

Prepared for: The Monroe County Planning Department



and

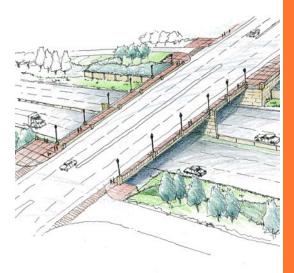
The City of Bloomington Planning Department

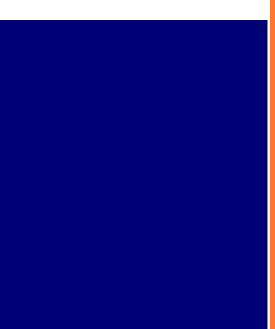


June 2007

Prepared by: The Schneider Corporation







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#### EXECUTIVE SUMMARY

In October of 2006, the City of Bloomington and Monroe County Planning Departments hired the Schneider Corporation to perform an Alternative Transportation Corridor Study. The task was to evaluate the possibilities for implementing both Department's Alternative Transportation Plans where they intersect State Road 37 (SR 37) and potentially Interstate 69. The Indiana Department of Transportation (INDOT) has proposed upgrading the SR 37 corridor as part of the Interstate 69 development through Monroe County.

The following study takes into account the need to cross the SR 37 corridor through alternative transportation methods, whether or not it is upgraded to an interstate. Some of the alternative transportation methods taken into account were pedestrian traffic, bicycles, rollerblades and even horseback in some instances. All of these methods are important to provide future connectivity between the alternative transportation systems of Monroe County and the City of Bloomington.

The study first looked at a site analysis of the corridor and each prioritized intersection. Fourteen potential crossing locations were evaluated in the study. Some of these were existing intersections, overpasses or underpasses. Some of the locations did not exist at the time of the study, but were planned as interchanges or overpasses if SR 37 were upgraded and made part of Interstate 69. Based on the site analysis, the intersections were prioritized as high, medium or low priority for study. The high priority study areas were generally the most complicated or difficult to cross, the lower priority study areas generally presented easier solutions and had lower traffic volumes. This study also took into account preliminary Interstate 69 plans prepared by the Michael Baker Group.

Intersections determined to be high priority were set apart for further study. This included using visioning tools to illustrate possible crossing configurations, materials, amenities and alignments. 3-D sketches or 3-D computer images were used to help illustrate potential solutions as part of the visioning process. Lower priority study areas were studied in more simple plan and section views.

Once the conceptual plans & sketches were completed they were presented at a public meeting for review and comment. This meeting produced good feedback and further ideas to consider as potential solutions for the project move forward in their development. The goal of the Monroe County and City of Bloomington planning offices is to have this document incorporated as part of the Tier II Mitigation Study for Section 5 of the Interstate 69 corridor. It is also planned to keep this work in front of INDOT and further develop the concepts as the Interstate 69 project moves forward so they can be included in any future development for the corridor. It is also the intention of both respective planning departments to work towards the implementation of these ideas, whether or not the Interstate 69 corridor is developed.









#### **PURPOSE**

The purpose of the I-69/ SR 37 Alternative Transportation Corridor Study is to provide much needed concepts and ideas of how the Monroe County and City of Bloomington alternative transportation networks can be effectively linked together over or under the existing SR 37 or potentially Interstate 69 in the future.

The City of Bloomington and Monroe County both realize the importance of an integrated alternative transportation network Currently SR 37 is a major roadblock to a safe and effective alternative transportation network on the west side of Bloomington. There are a few safe routes across SR 37 currently, but the majority of the crossings are either very dangerous to bicycles & pedestrians or they are completely inaccessible. Both the City and the County have a goal to provide safe and accessible crossings to everyone using their trail systems. Therefore, current or future crossings must be upgraded to meet these requirements.

The time for this study was chosen now because the plans for a potential Interstate 69 corridor are currently underway. While The City of Bloomington Planning and Monroe County Planning departments do not necessarily support the construction of the Interstate 69 corridor through Monroe County, they realize it may be inevitable. If it does happen, both groups want to plan for it and make it the best design possible for Bloomington and Monroe County. Getting ideas in front of the road designers and INDOT now will greatly increase the chances they will be implemented if the road happens. The more the ideas can be incorporated early into the design, the more they will be accepted as part of the project. It also allows them to be included in early cost estimates and funds can be allotted for these improvements in the project budgets.

With both Monroe County and the City of Bloomington having Alternative Transportation Plans in place, the connectivity of the two becomes a critical element for the alternative transportation network. Pieces of each alternative transportation network are being developed every year and the plan is to link the two together at a number of locations. There is a great deal of development happening on the west side of Bloomington, making safe and effective crossings of SR 37 more difficult as time goes by. New developments are happening up and down the corridor and several others are planned for the future. Even if Interstate 69 does not happen, the city and the county still intend to find ways to implement the design ideas noted in this document. These upgrades and pedestrian crossings are not a luxury item, they are a necessity. They are a matter of public safety. As Bloomington expands to the west and more development is in place along the corridor, more and more people will want to go there. Currently there are no safe routes for pedestrians or bicycles to access many of these locations. This study is a first step in changing that dynamic by looking at ways to provide functional, safe, cost-effective and aesthetically pleasing ways to link the uses west of SR 37 via an alternative transportation network.









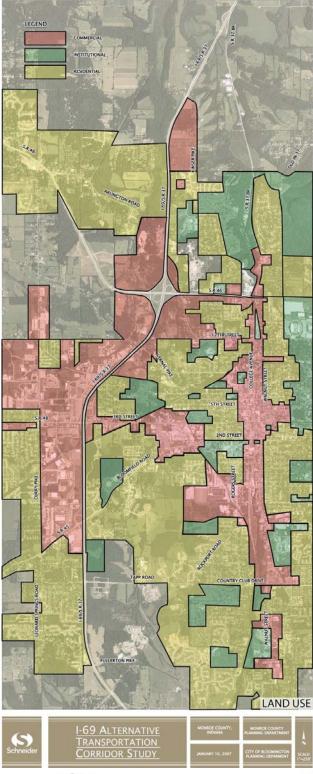
#### **Transportation**

A first piece of the site analysis consisted of understanding the **Major Vehicular Transportation Routes** through Monroe County.

The blue dashed line highlights the current SR 37 location, this would also be the route for future Interstate 69, if it were to happen. The red dashed lines indicate other State Roads in the vicinity. The yellow dashed lines indicate major local traffic arteries. Finally the green lines indicate existing or abandoned rail lines.

The location of many of these roads correspond with potential crossing areas within the study area. The rail lines are highlighted due to their potential to be used as crossing locations.





#### Land Use

A second piece of the analysis undertaken was to look at the land uses surrounding the corridor. The land uses were broken into 3 categories, **commercial**, **residential & institutional.** 

The land uses are important because they tell us which areas are trip originators and destinations. If we look at the higher density commercial areas, we see they correspond with the most congested areas with the highest traffic volumes. This leads to these being some of the toughest crossing points to deal with. Likewise, we also realized that many of the residential areas may have lower volumes of traffic on them, but they also represented points where people may want to access the alternative transportation network. This makes them just as important as the more congested areas, but somewhat simpler to connect to the network.

The other thing the land use map shows is areas that are not as dense and do not have a great need for crossing points at this time. In these areas Schneider worked with the city and county planning departments to understand zoning and future development plans. Where large projects are planned the team realized crossing locations may still be a priority.

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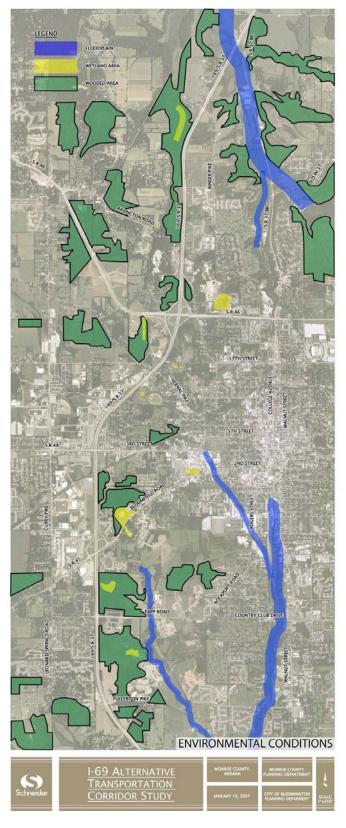
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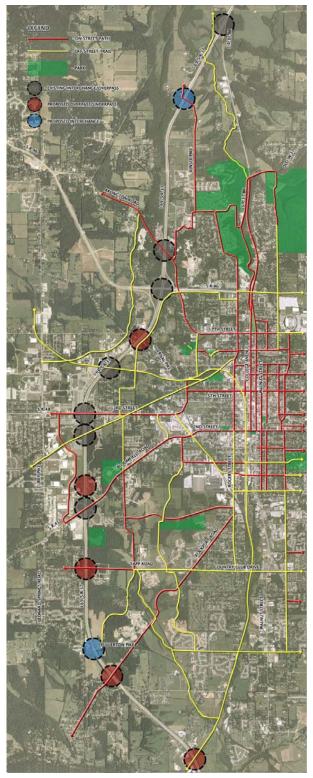
#### **Environmental**

The another area of analysis is Environmental conditions. Environmental factors are a major issue with any site project and can have a big effect on what happens on the site.

The 3 areas noted on the map are heavily wooded areas, floodplain & wetlands. Other environmental factors considered included topography, views, historic areas or structures, etc.

The main reason to study these conditions is to insure minimal disturbance in any sensitive areas along the corridor.





#### **Alternative Transportation**

It is very important to understand the existing Alternative Transportation routes that are planned or already in place before moving into the design phase of the project.

The map to the left represents the combined Alternative Transportation Plans of both the City and the County. Both off-street trails and on street paths are represented here. The park areas are also highlighted in green to better understand where the alternative transportation network users may be going.

The grey circles along the SR 37 corridor represent existing underpass, overpass or interchange locations within the study area. The red circles represent proposed overpass or underpass locations that would happen as part of the Interstate 69 project. Finally, the blue circles represent future interchange locations that would happen as part of the Interstate 69 project as well.

This map helped the team determine where critical crossing locations for alternative transportation users may be. Generally, the locations where the alternative transportation network intersected existing or future interchanges, overpasses or underpasses were the locations determined to be priority areas for study.







#### Intersections

Once the intersections for study were determined, a priority for importance of study was set for each intersection. There were four priorities for further study used—high, medium, low and future.

It is important to note that all of these crossings were determined to be an important crossing location. The object here was not to determine whether or not a crossing was a high priority, but to determine how important future study on a particular intersection is.

The green intersections are the highest priority for further study. These were generally the most congested intersections with the highest traffic volumes. This made them the most complicated to find workable solutions for, thus requiring the most study. Plans, sections, elevations, sketches and 3-D imaging was used to study these intersections.

The yellow intersections were the medium priority for study. These intersections had lower traffic volumes but still some complicated crossing areas and warranted a moderate amount of study. These intersections were generally studied with plan and section drawings.

The red intersections were the lowest priority for study and had the lowest traffic volumes and simpler crossing solutions.



#### Summary

The site analysis phase was necessary to better understand the conditions we were working within and to determine the areas in which further design focus needed to applied. Through a great deal of coordination with the planning staff from both Monroe County and the City of Bloomington the **Analysis Phase** resulted in clearly defined crossing locations that would be studied and a level of design focus for each intersection, overpass or underpass that would be taken into conceptual design. It also provided the design team with an understanding of the surrounding context and environmental factors that would shape the design.

As the Analysis Phase moved it became apparent that **Connectivity of the trail System** and **Context** would become the driving factors in the design. Because the goal of the project is to connect various areas of the alternative transportation network, much of the design for the crossing locations comes back to how the crossings relate back to the larger alternative transportation network and where logical connection points could be made. The context or area surrounding each of the crossing locations is very important because this context identifies where people using the alternative transportation network are trying to get to. Much of the conceptual design is being based on these two factors identified in the analysis.

Another significant factor that the analysis phase makes evident is the lack of accessible routes at most of the existing crossing locations. It was confirmed through the study of the existing intersections that most of the locations with crossings in place had few, if any, safe routes for pedestrians or bicycles. This was most evident at the intersections that were highly congested with the largest traffic volumes. Unfortunately, these are intersections that pedestrians try to cross most often.

The analysis proved that the State Road 37 corridor, as it currently exists, presents many challenges for the alternative transportation network in Monroe County. It is clear that changes need to be made to accommodate public safety and accessibility in many locations and that upgrades need to be made regardless of the Interstate 69 project.







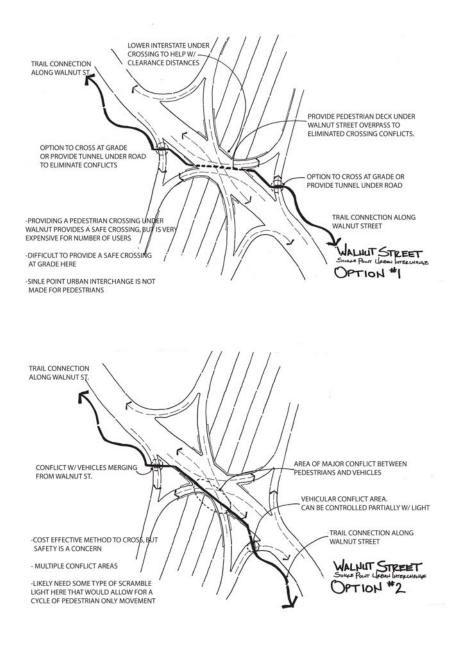




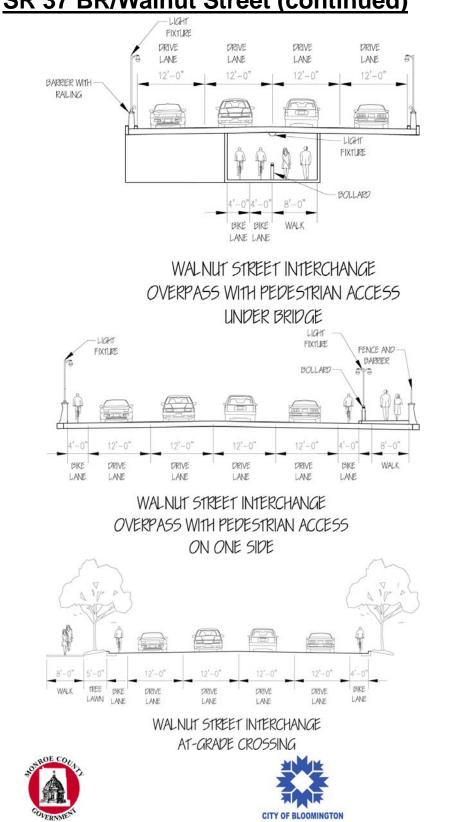
### SR 37 BR/Walnut Street

**Opportunities** 

- Connection to northwest Monroe County
- Grade separated crossings are possible
- Constraints
- Single Point Urban Interchange (SPUI) does not accommodate pedestrians well.
- Grade separated crossings are expensive.



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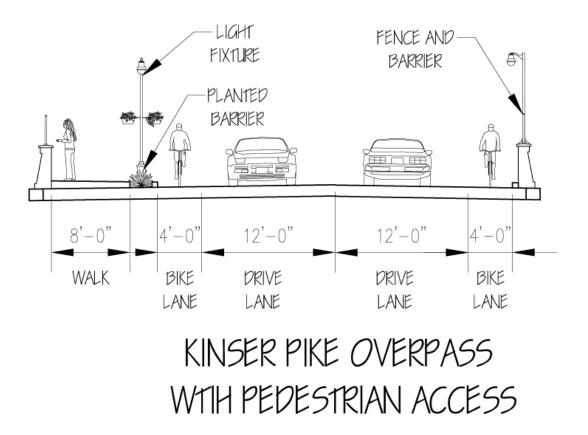


### Kinser Pike

**Opportunities** 

- At-grade crossing with good sight lines.
- I-69 interchange would be completely rebuilt.
- Low traffic volume

- Currently a difficult crossing
- Roadway on west side of SR 37 in need of improvement to accommodate alternative transportation.



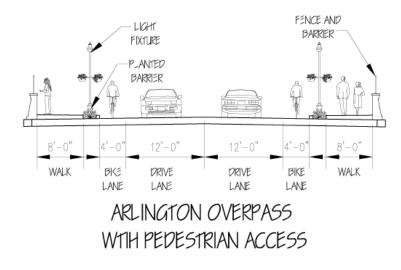
## **Arlington Road**

**Opportunities** 

- Wide existing bridge deck
- Low traffic volumes
- No conflict with on or off ramps
- Good connection possibilities to Ellettsville

Constraints

• Narrow right-of-way to east and west







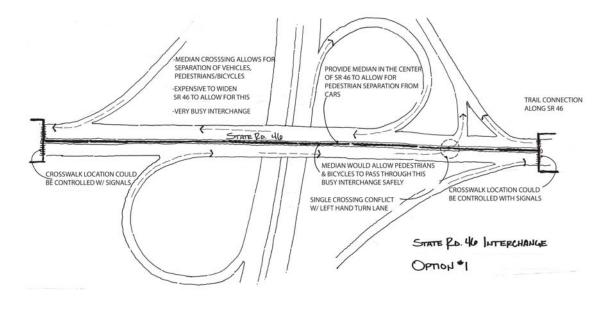


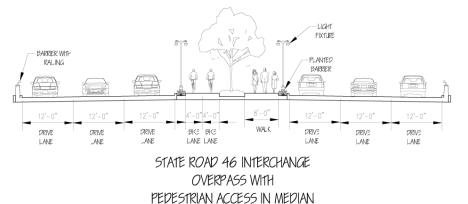
### <u>SR 46</u>

**Opportunities** 

• Highly visible opportunity to call attention to alternate transportation system.

- · Free flowing ramps are difficult to cross safely
- High traffic volume
- Costs to retrofit an existing interchange



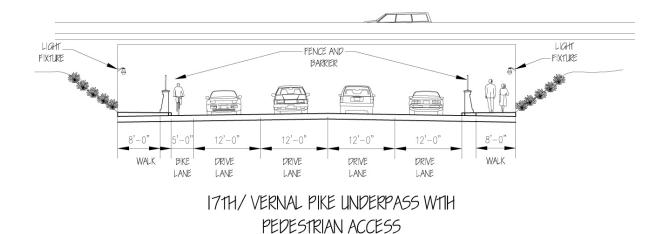


## 17th Street

Opportunities

- Low traffic volume
- Interstate 69 development will require new road section.

- Poor sight lines at existing intersection
- Hilly terrain to west







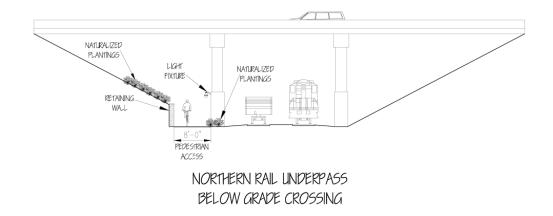


### Northern Rail Line

**Opportunities** 

- Existing underpass
- Possibility for far-reaching connections in future
- · Good access to commercial area to west
- Good access to residential area to east

- Safely separating traffic from rail lines is difficult
- Cost of modifying abutments



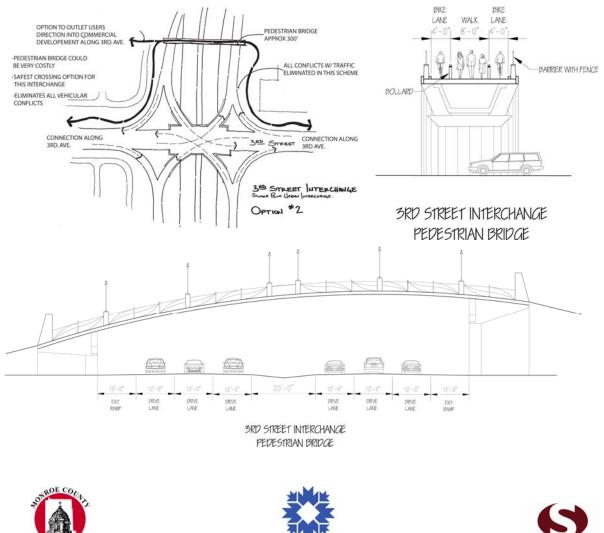
## 3rd Street

**Opportunities** 

- · Good connections to commercial area to west
- Ample right-of-way for separated pedestrian bridge
- Could be highly-visible landmark in SR 37 corridor
- Possibility for grade separated crossing at interchange.

Constraints

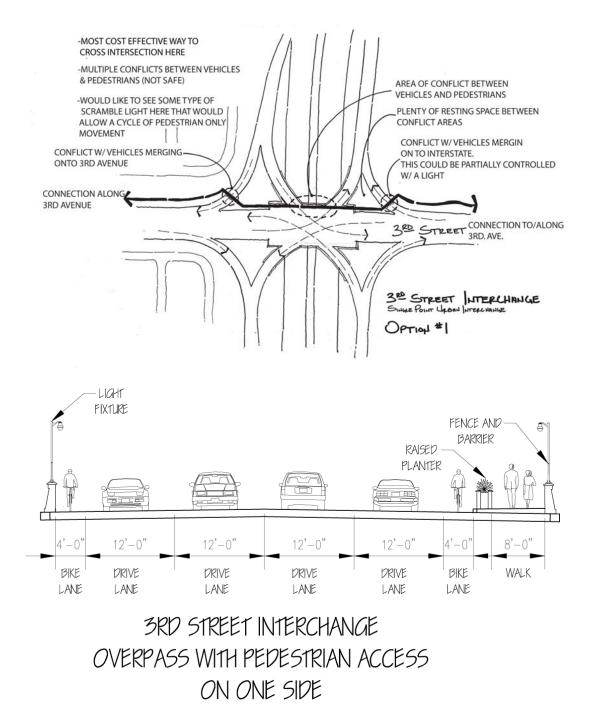
- SPUI interchange difficult for pedestrians
- Separate pedestrian bridges are costly



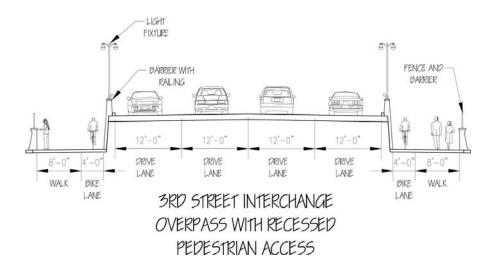
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## 3rd Street (continued)



## **3rd Street (continued)**









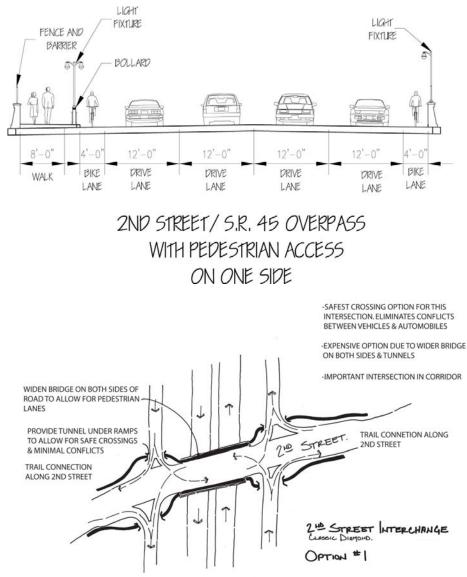
### SR 45/2nd Street

**Opportunities** 

- Ample right-of-way to work in.
- · Multiple commercial destinations to west

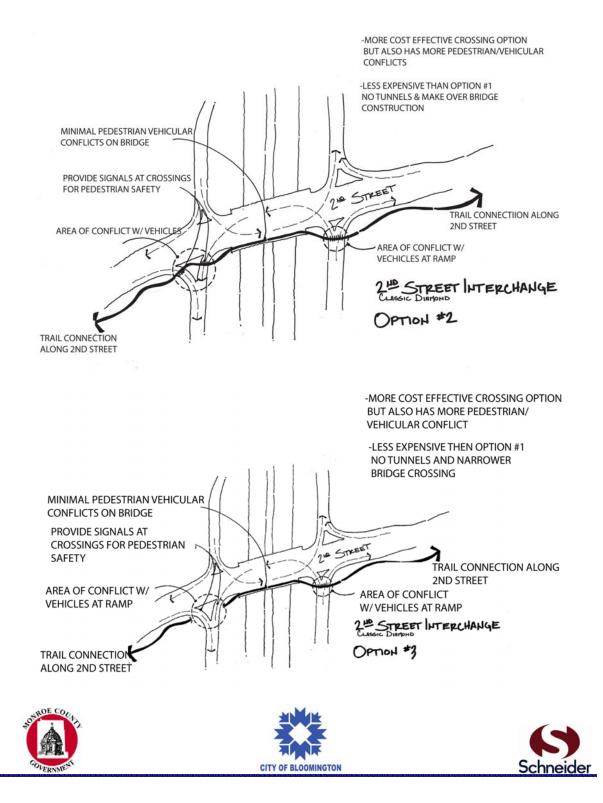
Constraints

- High traffic volume
- Proposed free-flowing rams are difficult for pedestrians to cross



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### SR 45/2nd Street (continued)

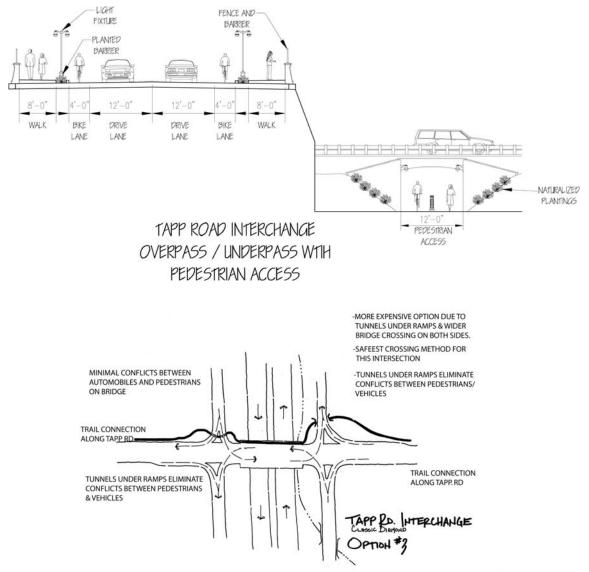


### Tapp Road

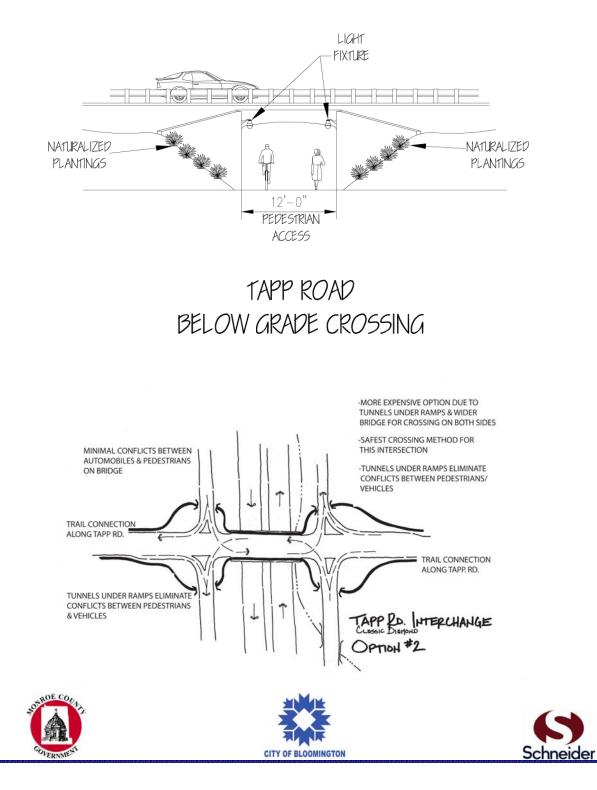
**Opportunities** 

 New interchange will provide good chance to connect to proposed development west of SR 37

- Cost of wider bridge deck
- Cost of grade separated crossing



## Tapp Road (continued)



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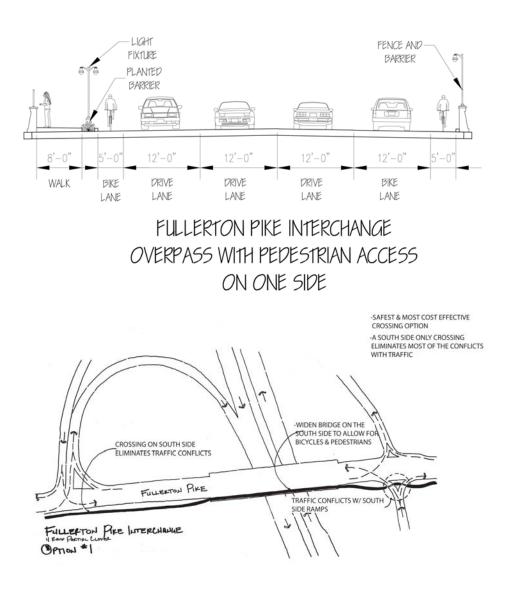
## **Fullerton Pike**

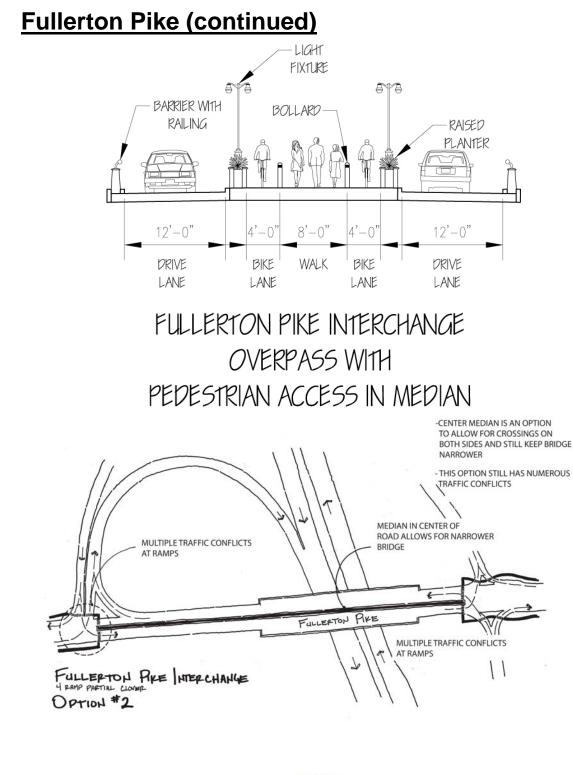
**Opportunities** 

• Proposed interchange allows minimal conflict for path on south side

Constraints

• Median crossing option (#2) concentrates pedestrians and eliminates conflict with ramps.





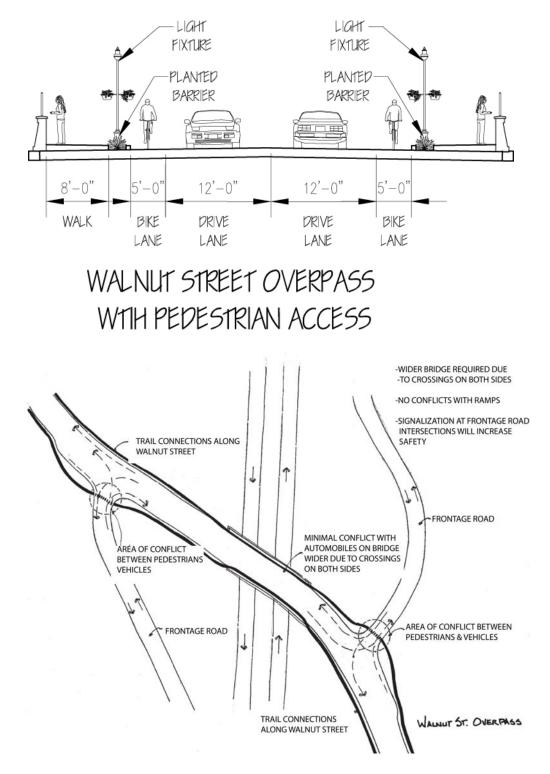




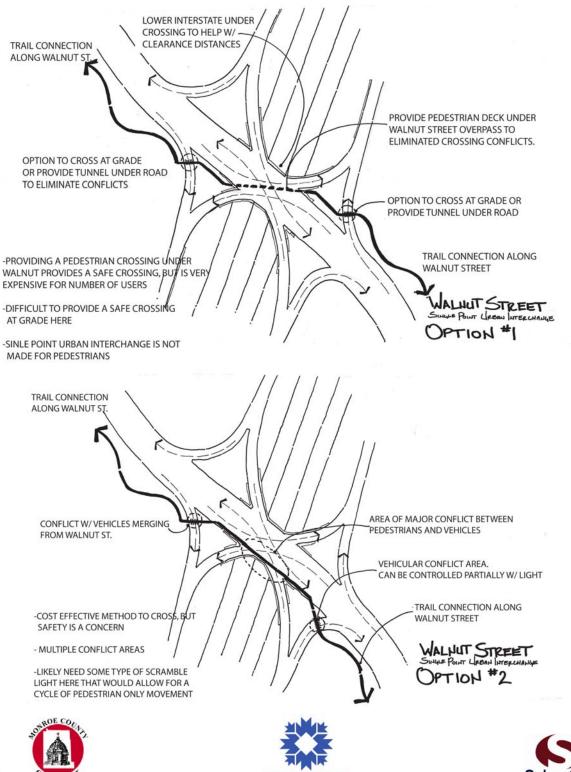




## SR 37 BR/Walnut Street



## SR 37 BR/Walnut Street

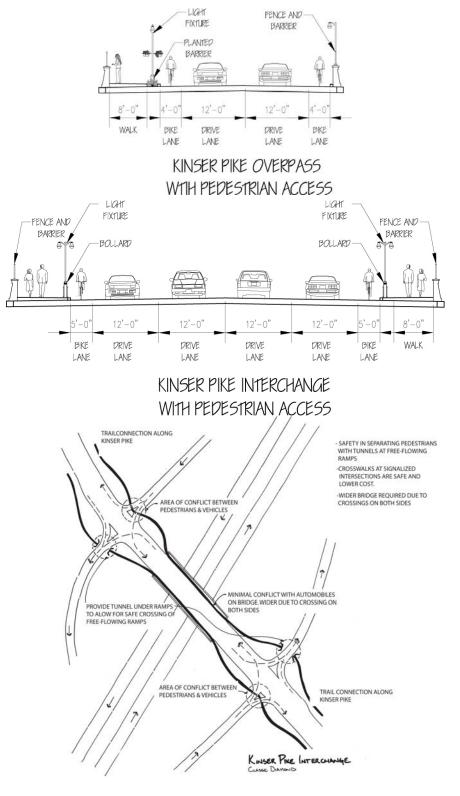


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## Kinser Pike



## **Arlington Road**



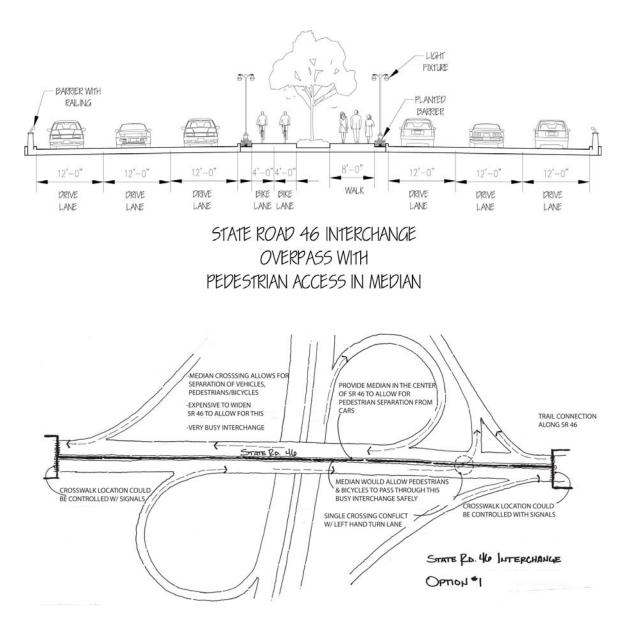




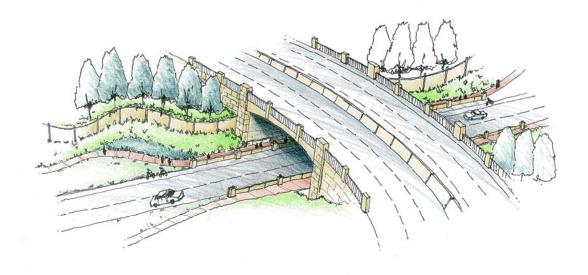


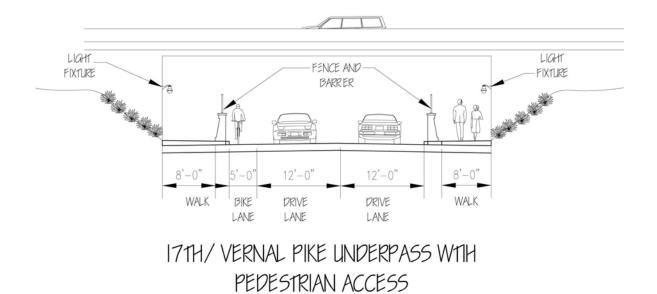


### <u>SR 46</u>



## 17th Street



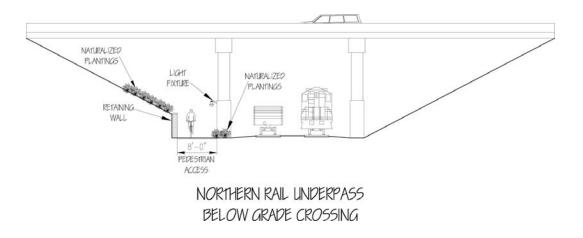




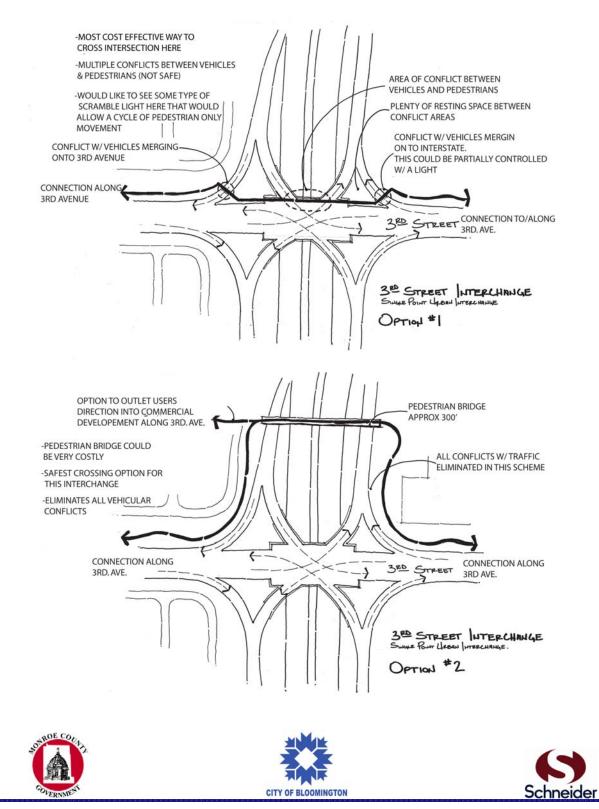




## Northern Rail Line



## **3rd Street**

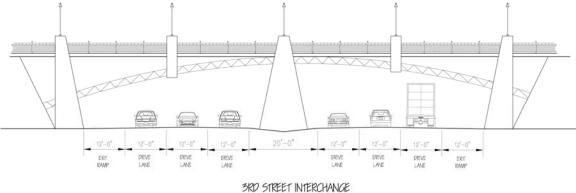


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### **3rd Street**



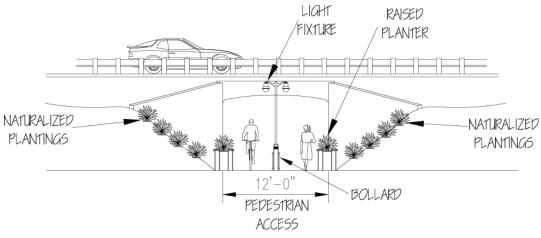




PEDESTRIAN BRIDGE

## SR 45/2nd Street





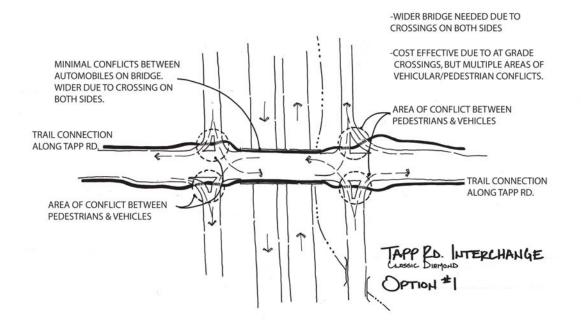
2ND STREET / S.R. 45 OVERPASS BELOW GRADE CROSSING







## Tapp Road





## **Fullerton Pike**

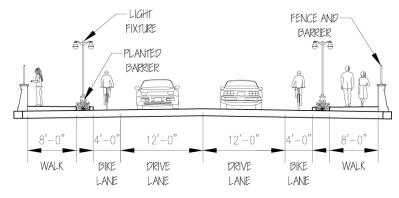






### **Rockport Road**





### ROCKPORT ROAD OVERPASS WTIH PEDESTRIAN ACCESS









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### **Recommendations & Implementation**

With or without the future construction it is important the ideas in this report be moved forward and sources for funding be identified. As noted numerous times in this report, the current crossings over SR 37 are not safe for most means of alternative transportation and upgrades need to be made to insure the safety and welfare of those using these crossings. The ideas presented in this document are conceptual in nature only. The next step is for each proposed intersection to be thoroughly studied and design concepts refined. A great deal of work needs to be put into these concepts to better understand how they could be constructed. These concepts are in no way intended to be final designs, but rather a first step in the process. The important thing, however, is that the concepts continue to be pushed forward and funds for design and construction actively pursued.

There are two ways the next steps in the process could develop. The first would be as part of the upgrades to the SR 37 corridor as part of the Interstate 69 project. The second would be as stand alone projects that would upgrade these connections to the alternative transportation network if SR 37 remains as it is today. These options would involve very different processes.

A first step under either scenario would be to have the study adopted locally by either Monroe County or the City of Bloomington. This would make it part of a formal resolution give it the blessing of local agencies. In order to do this the study would likely be adopted as part of the Long Range Transportation Plan or the Monroe County Alternative Transportation Study. Once this step is completed, path towards implementation would be different for SR 37 and Interstate 69.

Interstate 69 is currently in its early planning stages. If the interstate project does happen, it is critical to be involved in the process early to have any chance of getting the desired upgrades and crossing points included in the project. Although the city and the county do not necessarily support the construction of Interstate 69 through Monroe County, both planning departments realize the importance of planning for it and making sure that it provides the best possible solution for the Bloomington and Monroe County. The first goal with the Interstate 69 project is to make sure the study gets included as part of the Tier II, Section 5 Environmental Mitigation Study. This will insure that the study is at least considered a valid part of the Interstate 69 project and is considered for funding. This is being prepared by Michael Baker Group and the project team has been coordinating with them as the project has moved forward. From there it will be important for the group to keep the issue in front of INDOT and FHWA to make sure they understand how important this is to Bloomington.

Another option for staying in front of INDOT on this project push to get it adopted as a test case in the Context Sensitive Solutions project. Context Sensitive Solutions (CSS) is an initiative by INDOT to make sure that the desires of the local community are considered for every project. This is accomplished through a great deal of coordination with local communities to understand their wants and needs. The goal of CSS is to provide design that is more sensitive to its surroundings and local needs, rather than trying to build the same road or bridge in every location. This is a new initiative by INDOT and they are going to provide 6 test cases for different type of projects around the state. Any projects that are a part of this study would have an excellent chance of being constructed.

If Interstate 69 does not happen, then the process towards implementation would be very different. The funding for the project would likely have to come from one of the following sources:

- Funding through Transportation Enhancement Grants from INDOT or similar grant programs that are transportation based
- Funding from the state as part of Bridge or Interchange reconstruction
- Federal Earmark Money
- Local Funds raised to make upgrades

Some important steps in moving the project forward under this scenario would be to first identify the grants to be applied for to fund this work. These grants should be applied for on the next available cycle for each respective grant. Any grant monies attained would get the process started. Second, it is still critical to communicate with INDOT about this work, even without Interstate 69. If INDOT is aware of these plans they can allocate funds as they fund road improvements or intersection reconstructions in the corridor. Establishing line items in local road improvement budgets is another good way to start to procure local funds for improvements.

There is a great potential to enhance the alternative transportation network through Bloomington and Monroe County and provide connectivity to existing and future development along the corridor. Working toward the implementation of the concepts presented in this study will provide a safer and more accessible corridor for its users. It will also enhance the local alternative transportation network; one of the finest in the state.









## Information Gathering Presentation Boards January 2007

# APPENDIX

#### I-69/ SR 37 ALTERNATIVE TRANSPORTATION CORRIDOR STUDY

## **Transportation**



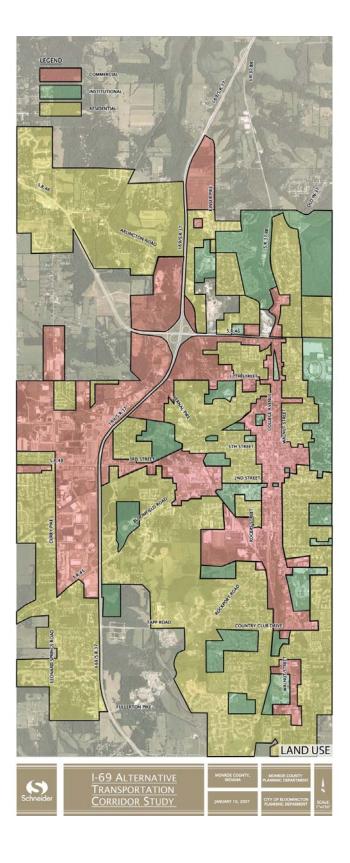






## APPENDIX

## Land Use



## APPENDIX

#### I-69/ SR 37 ALTERNATIVE TRANSPORTATION CORRIDOR STUDY

## **Environmental**







## APPENDIX

### Alternative Transportation



June 2007

## APPENDIX

### I-69/ SR 37 ALTERNATIVE TRANSPORTATION CORRIDOR STUDY

## **Intersections**



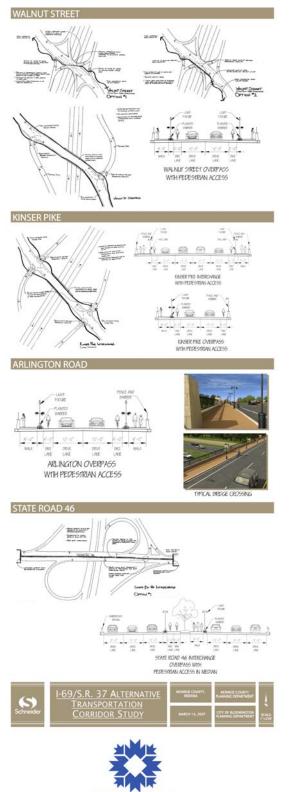






## Feasibility Study Presentation Boards February 2007

## Walnut Street and Kinser Pike

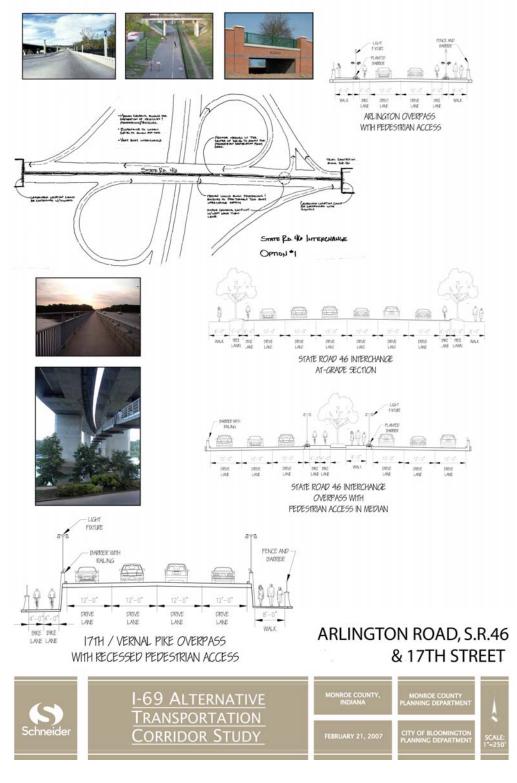


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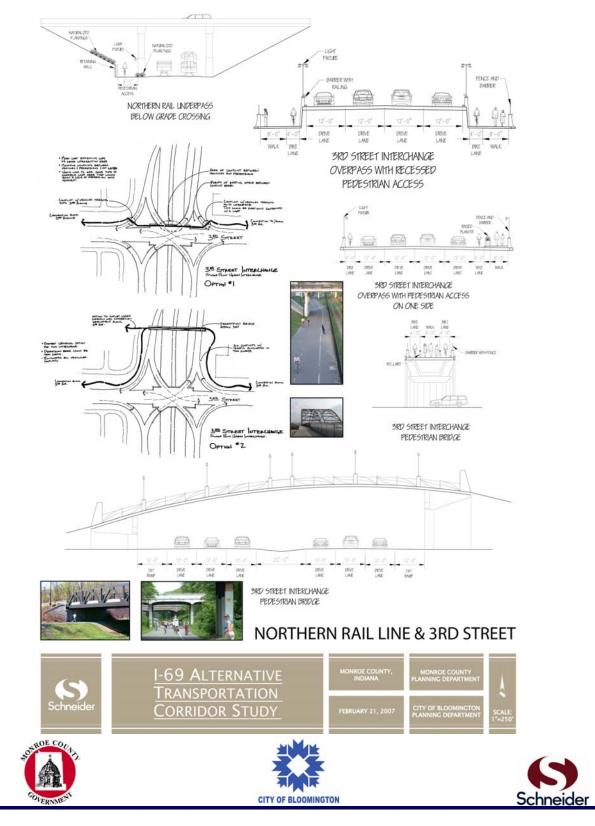




## Arlington Road, SR 46 and 17th Street



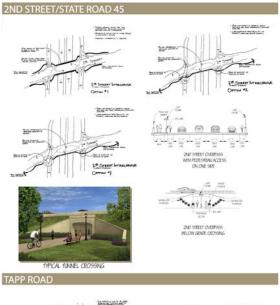
## Northern Rail Line and 3rd Street

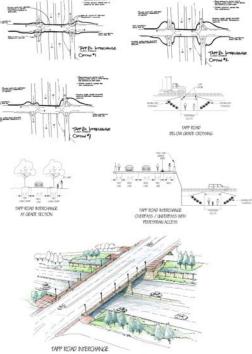


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## APPENDIX

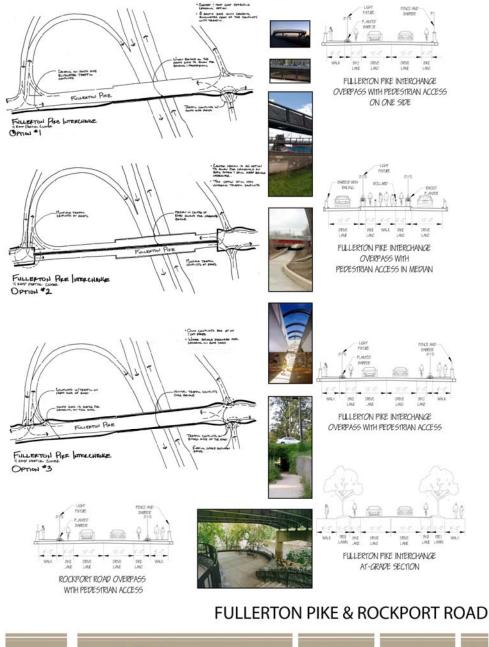
### 2nd Street/SR 45 and Tapp Road





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## **Fullerton Pike and Rockport Road**





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### Conceptual Design Development Presentation Boards March 2007

## APPENDIX

#### I-69/ SR 37 ALTERNATIVE TRANSPORTATION CORRIDOR STUDY

## WALNUT STREET **Visual Survey** KINSER PIKE ----ARLINGTON ROAD STATE ROAD 46 STATE ROAD 46 1 VERNAL PIKE VERNAL PIKE NORTH RAIL SOUTH RAIL STATE ROAD 45 -STATE ROAD 45 TAPP ROAD fullertoi Pike FULLERTON PIKE 1000 78 ROCKPORT ROAD FLANNING DIFA (5) TRANSPORTATION CORRIDOR STUDY







## APPENDIX

### Precedent Images

#### UNDERPASS IMAGES



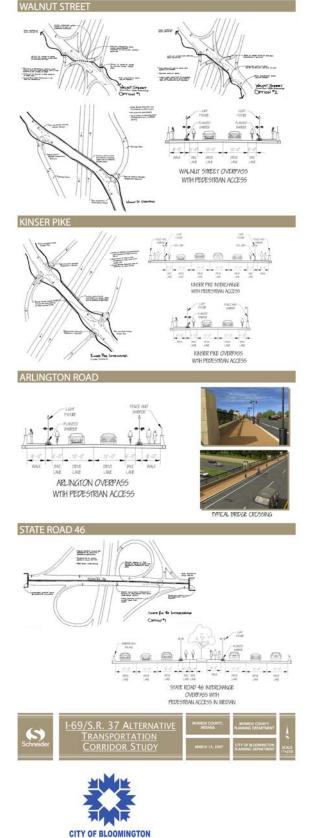
#### PRECEDENT IMAGES



## APPENDIX

#### I-69/ SR 37 ALTERNATIVE TRANSPORTATION **CORRIDOR STUDY**

## Walnut Street, Kinser Pike, Arlington Road, <u>SR 46</u>



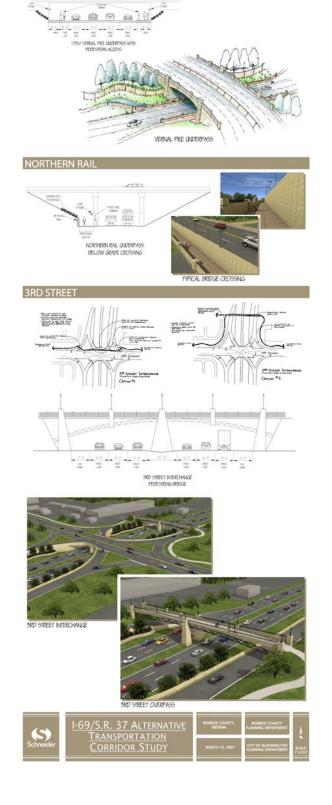




**17TH STREET/VERNAL PIKE** 

## APPENDIX

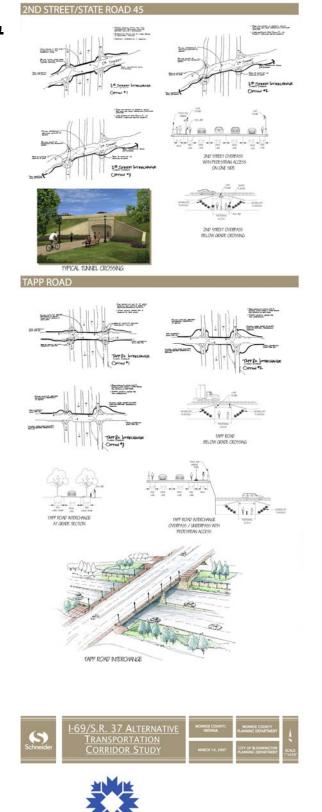
## <u>17th Street,</u> Northern Rail, <u>3rd Street</u>



## APPENDIX

#### I-69/ SR 37 ALTERNATIVE TRANSPORTATION CORRIDOR STUDY

## <u>2ndStreet/SR 45,</u> Tapp Road



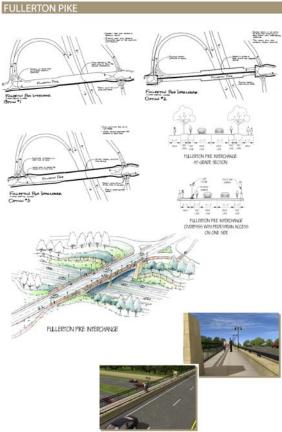
**CITY OF BLOOMINGTON** 





## APPENDIX

## Fullerton Pike, Rockport Road



TYPICAL BRIDGE CROSSING

ROCKPORT ROAD









TYPICAL BRIDGE OROSSING



## **Public Forum Notes**









Prepared by:

**The Schneider Corporation**