Public Open House
June 1, 2017
WELCOME!

Pierre US-14 (Euclid Ave.) Reconstruction Planning Study
Project No. NH 0014(185)229, PCN 026Z

The goals of today’s meeting are to:
- Share what we’ve done so far
- Answer your questions
- Get your input
Study Area

LEGEND
- Study Area
- State Capitol
- KCPE Railroad
- Hilgar's Gulch Bike Trail

VICINITY MAP

STUDY AREA

Project Study
End Limits

Project Study
Begin Limits
Project Purpose & Need

Purpose of the Project:
- Maintain the pavement infrastructure
- Increase the safety for all road users
- Reduce driver delay
Need for the Project:
- Existing asphalt surface is 21 years old
- Underlying pavement and storm sewers are 50-86 years old
- Crash Issues
- Lack of ADA accessibility
## Project Background

### Capacity vs. Traffic Volumes

<table>
<thead>
<tr>
<th>Roadway Type</th>
<th>Design Capacity (# of Vehicles per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Lane</td>
<td>11,200</td>
</tr>
<tr>
<td>4-Lane</td>
<td>18,700</td>
</tr>
<tr>
<td>5-Lane</td>
<td>24,700</td>
</tr>
</tbody>
</table>

**Legend**
- XXX = 2016 Average Daily Traffic
- XXXX = 2022 Average Daily Traffic
- XXXXX = 2042 Average Daily Traffic
Benefits of 3 Lanes vs. 4 Lanes

Vehicle Safety
- Removes left turners from thru lane
- Reduces number of potential crash points
- Calms traffic
Benefits of 3 Lanes vs. 4 Lanes

Pedestrian Safety & Comfort

- Fewer lanes to cross
- Less traffic to watch
- Increased buffer – sidewalk to traffic
Benefits of 3 Lanes vs. 4 Lanes

Examples of three lane concept on similar streets:
- US-12 in Milbank
- Melgaard Road in Aberdeen
- Roosevelt Street in Aberdeen
- 18th Street in Sioux Falls (in front of Sanford Hospital)
Safety Analysis

LEGEND
- Incapacitating Injury
- Non-Incapacitating Injury
- Possible Injury
- Property Damage Only
(no fatalities)

NOTE:
21/Yr - See Collision Diagrams

RCPE Railroad

Project Study End Limits

FELSBURG HOLT & ULLEVIG
### Safety Analysis

<table>
<thead>
<tr>
<th>Crash Pattern</th>
<th>Sioux Ave.</th>
<th>RCPE Bridge</th>
<th>All Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Angle</td>
<td>3</td>
<td></td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Left Turn Leaving</td>
<td>6</td>
<td></td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Rear-End (thru)</td>
<td>4</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Sideswipe</td>
<td></td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Fixed Object</td>
<td></td>
<td>22</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Parked Vehicle</td>
<td></td>
<td>4</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>3</td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Animal</td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>22</strong></td>
<td><strong>42</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

Correctable converting from 3-lanes to 4-lanes = 19
### Operational Analysis
### Levels of Service Concept

<table>
<thead>
<tr>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
</tbody>
</table>

![Images of different traffic conditions corresponding to Levels A to F]
Operational Analysis
Levels of Service 2016

Four Lanes

Three Lanes
Operational Analysis
Levels of Service 2042

Four Lanes

Three Lanes
Truck Movements

Existing Truck Over Height Warning Signs
Truck Movements

Existing RCPE Bridge & Truck Over Height Warning Signs
RCPE Bridge Clearance

Potential RCPE Bridge Raising- Estimated Cost _ $1,283,000
Projected Road User Benefits in Crash Savings _ $1,231,000
Alternative Concepts
North Area

EXISTING 4-LANE SECTION - 68'
LOOKING NORTHBOUND AT EUCLID AVENUE & OAK STREET
PROPOSED 3-LANE SECTION - 64'
ALTERNATIVE 3 (50' AT INTERSECTIONS W/ BULB-OUTS EACH SIDE)
### Alternative Concepts

#### Benefit Cost Analysis

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>LANES</th>
<th>STREET WIDTH (FEET)</th>
<th>PARKING</th>
<th>BIKE PROVISIONS</th>
<th>COST ESTIMATE</th>
<th>BENEFITS CRASH REDUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
<td>4</td>
<td>68</td>
<td>Both Sides</td>
<td>None</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>64</td>
<td>Both Sides</td>
<td>None</td>
<td>$8,453,000</td>
<td>-$225,500</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>68</td>
<td>One Side</td>
<td>None</td>
<td>$8,720,000</td>
<td>-$73,500</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>64</td>
<td>Both Sides</td>
<td>Added Width</td>
<td>$8,453,000</td>
<td>$2,819,000</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>54</td>
<td>Both Sides</td>
<td>Trail East Side</td>
<td>$8,033,000</td>
<td>$2,819,000</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>54</td>
<td>Both Sides</td>
<td>None</td>
<td>$7,567,000</td>
<td>$2,819,000</td>
</tr>
</tbody>
</table>
Pedestrian Crossing
Euclid at 5th Street

Potential Crossing Improvements:
- Install a raised center median refuge
- Install additional signs & beacons
Roundabouts increases safety by:

- Reducing Vehicle Conflict Points from 32 to 8
- Eliminating potential for most severe crashes
  - Head-on
  - Right angle
  - Left turns
Potential Roundabout
Euclid at 4th Street

Benefits of 4th Street Roundabout:
- Visual gateway to lower speed urban area
- Reduce delay to 4th Street traffic
- Benefits in less delay - $1,500,000
- Projected cost - $415,000
- Benefit / Cost Ratio - 3.61
Roundabouts also increase safety:

- Reduce injury crashes 76%
- Reduce overall crashes by 35%
- Slower speeds for pedestrian crossings
Traffic Signal
Euclid at Elizabeth Street

Existing Traffic Signal Does Not meet:
- National standards for need
- National standards for ADA
Environmental Investigations

Studies completed or underway:

- Environmental Justice
- Wetlands and waterways
- Bicycles, pedestrians, and recreational
- Social economic resources
- Noise analysis
- Regulated hazardous materials
- Water quality
- Threatened & Endangered Species
Environmental Investigations

- Section 4(f) & 6(f) resources
- Cultural resources:
  - Archeological
  - Historic structures
  - Historic districts
  - Retaining walls
Where do we go from here?

Next Steps:
- Review public comments
- Screen down to 1-3 build alternatives
- Prepare concept plans for entire corridor
- Refine cost estimates
- Evaluate environmental impacts
- Present results at a future public meeting
Your Input is Critical

Project No. NH 0014(185) 229 PCN026Z
INFORMATION OPEN HOUSE
June 1, 2017 - Pierre, South Dakota

We want to hear what you think! What concerns do you have along the study corridor? What should the study team consider regarding living, working, or travelling near US-14 (Euclid Ave)?

Please return to the sign-in table or send comments to the below contact by June 16, 2017:

Mail: Rick Haden, Project Manager
Felsburg Holt & Ullevig
321 S. 9th Street
Lincoln, NE 68508

E-mail: rick.haden@fhnueng.com
Phone: (402) 438-7530

Website: http://www.sddot.com/dot/publicmeetings/pubmeet_us14PierreSioux1804.aspx

Please identify any specific concerns or improvements that would be beneficial to include in the reconstruction of US-14 Euclid Avenue.

________________________________________________________________________________________

What alternative(s) would you recommend be dropped from further evaluation in planning for the future of US-14 Euclid?