narrowed lanes

DISADVANTAGES:

- None

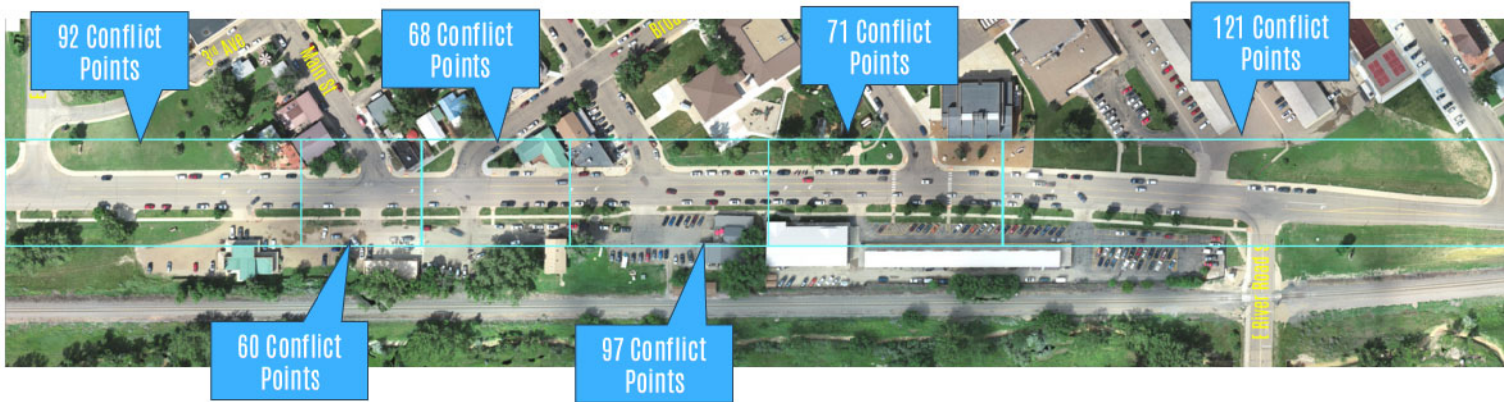
PEDESTRIAN CONDITIONS

- Multi-generational users during peak tourist season
- Medora – Family destination, need for safe pedestrian crossings for everyone
- Poor sight conditions due to Parking/large vehicles
- Near miss accidents are common safety concerns
- 50-150 pedestrians an hour at various locations
- Only one existing marked crosswalk at 4th Ave





PEDESTRIAN SAFETY



509 TOTAL CONFLICT POINTS

PEDESTRIAN IMPROVEMENTS

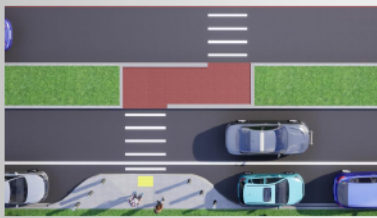
BULB-OUTS

Bulb-outs reduce vehicles speeds by narrowing the roadway while shortening pedestrian crossing distances
Provide better visibility of pedestrians waiting to cross



Pedestrians – 4th St Example:

- Distance to cross currently: 56 feet
- More vulnerable pedestrian walking speed: 3.5 ft/s
- Time to cross: 16 seconds



DANISH OFF-SET CROSSWALK

Danish offsets turn pedestrians toward opposing vehicles and provide pedestrian refuge

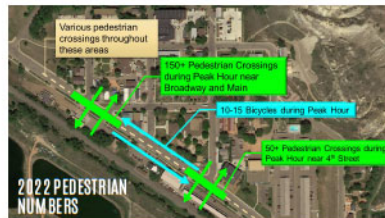
- Adding bulb-outs, and Danish off-set crosswalk, distance to cross one lane: 12 feet
- More vulnerable pedestrian walking speed: 3.5 ft/s
- Time to cross: 3.4 seconds

PEDESTRIAN & TRAFFIC STATISTICS

Design Speed: 25 mph
Pedestrian Walking Speed: 3.5 ft/s
Sight Distance to Vehicle:
Near Lane: 264 feet
Far Lane: 572 feet

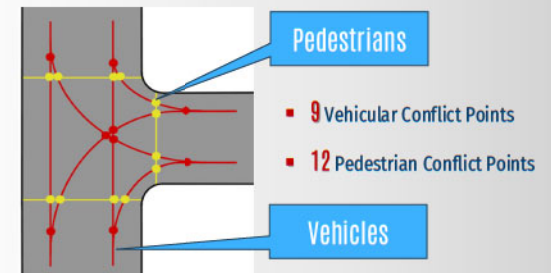


Distance required to react and stop on Pacific Avenue when pedestrian steps into roadway: 200 feet

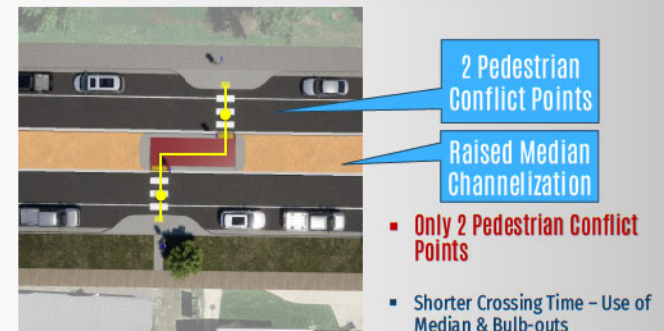


PEDESTRIAN CONFLICTS

INTERSECTION CONFLICTS



DANISH OFFSET CROSSWALK - MID BLOCK CONFLICTS



PEDESTRIAN CROSSINGS / CHANNELIZATION

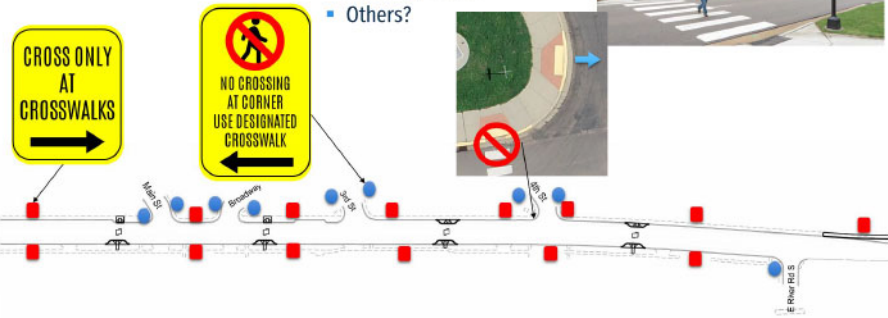
Purpose & Need Compatibility



PEDESTRIAN SIGNAGE

OPTIONS:

- Signage
- Curb Ramp Modifications
- Flashing Beacon
- Others?



FARGO 19TH AVE - CASE STUDY PEDESTRIAN CROSSING

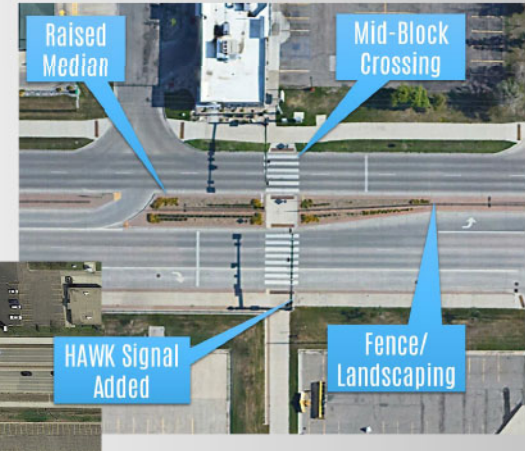


BEFORE

- 19th Ave – 2010
- 30 mph roadway
- “Before” Condition
 - Pedestrians Jaywalking to access nearby event center

AFTER

- 2014-5 – Added Mid-block controlled pedestrian crossing
- Channelization Features Implemented
 - Directed pedestrians to crosswalk area
 - Raised island in median along with vertical features



EXISTING PEDESTRIAN RAMP DEFICIENCIES



PEDESTRIAN CHANNELIZATION (DIRECTED) EXAMPLES

BELLEVUE, WA

DESERT SPRINGS, AZ





AESTHETIC TREATMENTS POSSIBLE MEDIAN TREATMENTS

Vegetation / Grading



Retaining Wall



Grand Forks, North Dakota Example

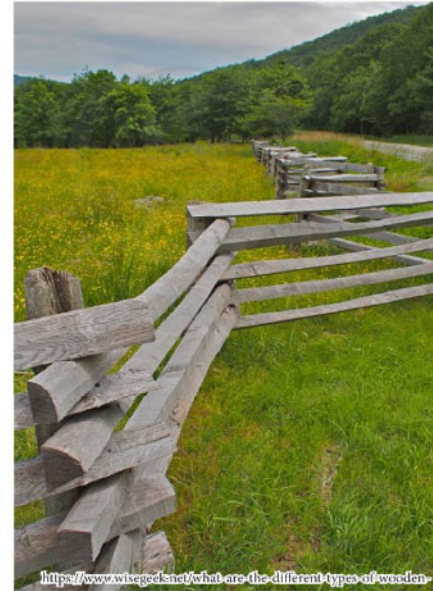




AESTHETIC TREATMENTS

POSSIBLE MEDIAN TREATMENTS

Fencing Treatments





PEDESTRIAN CROSSINGS

ALTERNATIVE 1- NO BUILD

- Leave marked pedestrian crossing at 4th Ave
- Number of locations (2)
- Conflict Points (509)



SAFETY

ACCESSIBILITY

Vehicles

Goods & Services

Businesses

Parking

BALANCE

ADVANTAGES:

- No cost

DISADVANTAGES:

- Does not address pedestrian safety concerns
- Increase in safety risk as traffic increases

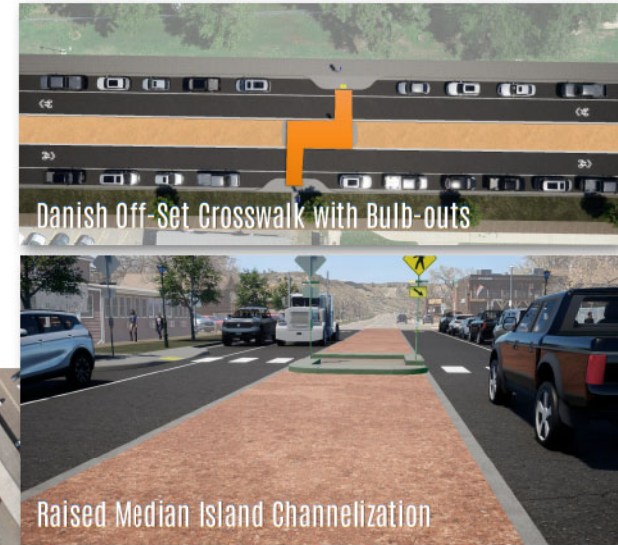


PEDESTRIAN CROSSINGS

ALTERNATIVE 2, OPTION 1 - MID-BLOCK & CORNER PEDESTRIAN CROSSINGS

- Expanded number of locations: **[6]**
- Mix of Channelization* **[3]** and Standard **[3]** Crosswalks
- Conflict Points [212]**

*Channelization = raised median with bulb-outs and Danish Offset crosswalks



Key

- = Danish Off-set Crosswalk
- = Standard Crosswalk
- = Raised Median



ADVANTAGES:

- Improved pedestrian channelization and crossing safety
- Channelization focus in areas of greatest pedestrian concentration

DISADVANTAGES:

- Modifications in access and intersection turning



PEDESTRIAN CROSSINGS

ALTERNATIVE 2, OPTION 2 - MID-BLOCK & CORNER PEDESTRIAN CROSSINGS

- Expanded number of locations: (6)
- Mix of Channelization* (2) and Standard (4) Crosswalks
- Conflict Points (315)

*Channelization = raised median with bulb-outs and Danish Offset crosswalks



Key

- = Danish Off-set Crosswalk
- = Standard Crosswalk
- = Raised Median



ADVANTAGES:

- Improved pedestrian channelization and crossing safety
- Channelization focus in areas of greatest pedestrian concentration

DISADVANTAGES:

- Modifications in access and intersection turning



PEDESTRIAN CROSSINGS

ALTERNATIVE 2, OPTION 3 - MID-BLOCK & CORNER PEDESTRIAN CROSSINGS

- Expanded number of locations: (6)
- Mix of mid-block channelization* (3) & standard (3) crosswalks
- Conflict Points (192)



*Channelization = raised median with bulb-outs and Danish Offset crosswalks

Key

- = Danish Off-set Crosswalk
- = Standard Crosswalk
- = Raised Median



SAFETY
ACCESSIBILITY

Pedestrians	Goods & Services
Bicyclists	Businesses
Vehicles	Parking

BALANCE

ADVANTAGES:

- Improved pedestrian channelization and crossing safety
- Channelization focus in areas of greatest pedestrian concentration

DISADVANTAGES:

- Modifications in access and intersection turning



PEDESTRIAN CROSSINGS

ALTERNATIVE 3 - MID BLOCK DANISH OFFSET CROSSWALKS/BULB-OUTS / CENTER RAISED MEDIAN

- Expanded number of locations: **(4)**
- Focus on channelization* & safety
- Conflict Points (107)**

*Channelization = raised median with bulb-outs and Danish Offset crosswalks

Key

- = Danish Off-set Crosswalk
- = Standard Crosswalk
- = Raised Median



ADVANTAGES:

- Comprehensive pedestrian channelization
- Highest Safety Benefits – reduced conflicts

DISADVANTAGES:

- Largest number of modifications in access and intersection turning
- Highest cost/longest construction period

INTERSECTION IMPROVEMENTS

INTERSECTION ANALYSIS AT EAST RIVER RD N

INTERSECTION CONTROLS



Level of Service (LOS)
 LOS A – Free Flow, Insignificant Delays
 LOS B – Stable Flow, Minimum Delays
 LOS C – Stable Flow, Acceptable Delays
 LOS D – Approaching Unstable Flow, Tolerable Delays
 LOS E – Unstable Flow, Significant Delays
 LOS F – Forced Flows, Excessive Delays

TYPE	MID 2030s - FUNCTION	2045 FUNCTION	Meets Standard?	CONCLUSION
NO BUILD	F Backed up 275 ft SB	F Backed up > 1,000 ft	✗	• Intersection would continue to back up and delay and frustrate drivers
MINOR-STREET STOP CONTROL	E Backed up 125 ft SBL	F Backed up 525 ft SBL	✗	• Intersection would continue to back up and delay and frustrate drivers
ALL-WAY STOP-CONTROL	C Backed up 600 ft WB	F Backed up > 1,000 ft	✗	• Intersection would continue to back up and delay and frustrate drivers
RESTRICTED CROSSING U-TURN INTERSECTION (RCUT)	A Backed up 125 ft EB	A Backed up 125 ft EB	✓	• Modified “Bowtie” concept tied to roundabout at Chateau Road • Left Turn restrictions
HIGH T UNSIGNALIZED	D Backed up 150 ft SB	F Backed up 825 ft SB	✗	• Not enough room for merge movement
ROUNDAABOUT	A Backed up 125 ft EB	A Backed up 125 ft EB	✓	• Would work with traffic for next 20 years
SIGNALIZED INTERSECTION	N/A	N/A	✗	• Intersection does not meet signal warrants

EVALUATED

MINOR-STREET STOP-CONTROL



ALL-WAY STOP-CONTROL



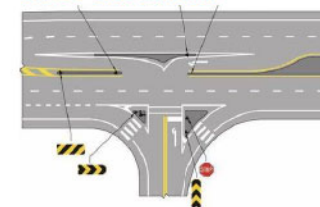
RCUT



ROUNDAABOUT



HIGH-T UNSIGNALIZED



SIGNALIZED INTERSECTION





INTERSECTION IMPROVEMENTS

ALTERNATIVE 1- NO BUILD

Theodore Roosevelt
National Park Entrance

- Stacking and delay conditions to increase as traffic volumes will continue to grow
- Concerns with right turns stacking on Pacific Ave and Left turns from East River Road N onto Pacific Ave



ADVANTAGES:

- No changes
- Lowest cost

DISADVANTAGES:

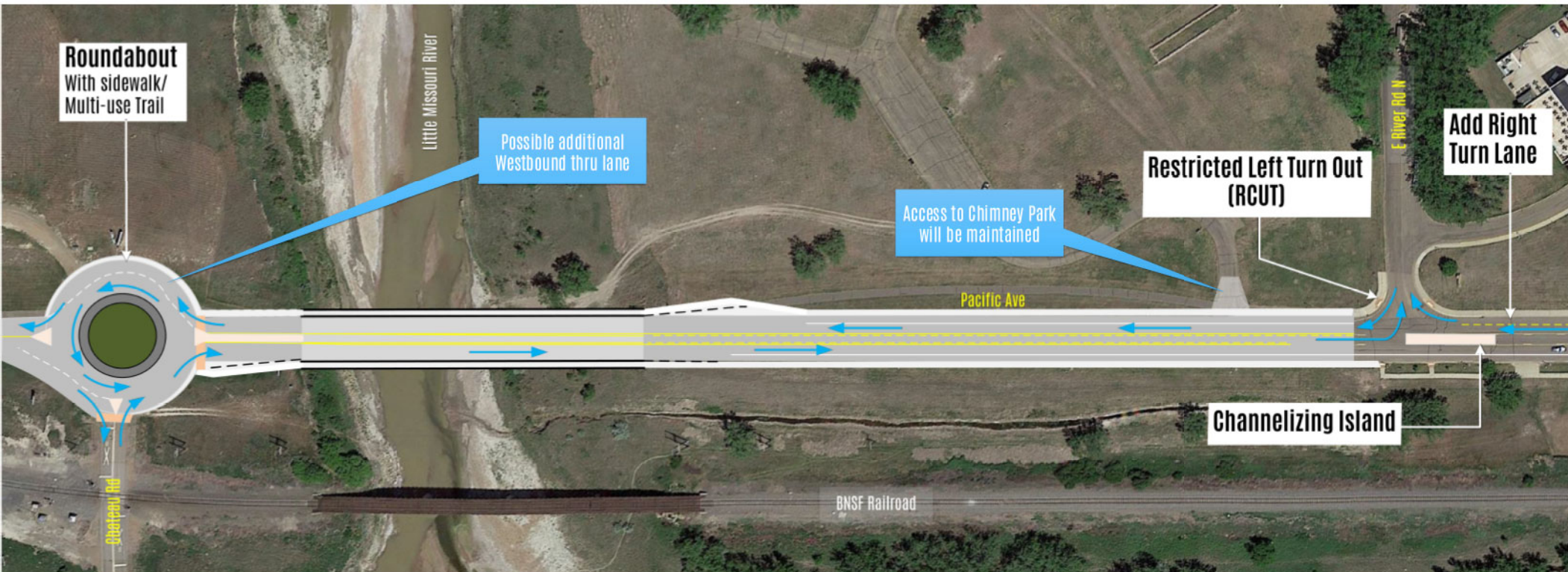
- Does not meet Purpose & Need
- Failed long-term function standards
- Traffic stacking to turn onto Pacific Ave will increase



INTERSECTION IMPROVEMENTS

ALTERNATIVE 2 - CHATEAU RD ROUNDABOUT

Note: This alternative also shows the Pacific Ave Cross Section base improvement from E River Rd N to Chateau Rd.



SAFETY

ACCESSIBILITY

- Pedestrians
- Bicyclists
- Vehicles
- Goods & Services
- Businesses
- Parking

BALANCE

ADVANTAGES:

- Improved traffic operations
- Multiple lanes to maintain traffic flow

DISADVANTAGES:

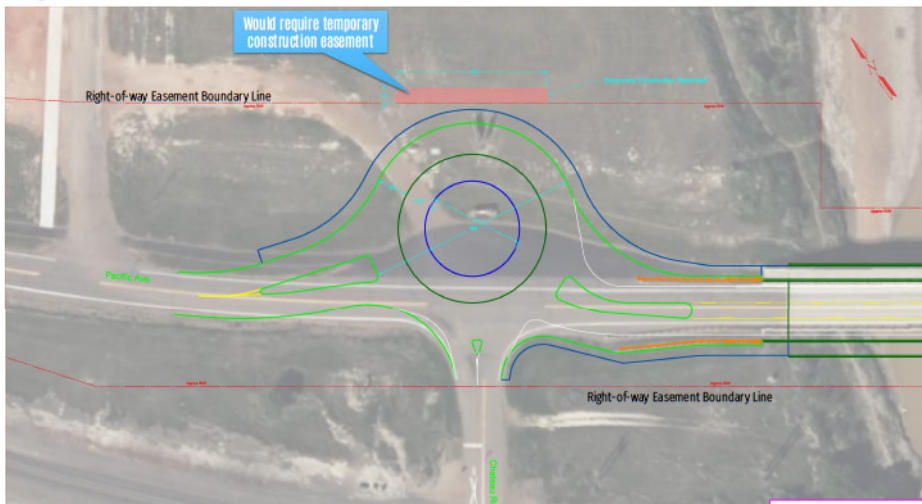
- Increased Maintenance Costs
- Impacts to railroad property at Chateau Rd



INTERSECTION IMPROVEMENTS

ALTERNATIVE 2 - CHATEAU RD ROUNDABOUT

Option 1 - One Lane Roundabout*



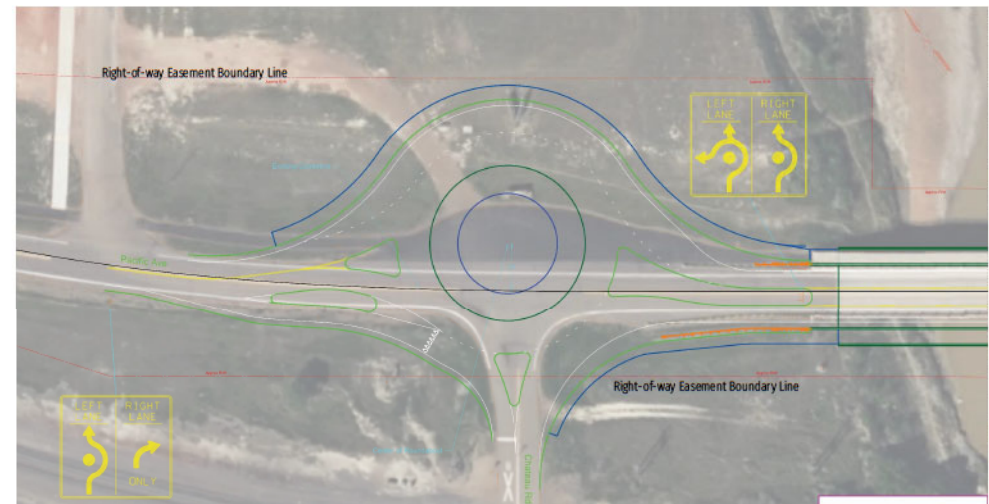
ADVANTAGES:

- Reduces left turn stacking at E River Road N
- All improvements inside existing right-of-way (easement)

DISADVANTAGES:

- Indirect traffic flow

Option 2 - Two Lane Roundabout*



ADVANTAGES:

- Reduces left turn stacking at E River Road N
- Eliminates main traffic flow delays when trains come through

DISADVANTAGES:

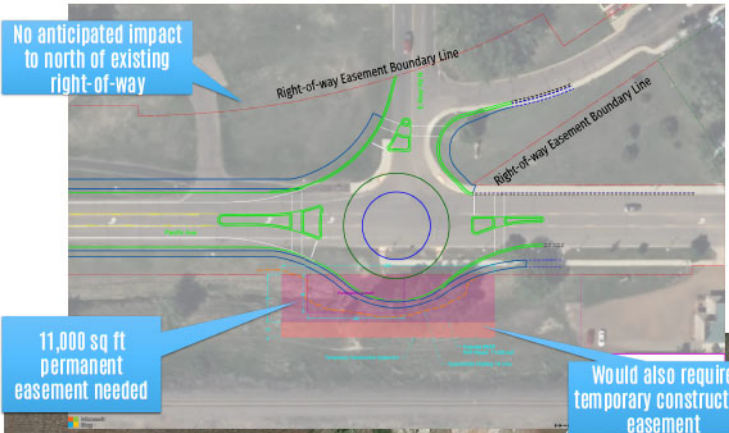
- Impact to BNSF Railroad Property

***Note: Roundabout location and orientation to be further refined as part of final design.**

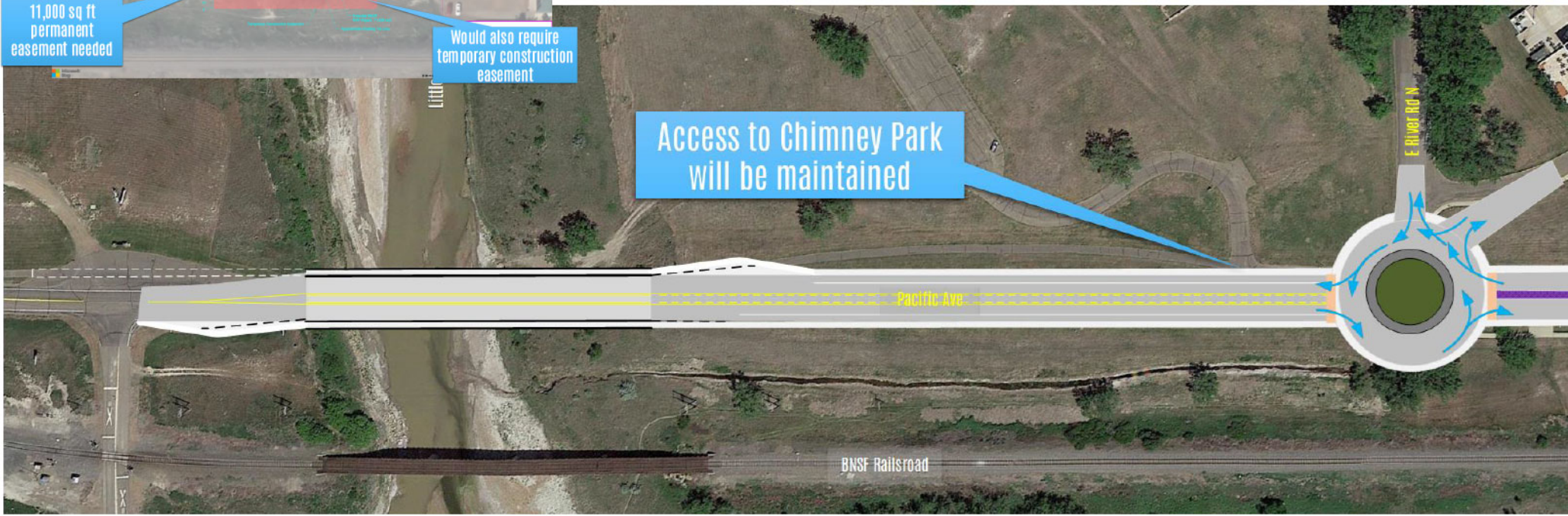


INTERSECTION IMPROVEMENTS

ALTERNATIVE 3 - ROUNDABOUT AT E RIVER RD N



Note: This alternative also shows the Pacific Ave Cross Section base improvement from E River Rd N to Chateau Rd.



ADVANTAGES:

- Improved future traffic operations
- Reduced intersection conflicts – safety enhancement

DISADVANTAGES:

- Impact to BNSF railroad property
- Change in Access to National Park / Need for Entrance Station Relocation



AESTHETIC TREATMENTS WAYFINDING/INTERSECTION ELEMENTS

Wayfinding Examples



- Opportunity to provide assistance and direction to visitors in finding parking, historical sites, etc. through Medora
- Directional signage could provide notification to RV/ Large Vehicle drivers of accessible/ convenient parking near Chimney Park along Pacific Avenue

Directional Signs Examples



Vehicular Directional

Pedestrian Directional

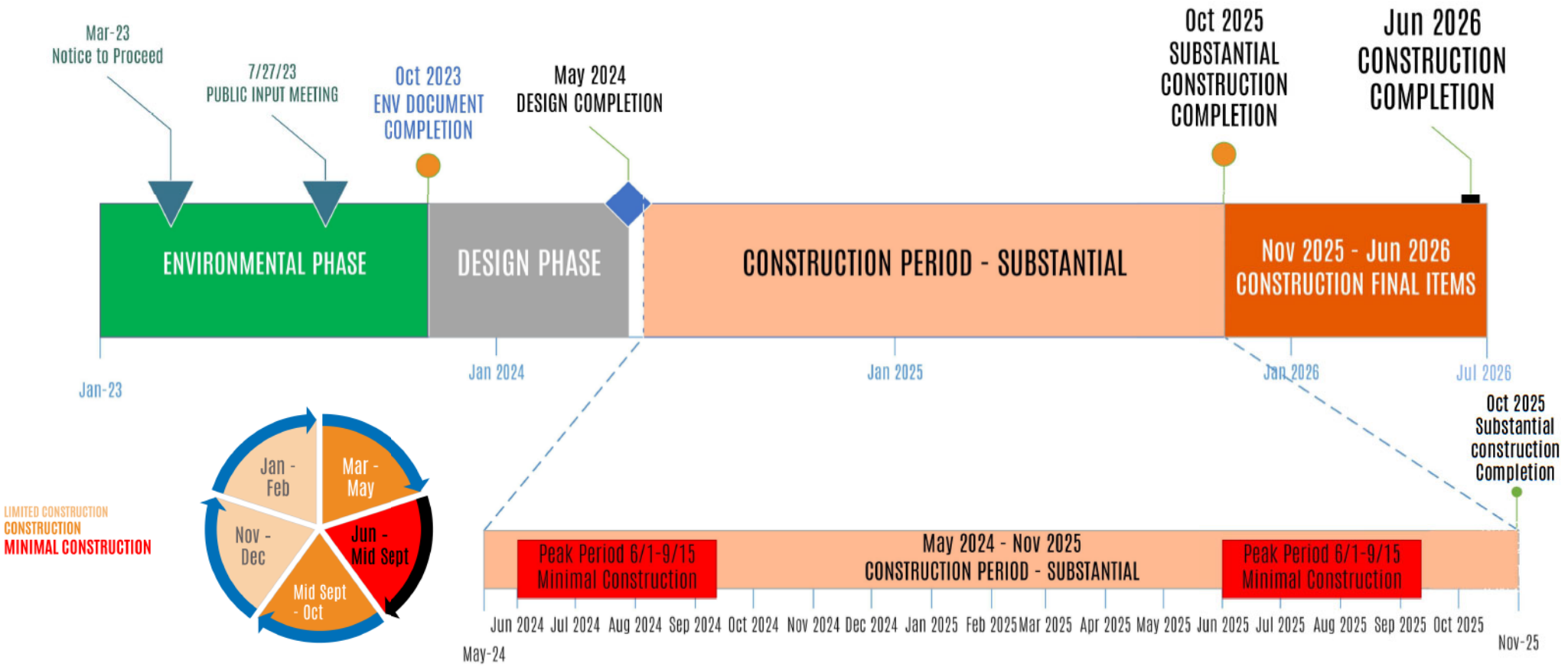


Intersection Example Elements



CONSTRUCTION TIMING

Design focus on mitigating construction impacts during peak season



INPUT & COMMUNICATIONS

WE WANT YOUR INPUT

Fill out a comment form here or email written comments to comments@civilscience.com with “Public Input” in the subject line

NDDOT CONSULTANT:
Civil Science Inc.,
Kyle J. Comer, PE Project Manager

NDDOT PROJECT LIAISON:
Chad Frisinger, PE

ONGOING PROJECT INFORMATION:
dot.nd.gov/MedoraBusinessLoop



Stormwater and the Construction Industry

Protect Natural Features



- Minimize clearing.
- Minimize the amount of exposed soil.
- Identify and protect areas where existing vegetation, such as trees, will not be disturbed by construction activity.
- Protect streams, stream buffers, wild woodlands, wetlands, or other sensitive areas from any disturbance or construction activity by fencing or otherwise clearly marking these areas.

Construction Phasing



- Address planning and zoning to ensure proper implementation of the BMPs.
- Sequence construction activities so that the soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Install key sediment control practices before site grading begins.
- Schedule site stabilization activities, such as landscaping, to be completed immediately after the land has been graded to its final contour.

Vegetative Buffers



- Protect and install vegetative buffers along waterbodies to slow and filter stormwater runoff.
- Maintain buffers by mowing or replanting periodically to ensure their effectiveness.

Site Stabilization



- Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed.

Silt Fencing



- Inspect and maintain silt fences after each rainstorm.
- Make sure the bottom of the silt fence is buried in the ground.
- Securely attach the material to the stakes.
- Don't place silt fences in the middle of a waterway or use them as a check dam.
- Make sure stormwater is not flowing around the silt fence.

Construction Entrances



- Remove mud and dirt from the tires of construction vehicles before they enter a paved roadway.
- Properly size entrance BMPs for all anticipated vehicles.
- Make sure that the construction entrance does not become buried in soil.

Slopes



- Rough grade or terrace slopes.
- Break up long slopes with sediment barriers, or under drains, or divert stormwater away from slopes.

Dirt Stockpiles



- Cover or seed all dirt stockpiles.

Storm Drain Inlet Protection



- Use rock or other appropriate material to cover the storm drain inlet to filter out trash and debris.
- Make sure the rock size is appropriate (usually 1 to 2 inches in diameter).
- If you use inlet filters, maintain them regularly.

Maintain your BMPs!

www.epa.gov/npdes/menuofbmps

Stormwater and the Construction Industry

Planning and Implementing Erosion and Sediment Control Practices

In the construction industry is a critical participant in the nation's effort to protect streams, creeks, lakes, wetlands, and oceans. Through the use of best management practices (BMPs), construction site operators can help address erosion and sedimentation.

An operator from one construction site might pollute his sediment, debris, and chemicals. High volumes of stormwater can cause serious bank erosion, and destroy downstream aquatic habitat. Preventing soil erosion and sedimentation is an important responsibility at all construction sites.

In addition to the environmental impacts, uncontrolled erosion can have a significant financial impact on a construction project. It costs money and time to repair gulches, replace vegetation, clean sediment-choked streams, and restore property. BMPs and sediment control practices can help protect a property or to natural resources.

Best Management Practices (BMP)
 A BMP is a method used to prevent or minimize erosion and the discharge of pollutants, including sediment, into local waterbodies. It means, in practice, the development and implementation of a BMP is a written plan or a set of instructions that describe what to do to control erosion and sedimentation at a site.

Operator
 An operator is someone who has control over and the ability to modify construction plans and specifications for a project, permit, or site.

Operator who has control over the development and implementation of a site-specific plan (operator/contractor) that an agency is responsible for is the permit applicant, the permit holder, or the permittee. The operator is responsible for ensuring that the operator meets permit and permit conditions during all stages of a project.

Third party
 A third party is someone who is not the permit applicant or permit holder and does not have the authority to modify the permit or permit conditions.

So what's being done about polluted runoff?
 The Clean Water Act includes the National Pollution Discharge Elimination System (NPDES) permitting program. As of January 2003, 41 states and territories are authorized to issue NPDES construction permits. If your state isn't authorized to issue NPDES construction permits, you'll need to get NPDES construction permits from the state that is. You'll need to get NPDES construction permits from the state that is. You'll need to get NPDES construction permits from the state that is.

The NPDES construction permit program includes:

- Develop and implement a stormwater pollution prevention plan
- Submit a permit application or notice of intent (NOI)
- Comply with the permit, including maintaining BMPs and reporting the site

Under the NPDES permit, construction activities that disturb 1 or more acres are required to obtain stormwater permit coverage. States have different rules for the point that construction operators must develop, such as:

- Increase permit application
- Increase permit coverage
- Increase permit coverage
- Increase permit coverage
- Increase permit coverage
- Increase permit coverage

The permit or operator of the construction site is responsible for developing:

- A written plan of construction site erosion and sediment control practices, including BMPs, and implementing the plan at the end of the construction activity.

Determine your obligation
 All construction activity that disturbs 1 or more acres of land, as well as activity that disturbs less than 1 acre but is part of a larger construction plan, requires permit coverage.

Read and understand your stormwater permit requirements
 Get a copy of the permit for your construction project and a permit application (for activity that disturbs less than one acre or RPA permit application).

Drawing a Plan
 Make sure you are realistic when you draw your Plan. However, you should keep the Plan on site. If it's not on site, you might not have a copy of it when you need it. You should keep the Plan on site.

Apply for permit coverage
 Once you understand your permit requirements and have developed a Plan, you can submit a stormwater permit application for activity that disturbs 1 or more acres of land. You should submit your application to the state that is. You should submit your application to the state that is.

Approved to implement the BMP in your Plan before construction begins. Ensure that BMPs are properly installed, and upgrade and repair them as necessary.

Developing and Implementing a Plan

Each site has a Plan that includes erosion and sediment control and pollution prevention BMPs. These BMPs are based on:

- Review and control water BMPs in place and the area is generally undisturbed
- Review permit requirements for the construction site

Site Assessment

1. **Site Evaluation and Design Development**
 - Collect site information
 - Develop site plan design
 - Prepare pollution prevention site map
2. **Assessment**
 - Measure the site area
 - Determine the drainage areas
 - Calculate the runoff coefficient
3. **Control Selection and Design**
 - Review and incorporate state or local requirements
 - Select erosion and sediment controls
 - Select other controls
 - Develop construction management controls
 - Include the location of controls on the site map
 - Prepare an inspection and maintenance plan
 - Coordinate construction with construction activity
 - Prepare schedule of major activities

4. Certification and Notification

- Certify the Plan
- Submit permit application or notice of intent

Erosion and sediment control practices are only as good as their installation and maintenance.

5. Implementing and Maintaining a Plan

- Implement controls
- Inspect and maintain controls
- Update/change the Plan

6. Completing the Project: Final Stabilization and Termination of the Permit

- Final stabilization
- Notice of Termination
- Record retention

Other BMPs and Activities to Control Polluted Runoff

Other BMPs and activities to control polluted runoff include:

- Backfill and install erosion control blankets
- Use mulch or vegetation to stabilize exposed soil
- Use silt fences
- Use sediment basins
- Use check dams
- Use silt fences
- Use sediment basins
- Use check dams

Implementation Checklist

- Develop and implement a stormwater pollution prevention plan
- Submit a permit application or notice of intent (NOI)
- Comply with the permit, including maintaining BMPs and reporting the site
- Obtain permit coverage
- Implement controls
- Inspect and maintain controls
- Update/change the Plan
- Final stabilization
- Notice of Termination
- Record retention

For more information visit:

www.epa.gov/npdes/stormwater
www.dot.nd.gov/divisions/environmental/storm-water/storm-water-management.htm

