
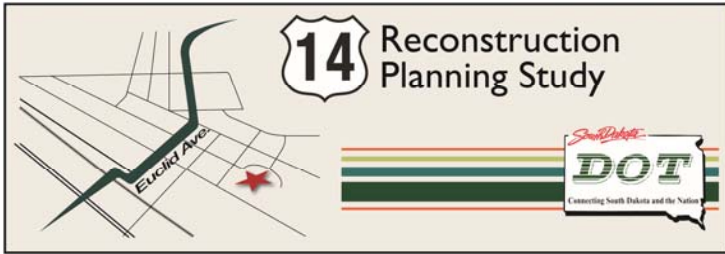


**14** Reconstruction  
Planning Study



# Public Open House June 1, 2017





# 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:

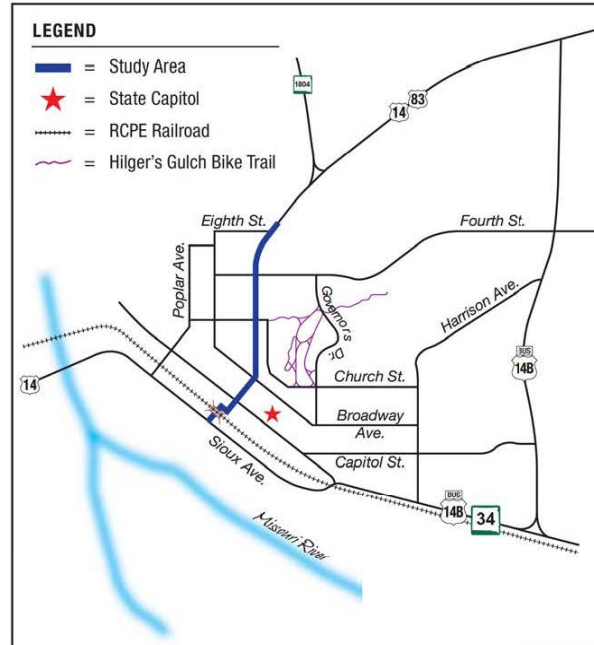
- Share what we've done so far
- Answer your questions
- Get your input

**14** Reconstruction Planning Study

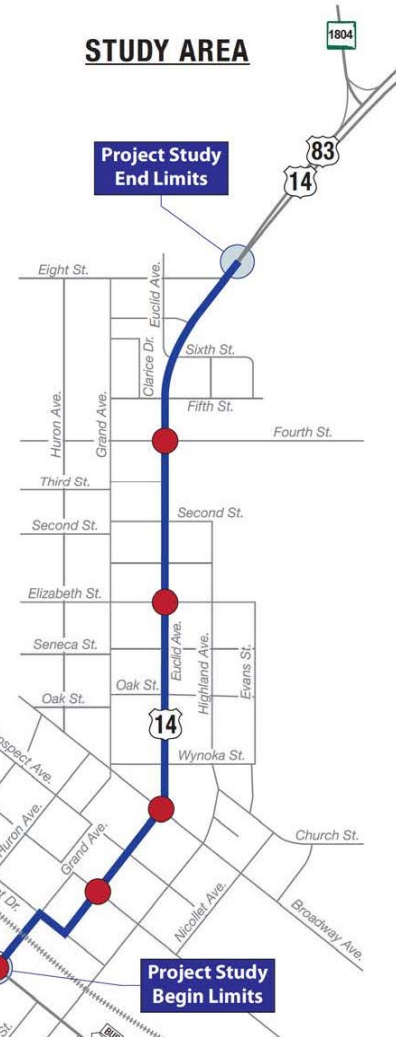
South Dakota DOT  
Connecting South Dakota and the Nation

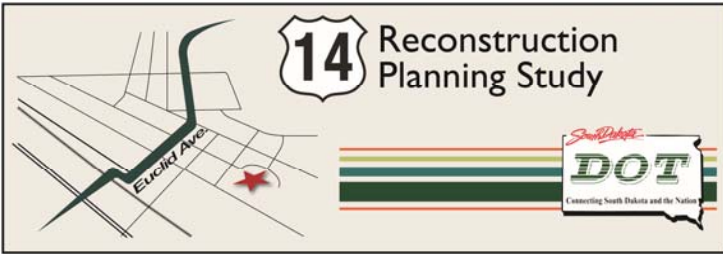
# Study Area

## VICINITY MAP



## STUDY AREA



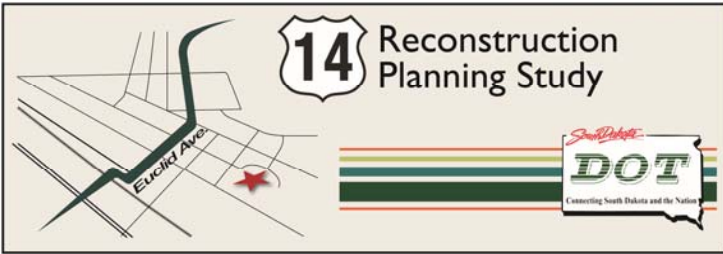


## Project Purpose & Need

### Purpose of the Project:

- Maintain the pavement infrastructure
- Increase the safety for all road users
- Reduce driver delay





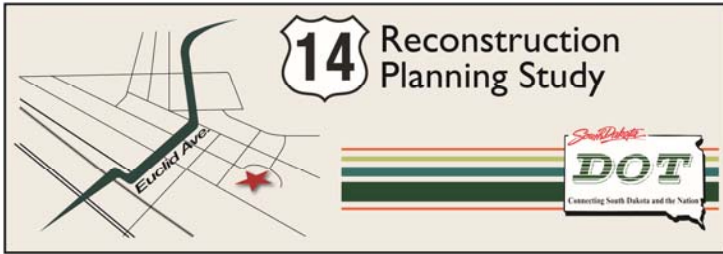
## Project Purpose & Need

### 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



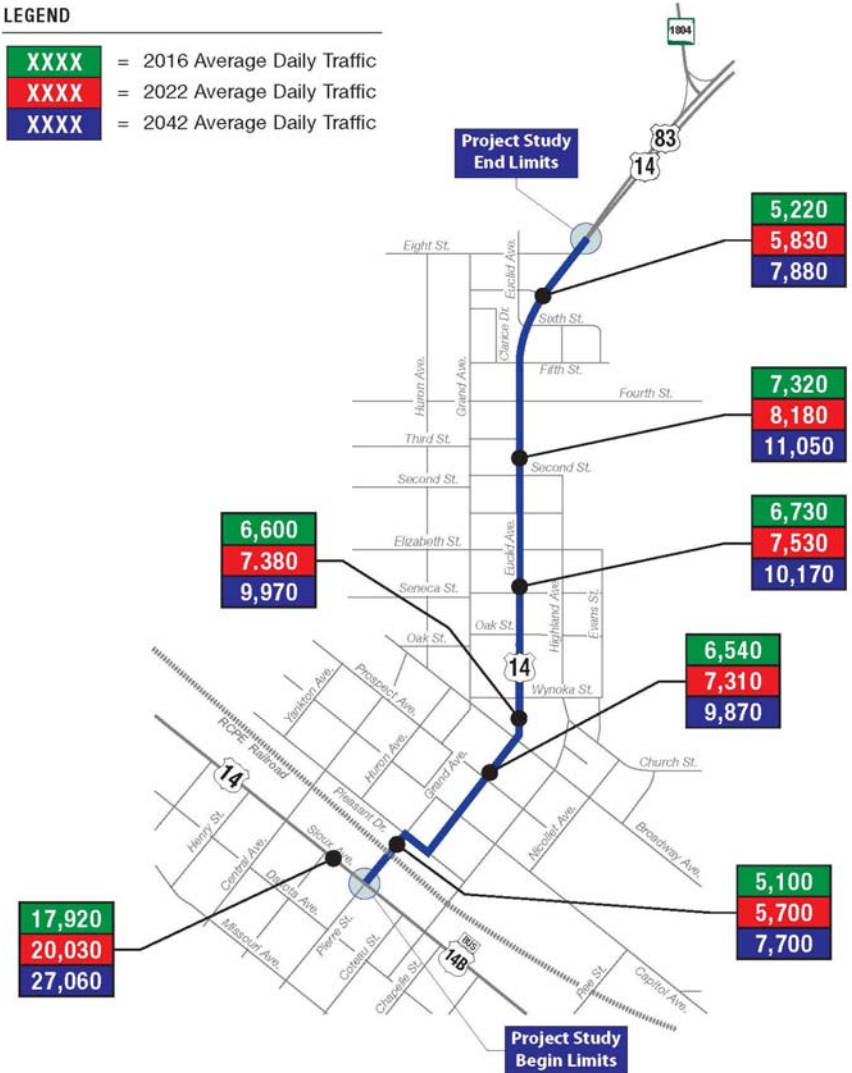
# Project Background Capacity vs. Traffic Volumes

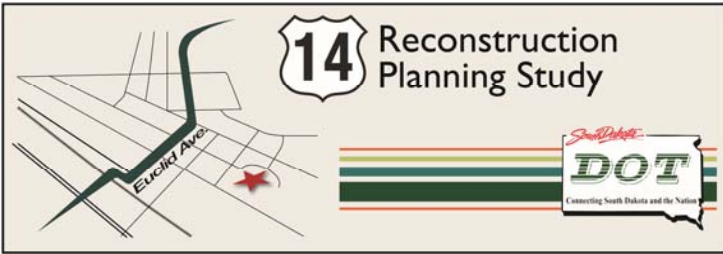


| Roadway Type | Design Capacity (# of Vehicles per day) |
|--------------|---|
| 3-Lane       | 11,200                                  |
| 4-Lane       | 18,700                                  |
| 5-Lane       | 24,700                                  |

## LEGEND

- XXXX = 2016 Average Daily Traffic
- XXXX = 2022 Average Daily Traffic
- XXXX = 2042 Average Daily Traffic



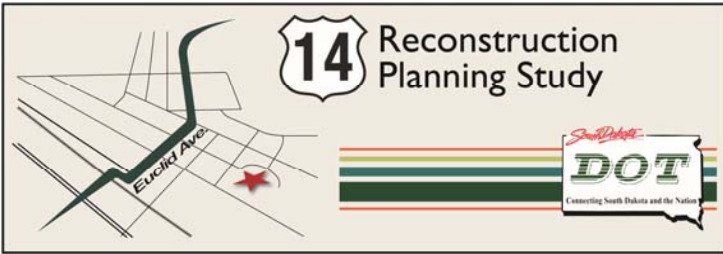


# Benefits of 3 Lanes vs. 4 Lanes

## Vehicle Safety

- Removes left turners from thru lane
- Reduces number of potential crash points
- Calms traffic





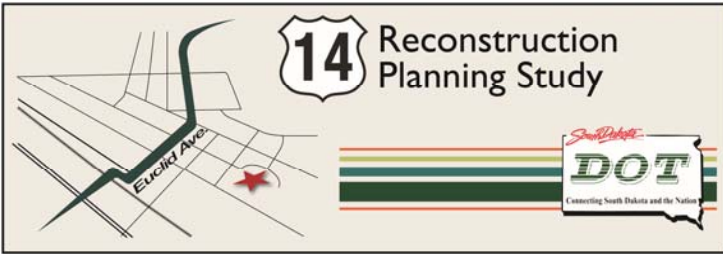
## Benefits of 3 Lanes vs. 4 Lanes

### 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
- 18<sup>th</sup> Street in Sioux Falls (in front of Sanford Hospital)

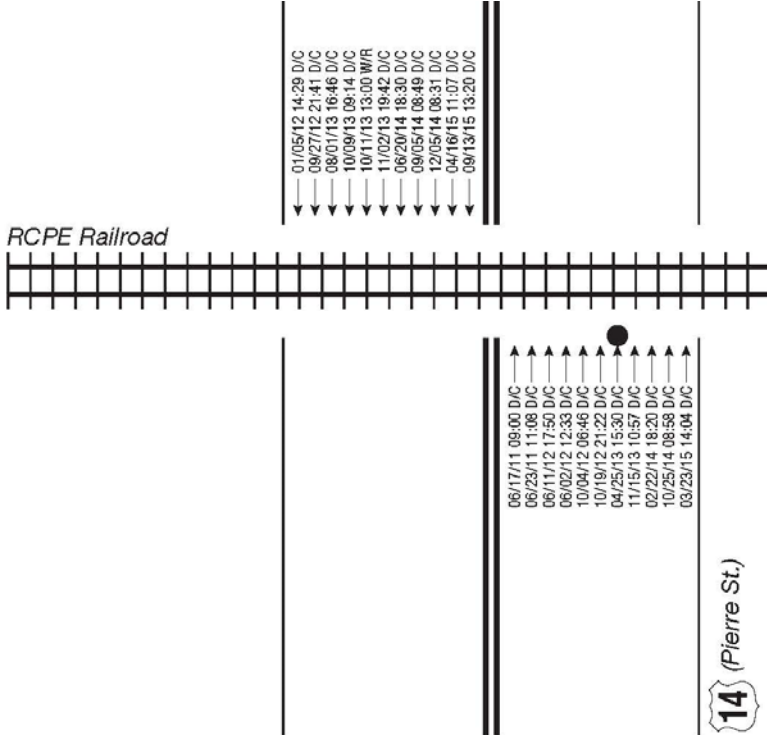




**14** Reconstruction Planning Study

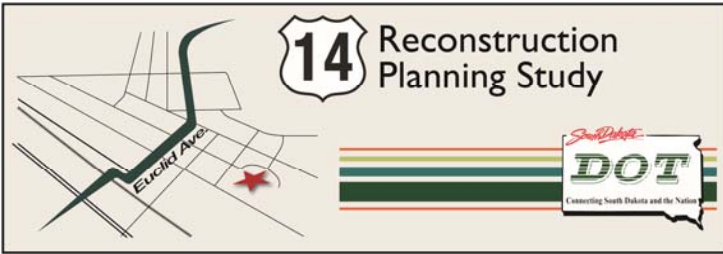


# Safety Analysis



**14** (Pierre St.)

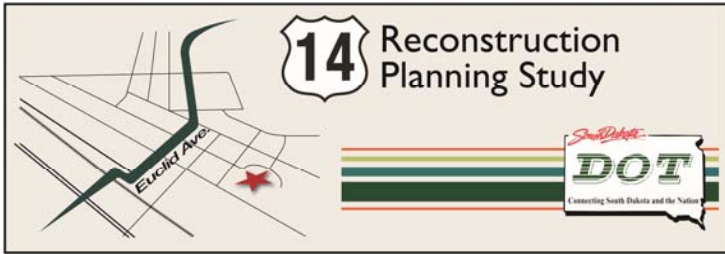




# Safety Analysis

| Crash Pattern     | Number of Crashes (5-years) |             |           | Total     |
|-------------------|-----------------------------|-------------|-----------|-----------|
|                   | Sioux Ave.                  | RCPE Bridge | All Other |           |
| Right Angle       | 3                           |             | 15        | 18        |
| Left Turn Leaving | 6                           |             | 15        | 21        |
| Rear-End (thru)   | 4                           |             | 1         | 5         |
| Sideswipe         |                             |             | 3         | 3         |
| Fixed Object      |                             | 22          | 1         | 23        |
| Parked Vehicle    |                             |             | 4         | 4         |
| Pedestrian        | 3                           |             | 1         | 4         |
| Animal            |                             |             | 2         | 2         |
| <b>Total</b>      | <b>16</b>                   | <b>22</b>   | <b>42</b> | <b>80</b> |

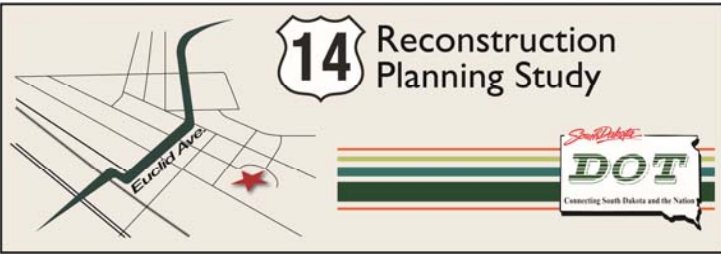
Correctable converting from 3-lanes to 4-lanes = 19



# Operational Analysis Levels of Service Concept

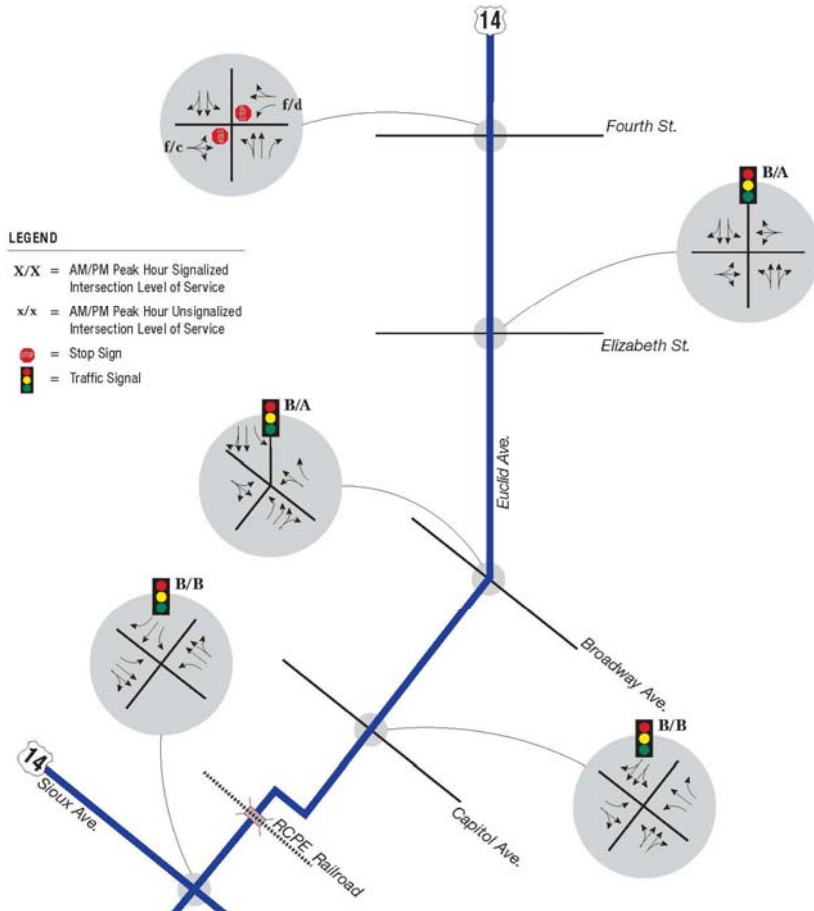
| Level of Service |
|------------------|
| A                |
| B                |
| C                |
| D                |
| E                |
| F                |



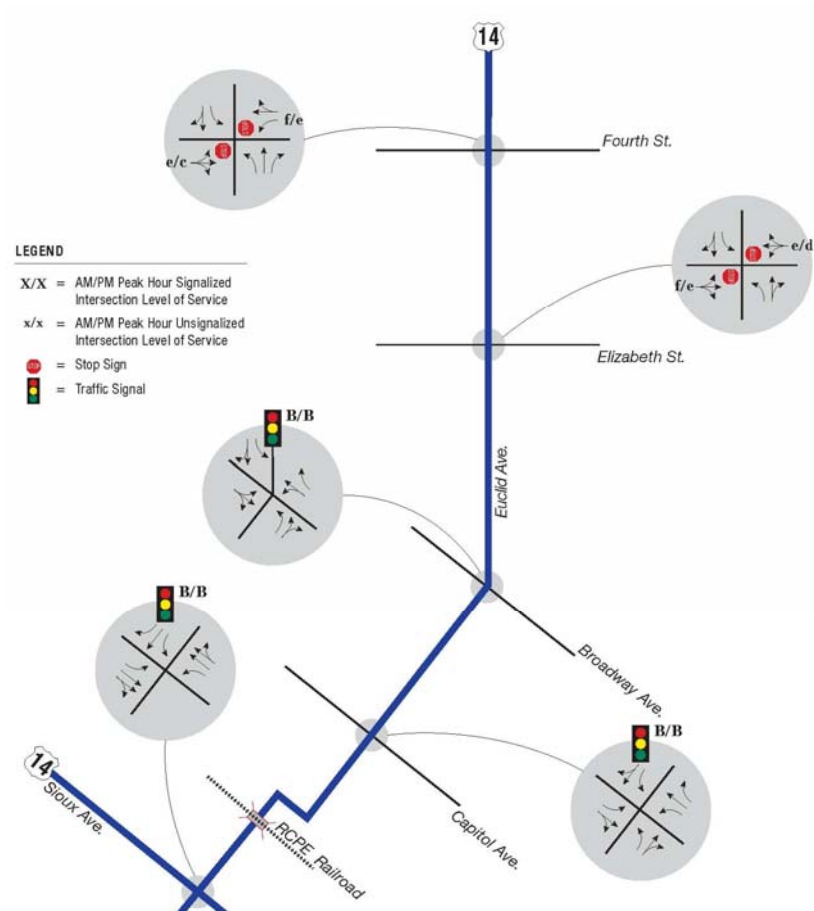


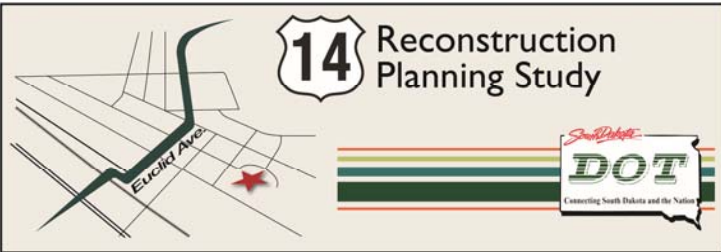
# Operational Analysis Levels of Service 2016

## Four Lanes



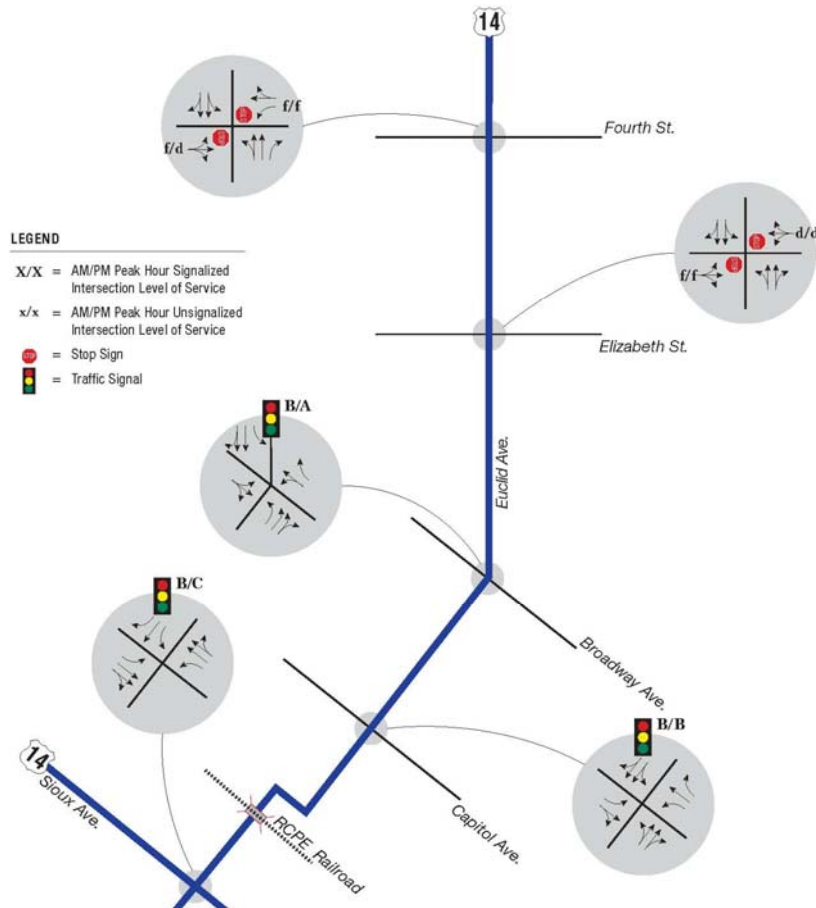
## Three Lanes



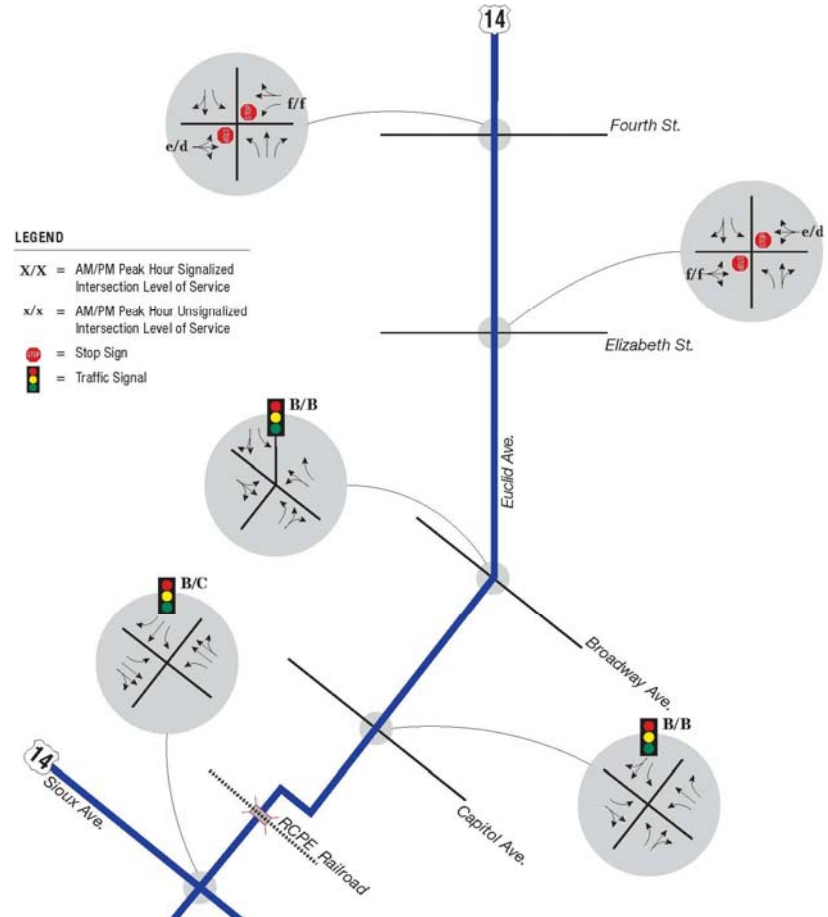


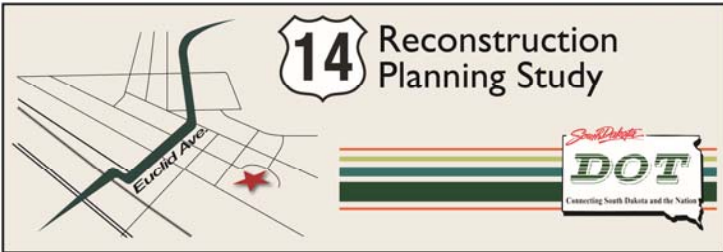
# Operational Analysis Levels of Service 2042

## Four Lanes



## Three Lanes



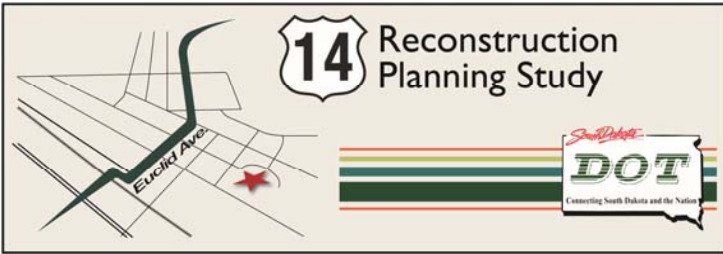


**14** Reconstruction Planning Study

# Truck Movements

## Existing Truck Over Height Warning Signs



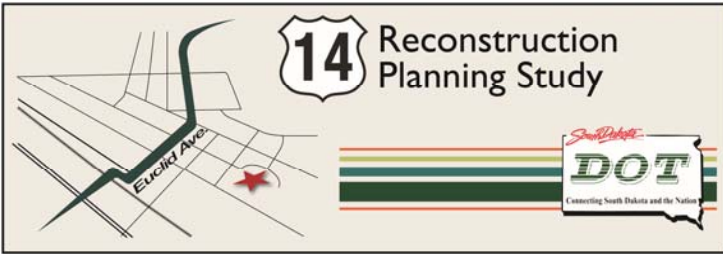


# Truck Movements

## 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





# Alternative Concepts North Area

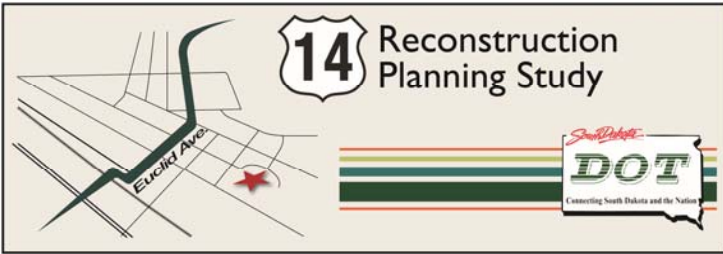
PROPOSED 3-LANE SECTION - 64'  
ALTERNATIVE 3 (50' AT INTERSECTIONS W/ BULB-OUTS EACH SIDE)





# Alternative Concepts Benefit Cost Analysis

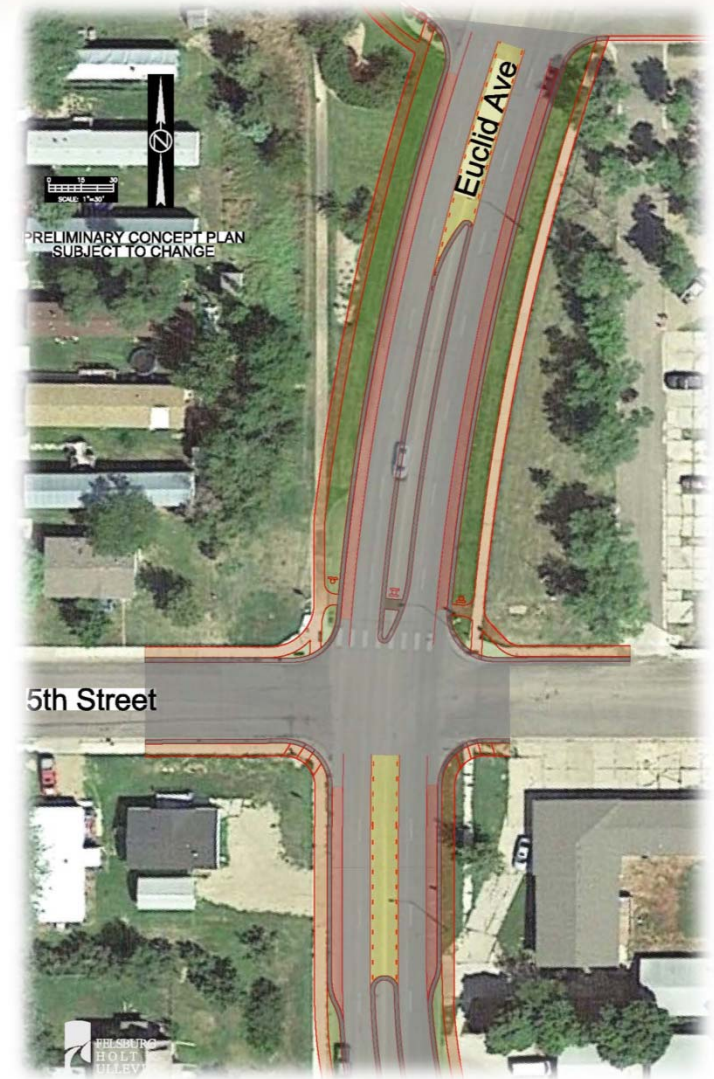
| ALTERNATIVE | LANES | STREET WIDTH (FEET) | PARKING    | BIKE PROVISIONS | COST ESTIMATE | BENEFITS CRASH REDUCTION |
|-------------|-------|---------------------|------------|-----------------|---------------|--------------------------|
| Existing    | 4     | 68                  | Both Sides | None            | N/A           | N/A                      |
| 1           | 4     | 64                  | Both Sides | None            | \$8,453,000   | -\$225,500               |
| 2           | 5     | 68                  | One Side   | None            | \$8,720,000   | -\$73,500                |
| 3           | 3     | 64                  | Both Sides | Added Width     | \$8,453,000   | \$2,819,000              |
| 4           | 3     | 54                  | Both Sides | Trail East Side | \$8,033,000   | \$2,819,000              |
| 5           | 3     | 54                  | Both Sides | None            | \$7,567,000   | \$2,819,000              |



# Pedestrian Crossing Euclid at 5<sup>th</sup> Street

## Potential Crossing Improvements:

- Install a raised center median refuge
- Install additional signs & beacons

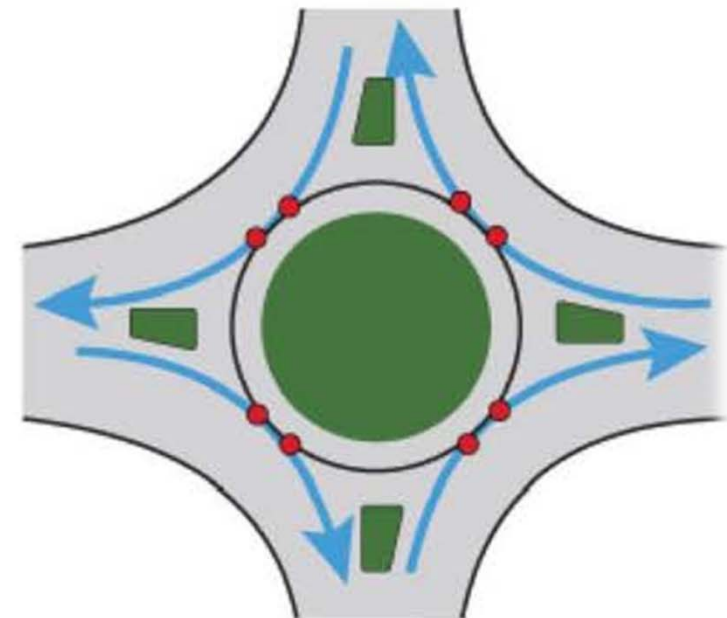
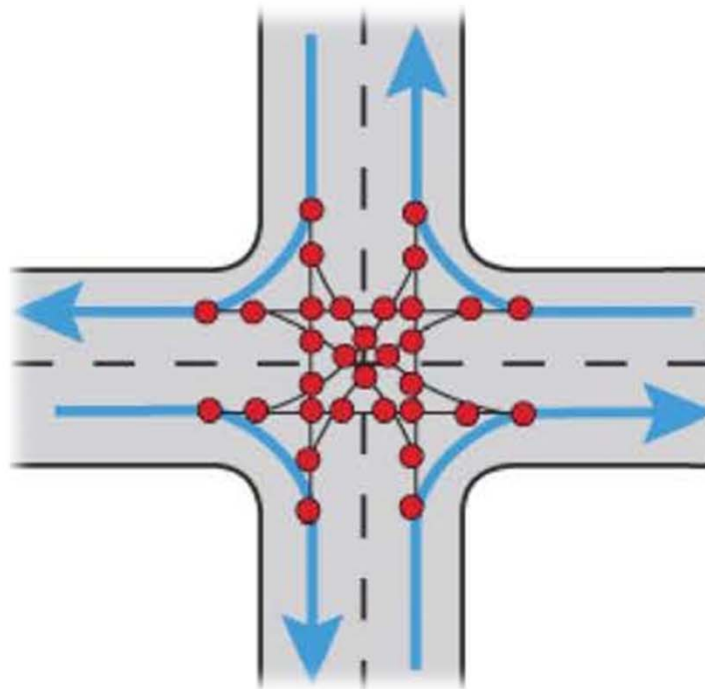


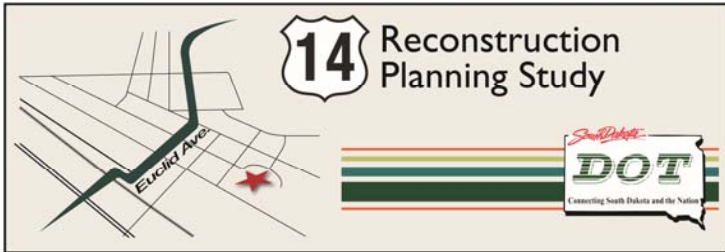


# Conventional Intersections vs. Roundabouts

Roundabouts increases safety by:

- Reducing Vehicle Conflict Points from 32 to 8
- Eliminating potential for most severe crashes
  - Head-on
  - Right angle
  - Left turns



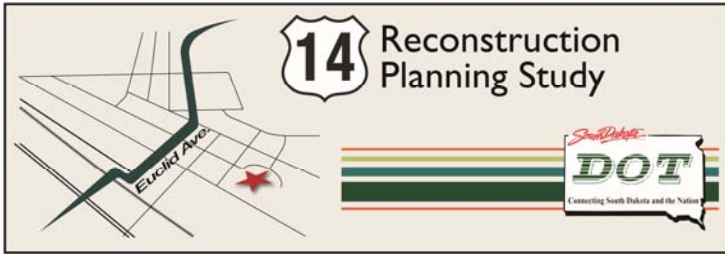


# Potential Roundabout Euclid at 4<sup>th</sup> Street

## Benefits of 4<sup>th</sup> Street Roundabout:

- Visual gateway to lower speed urban area
- Reduce delay to 4<sup>th</sup> Street traffic
- Benefits in less delay - \$1,500,000
- Projected cost - \$415,000
- Benefit / Cost Ratio - 3.61





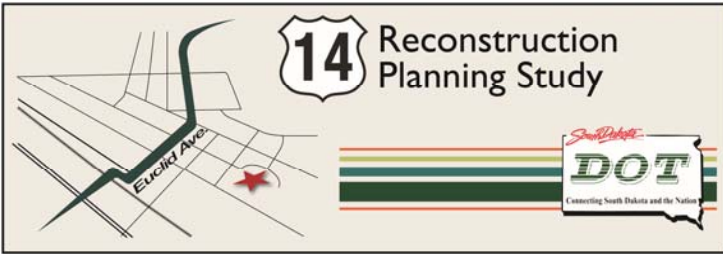
# Potential Roundabout Euclid at 4<sup>th</sup> Street

Roundabouts also increase safety:

- Reduce injury crashes 76%
- Reduce overall crashes by 35%
- Slower speeds for pedestrian crossings





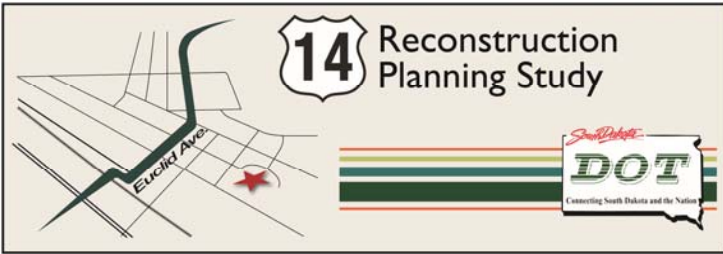


# Traffic Signal Euclid at Elizabeth Street

## Existing Traffic Signal Does Not meet:

- National standards for need
- National standards for ADA

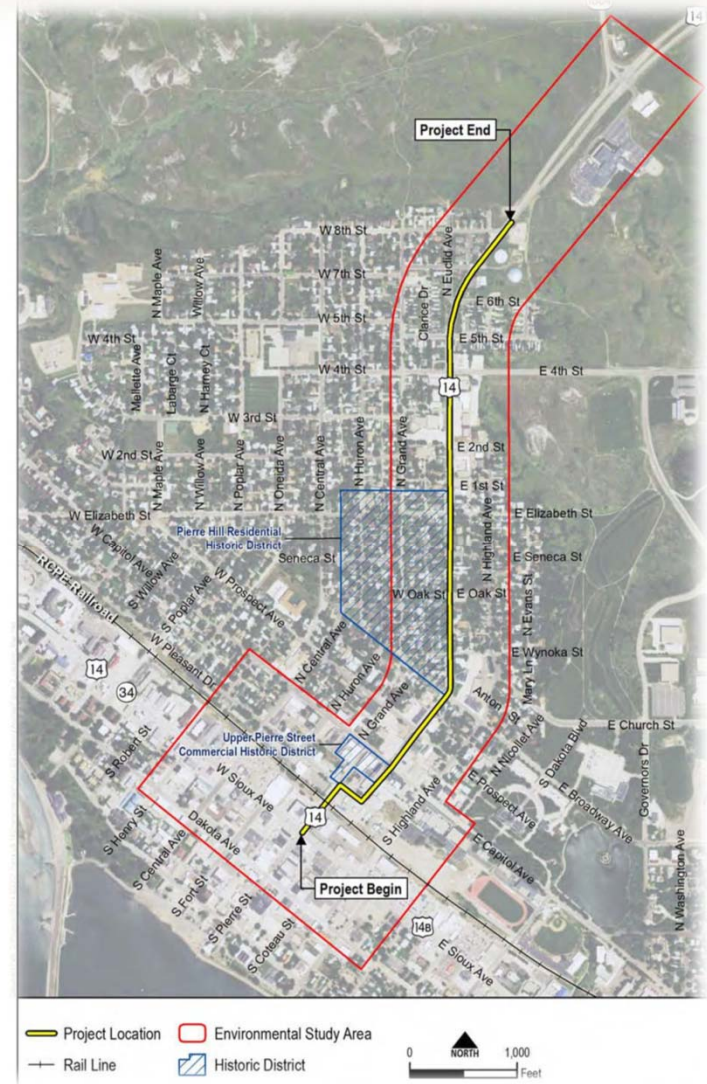


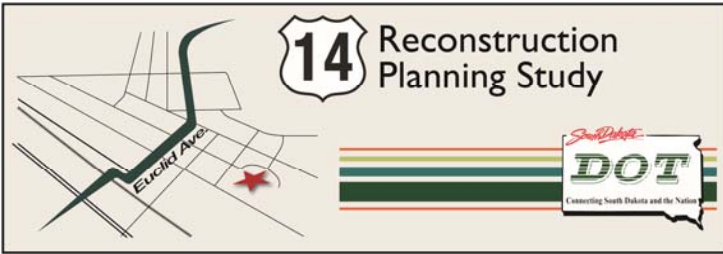


# Environmental Investigations

## 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

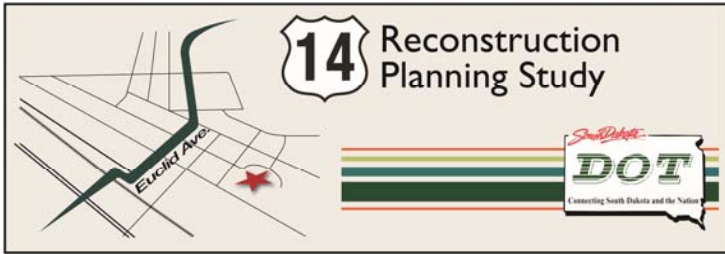




# Environmental Investigations

- Section 4(f) & 6(f) resources
- Cultural resources:
  - Archeological
  - Historic structures
  - Historic districts
  - Retaining walls



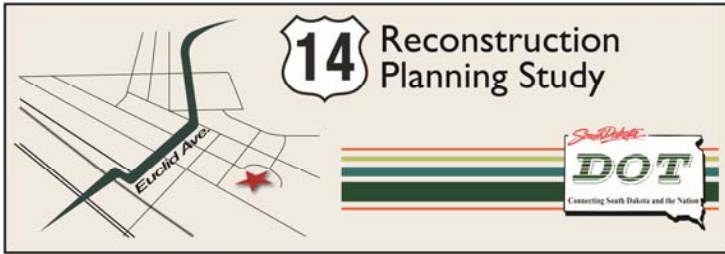


## Study Work Flow

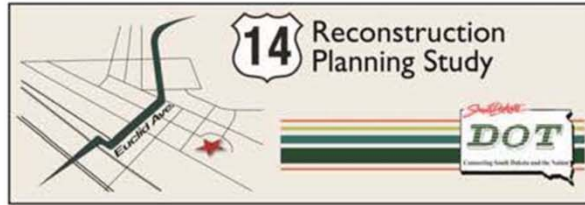
Where do we go from here?

### 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. 9<sup>th</sup> Street  
Lincoln, NE 68508

**E-mail:** [rick.haden@fhueng.com](mailto:rick.haden@fhueng.com)

**Phone:** (402) 438-7530

**Website:** [http://www.sddot.com/dot/publicmeetings/pubmeet\\_us14PierreSioux1804.aspx](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.

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