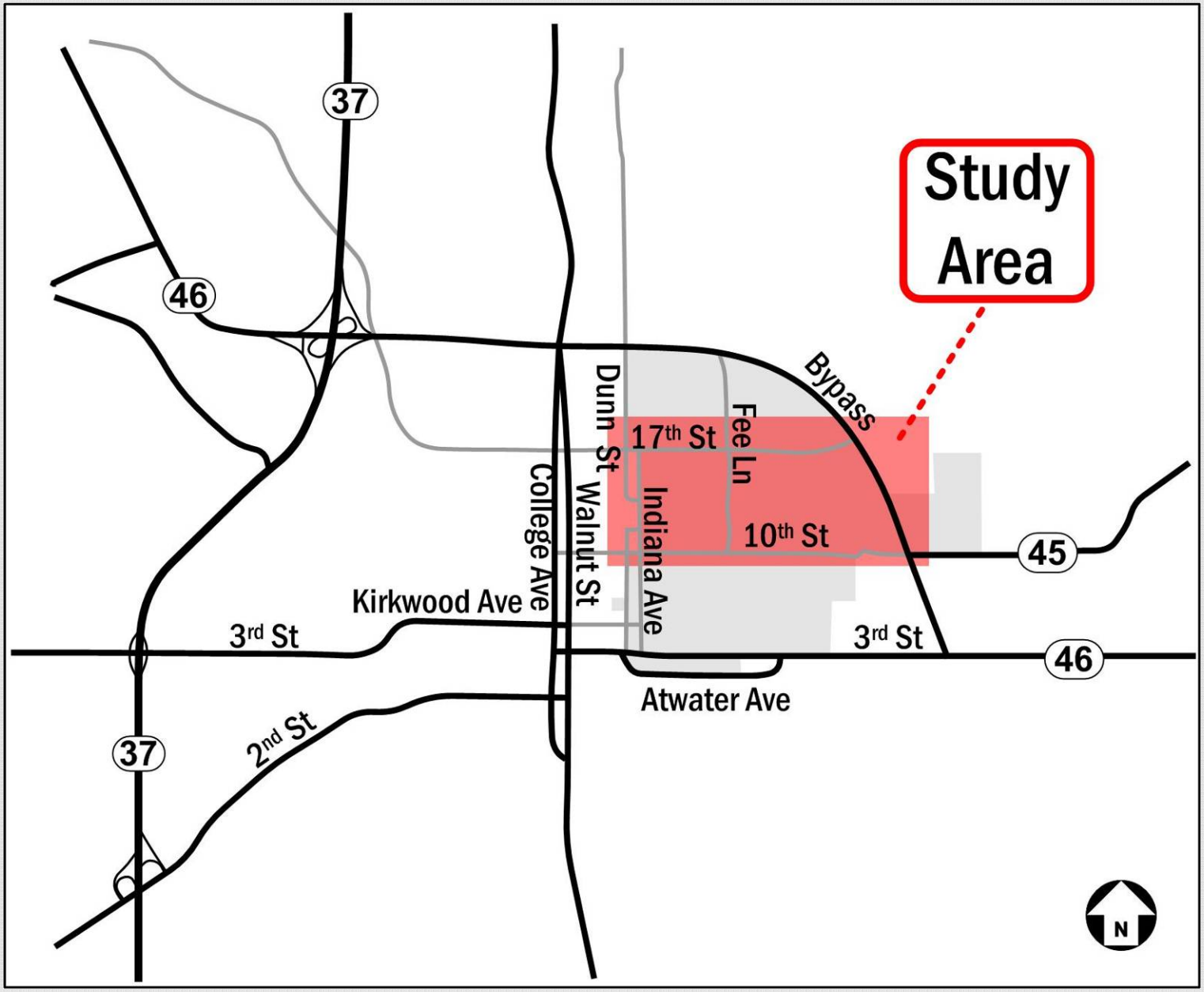
10th Street Mobility Study

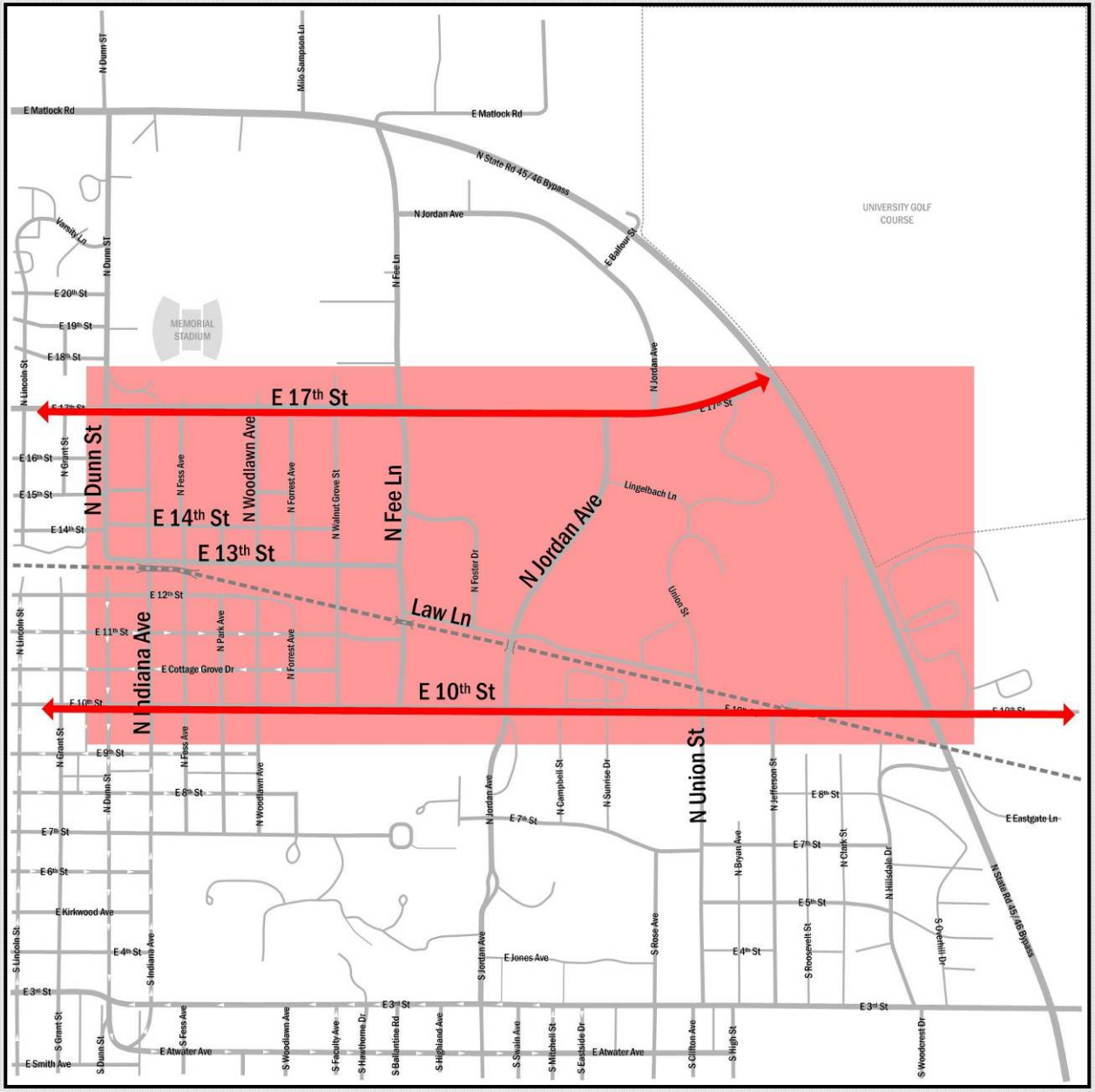
Final Presentation

3/11/10

Project History

- March 2009: Project Kick-off
- March-May 2009: Data Collection
- April 16, 2009: First public workshop held to get public input
- May-June 2009: Completed Existing Conditions Analysis
- June-August 2009: Alternatives developed and analyzed
- September 10, 2009: Second public workshop to review alternatives and gain input
- October 28, 2009: Workshop with City, MPO and IU Staff
- March 11, 2010: Presentation of findings
- April 2010: Final Report available


Study Area
37
46
Bypass
Dunn St
17th St
Fee Ln
College Ave
Walnut St
Indiana Ave
10th St
45
Kirkwood Ave
3rd St
3rd St
46
Atwater Ave
2nd St
37
N


E 17th St
E 14th St
E 13th St
E 10th St
N Dunn St
N Indiana Ave
N Woodlawn Ave
N Fee Ln
N Jordan Ave
Law Ln
N Union St
E Matlock Rd
N State Rd 45/46 Bypass
UNIVERSITY GOLF COURSE
MEMORIAL STADIUM
E Cottage Grove Dr
E Kirkwood Ave
E Jones Ave
E Atwater Ave
E Smith Ave
E Eastgate Ln
Lingelbach Ln
Union St
N Jordan Ave
N Fee Ln
N Dunn St
Milo Sampson Ln
Varsity Ln
E Balfour St
N Lincoln St
N Grant St
N Fess Ave
N Forrest Ave
N Walnut Grove St
N Park Ave
N Foster Dr
N Campbell St
N Sunrise Dr
N Jefferson St
N Bryan Ave
N Clark St
N Hillsdale Dr
S Lincoln St
S Indiana Ave
S Jordan Ave
S Rose Ave
S Roosevelt St
S Overhill Dr
S Grant St
S Dunn St
S Fess Ave
S Woodlawn Ave
S Faculty Ave
S Hawthorne Dr
S Ballantine Rd
S Highland Ave
S Swain Ave
S Mitchell St
S Eastside Dr
S Clifton Ave
S High St
S Woodcrest Dr
E 20th St
E 19th St
E 18th St
E 17th St
E 16th St
E 15th St
E 14th St
E 12th St
E 11th St
E 10th St
E 9th St
E 8th St
E 7th St
E 6th St
E 5th St
E 4th St
E 3rd St

Study Purpose & Goals

- Purpose
  - Feasibility study to identify preferred alternative and estimate cost
- Goals
  - Study feasibility of corridor solutions
  - Build upon prior planning efforts and existing policy
  - Increase mobility and connectivity of each transportation mode:
    - Vehicles
    - Transit
    - Pedestrian
    - Bicycle
  - Enhance safety of study area transportation network

Approach

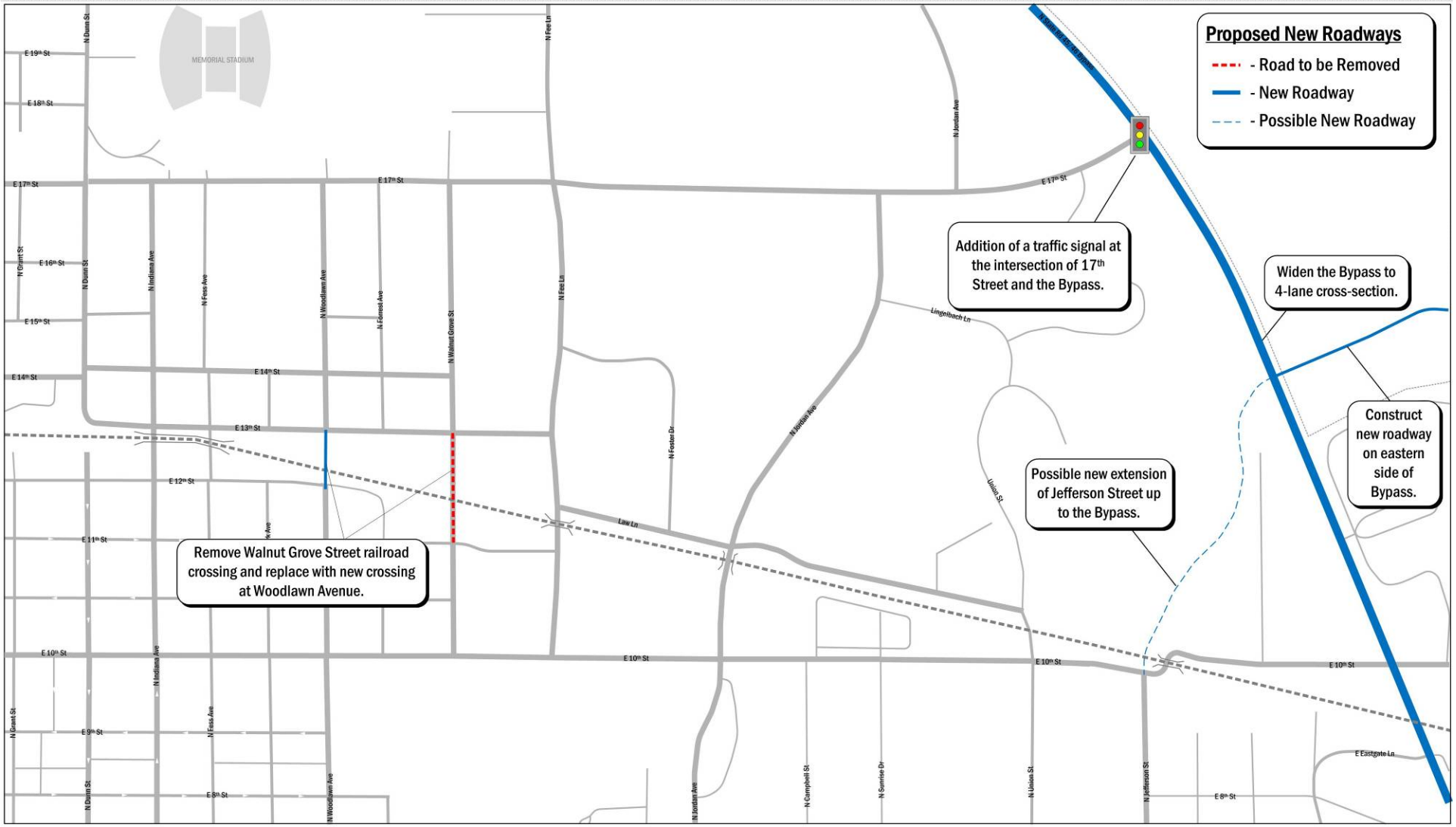
- Include all stakeholders to guide the alternatives
  - Community residents
  - Students
  - City
  - University
  - MPO
- Evaluate alternatives using metrics that address all transportation impacts

Alternatives

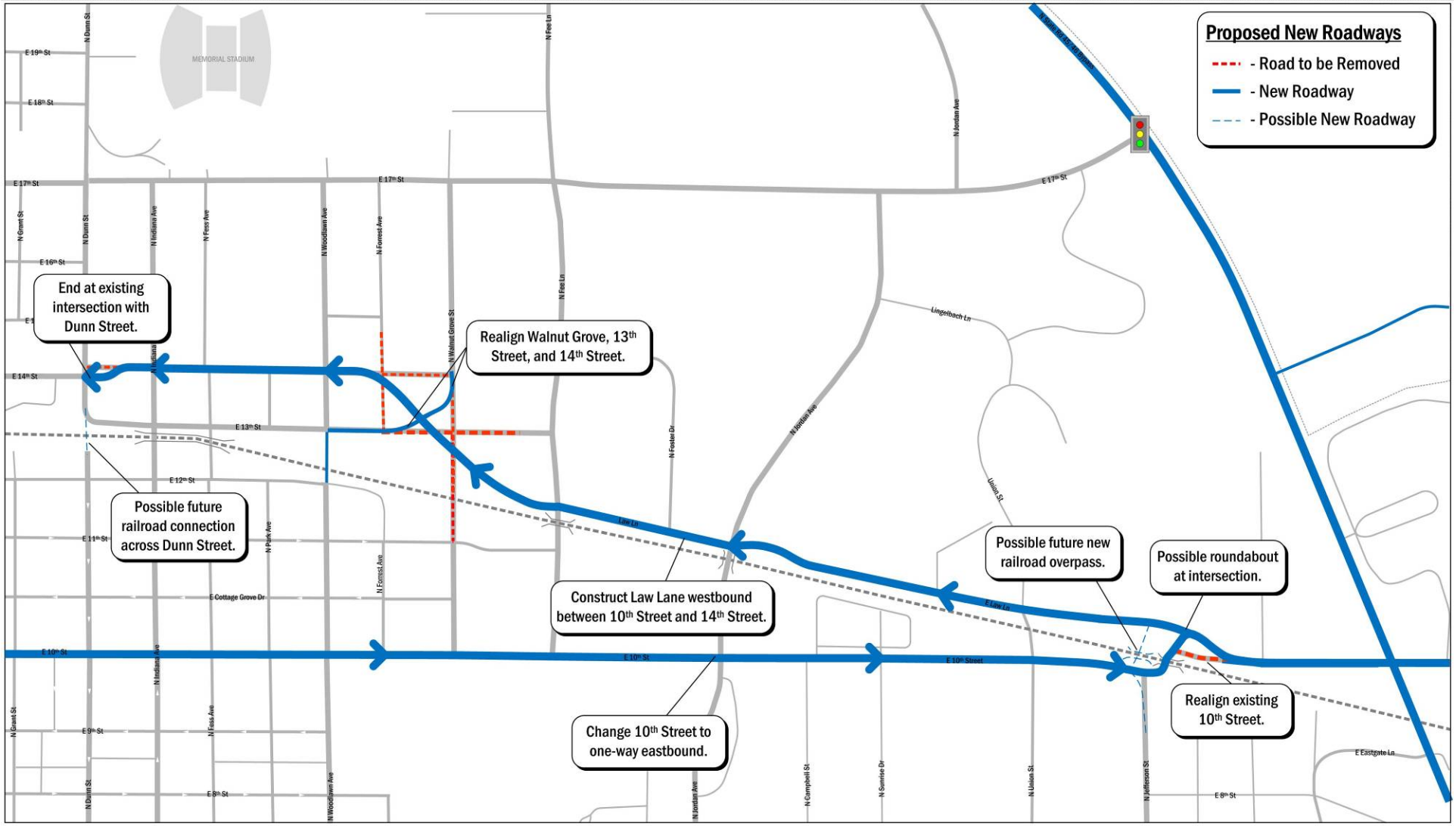
- Three alternatives assembled for evaluation:
  - Alternative 0: No-build scenario
  - Alternative 1: Law Lane and 10th Street as one-way pair
  - Alternative 2: Law Lane and 10th Street as two-way streets

- *Preferred Alternative* is a refined version of one of these alternatives

Baseline – Alternative 0



Alternative 1 – One Way Streets



Alternative 2 – Two Way Streets

Evaluation of Alternatives

- Alternatives were evaluated against goals of study
  - Increase mobility and connectivity of each mode of transportation
    - Public Vehicle
    - Transit
    - Pedestrian
    - Bicycle
  - Improve safety of study area transportation network
- Other factors:
  - Cost
  - Ease of implementation

Preferred Alternative

- Alternative 2 was selected as Preferred Alternative
  - Law Lane and 10th Street operate as two-way streets
  - Better at balancing all modes and the needs of users of the study area
  - Consistent with City and MPO policy goals
  - Fits with University context and IU Master Plan goals

Existing Conditions

- Existing Conditions findings
  - Traffic congestion at several points within study area
  - Several of the City's high accident locations are in the study area
  - Transit becoming more important; ridership on both BT and IUT impacted heavily by IU academic calendar
  - Few bike/ped accommodations traverse the entire area
  - Lack of sidewalks in some areas
  - Railroad is a barrier, particularly between Indiana and Walnut Grove

- Public Workshop #1
  - Discussed Existing Conditions
  - Gained input on desired aspects of alternatives

Alternatives Evaluation

- Alternatives developed
  - Build upon prior concepts
  - Accommodation of all modes
  - List generated based on comments and narrowed down by study team
- Evaluation of Alternatives
  - Developed ‘matrix’ of how well each alternative responded to study goals
  - Measures of Effectiveness (MOEs) chosen were both qualitative and quantitative, traditional and non-traditional
- Public Workshop #2
  - Evaluation presented with no clear preference
  - Input gained on which alternative had most public support

Evaluation of Preferred Alternative

- Vehicular mobility
  - Benefit to congestion and overall corridor travel times
  - Has better block circulation than one-way streets:
    - More forgiving for wrong turns
    - More intuitive network for new drivers
    - Network flexibility during incidents, construction, etc.
  - Shorter distance traveled leads to lower VMT
- Transit mobility
  - Benefit to intersection congestion and overall corridor travel times
  - Corresponding bus stops located on same street
  - Easier to route buses serving campus on two-way streets

Evaluation of Preferred Alternative

- Pedestrian Mobility:
  - Sidewalks with buffers to street will be included
  - Traffic signals should be able to keep wait times for “Walk” signals short
  - Vehicles tend to go slower, making crossings less intimidating
  - Slower speeds can reduce accident severity
- Bicycle Mobility:
  - Bike lanes on both sides of street
  - More intuitive connections compared to one-way streets
  - Vehicles tend to go slower, making mixed-traffic less intimidating

Evaluation of Preferred Alternative

- Safety Concerns:
  - Two-way streets can lead to easier circulation for emergency vehicles and flexibility during incidents
  - Speeds on through lanes and some turns will likely be lower on two-way streets
- Ease of Implementation:
  - Preferred Alternative can be constructed in phases

Public Input from Workshop #2

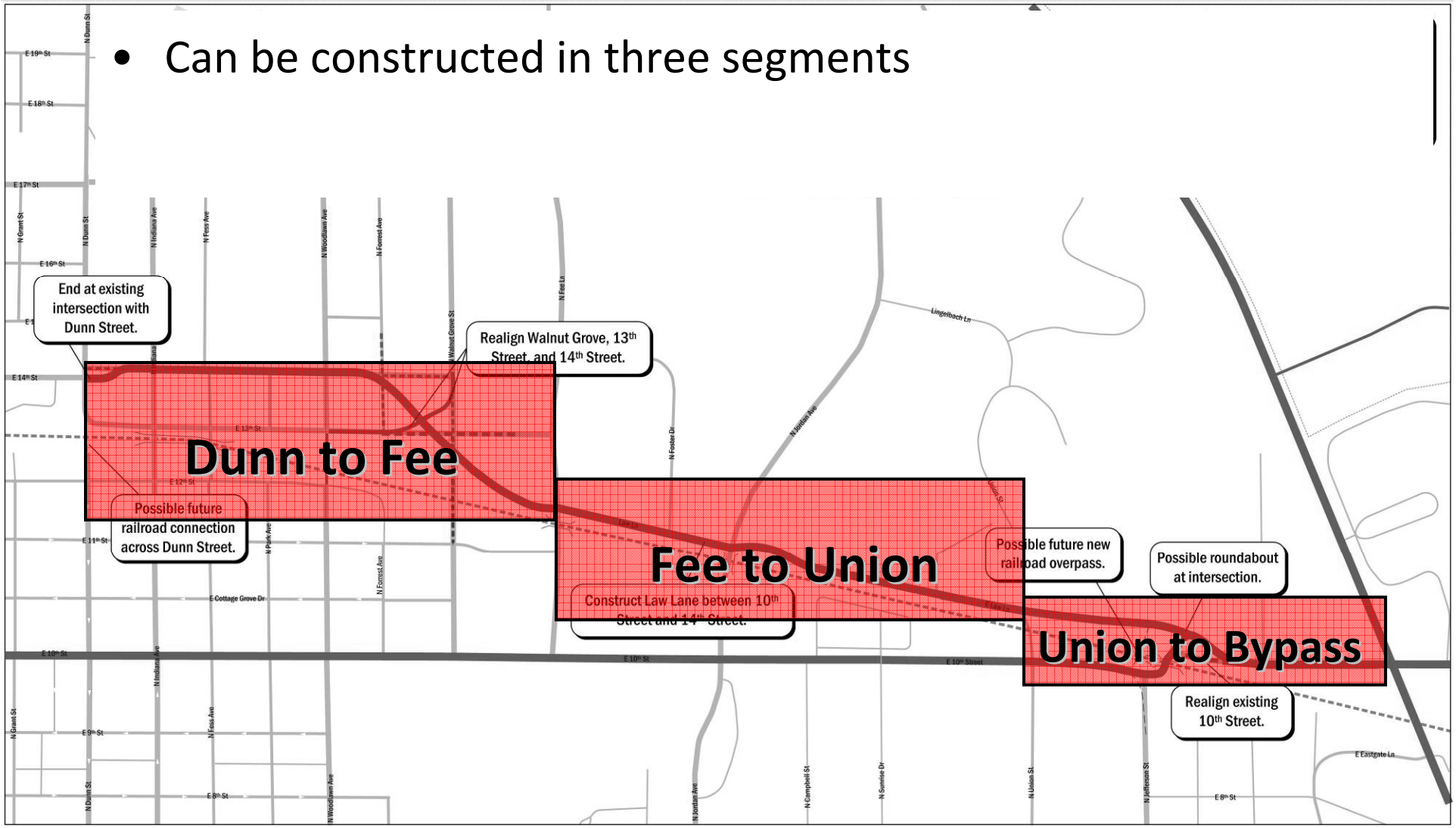
- General consensus was for Two-way Alternative
- Additional comments:
  - Recommendation for 10th Street bus corridor alternative
  - Desire for 'complete streets', with bike lanes and ample sidewalks
  - Some desire for roundabout at future intersection at 10th and Law Lane (eastern end of study area)
  - Several break-out tables were worried that traffic wouldn't 'shift' to the new Law Lane/14th Street corridor
    - One group created a hybrid alternative to 'force' drivers to do this

Cost Estimate

- Preliminary estimates for both alternatives were similar with two-way alternative slightly less
- Preferred Alternative
  - 65’ ROW = $7.96 Million
  - 80’ ROW = $8.72 Million
- Right-of-Way
  - Not included in these estimates
  - Most owned by IU
- Rail overpass not included

Phasing Considerations

- Can be constructed in three segments



Two-Way Alternative Selected

- Fits with City/MPO goals
  - Complete Streets Policy: more mobility for all modes, especially transit and bicycle
  - Growth Policy: supports development in existing City neighborhoods rather than development outside of the City
- University context: heavy pedestrian volumes, slower speeds, intuitive circulation and transit stops
- More flexibility:
  - If congestion persists on 10th, Law Lane provides relief
  - Can close one street for special events, construction, etc…
  - Construction can be phased
- Public comments support two-way alternative

Refinements to Preferred Alternative

- Inclusion of measures to try to shift traffic to Law Lane/14th from 10th Street, such as signs, markings and use of traffic controls.
- Focus vehicular activity to new Law Lane/14th corridor, and reduce vehicular demand generators along 10th Street.
- Establish access to new parking lots/vehicular activity on new Law Lane/14th St corridor instead of 10th Street – IU Master Plan does this.
- Evaluate existing curb cuts along 10th Street to review if they can be eliminated or moved to side streets.

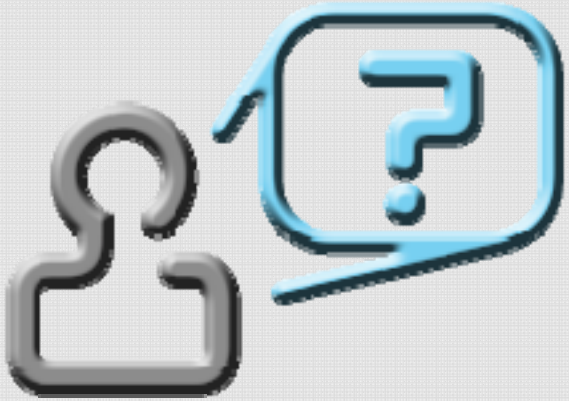
Design Considerations

- Secondary Arterial vs. Primary Collector
- Low impact design on streetscape
- Pavement markings for pedestrian and bicycle facilities
- On-street parking on 14th Street and Law Lane
- East end of Law Lane corridor
- 10th Street Underpass
- Union Street railroad crossing
- Alignment at western end of 14th Street/Law Lane corridor
- Transit routing to take advantage of new roadways

Interim Improvement Ideas

- Bike Lanes and Sharrows
- ‘Polly Grimshaw’ trail through campus
- Increases to transit service
- Signing/striping for pedestrians
- Speed Analysis
- Improvements to signal timing

Next Steps

- Issue Final Report
- Funding Sources
- Preliminary Engineering
- Right-of-Way
- Implementation of Interim Improvement Ideas

Questions