Appendix C

Agency Coordination

URS

Project Meeting Notes

Meeting Date:	January 21, 2011	Client:	City of Terre Haute
Time:	9:30 am	Project Name:	Railroad Relocation Study
Location:	Conference Call	Project Number:	25627422
From:	David Cleveland	Issue Date:	February 3, 2011
Subject:	FHWA/FRA\WCIEDD meeting		

Attendees:

- Ron Hinsenkamp, Metropolitan Planning Organization (MPO), West Central Indiana Economic Development District, Inc. (WCIEDD)
- Larry Heil, Federal Highway Administration (FHWA)
- Wendy Messenger, Federal Railroad Administration (FRA)
- Winn Davis, FRA
- Alice Alexander, FRA
- Chris Andrews, Indiana Department of Transportation (INDOT)
- Mike Riley, INDOT
- Vaneeta Keefe, INDOT
- Paul Satterly, URS Corporation (URS)
- Liz Solberg
- David Cleveland, Corradino LLC (Corradino)
- Sarah Hoch, Corradino

The purpose of this meeting was to discuss the project, the progress to date, and the roles of the state and federal agencies in the review and approval of the study. The topics shown below in italics correspond to the topics listed in the meeting agenda.

1. *Introductions*: Larry Heil organized the meeting and led the introductions. Ron Hinsenkamp, Chief Transportation Planner for the MPO, has management responsibility for the project to insure development of an acceptable planning document. The City of Terre Haute hired URS Corporation, including subconsultants Corradino LLC, Hannum Wagle & Cline, and Liz Solberg, to prepare the study. Representing FRA were Winn Davis (Customer Lead), Wendy Messenger (NEPA), and Alice Alexander (Grant Manager). Representing INDOT were Chris Andrews of the Office of Environmental Services and Mike Riley and Vaneeta Keefe of the INDOT Rail Section.

2. *Brief Project History:* Ron Hinsenkamp explained the history of the study. There have been various rail studies and initiatives in the Terre Haute area over the years. Ron Hinsenkamp described the existing rail challenges in Terre Haute and described the major rail lines, switching yards, rail volumes and speeds, and major conflict points between rail and the motoring public. Mr. Hinsenkamp commented that the project will include some smaller projects for which funding may be relatively easy to obtain, as well as larger projects that will require aggressive pursuit of funding; however, alternatives that do not have a reasonable expectation of being able to be funded in the future will not be advanced by the team.

3. *Project Description:*

    a. *Study Type:* Larry Heil explained that the study will ultimately result in FHWA and FRA joint approval of an Environmental Assessment (EA) and Finding of No Significant

Impact (FONSI), with INDOT providing review, input, and recommendations to FHWA. The process will follow the INDOT/FHWA NEPA process. The EA will encompass a large study area and will identify and prioritize various projects of independent utility, of different sizes and complexities, to be carried forward for further study and implementation. As an individual project of independent utility is carried forward, the Purpose and Need, Alternatives Analysis, and Public Involvement contained in the original study will not need to be re-established. The subject study will utilize planning level data and "windshield survey" information for determination of impacts to environmental resources. When a project of independent utility is carried forward, the individual NEPA document for that project will pickup where the subject study leaves off, and update the precise environmental impacts for the preferred alternative with field delineated environmental impacts. FRA responded that the EA approach is acceptable, and the project would only need to be kicked up to an Environmental Impact Statement (EIS) level if some significant, unforeseen impact were to arise. FRA requested that the EA consider cumulative impacts.

b. *Study Funding:* The City of Terre Haute, with assistance from Ron Hinsenkamp and Alice Alexander, obtained a $479,112 FRA grant to perform the subject study. Mike Riley asked if a second grant for $500,000 had been obtained. Ron Hinsenkamp responded that it has been obtained and will be used to help advance whatever the top priority of the study turns out to be. There was a discussion of potential funding sources for additional projects identified by the plan. Ron Hinsenkamp commented the MPO will work with local government agencies to explore a combination of FHWA and FRA (both competitive and non-competitive) funding programs. The MPO and local officials will also likely pursue project specific funding such as TIGER Grants, etc.

c. *Study Area:* The study area encompasses the Terre Haute Urbanized Area from the 2000 Census.

d. *Goals of the Study:* The goal of the study is to validate the Purpose and Need for the project and to identify, screen and prioritize near-term and long-term improvement projects that the Metropolitan Planning Organization's (MPO's) Policy Board will adopt into a long-range plan.

4. *Project "Needs" Discussion:* David Cleveland led the discussion of the project needs that the team has identified to date. This information is important for developing a sound Purpose and Need statement. Mr. Cleveland presented the following needs and asked for input.

   a. *Public Safety:* Standard metrics such as train/vehicle collision data will be utilized; however, Terre Haute presents a unique case. Long freight trains literally slow down and stop in the downtown area, blocking traffic in all directions. There are very few grade separations. There are east-west and north-south lines in the downtown area, and Indiana State University is bordered by both. Terre Haute's hospital facilities are located on one side of the north-south line, and these hospital facilities serve the entire west central Indiana region and not just Terre Haute. Additional fire stations have been added over the years to be able to provide adequate response time on each side of the rail lines. Emergency response times and the ability to evacuate for hazardous materials spills and/or other catastrophic events will be addressed.

   b. *Mobility:* Driver and pedestrian delay and accessibility will be included in the Purpose and Need statement. These are all quantifiable metrics. The MPO's travel demand model will be used as a tool to analyze various alternatives.

c. *Community Sustainability*: Division of neighborhoods, environmental and social impacts, transit, and consistency with other planning efforts will be incorporated in the Purpose and Need. Aside from the typical local agency driven long range planning, other private entities such as Union Hospital and Indiana State University have prepared or are in the processing of developing long range plans. These two entities have formed the Rural Health Innovation Collaborative (RHIC), which is currently developing a long range plan for that area.

d. *Railroad Mobility and Connectivity:* Economic benefits will result from higher rail speeds through Terre Haute and less overall delay. Improved rail to rail connectivity could have beneficial impacts on a regional level

Group Discussion: The group concurred that the needs presented are reasonable for inclusion into the study's Purpose and Need statement. Larry Heil commented that the Purpose and Need statement should be distributed to the management team prior to being presented at a Community Advisory Committee (CAC). There was discussion of whether or not the Alternatives Analysis should be distributed to the resource agencies for review and comment prior to the first Public Information Meeting (PIM). The group decided to distribute to resource agencies prior the first PIM in case the resource agencies find flaws with an alternative(s); it will not be presented to the public as a viable alternative, only to be eliminated later.

5. *Public Involvement Plan and Schedule:* Ron Hinsenkamp discussed public involvement plans including media releases, involvement of the CAC (note: a preliminary CAC invitee list was provided to the group.), and PIM(s). Sarah Hoch discussed plans for a project website with links to be provided on MPO's, city's and county's websites. Paul Satterly reviewed the project schedule (note: the project schedule was provided to the group). FRA's initial reaction to the schedule was positive.

6. *Federal Agency Roles:* The FHWA and FRA will both review and approve the EA and FONSI. The EA will follow the INDOT/FHWA NEPA process. INDOT will review the EA and FONSI and provide input and recommendations to FHWA. The MPO will work with local project sponsors to seek future funding for individual projects being carried forward from a combination of FHWA and FRA sources.

   The consultant team will share project management team meeting dates with Mr. Heil, who will then forward invites to the other agencies as appropriate. FHWA, FRA, and INDOT are welcome to participate in any project management team meeting (conference call connection). Mr. Heil requests the critical information such as Purpose and Need information or results of Alternative Analysis be distributed to the agencies for review and comment prior to sharing with the media and/or general public.

Please notify us of any corrections to these meeting notes.

Thank you,

Signed: David C. Cleveland

Corradino LLC

cc: Duke Bennett, Mayor, City of Terre Haute
Judy Anderson, Vigo County Commissioner
Chuck Ennis, Terre Haute City Engineer
Jerry Netherlain, Vigo County Engineer
Keith Bucklew, INDOT Freight Manager
Meeting participants

URS

Project Meeting Notes

Meeting Date:	April 13, 2011	Client:	City of Terre Haute
Time:	9:00 AM	Project Name:	Terre Haute Urbanized Area Railroad Corridor Study
Location:	Girl Scout Office or GoToMeeting		
From:	Sarah Hoch	Project Number:	25627422
Subject:	Agency Review Meeting	Issue Date:	April 18, 2011

Attendees:

- Mayor Duke Bennett, City of Terre Haute
- Judith Anderson, Vigo County Commissioner
- Chuck Ennis, City of Terre Haute Engineer
- Jerry Netherlain, Vigo County Engineer
- Ron Hinsenkamp, Chief Transportation Planner, Metropolitan Planning Organization, West Central Indiana Economic Development District, Inc.
- Mike Ciolli, Vigo County Commissioner
- Larry Heil, Federal Highway Administration
- Norm West, US Environmental Protection Agency
- Mike Riley, Indiana Department of Transportation Rail Office
- Forest Clark, US Fish and Wildlife Service
- Ross Carlson, US Department of Housing and Urban Development
- Paul Satterly, URS
- Jim Rice, Hannum, Wagle & Cline
- Dave Cleveland, Corradino
- Sarah Hoch, Corradino
- Liz Solberg

The purpose of this meeting was to introduce relevant resource agencies to the Terre Haute Urbanized Area Railroad Corridor Study and to discuss the Purpose & Need statement and preliminary alternatives.

1. *Introduction*

The first topic of discussion was an introduction to the study. The goal of the study is to produce a rail master plan, which will identify and prioritize projects of independent utility, which can be independently funded and pursued over the next 25 years. The master plan will be adopted by the Metropolitan Planning Organization's (MPO's) policy committee. An Environmental Assessment is being prepared for the overall study. Analysis of alternatives will be completed at a "paper level" utilizing geographic information system (GIS) data and data from other readily available sources. Each project of independent utility that is carried forward for implementation will require further development of the appropriate National Environmental Policy Act (NEPA) document (i.e. CE, FONSI, etc.); however, the Purpose and Need and the alternatives analysis from the larger study can be used. The supporting individual NEPA documents will include further detailed analysis of impacts on environmental resources. A tiered alternatives analysis was recommended for the overall corridor study. This will allow alternatives with fatal flaws to be eliminated in Tier 1, thereby reducing duplicative work and eliminate unnecessary delays in

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implementing selected projects. This approach to NEPA is consistent with the authority provided in 23 CFR 450.212, 23 CFR 450.318 and Appendix A to 23 CFR 450.

The role of the railroad in Terre Haute was also discussed. Currently, there are no downtown industries that utilize the railroad. Most rail customers are located in industrial parks. The potential for a railroad "buy in" was discussed. Improving rail operations would be an incentive to the local railroads.

During the first community advisory committee (CAC) meeting, attendees were asked to identify and prioritize areas of concern due to the railroad in Terre Haute. The top concern was trains blocking the road at the intersection of 19th Street & Margaret Street. Emergency vehicle response times were also a public concern. The area where the existing CSX lines coincide, near 8th Avenue & 13th Street, was identified because the train traffic there includes the traffic on both lines.

A concern regarding the potential relocation of the Baker Yard to a site near the Shrine Hill neighborhood was raised. Steelton Avenue is a main entrance to Shrine Hill. Concerns of blockages on Steelton Avenue, aesthetics of the rail yard, and noise created by the rail yard were discussed by the group.

2. *Purpose & Need Matrix*

The Purpose and Need performance measures draft matrix was discussed by the group. Some items on the draft matrix were removed, some were added, and others were consolidated or renamed. The methods on how to quantify each item were also discussed. Reductions in motorist delay will be quantified by overall vehicle hours of delay for the whole community. Noise was another topic added. The group discussed simple methods for quantifying noise that could easily be understood by the public and suggested developing a performance measure that looks at the number of train horn soundings in relation to census data. Quiet zone crossings could be a method to reduce noise; however, the group discussed that there are specific steps required to obtain a quiet zone status from the Federal Rail Administration (FRA). Rail efficiency and regional rail connectivity will be combined to the create rail operations criteria. Rail operations will also include rail yard functionality and switching. Improving rail operations must not be a "hand-out" to the railroads, but rather, a method to decrease delay and improve safety for the community. It is important to communicate this to the public clearly. An example could potentially be the relocation of the Baker Yard. By relocating the Baker Yard, it may be possible to eliminate the need for a Margaret Avenue overpass at 19th Street. A side benefit would be that the railroad might benefit from more efficient switching of cars.

The draft performance measures matrix that was discussed at the meeting is attached. Recommended revisions are included in red highlights on the attachment. The intent is to use these criteria in the Tier 1 analysis. Many of the same criteria would then be applied in the Tier 2 analysis but maybe with a slightly different methodology. For instance, the "reduction in motorist delay" criteria could be much more detailed and analytical in Tier 2 than Tier 1 because in Tier 2 key grade separation locations will be modeled, tested, selected, and prioritized. Some criteria would stay consistent from Tier 1 to Tier 2, i.e. the standard environmental resource impacts such as "relocations, wetlands", etc. Some criteria may drop completely out of Tier 2 because they only apply to the Tier 1 decision on preferred alignment, i.e. "compatibility with established long range and economic development plans".

3. Preliminary Alternatives

The preliminary alternatives were discussed using an interactive map. The existing rail corridors and key locations in the community were presented. The preliminary corridor alternatives were described and displayed to the group. Pros and cons of the various options were discussed. Project phasing and financial feasibility will play a role in screening and further developing the alternatives. The alternatives that meet the first screening will be separated into projects of independent utility.

The preliminary alternatives will be discussed at the next CAC meeting. Communicating the options to the community is key to a successful project. It was discussed that it may be easier to understand alternatives if they were shown separately. A method to show the timing of the various phases in the project should also be developed.

There are two alignments created for the north-south CSX line. Both alignments utilize the existing INRD line and relocate Baker Yard. The area identified for the new yard is just south of Steelton Avenue in the Fort Harrison Industrial Park. The majority of this targeted property is already owned by the City of Terre Haute. The existing INRD line is grade separated at and near Wabash Avenue. The INRD line is at-grade at Deming Park to I-70. Currently, Baker Yard is causing roadway blockages along the north-south CSX line, specifically at the intersection of Margaret Ave & 19th Street. These blockages also often extend along the corridor from Davis Dr. on the south to Hulman St. on the north. Trains stop due to the rail operations in the yard, including brake testing or other inspections. Brake testing takes about 30 minutes to complete since the conductor must physically check each car in the train and then test the brake pressure at the end of the train. Relocating the rail yard operations will help eliminate blockages and reduce vehicle delay caused by yard operations. Grade separating Margaret Ave & 19th Street is also an option; however, this will not eliminate other blockages along the corridor from Davis Dr. to Hulman St. Deming Park and Ohio Boulevard is a historic district on the National Register of Historic Places. The entrance to Deming Park is a key part of the historic district. The existing INRD rail line crosses the park entrance. The implications of additional tracks on the INRD line, grade separations, and an alternate entrance were discussed. There is a second entrance on Keane Lane, which is not currently in use due to vandalism in the past. Closing the entrance is undesirable, because it would compromise the historical integrity of the park; however, an additional entrance would be beneficial. Opening the current entrance on Keane Lane or creating an entrance on Poplar Street are options that should be further investigated.

There are also two variations of an east-west alignment that follows the general alignment of US 50, west of the Wabash River, from the CSX rail line in West Terre Haute to the power plant north of SR 63. Both variations of this alignment generate wetland and floodplain impacts, increase the travel distance for trains by 2+ miles, and require a new rail road bridge over the Wabash River; this alignment will be eliminated if it is determine that there is no reasonable chance of it being fundable. The second alignment is a partial new terrain alignment. The portion of the railroad north of Indiana State University campus will be relocated a few blocks north and the curvature will be modified to enable higher rail speeds. This option can also be somewhat depressed to reduce the height of potential grade separations or pedestrian paths. The existing east-west line through Indiana State University can also be modified as part of the limited build option. This option will be further developed, including the potential for a protective barrier and depressing the existing rail line.

The alignments will be further developed based on resource agency input and CAC input prior to the second CAC meeting. The meeting was originally scheduled for the beginning of June; however, the alternatives will require many changes, so the meeting may be postponed to later in

the month. The alternatives will incorporate the limited build scenario and will break the corridors into ala carte items. Project phasing will also be considered.

4. *Field Check*
A portion of the attendees were able to attend a field check to become familiar with the rail related issues in Terre Haute. Key areas were visited, including Indiana State University Campus, 8th Avenue & 13th Street, potential location for relocating Baker Yard, Shrine Hill housing edition, Deming Park, Margaret Street & 19th Street, and the area for a potential rail corridor west of Terre Haute. It was noted the rail lines near Indiana State University campus are not fenced or barricaded to prevent pedestrian right-of-way incursions. The area identified for the potential new terrain on the west side of Terre Haute was visited. There are many apparent wetlands, Isaac Walton Lake, and forested areas.

Please notify us of any corrections to these meeting notes.

Thank you,

Signed: Sarah Hoch

The Corradino Group

Attachment: Matrix for evaluating alternatives with suggested revisions in red highlights

List as first evaluation criterion

Can separate table into groups of criteria by changing border type to highlight different areas, if desirable

Draft Matrix for Evaluating Alternatives

	No Build	East-West Alternatives			North-South Alternatives			
Evaluation Criteria		**A-1**	**A-2**	**B**	**A-1**	**A-2**	**A-3**	**B**
~~Fulfillment of Purpose and Need (1)~~								
Financial viability (2)								
Ability to be implemented in feasible phases (3)								
Reduction in motorist delay (4)								
Reduction in travel times between key destinations (5)								
Reduction in rail/vehicle collisions (6)								
~~Reduction in emergency response times (7)~~								
~~Reduction in transit delay (8)~~								
Compatibility with established long range and economic development plans (9)								
Environmental impacts (10)								
Relocations								
Wetlands								
Floodplains/floodways/waterways								
Forested areas								
Rail efficiency (11)								
Regional rail connectivity (12)								

totally eliminate - alternatives that do not fulfill P&N are fatally flawed and thus eliminated altogether

transit delay (8) can be folded in here

emergency response (7) can be folded in here

add noise impacts - some type of metric for # of horn blows with a census data component

These two could be folded into a single criterion or kept separate - do a single if we don't want to overemphasize

1. ● yes, ● partial, ● no
2. Captures whether or not the alternative has a reasonable chance of being funded – setup a range, i.e. ● $0-$20million, ● $20-$50million, ● $50million
3. Captures whether or not an alternative can be built in phases, i.e. grade separations built as funding becomes available versus new terrain alignment where entire alternative must be built prior to use.
4. Average hourly delay reduction per day for the entire community – captures all at-grade crossings and all traffic. Terre Haute has this information. Will use travel demand model in conjunction with capacity software

look for percent reduction in vehicle hours of delay compared to no build 2035

5. This will be a predicted value (in minutes) based on when trains are present – will need to better define this metric to be able to compare the existing condition with the various modeled alternatives – travel demand model may be of use for testing alternatives. Will need some methodology for choosing origins and destinations to report.
6. This will be a predicted value based on “exposure” – number of trains and rail traffic characteristics and the volume of traffic and traffic characteristics for at-grade crossings. Will follow FRA guidelines. Could be reported as a percentage or we could setup ranges and assign green, yellow, and red dots.
7. Similar to item 5 above – a predicted value that we will need to flesh out the methodology on.
8. Similar to item 4. Above but pulls out the transit component. We could generate results based on bus schedules, routes, and ridership info. Could be criteria we drop, but nice to have a public transit component.
9. ● yes, ● partial, ● no – this would include a write-up in the body on how each alternate accommodates or is in conflict with the various adopted plans.

useful for choosing strategic grade separations

10. Impacts will be reported in standard units, i.e. acres, lineal feet, etc. The discussion will make clear that impacts were calculated at a “planning study” level of accuracy.
11. This would be a green, yellow, red dot scenario with ranges that capture increased rail speeds and improved efficiencies with yard improvements.
12. This would be a green, yellow, red dot scenario to capture any improved connectivity to other cities within the region.

U.S. Department of Transportation
Federal Highway Administration

Indiana Division

575 North Pennsylvania Street, Room 254
Indianapolis, Indiana 46204

March 25, 2011

«Person»
«Organization»
«Division»
«Street»
«City», «State» «Zip»

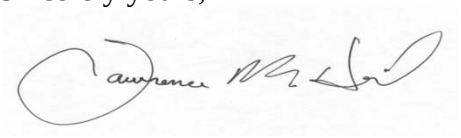
Dear «Person»:

On behalf of the City of Terre Haute, Vigo County Board of Commissioners, and the local Metropolitan Planning Organization, you are invited to the first Resource Agency Review Meeting for the Terre Haute Urbanized Area Railroad Corridor Study (THUARC) Study. The meeting is scheduled for April 13, from 9:00 am to noon. It will be held at the Girl Scout Office located in Fairbanks Park, Terre Haute, IN. Please visit the project website www.terrehauterailstudy.com for additional information. The following materials are attached for your information:

- Location Map for Meeting Site
- Study Description
- Frequently Asked Questions
- Purpose and Need
- Existing Rail Corridor, Wetlands, and Floodplain Map
- Conceptual Alternatives Packet (including 36”x48” aerial exhibit and description)

Please RSVP to Sarah Hoch, Project Engineer, at shoch@corradino.com.

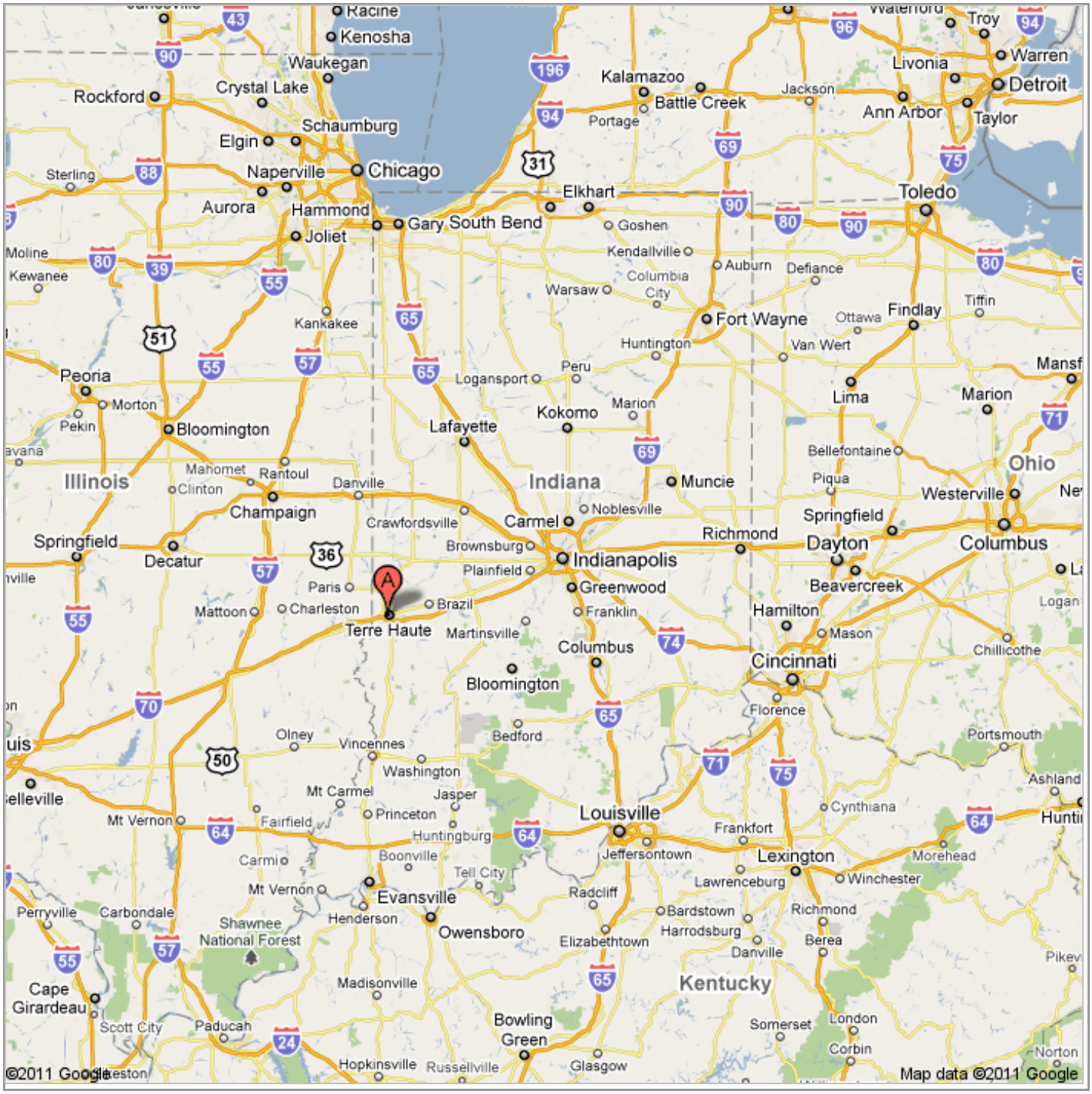
Sincerely yours,



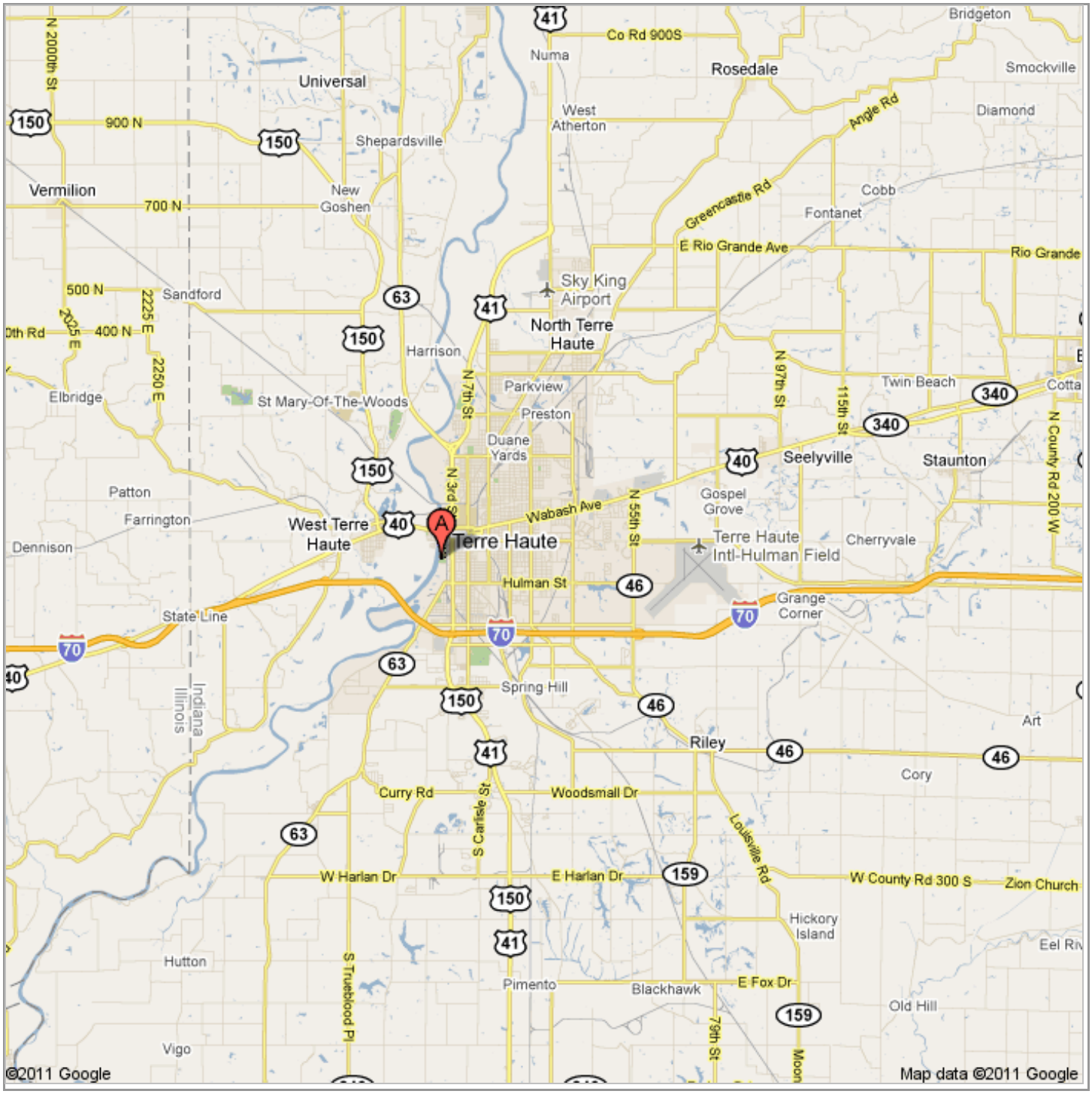
Lawrence M Heil

Cc: Duke Bennett, Mayor of Terre Haute
Judy Anderson, Vigo County Commissioner
Charles Ennis, Terre Haute City Engineer
Jerry Netherlain, Vigo County Engineer
Ron Hinsenkamp, Chief Transportation Planner MPO
Larry Heil, FHWA Indiana Division
Paul Satterly, URS Corporation

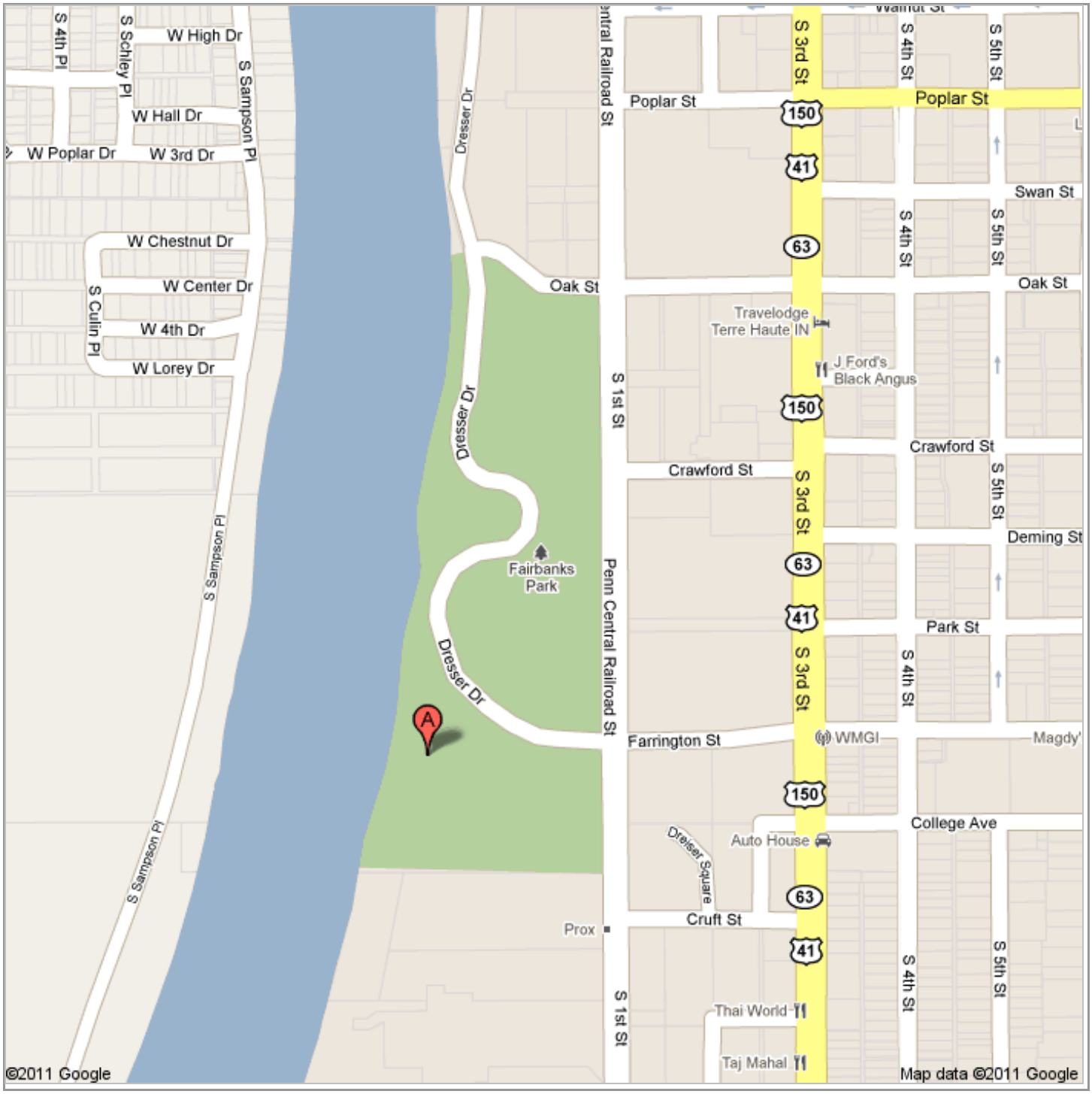
Enclosure



A. **Girl Scouts** of Central Indiana
1100 Girl Scout Lane, Terre Haute, IN -
(812) 232-0104



A. **Girl Scouts** of Central Indiana
1100 Girl Scout Lane, Terre Haute, IN -
(812) 232-0104



A. **Girl Scouts** of Central Indiana
1100 Girl Scout Lane, Terre Haute, IN -
(812) 232-0104

ABOUT THE STUDY

An ambitious collaborative planning effort has been launched by the City of Terre Haute, Vigo County Board of Commissioners, and the Metropolitan Planning Organization (West Central Indiana Economic Development District). The goal is to develop and adopt an integrated conceptual plan to mitigate the current and future impacts of train traffic on safety and security, vehicular and pedestrian traffic, institutions of higher education, commerce, and quality of life in the Terre Haute Urbanized Area.

Senator Richard Lugar worked with local city officials to obtain 90% of the funding for this $479,122 effort from the Federal Railroad Administration. A competitive, qualifications-based process, prescribed by the Indiana Department of Transportation, was used to select URS Corporation as the lead consultant. Other members of the team include The Corradino Group; Hannum, Wagle & Cline Engineering; Myers Engineering; and ASC Group.

This effort will accomplish three specific objectives:

1) A planning-level analysis of the major rail corridors that crisscross the urbanized area;

2) Development and validation of a purpose and need statement that accurately presents the community's concerns and priorities and that is done in accordance with the National Environmental Policy Act (NEPA);

3) Preliminary development and screening of a series of independently usable projects that can be incrementally advanced over the next 5 to 20 years.

It is important to note that funding will have to be secured before any projects can be constructed and that further NEPA documentation will be required during the preliminary engineering phase of each funded project.

TERRE HAUTE URBANIZED AREA RAILROAD CORRIDOR STUDY

CITY OF TERRE HAUTE
VIGO COUNTY BOARD OF COMMISSIONERS
METROPOLITAN PLANNING ORGANIZATION

Frequently Asked Questions

1. ***Q: What is the purpose of this study?***
   A: The study involves a planning-level analysis of the railroad corridors that crisscross the urbanized area. It will culminate in the development and adoption of an integrated master plan and comprehensive strategy to help mitigate the adverse affects that train operations have on this community. The plan will also serve as the framework for making strategic decisions concerning funding, prioritization, and further development of a series of practicable projects, with independent utility, that can be targeted for advancement over the next 5 to 20 years.

2. ***Q: Who is conducting the study?***
   A: The study is a collaborative planning effort among the City of Terre Haute, Vigo County Board of Commissioners and the Metropolitan Planning Organization (West Central Indiana Economic Development District). However, these agencies do not have the technical expertise or staffing to conduct this type of in-depth study. Therefore, the local project steering committee (see table below) used a competitive qualifications based process to select URS Corporation as the lead consultant for this project. Other members of the consultant team include The Corradino Group; Hannum, Wagle & Cline Engineering; Myers Engineering; and ASC Group.

3. ***Q: Are the railroads involved in this planning effort?***
   A: CSX Transportation and Indiana Rail Road are committed to partnering with the study team to develop alternatives that balance the needs of the community and the railroads.

4. ***Q: How much will this study cost and who is paying for it?***
   A: The study will cost $479,112. Thanks to the efforts of Senator Richard Lugar, the City of Terre Haute secured a special grant from the Federal Railroad Administration to pay for 90% of the study's cost ($431,200). As the grant recipient, the City of Terre Haute must pay the remaining 10% as a local funding match ($47,912).

5. ***Q: How long will the study take?***
   A: The study will take approximately one year. Upon completion, the Metropolitan Planning Organization's Transportation Policy Committee (the local policy and decision-making body responsible for carrying out the federally prescribed multimodal transportation planning process in Terre Haute and Vigo County) will consider adoption of the plan. If the committee adopts the plan, the stage will be set to seek federal funding to help advance selected projects.

6. ***Q: Several local groups and organizations have studied Terre Haute's railroad problems in the past, so why do we need another study?***
   A: Many of the solutions proposed in these earlier studies were not thoroughly evaluated from an engineering, system-level, operational, cost- effectiveness or fundability standpoint. In addition, the scope of these studies did not provide adequate opportunities for stakeholder and public involvement, which are required if federal funds will be used to advance projects to construction.

7. ***Q: Does this study mean the city is finally going to build an overpass or underpass on Margaret Avenue near 19th Street?***
   A: No, but the study will re-evaluate the merits of an overpass or underpass along with some other proposed alternatives related to the operation of north-south trains.

8. ***Q: Will ISU and Union Hospital be affected by this project?***
   A: Operation of the east-west corridor that crosses the ISU campus will be evaluated during this study and some proposed

alternatives will be considered, but it is too early to tell how either institution might be affected. Both ISU and Union Hospital have been asked to serve on the Community Advisory Committee for this project so their input and needs can be considered.

9. ***Q: Will this study eventually lead to removal of the railroad tracks that crisscross downtown Terre Haute?***
   A: It is not known at this time; however, alternatives to reduce the amount of train traffic through the central business district will be considered during this study.

10. ***Q: Will the study consider the environmental impacts (noise, air quality, etc.) of rail traffic on this community?***
    A: Since the study is being conducted in the context of the National Environmental Policy Act (NEPA), it will include a system-level assessment of environmental impacts. Individual projects selected for advancement will undergo further environmental assessment during the preliminary engineering phase of the project.

11. ***Q: When will selected projects be built?***
    A: Individual project sponsors (i.e. City of Terre Haute, Vigo County, etc.) will have to secure funding before any selected project can actually be programmed and advanced through the transportation project development cycle (preliminary engineering and design, environmental review, right-of-way acquisition, etc.) to construction. Therefore, it is difficult to predict when construction might begin. However, the goal is to incrementally advance selected projects over the next 5 to 20 years as funding is secured.

12. ***Q: How can the public learn more about the study or get involved?***
    A: To learn more about the study visit http://www.terrehauterailstudy.com or email info@terrehauterailstudy.com. You can also get involved by attending the two public information meetings that will be held later this year. The exact dates, times and locations for these meetings will be announced at a later date. Finally, you can provide your input directly to one of the local study steering committee members listed below.

Local Study Steering Committee

DUKE BENNETT, CHAIR
Mayor of Terre Haute
17 Harding Avenue
Terre Haute, IN 47807
(812) 244-2320
mayor@terrehaute.in.gov

CHARLES ENNIS
Terre Haute City Engineer
17 Harding Avenue
Terre Haute, IN 47807
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charles.ennis@terrehaute.in.gov

JUDY ANDERSON
Vigo County Commissioner
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PURPOSE & NEED STATEMENT

Terre Haute Urbanized Area Railroad Corridor Study

March 23, 2011

The "Purpose" of the project is to improve the interface between vehicular and pedestrian traffic and train traffic, more specifically to minimize potential collisions, increase the effectiveness of emergency response or large-scale evacuations, and reduce both congestion and delay in the transportation network caused by roadway blockages from train traffic.

The project "Need" is to address issues related to public safety, mobility, community sustainability, and railroad operations. Within the study area, the existing rail lines fall within "north-south" and "east-west" corridors. The various alternatives being studied also conform to the north-south and east-west naming convention. The north-south and east-west rail corridors share the common Needs discussed below. Each corridor inherently has a different existing road network, traffic patterns, and land use, and thus their needs will be emphasized accordingly. While public safety is the emphasis for all corridors, mobility plays an enhanced role for the north-south corridors and community sustainability plays an enhanced role for the east-west corridors.

1. Public Safety

   Public safety is a key factor in the decision making process for this study. This topic encompasses the potential for collisions between trains and vehicles/pedestrians. The response times of emergency personnel (fire, ambulance, police, etc) have a large impact on the quality of life of an urbanized area. Many of the existing rail lines through the Terre Haute urbanized area (the study area) have sharp curves, which require trains to travel at speeds as low as 25mph. Existing rail switching yards create congestion on the rail lines, causing trains to slow and many times park and block major corridors in the downtown area and in other locations within the study area. There are only two east-west existing grade separations (US 41 and Ft. Harrison Road) and only three existing north-south grade separations (I-70, Wabash Avenue, and Ft. Harrison Road) within the study area. These grade separations are on roadway corridors that are spaced approximately 3 miles apart.

   Beyond the concern regarding emergency response time for individual citizens, there is a safety concern regarding large-scale emergency situations. Terre Haute is unique in that the downtown area, with the Indiana State University campus located on the north edge of downtown, is bordered by rail lines on two sides (north and east sides). There is a concentration of people due to the commercial, residential, and university land uses. If a large-scale event were to occur such as a spill or a catastrophic event, the existing rail configuration and lack of grade separations would hinder emergency response and evacuations. Both of Terre Haute's hospitals, which serve the west central Indiana region, are located on the west side of the north-south rail line that travels through downtown Terre Haute.

Goal 1.1 – Reduce the number of at-grade crossings in the Terre Haute urbanized area, giving precedence to roadways identified as arterials and collectors in Terre Haute and Vigo County's Thoroughfare Plan.

Goal 1.2 – Eliminate areas where trains block traffic flow due to congestion in rail yards located in close proximity to at-grade crossings.

2. Mobility

The slow moving train traffic or even stopped train traffic within the study area not only creates safety issues as previously discussed in item 1 above, it also negatively effects the mobility of vehicular and pedestrian traffic. Train delays are common in Terre Haute and routinely last five minutes or longer. With the lack of grade separations, there are many occasions where motorists have no option but to sit and wait, which results in lost productivity.

Goal 2.1 – Reduce the travel time delay for motorists and pedestrians with primary focus on local arterial and collector streets.

Goal 2.2 – Improve overall accessibility within the study area.

3. Community Sustainability

The idea of community sustainability encompasses issues regarding community services, division of neighborhoods, environmental impacts, and conformance with other locally initiated planning efforts. Public transportation in the Terre Haute urbanized area, via a bus system headquartered at the Cherry Street Transit Facility, is an important component to the livability of Terre Haute, especially for citizens that rely on public transportation for access to educational facilities, employment, shopping, medical care, etc. The public transit network and bicycle trail facilities utilize the same network that the motoring public uses.

Quality of life is a key aspect of community sustainability. The railroads have caused a division of neighborhoods over time. Accessibility within neighborhoods and between neighborhoods and workplaces, schools, medical care, grocery stores, and other essentials are necessary for a high quality of life.

Numerous locally initiated planning studies that impact the study area have been developed by planning professionals with input from stakeholders and the public. Some of these plans include THRIVE 2025 (Terre Haute/Vigo County Comprehensive Plan), the Rural Health Innovation Collaborative (collaboration between institutes of higher education and regional medical services providers), and the Indiana State University strategic long-range plan. Railroad improvements will ideally compliment and accommodate these and other local planning efforts.

Environmental impacts to air quality, noise, cultural resources, and community recreational facilities are also a component of community sustainability. Congestion negatively impacts air quality. At-grade crossings require the use of train horns to warn motorists of approaching trains.

Goal 3.1 – Improve neighborhood connectivity and access to essential destinations, including schools, grocery stores and recreational facilities.

Goal 3.2 – Improve air quality through the reduction of vehicular delays.

Goal 3.3 – Reduce noise impacts to the human environment via grade separations and "quiet zones".

Goal 3.4 – When possible, promote railroad improvements that mesh with and support the goals of other locally supported and adopted planning efforts.

4. Railroad Mobility and Connectivity

The regional mobility, local mobility, and connectivity of the railroad network impacts the Terre Haute community. Delays caused by inefficient rail connections and switching yards located near roadway crossings constrain railroad operations. Tight curve radii, which are inherent in population centers, require a lower operating and increase travel times.

Goal 4.1 – Decrease lost time in railroad network due to required low speeds through tight curve radii.

Goal 4.2—Decrease delays and congestion in rail yards. Accommodate longer trains and provide efficiencies with the consolidation of rail yards.

CONCEPTUAL ALTERNATIVES PACKET
Terre Haute Urbanized Area Railroad Corridor Study

March 23, 2011

The goal of this study is to identify and prioritize near-term and long-term projects ranging in size from individual crossing improvements, to replacing individual at-grade rail crossings with grade-separated bridges, to projects as large as relocating existing rail lines onto new alignments. This planning study is being performed following National Environmental Policy Act (NEPA) procedures and guidelines. As the individual projects identified within this planning study are carried forward for implementation, additional NEPA documentation and analysis of environmental impacts will be prepared for that individual project; however, the "Purpose and Need and Alternatives Analysis" prepared by this planning study will serve as the basis for each individual project.

Railroad corridor alternatives considered for the study include no-build alternatives, limited build alternatives and build alternatives. The no-build alternatives are the existing railroad corridors with existing at-grade roadway/railroad crossings. The limited build alternatives are the existing railroad corridors with roadway grade separations and at-grade roadway/railroad crossing closures. The build alternatives are railroad corridors built on new and existing railroad alignments with roadway grade separations. The attached exhibit illustrates the conceptual alternatives. It is important to note that no alternative can be implemented without funding. If during the analysis of alternatives it becomes apparent that an alternative has no reasonable chance of being funding, it will be eliminated from further consideration.

A benefit of the limited build alternatives is that they allow for pieces of the overall alternative to be constructed as funding becomes available, i.e. key grade separations could be constructed as an individual project or a rail switching yard improvement could be made individually but within the intent of the full alternative. Improvements can be made as funding becomes available over a period of time, within the overall plan.

The railroads involved with the corridor study are CSX Transportation (CSX) and the Indiana Rail Road. CSX owns the East-West and North-South mainline tracks. These tracks run parallel to each other and cross each other between Locust Street and Maple Avenue northeast of the downtown area. The Indiana Rail Road has tracks that run around the east side of the urbanized area parallel to Fruitridge Avenue and then run along the north side of the urbanized area parallel to Ft. Harrison Road.

The study area limits are the Terre Haute Urbanized Area boundary and the western limit is US 150 in West Terre Haute. The limits along the railroads start on the south end at Spring Hill Drive along the existing North-South CSX mainline and extend to Erickson Street on the north end along the existing North-South CSX mainline. The western limit

is US 150 (3rd Street) in West Terre Haute along the existing East-West CSX mainline and the eastern limit is Scott Street along the existing East-West CSX mainline.

Conceptual Alternatives

The limited build alternatives will consist of the existing railroads remaining in place with roadway grade separation structures over or under the existing East-West and North-South CSX mainline tracks at select locations. The at-grade crossings not replaced with a roadway grade separation structure will be closed. The roadway grade separation structures will either be overpasses (roadway over the railroad) or underpasses (roadway under the railroad). The roadway grade separation locations will be considered for roadways that are primary arterials, secondary arterials and primary collectors.

The existing North-South CSX corridor is approximately 11 miles in length (shown yellow on the corridor map) and the existing East-West CSX corridor is approximately 9 miles in length (shown blue on the corridor map).

The build alternatives consist of the relocation of the North-South CSX mainline to the Indiana Rail Road corridor on the east side of the urbanized area and the relocation of the East-West CSX mainline either along the west side of the Wabash River to the Indiana Rail Road corridor on the north side or a localized relocation of the East-West CSX mainline adjacent to the north side of the Indiana State University campus.

The North-South build alternatives and the East-West build alternatives are independent alternatives and could be implemented together or separately. Trains will be able to travel along most of the build alternative corridors at 60 mph and will match the existing train speeds outside of the urbanized area. The exception is the train speed for the localized East-West Alternative B relocation which will be 40 mph.

The build alternatives will be fully grade separated for safety reasons due to the train speeds and the multiple tracks that will exist within the corridors.

The build alternatives are:

- East-West Alternatives A-1 and A-2 (shown orange on the corridor map)
- East-West Alternative B (shown light blue on the corridor map)
- North-South Alternatives A-1, A-2, and A-3 (shown pink on the corridor map)
- North-South Alternative B (shown purple on the corridor map)

Details of the build alternatives are as follows:

<u>East-West Alternatives A-1 and A-2 -</u>

These corridor alternatives route the East-West CSX mainline along the west side of the Wabash River, across the Wabash River adjacent to the power plant, and then along the Indiana Rail Road corridor on the north side of the City. These corridor alternatives join the existing East-West CSX mainline near the existing Ft. Harrison Road overpass.

These corridor alternatives are identical north of the connection with the CSX Danville Secondary track. The difference in Alternatives A-1 and A-2 is the alignment at the west end of the corridors. The Alternative A-1 corridor diverges from the existing East-West CSX alignment west of US 150 and runs northwest parallel to US 150 for about a mile. Alternative A-2 diverges east of Izaak Walton Lake, loops back to the CSX Danville Secondary track alignment and then turns northeast to join the common A-1/A-2 corridor alignment. Alternative A-1 is 1.7 miles longer than the existing East-West CSX mainline and Alternative A-2 is 2.7 miles longer than the existing East-West CSX mainline.

East-West Alternative B -

This alternative begins at the east end of the existing East-West CSX bridge over the Wabash River, runs northeast underneath the existing US 41 grade separation, turns east between Locust Street and First Avenue and rejoins the existing East-West CSX corridor at 3rd Avenue. Length of this alternative is 1.2 miles. The profile grade for this alternative could be partially depressed 12 to 15 ft. so that the roadway overpasses are approximately 15 ft. above existing ground level instead of the typical 30 ft. above existing ground level. This alternative will be studied with the railroad corridor alignment at existing ground level and with a depressed corridor alignment.

North-South Alternatives A-1, A-2, and A-3 -

These alternatives begin in the Spring Hill Drive area and run north along the existing North-South CSX mainline to the crossing of the Indiana Rail Road. At this point, the corridor alternatives turn northeast and follow the existing Indiana Rail Road corridor on the east side of the City.

The North-South Alternative A corridors share the same alignment from Spring Hill Drive up to the Wabash Avenue overpass. The “A” corridor alternatives vary north of Wabash Avenue with alternative yard locations and variations in the mainline alignment and connecting track alignments at the north end of the corridor.

Alternative A-1 shows a railroad yard located south of the Ft. Harrison industrial park. Alternatives A-2 and A-3 show a railroad yard located east of the Ft. Harrison industrial park. The railroad yard can be located in either location for any of the “A” Alternatives.

The North-South Alternative A corridor runs along the east side of the Ft. Harrison industrial park and connects with the existing East-West CSX mainline track. The

corridor runs along this existing CSX corridor and then diverges to the north where the Alternative A corridor connects with the existing North-South CSX mainline at Otter Creek Junction just south of Rose Hill Avenue. Alignments A-1, A-2 and A-3 show different northeast quadrant connecting track geometry. These northeast quadrant connecting tracks tie into the existing East-West CSX mainline near Scott Street.

The Alternative A corridors are approximately 11 miles in length and are equal to the length of the existing CSX corridor.

North-South Alternative B -

The North-South Alternative B corridor shares the same alignment with the Alternative A corridors from Spring Hill Drive up to the Wabash Avenue overpass.

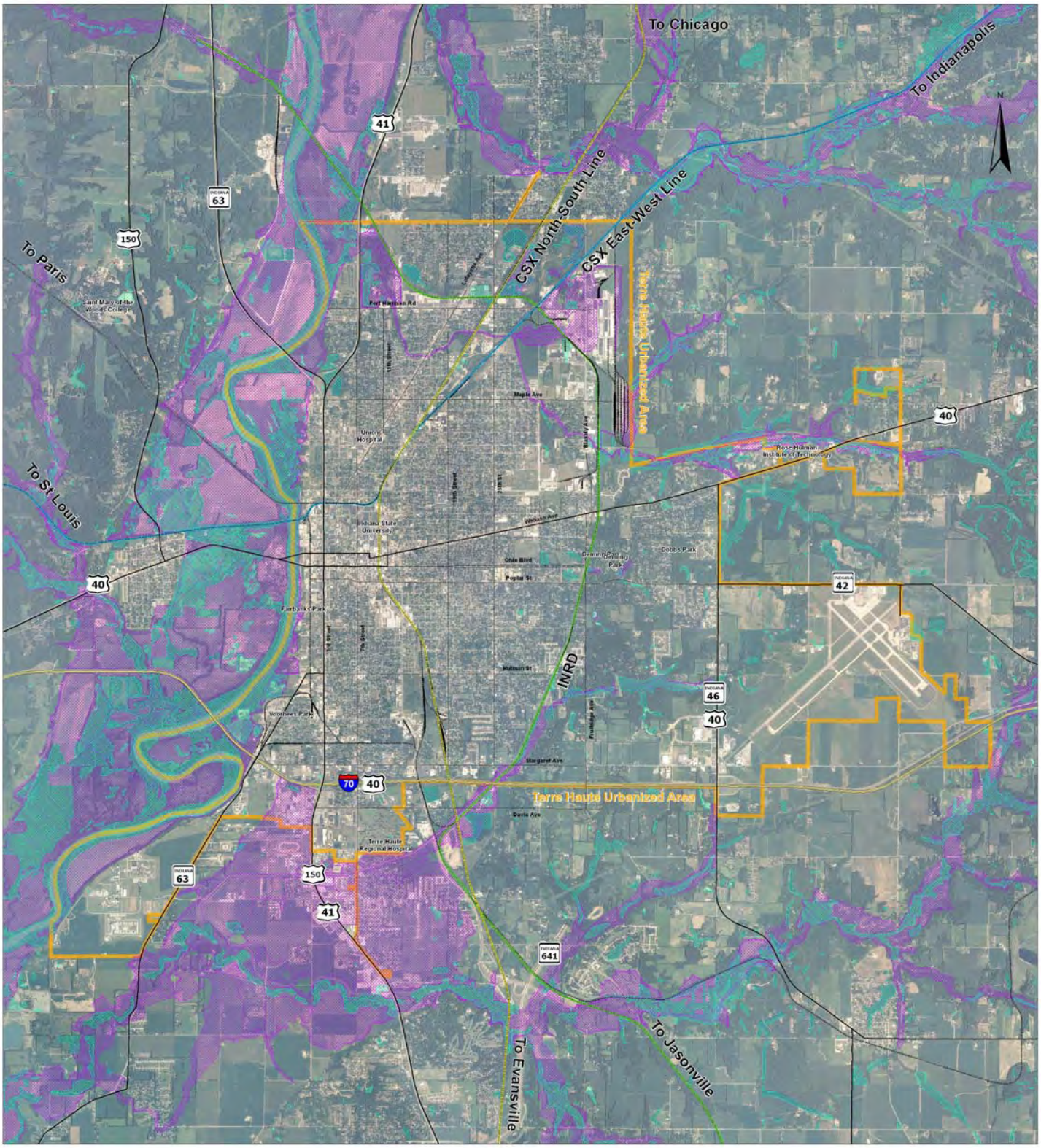
The Alternative B railroad yard is located north of Wabash Avenue and south of the Ft. Harrison industrial park; it is parallel to the existing Indiana Rail Road mainline and railroad yard. The northeast quadrant connector track runs north along the east side of the Ft. Harrison industrial park and connects with the existing East-West CSX mainline at Haythorne Avenue.

The North-South Alternative B alignment follows the Indiana Rail Road alignment across Fruitridge Avenue and goes over the existing East-West CSX alignment and the proposed East-West Alternative A alignment with a railroad grade separation. The Alternative B corridor follows an abandoned railroad corridor north of Ft. Harrison Road through a gravel pit area and ties into the existing North-South CSX corridor at Haythorne Avenue.

The Alternative B corridor is approximately 9 miles in length and is equal to the length of the existing CSX corridor.

Terre Haute Urbanized Area Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization



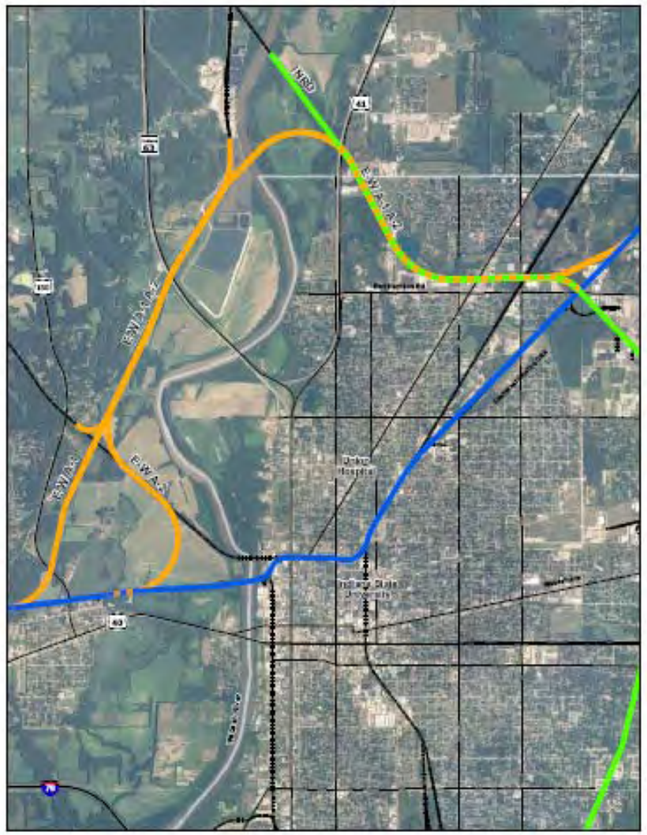
Cooperative - Comprehensive - Continuous Planning

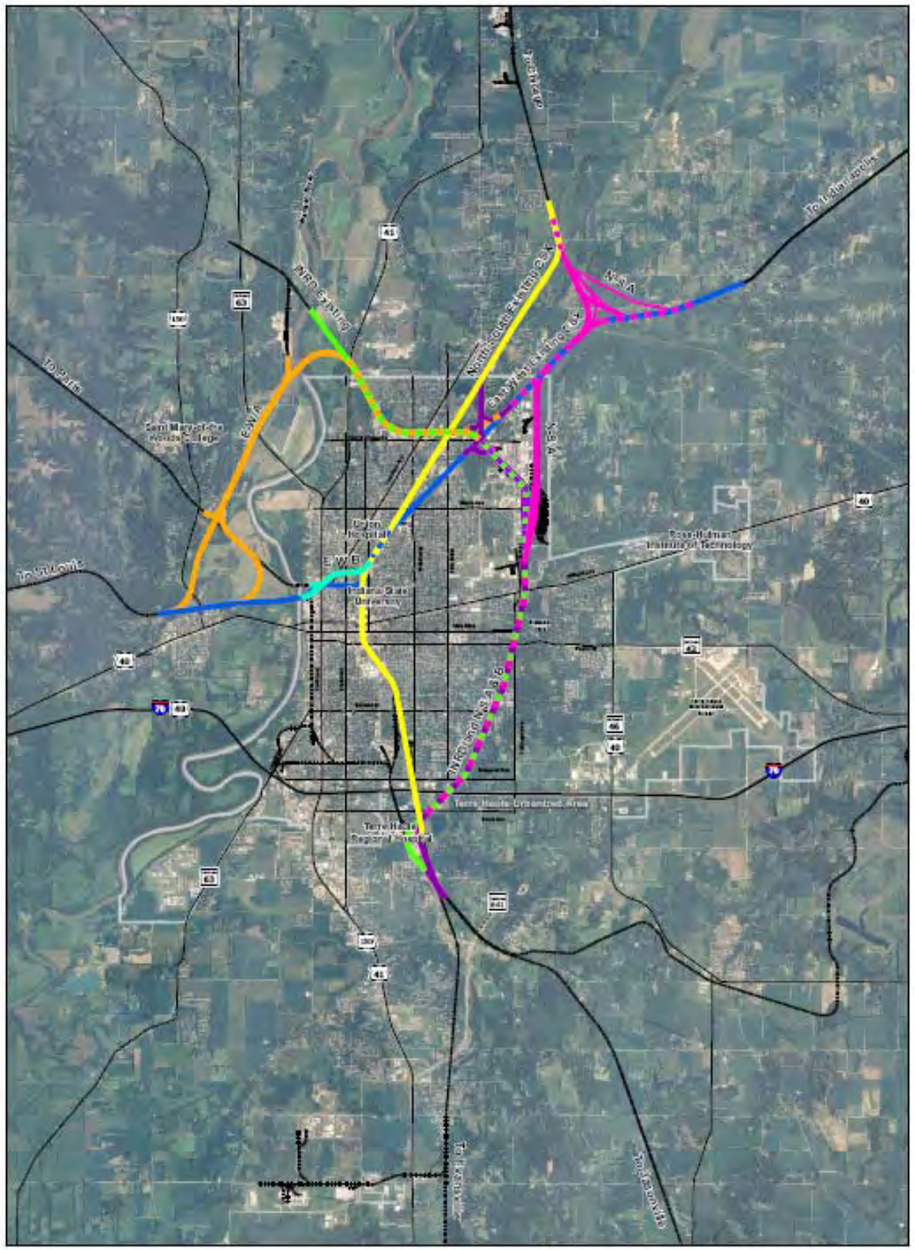
0 2,500 5,000 10,000 15,000 20,000 Feet

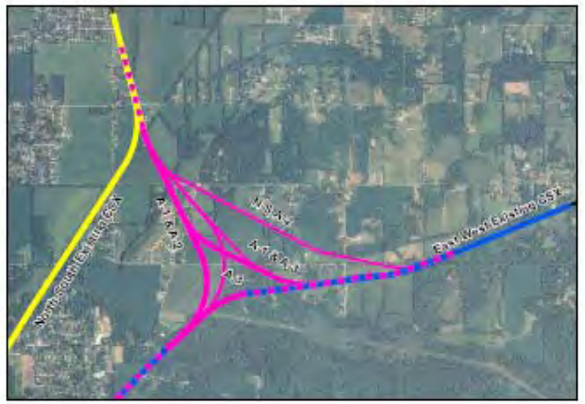
Legend
- East-West Existing CSX
- North-South Existing CSX
- Indiana Rail Road (INRD) Existing
- Wetlands (National Wetland Inventory)
- Floodplains (DFIRM Flood Mapping)

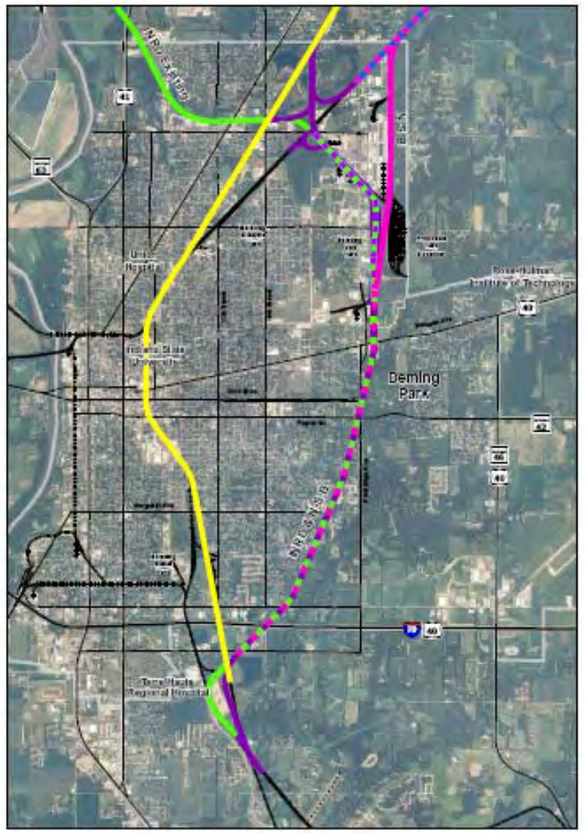
Terre Haute Urbanized Area Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization









East-West Preliminary Corridors

- East-West Alternatives A-1 & A-2
- East-West Alternative B

Cooperative - Comprehensive - Continuous Planning

0 2,500 5,000 10,000 15,000 20,000 Feet

Existing Corridors

- East-West Existing CSX
- North-South Existing CSX
- Indiana Rail Road (INRD) Existing

North-South Preliminary Corridors

- North-South Alternative A-1 to A-3
- North-South Alternative B

URS

Agency Review Meeting

Meeting Date:	March 21, 2012	Client:	City of Terre Haute
Time:	10:00 AM	Project Name:	Terre Haute Urbanized Area Railroad Corridor Study
Location:	Girl Scout Office or GoToMeeting		
From:	Sarah Hoch	Project Number:	25627422
Subject:	Agency Review Meeting	Issue Date:	April 4, 2012

Attendees:

- Larry Heil, Federal Highway Administration
- Ron Hinsenkamp, Chief Transportation Planner, Metropolitan Planning Organization, West Central Indiana Economic Development District, Inc.
- Chuck Ennis, City of Terre Haute Engineer
- Jerry Netherlain, Vigo County Engineer
- Ben Lawrence, Indiana Department of Transportation Environmental Services (GoToMeeting)
- Michael Litwin, US Fish and Wildlife Service (GoToMeeting)
- Paul Satterly, URS
- Jim Rice, Hannum, Wagle & Cline
- Dave Cleveland, Corradino
- Sarah Hoch, Corradino
- Liz Solberg

The purpose of this meeting was to update relevant resource agencies on the Terre Haute Urbanized Area Railroad Corridor Study.

1. *Introduction*

   The outcome of the study was briefly discussed. The recommendations are improvements along existing rail corridors; there will be no alignments on new terrain. The study will be reviewed by the MPO Policy Committee for approval. The Federal Highway Administration (FHWA) will provide a letter documenting that the study followed the National Environmental Policy Act (NEPA) process.

2. *Presentation (attached)*

3. *Recommendations*

   The recommended projects include at least one, and possibly more, grade separations and, on a shorter time frame, an Intelligent Transportation System (ITS) system backbone for first responders. There is currently an approved Categorical Exclusion (CE) document for roadway improvements on Margaret Avenue, which is a recommended grade separation location. The ITS system backbone will likely require a CE1 or CE2 document. It may be possible to implement within existing rights-of-way.

4. *Feedback*

The FHWA commented that the alternatives analysis is based on good data and follows a sound approach. All of the other participating resource agencies concurred with FHWA's comments. FHWA also noted that the Federal Railroad Administration (FRA) was unable to participate in the meeting; however, FHWA and the Metropolitan Planning Organization (MPO) held a conference call with the FRA a week before this Agency Review meeting. FRA has no objections to the study's analysis or recommendations.

Please notify us of any corrections to these meeting notes.

Signed: Sarah Hoch

The Corradino Group

U.S. Department of Transportation
Federal Highway Administration

Indiana Division

575 North Pennsylvania Street, Room 254
Indianapolis, Indiana 46204

March 16, 2012

Dear Agency Representative:

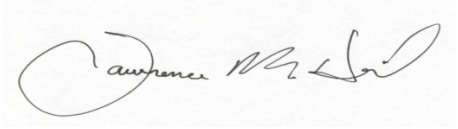
On behalf of the City of Terre Haute, Vigo County Board of Commissioners, and the local Metropolitan Planning Organization, you are invited to the final Resource Agency Review Meeting for the Terre Haute Urbanized Area Railroad Corridor Study (THUARC) Study. The meeting will focus on the alternatives analysis performed by the team. This analysis has led to the recommendation of smaller improvements such as individual grade separations at key locations, rather than corridor-wide rail improvements or rail relocation projects.

The meeting is scheduled for March 21, from 10:00 am to noon. It will be held at the Girl Scout Office located in Fairbanks Park, Terre Haute, IN. Sarah Hoch of Corradino LLC, a member of the consultant team, has sent an e-mail to you with "Go To Meeting" information, in case you are unable to travel to Terre Haute but would like to still participate. Please visit the project website www.terrehauterailstudy.com for additional information. The following materials, prepared by the consultant team, are attached for your information:

- Location Map for Meeting Site
- Background
- Purpose & Need Statement
- Alternatives Analysis Summary
- Power Point Presentation

Please contact Sarah Hoch at shoch@corradino.com with any questions or comments.

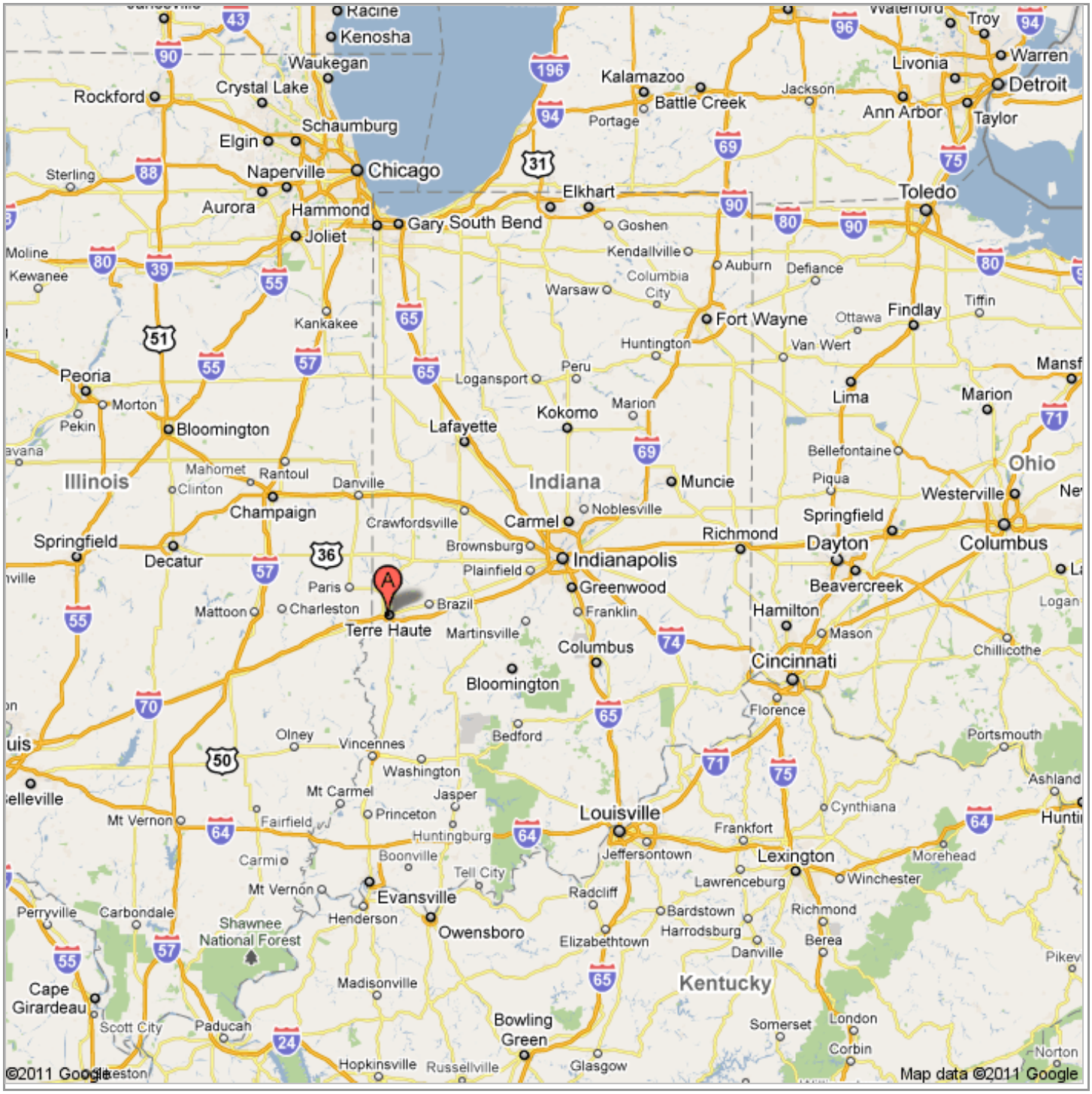
Sincerely yours,



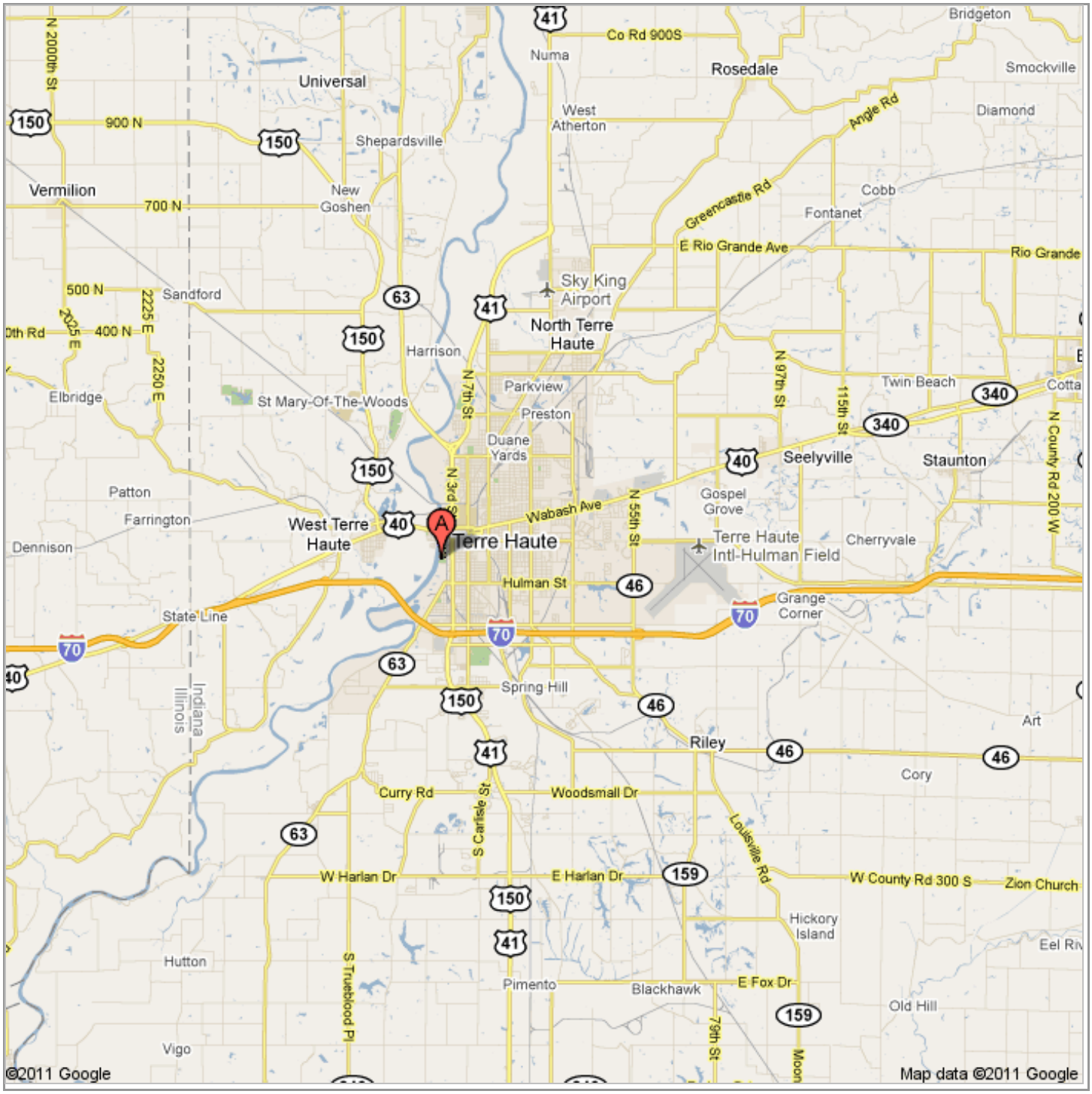
Lawrence M Heil

Cc: Ron Hinsenkamp, Chief Transportation Planner MPO
Paul Satterly, URS Corporation

Enclosure



A. **Girl Scouts** of Central Indiana
1100 Girl Scout Lane, Terre Haute, IN -
(812) 232-0104



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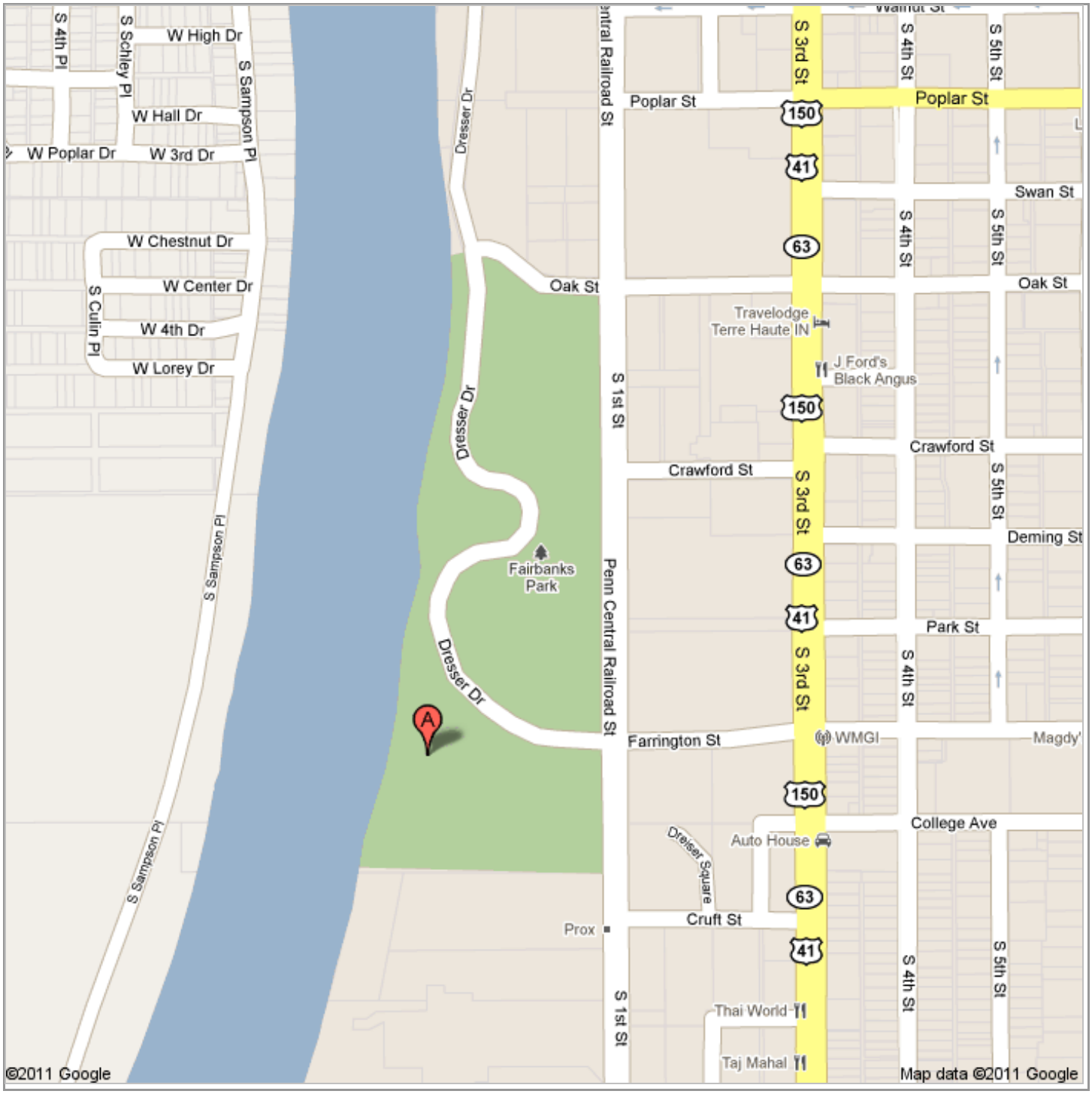


A. **Girl Scouts** of Central Indiana
1100 Girl Scout Lane, Terre Haute, IN -
(812) 232-0104

Background

Existing Conditions

Figure 1 illustrates the existing rail lines, and forecasted train volumes, in the Terre Haute urbanized area. There are currently two railroad companies operating within the Terre Haute urbanized area. The two railroads that run through downtown Terre Haute are operated by CSX Transportation. One line (Blue) connects from Indianapolis to St. Louis and is referred to as the east-west line. There are currently two grade separations on the east-west line. US 41/3rd Street, in the western portion of the study area, is an arterial and is grade separated with a highway overpass. Fort Harrison Road, located at the north end of the study limits, is also grade separated. The other CSX line (Yellow) connects Chicago to Evansville and is referred to as the north-south line, which currently has one grade separation at I-70. Indiana Rail Road (INRD), is a short line railroad that also operates in Terre Haute. The INRD line (Green) is located along the eastern side of the city. There are four existing grade separations on the INRD, one each at I-70 and Wabash Avenue, and the other two on low volume streets north of Wabash Avenue.

The largest train delays in the community occur on the Yellow line near 19th Street and Margaret Avenue. Margaret Avenue crosses the southern end of the Baker Yard at this location. While the average blockage at this location for through trains is four minutes, it is common for the crossing to be blocked for up to an hour during switching operations.

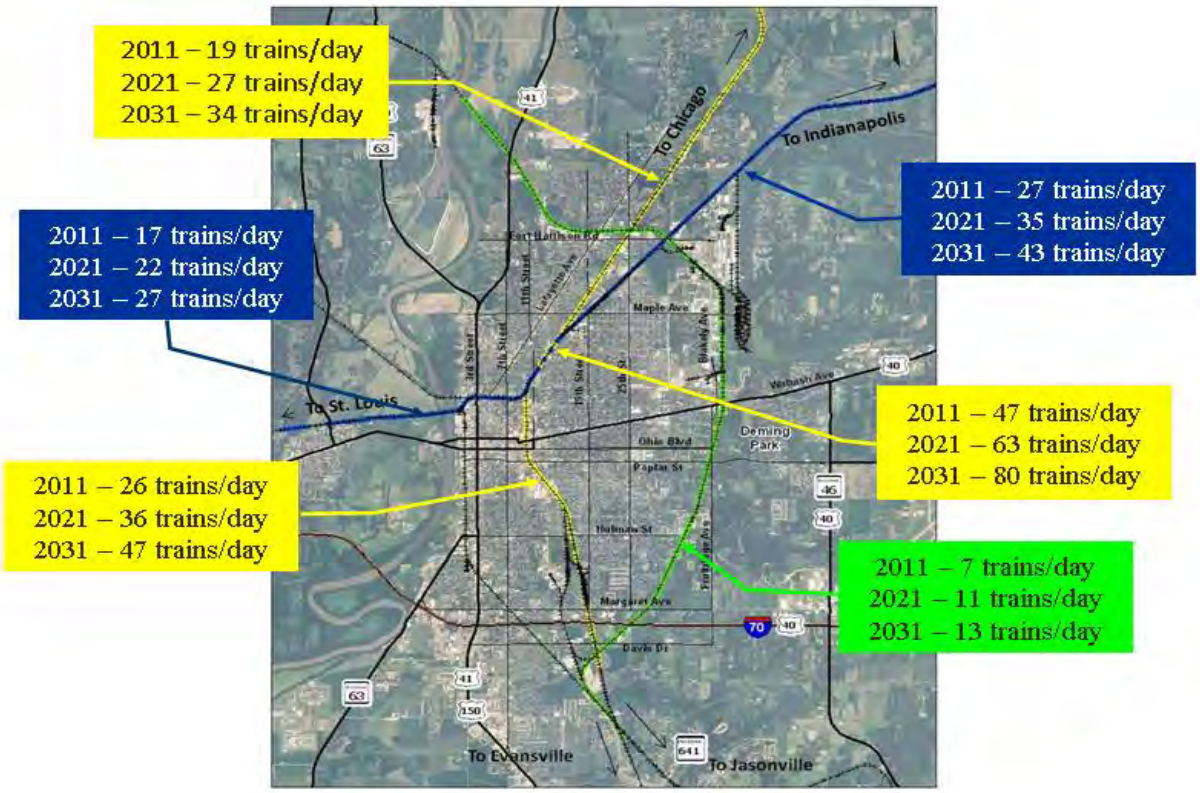


Figure 1 - Existing Conditions Map

Purpose and Need Statement

Purpose

The purpose of this project is to improve safety, mobility, and community sustainability by mitigating the adverse effects that rail operations have on the Terre Haute Urbanized Area. This goal is achieved via the following objectives:

1. Reduce delay and improve mobility for motorists.
2. Improve safety by reducing potential for train, vehicle, and pedestrian collisions, and reducing emergency response times.
3. Improve community sustainability by improving cohesion between neighborhoods and minimizing environmental impacts.
4. Maintain railroad operations, including regional mobility, local mobility, and rail yard efficiency.

Need

The project "Need" is to address issues related to public safety, mobility, community sustainability, and railroad operations. Within the study area, the existing rail lines fall within north-south and east-west corridors. The various alternatives being studied also conform to the north-south and east-west naming convention. The north-south and east-west rail corridors share the common Needs discussed below; however, each corridor's Needs inherently have slightly differing emphasis due to their differences in road networks, traffic patterns, and land use.

Mobility

Train traffic through Terre Haute creates delays for motorists when crossings are temporarily blocked as trains pass through. These delays are inconvenient, but not atypical of any community with a railroad presence. The situation in Terre Haute is unique, because trains often slow down or even stop at specific crossings. Stopped or slowed trains create additional delays above and beyond what most communities endure. Vehicle delays and queues also have an adverse impact on air quality. Vehicular delays negatively impact the community through loss of productivity and lowered quality of life.

Goal 1.1 – Reduce vehicle hours of delay for motorists.

Public Safety

Public safety is a factor in the decision making process for this study. This topic encompasses the potential for collisions between trains and vehicles or pedestrians, and the response times of emergency personnel (fire, ambulance, police, etc).

At-grade crossings create the potential for train and vehicle collisions. Using the Federal Railroad Administration's (FRA) web based accident prediction system (WBAPS) tool, the potential for train and vehicle accidents can be quantified. Factors including the annual average daily traffic (AADT), the crossing treatment type, and the crash history are used by WBAPS to predict the probability of future crashes. While WBAPS is a valuable analysis tool, there are limitations, including; sight-distance, highway congestion, bus or hazardous material traffic, and local topography. Vehicle and train collisions can be reduced by improving crossing treatments or grade separations. Pedestrian and train collisions mainly occur when pedestrians trespass onto railroad right-of-way; however, there is also potential for pedestrian collisions at designated crossings.

Response times for emergency personnel are an important aspect of public safety. Trains can delay personnel from responding to emergencies. There are only two east-west existing grade separations (US 41 and Ft. Harrison Road) and only five existing north-south grade separations (I-70, Wabash Avenue, Locust Street, Beech Street, and Ft. Harrison Road) within the study area. Currently, it is difficult for emergency vehicles to avoid delays due to trains.

Goal 2.1 – Reduce the potential for train and vehicle or pedestrian collisions. Methods for reducing potential collisions include crossing treatments, grade separations, and barriers to reduce trespassing.

Goal 2.2 – Reduce the travel time between key destinations for emergency responders. Enable emergency responders to avoid long delays by arming dispatchers with up-to-date crossing blockage data.

Community Sustainability

Community sustainability encompasses issues regarding environmental resources, quality of life, and community consensus.

Environmental resources include wetlands, forested areas, endangered species, cultural resources, residences, and commercial and industrial properties. Minimizing impacts on these valuable resources is important to the community.

Quality of life is inherently very broad and difficult to measure. For the purposes of this project, quality of life will quantify noise generated by train horns, visual impacts, and impacts to residential areas. Train horns are an important aspect of at-grade crossing safety; however,

they are a nuisance to residents of Terre Haute. Grade separations or quiet zone crossings are methods of reducing the noise generated by train horns.

Visual impacts include the effect of railroad solutions on the community. For example, grade separations or barriers in sensitive areas should be neutral or enhancing to the current landscape.

Community consensus is critical to the success of any project. Numerous locally initiated planning studies within the study area have been developed by planning professionals with input from stakeholders and the public. Some of these plans include THRIVE 2025 (Terre Haute/Vigo County Comprehensive Plan), the Rural Health Innovation Collaborative (collaboration between institutes of higher education and regional medical services providers), and the Indiana State University strategic long-range plan. Railroad improvements will ideally compliment and accommodate these and other local planning efforts. Due to the amount of public involvement or adoption of these studies by governing bodies, they can be considered an evaluation tool for public consensus. Community advisory meetings and public information meetings are also being held throughout this study to both gather input and educate the community.

Goal 3.1 – Minimize potential impacts to environmental resources, including wetlands, forested areas, endangered species, cultural resources, residences, and commercial and industrial properties.

Goal 3.3 – Promote railroad improvements that mesh with and support the goals of other locally supported and adopted planning efforts.

Railroad Operations

Railroad operations affect the railroad's ability to do business, and they also impact the Terre Haute community. The ability to complete switching operations and the permitted travel speed are important to the railroads. Connectivity between existing rail yards (Baker Yard, Duane Yard, and Van Yard) and access to rail customers are important to the railroad. In addition to effecting railroad operations, train speed effects crossing delay for motorists.

Goal 4.1 – Maintain or increase permitted train travel speeds.

Goal 4.2—Maintain local and regional mobility, including customer access, rail yard access, travel length, and available switches.

Alternatives Analysis

Tiered Analysis Methodology

The purpose of the Tier 1 and Tier 2 analysis is to identify and prioritize, within a National Environmental Policy Act (NEPA) framework, a list of projects of independent utility that can be carried forward for further refinement and implementation. Tier 1 identifies the north-south and east-west corridor(s) for investment. The main tool utilized in the analysis is the Tier 1 Analysis Matrix (Table 1). Tier 1 focuses on corridor alternatives with a primary goal of determining corridor(s) in which to make future investments and improvements. For example, it is not prudent to make an investment such as building a grade separation to an existing corridor if the ultimate goal is to relocate that corridor. Tier 2 focuses on specific projects of independent utility, their benefits, and their costs.

Tier 1 Analysis

Tier 1 focuses on the overall railroad corridors. Critical factors such as expense and feasibility of phased implementation have been examined. Because railroad projects can be costly, it is important that each project of independent utility fit within the scheme of an overall plan. It would not be prudent to construct a grade separation or establish a quiet zone along an existing railroad corridor if the ultimate goal is to relocate that railroad, so the ability to construct the project in fundable independently useful segments is a key component of the Tier 1 analysis. Other considerations such as reduction in motorist delay, effect on railroad operations, and environmental impacts, are also considered in the Tier 1 analysis.

The following corridor alternatives (Figure 2) were analyzed in Tier 1:

- Blue (Existing CSX East-West Corridor with Grade Separations)
- Orange (East-West Relocation to West of Wabash River)
- Teal (Existing East-West with Realignment and/or Depression through ISU Campus Area)
- Yellow (Existing CSX North-South Corridor with Grade Separations)
- Pink (North-South Relocation to Existing INRD)
- Purple (North-South Relocation to Existing INRD)

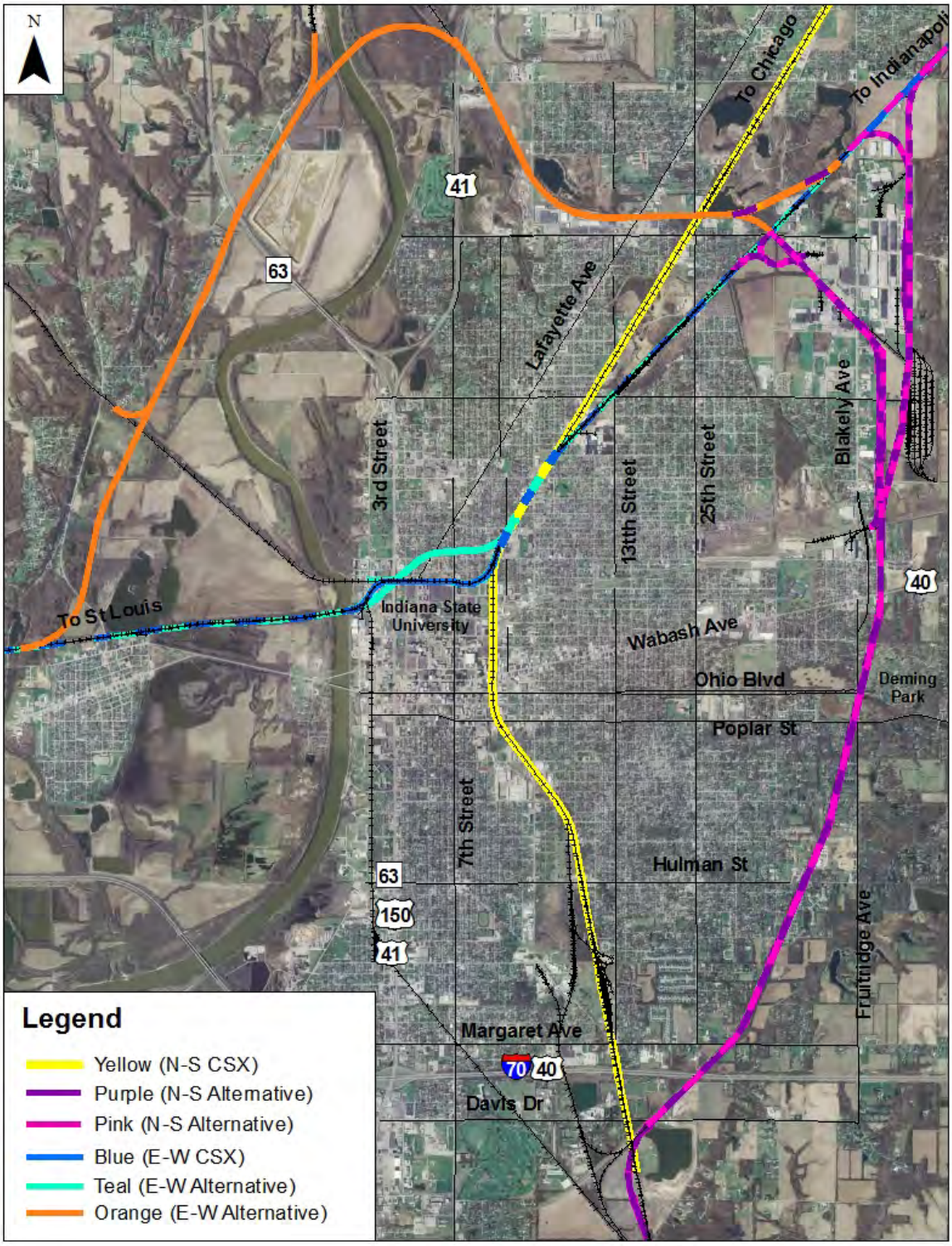


Figure 2 – Tier 1 Corridor Alternatives

Tier 1 Performance Measures

The corridor alternatives were evaluated on the following criteria. Table 1 summarizes Tier 1 corridor alternatives performance.

(1) Feasibility of phased implementation - measures whether or not an alternative can be built in phases that yield immediate benefits. For example, grade separations can be built as funding becomes available and the benefits will be immediate for the dollars invested.
- Easily separated into projects of independent utility suitable for phasing.
- Cannot be separated into projects of independent utility suitable for phasing.

(2) Preliminary cost estimates, for construction, land acquisition, and engineering, in current year USD (United States dollars).

(3) Total hours of vehicular delay calculated for each rail corridor using current traffic counts and current rail crossing delay. Only delay due to railroad crossing occupation is considered. Delay is measured in vehicle-hours (veh-hr).

(4) Affect on railroad operations, including customer access, rail yard access, travel length, permitted speed, and available switches.
- Maintains or improves rail operations.
- Negatively impacts rail operations, i.e. added mileage.

(5) Compatibility with established long-range and economic development plans.
- Accommodates established plans.
- Conflicts with established plans.
- Neutral impact.

(6) Potential environmental impacts based on planning level construction limits with a buffer of 30 additional feet. The environmental impacts include residential, commercial, industrial, and agricultural relocations. Impacts to wetlands, floodplains, waterways, and forested areas are also included.

Table 1 - Tier 1 Analysis Matrix

Evaluation Criteria	E-W Alternatives				N-S Alternatives			
	Blue	Teal	Orange	No Build	Yellow	Pink	Purple	No Build
(1) Feasibility of phased implementation	●	●	●	n/a	●	●	●	n/a
(2) Planning Level Cost [Million USD]	$ 65.50	$ 100.60	$ 226.20	$ 0	$162.20	$ 274.20	$ 304.30	$ 0
(3) Reduction in Motorist Delay [veh-hr]	593	593	517	0	600	340	340	0
(4) Railroad Operations	●	●	●	●	●	●	●	●
(5) Compatibility with established long-range and economic development plans	●	●	●	●	●	●	●	●
(6) Potential Environmental Impacts								
(6a) Residential Relocations	63	110	8	0	86	47	68	0
(6b) Commercial Relocations	10	14	14	0	37	4	5	0
(6c) Industrial Relocations	18	18	0	0	11	1	9	0
(6d) Agricultural Relocations	1	1	5	0	1	8	2	0
(6e) Wetlands	< 1 acre	< 1 acre	32 acres	n/a	0	7 acres	11 acres	n/a
(6f) Floodplains	< 1 acre	< 1 acre	114 acres	n/a	0	26 acres	19 acres	n/a
(6g) Waterways	0	0	830 ft	n/a	0	2,180 ft	580 ft	n/a
(6h) Forested Areas	0	0	32 acres	n/a	0	11 acres	11 acres	n/a

Tier 1 Corridor Alternatives Not Carried Forward to Tier 2

Orange (East-West Relocation to West of Wabash River)

The Orange corridor alternative was not carried forward for further study. The project does not have the ability to be implemented in phases and no benefits will be realized until the entire project is completed. The ability for the project to be funded is low due to the fact the entire investment will need funded in one phase. Orange does not satisfy Purpose and Need because it negatively impacts rail efficiency. Orange also has significantly more impacts to environmental resources such as wetland, forested lands, and floodplains.

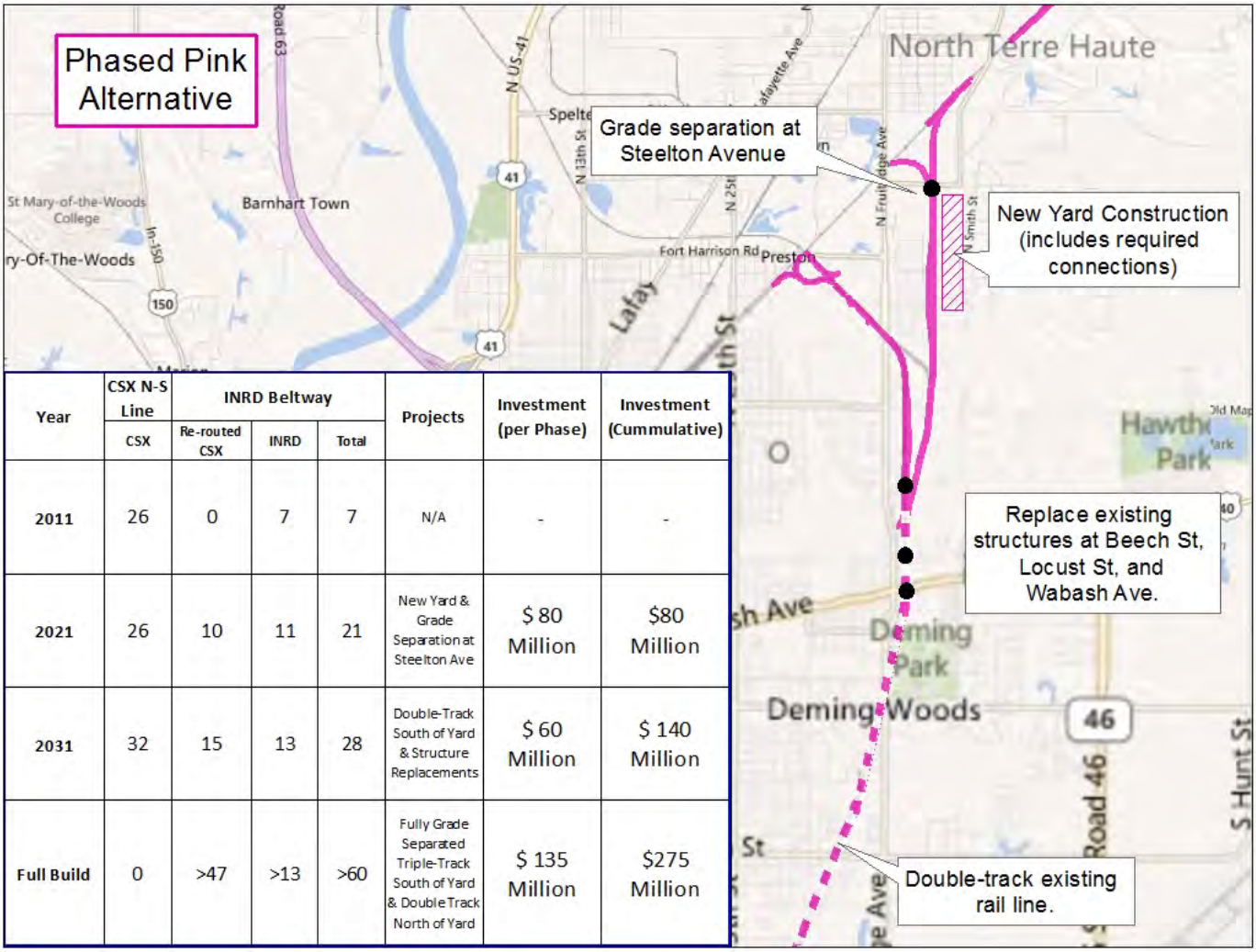
Teal (Existing East-West with Realignment and/or Depression through ISU Campus)

The Teal corridor alternative was not carried forward for further study. The realignment of the rail corridor allows for faster train speeds than Blue, which reduces delay to the motoring public in the ISU campus area; however, this area has significant pedestrian traffic and the increased rail speeds could reduce overall safety. Teal is approximately 50% more expensive than Blue. The Tier 2 analysis investigates alternative projects to enhance pedestrian safety.

Pink and Purple (North-South Alternative Relocation to INRD and Relocated Baker Yard from near Margaret Avenue and 19th Street to near Fort Harrison Road)

The Pink and Purple corridor alternatives were not carried forward for further study. The Pink and Purple corridor alternatives had very similar impacts; however, Pink enjoyed more support from the railroads and had a lower overall cost. Additional analysis was performed in an attempt to break the Pink corridor alternative into logical phases that could be constructed over time, with the ultimate goal of relocating all north-south CSX rail traffic from the line through downtown Terre Haute to this INRD corridor. Initial opinion was that this could provide benefits to the motoring public throughout the Terre Haute community.

Phase 1 includes years 0 to 10 and Phase 2 includes years 10 to 20. Phase I includes relocating Baker Yard from 19th Street and Margaret Avenue to near the Fort Harrison Industrial Park with required connector tracks. The yard must be located to the east of the existing GATX yard because existing grade separation will not be replaced in the first phase. A grade separation is required at Steelton Avenue. Existing grade separations at Beech Street, Locust Street, and Wabash Avenue are not proposed to be improved during Phase I, and no additional grade separations are proposed. The railroads were actively engaged to provide data regarding potential number of trains to be relocated per phase. The railroads also reviewed cost estimates for each phase. Approximately 8 to 12 trains would be re-routed from the north-south CSX line to the existing INRD tracks. Figure 3 summarizes the feasibility of each phase. Pink was eliminated because, even when broken into phases, the proposed improvements are cost prohibitive, for the amount of benefit anticipated per phase.



Year	CSX N-S Line	INRD Beltway			Projects	Investment (per Phase)	Investment (Cummulative)
	CSX	Re-routed CSX	INRD	Total			
2011	26	0	7	7	N/A	-	-
2021	26	10	11	21	New Yard & Grade Separation at Steelton Ave	$ 80 Million	$80 Million
2031	32	15	13	28	Double-Track South of Yard & Structure Replacements	$ 60 Million	$ 140 Million
Full Build	0	>47	>13	>60	Fully Grade Separated Triple-Track South of Yard & Double Track North of Yard	$ 135 Million	$275 Million

Figure 3 - Pink Phased Alternative

Tier 2 Analysis

The goal of Tier 2 Analysis is to prioritize projects of independent utility associated with the Tier 1 alternatives carried forward. Tier 2 focuses on all types of projects of independent utility. While Tier 1 focused on independent usability and delay reduction, Tier 2 focuses on additional items discussed in the Purpose & Need.

Tier 1 Corridor Alternatives Carried Forward to Tier 2

The existing railroad lines with grade separations (Tier 1 Yellow and Blue corridor alternatives) were carried forward to Tier 2. Potential grade separations were strategically selected for Tier 2 analysis for the following locations (Figure 4): Locust Street; 13th Street/8th Avenue; Ohio Street; 13th Street; Hulman Street; Margaret Avenue; 5th Street/Lafayette Avenue; and 7th Street.

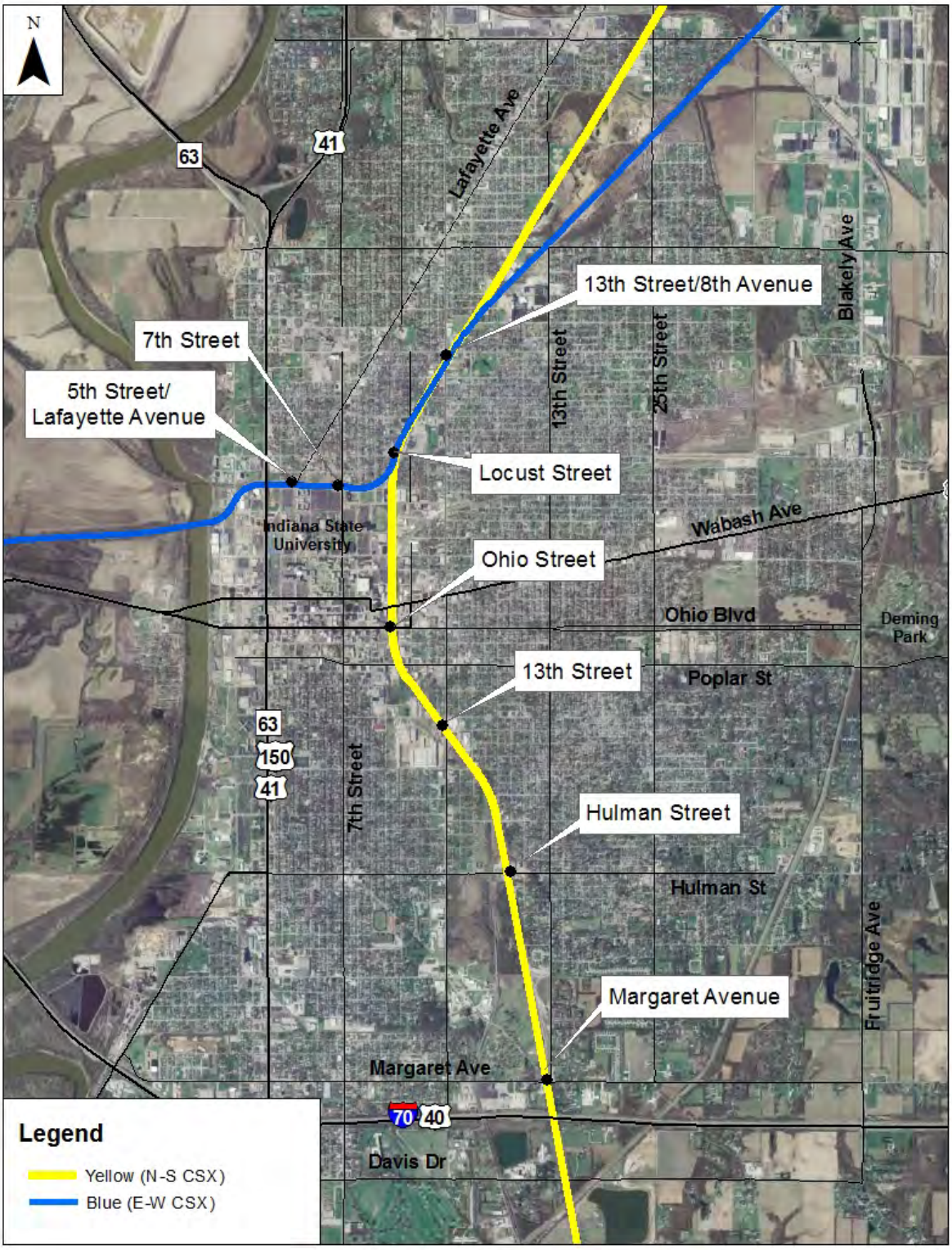


Figure 4 – Potential Tier 2 Grade Separation Locations

Tier 2 Methodology

The methodology used to analyze alternatives is tailored to the type of alternative. The grade separations were analyzed with travel demand model techniques to quantify benefit increase or decrease. The benefits were monetized for benefit-cost analysis. This type of alternative requires a large monetary investment, so rigorous analysis was performed. Additional projects, including ITS, pedestrian safety countermeasures, and quiet zones were analyzed more qualitatively. These criteria include how well the alternatives fulfill the Purpose & Need, independent utility, and public input.

Travel Demand Modeling

The travel demand model for the West Central Indiana Economic Development District (WCIEDD) was used to perform analysis to quantify the user benefits of each alternative. The travel demand model was prepared for the analysis. First, the roadway network was modified by adding short links at railroad crossings identified as locations for potential grade separations. The short links represent the delay associated with the rail crossing. The links were modified to represent different scenarios: at-grade crossing, grade separated crossing, or a crossing closure. For at-grade crossings, delay was coded for each link. The amount of delay was based on motion-activated camera data collected by the WCIEDD. For grade separations, the delay was removed at the crossing. For crossing closures, the link was removed, so vehicles could not utilize the crossing. The model was modified to represent the existing at-grade crossings and grade separations. New traffic counts were coded into the network and the model was calibrated to replicate the 2010/2011 conditions.

The first scenario analyzed was the existing conditions or “no build” condition. The results of this scenario was the base line for all analysis. Next, individual grade separations and alternatives carried forward from Tier 1 were analyzed. The grade separation locations were strategically chosen based on public input, roadway functional classification, spacing, and engineering constraints. The performance measures produced by the analysis include: crossing delays, vehicle-hours traveled, vehicle-miles traveled, and congested vehicle-miles traveled. The highest performing individual grade separations were then analyzed in various combinations. The combination scenario benefits are not simply a sum of their parts. the network results are different for the combinations than the individual network results combined.

The “No Build” scenario in Table 2 represents the modeled delay for the entire community caused by all existing at-grade rail crossings. The modeled reduction in community-wide delay for various alternatives, i.e. single grade separations and combinations of two and three grade separations, are also summarized. Parentheses indicate a negative number or a decrease. Crossing delay is indicated in hours per day. Vehicle hours travelled (VHT) and vehicle miles traveled (VMT) are also reported as a “per day” community-wide quantity. The congested VMT captures alternatives that route traffic onto a corridor that experiences congestion such as a level of service (LOS) D or greater. This could indicate that additional road improvements may be necessary.

Table 2 – Summary of Modeled Reduction in Delay

Daily Network Statistics (2010)

Scenario	Description	Crossing Delays	VHT	VMT	Congested VMT
No Build	*Existing Conditions*	873.98	59,732	2,753,840	373,463
Project 1	*Build Grade Separation at Margaret Ave.*	811.90	59,618	2,750,098	373,320
A	Net Change from Existing Conditions-->	(62)	(114)	(3,742)	(143)
Project 2	*Build Grade Separation at Hulman Street*	852.48	59,688	2,752,051	374,425
B	Net Change from Existing Conditions-->	(22)	(44)	(1,788)	962
Project 3	*Build Grade Separation at 13th Street*	849.77	59,649	2,752,356	372,388
C	Net Change from Existing Conditions-->	(24)	(83)	(1,484)	(1,074)
Project 4	*Build Grade Separation at Ohio Street*	852.50	59,668	2,752,945	373,755
D	Net Change from Existing Conditions-->	(21)	(64)	(894)	293
Project 5	*Build Grade Separation at Locust Street*	825.50	59,627	2,752,622	375,287
E	Net Change from Existing Conditions-->	(48)	(105)	(1,217)	1,824
Project 6	*Build Grade Separation at 13th/7th*	791.67	59,546	2,751,864	385,032
F	Net Change from Existing Conditions-->	(82)	(186)	(1,976)	11,569
Project 7	*Build Grade Separation at Margaret Ave. and at Locust Street*	763.41	59,542	2,750,722	376,248
A, E	Net Change from Existing Conditions-->	(111)	(190)	(3,117)	2,785
Project 8	*Build Grade Separation at Margaret Ave.and at 13th/7th*	729.58	59,460	2,749,883	384,648
A, F	Net Change from Existing Conditions-->	(144)	(272)	(3,956)	11,186
Project 9	*Build Grade Separation at Margaret Ave,.at 13th Street, and at Locust Street*	705.36	59,490	2,750,985	376,079
A,C,E	Net Change from Existing Conditions-->	(169)	(242)	(2,855)	2,616
Project 10	*Build Grade Separation at Margaret Ave,.at 13th Street, and at 13th/7th*	658.35	59,412	2,750,107	385,859
A,C,F	Net Change from Existing Conditions-->	(216)	(320)	(3,732)	12,397
Project 11	*Build Grade Separation at 5th Street/Lafayette Ave.*	864.28	59,665	2,751,896	371,921
	Net Change from Existing Conditions-->	(10)	(66)	(1,943)	(1,542)
Project 12	*Build Grade Separation at 7th Street*	830.97	59,659	2,751,506	380,507
	Net Change from Existing Conditions-->	(43)	(73)	(2,334)	7,045
Pink	*Upgrade INRR, Divert all Yellow CSX*		59,310	2,749,451	373,837
	Net Change from Existing Conditions-->		(421)	(4,389)	374
Yellow	*Upgrade Yellow (N-S) CSX to 60 mph*		59,438	2,758,339	392,277
	Net Change from Existing Conditions-->		(294)	4,500	18,815
Blue	*Upgrade Blue (E-W) CSX to 60 mph*		59,240	2,750,335	391,477
	Net Change from Existing Conditions-->		(492)	(3,504)	18,014

Benefits were quantified for the same alternatives and are summarized in Table 3. These benefits consisted of monetary savings based on the value of time for personal and commercial trips, operating cost savings such fuel and vehicle maintenance, and safety benefits resulting from less vehicle-train exposure as well as safety benefit realized from less overall vehicle miles travelled. The benefit-cost ratio calculation procedures used in this study followed standard Indiana Department of Transportation (INDOT) methodology.

Table 3 – Summary of Modeled Benefits

Scenario	Travel Time Cost Savings Auto	Travel Time Cost Savings Truck	Operating Cost Savings Auto	Operating Cost Savings Truck	Safety Cost Savings RR Xing	Safety Cost Savings Road Network	Annual Benefit ($ millions)
Project 1 A	$546,056	$244,780	$437,979	$203,245	$25,029	$116,629	$ 1.57
Project 2 B	$210,776	$94,484	$209,331	$97,140	$4,800	$55,742	$ 0.67
Project 3 C	$399,560	$179,110	$173,636	$80,576	$6,311	$46,237	$ 0.89
Project 4 D	$307,202	$137,709	$104,673	$48,574	$5,672	$27,873	$ 0.63
Project 5 E	$504,981	$226,367	$142,458	$66,108	$4,735	$37,935	$ 0.98
Project 6 F	$893,136	$400,365	$231,264	$107,319	$21,770	$61,583	$ 1.72
Project 7 A, E	$914,165	$409,792	$364,857	$169,313	$29,764	$97,157	$ 1.99
Project 8 A, F	$1,306,926	$585,854	$463,055	$214,882	$46,799	$123,306	$ 2.74
Project 9 A,C,E	$1,162,975	$521,326	$334,122	$155,050	$36,075	$88,973	$ 2.30
Project 10 A,C,F	$1,538,352	$689,595	$436,865	$202,728	$53,111	$116,332	$ 3.04
Project 11 5th	$319,282	$143,124	$227,470	$105,558	$4,946	$60,573	$ 0.86
Project 12 7th	$350,710	$157,212	$273,157	$126,759	$5,393	$72,739	$ 0.99
Pink	$2,023,960	$907,278	$513,688	$238,378	$167,906	$136,789	$ 3.99
Yellow	$1,413,783	$633,755	($526,658)	($244,397)	$93,498	($140,243)	$ 1.23
Blue	$2,360,423	$1,058,104	$410,178	$190,344	$180,387	$109,226	$ 4.31

Benefit-cost analysis is a tool used to compare the value of investments. It is appropriate for infrastructure investment projects and is required for some funding applications. To calculate the benefit component of the benefit-cost ratio, the performance measures were used to monetize user benefits on an annual basis. The analysis was performed using INDOT's process and basic assumptions. The benefits were taken from the results in Table 3. The cost component includes the preliminary cost estimate for design, right-of-way, construction, and maintenance. The only assumed maintenance cost was one deck replacement per grade separation over the 30-year analysis period. All maintenance for grade separation approaches was assumed to be part of the routine roadway network maintenance cost. Table 4 summarizes the modeled benefit-cost ratios for the alternatives.

Table 5 – Summary of Modeled Benefit-Cost Ratios

Road User Benefit-Cost Analysis Results 3% Discount Rate		Project Capital Costs ($2011 millions)	30 Year Period Net Present Value ($2011 in millions)			
Scenario	**Description**		**Benefits**	**Costs**	**Residual**	**B/C**
Project 1	*Build Grade Separation at Margaret Ave.*	$ 16.50	$ 32.51	$ 16.54	$ 0.79	2.01
Project 2	*Build Grade Separation at Hulman Street*	$ 14.00	$ 13.89	$ 14.03	$ 0.67	1.04
Project 3	*Build Grade Separation at 13th Street*	$ 10.40	$ 18.29	$ 10.42	$ 0.50	1.80
Project 4	*Build Grade Separation at Ohio Street*	$ 10.90	$ 13.05	$ 10.92	$ 0.52	1.24
Project 5	*Build Grade Separation at Locust Street*	$ 9.00	$ 20.30	$ 9.02	$ 0.43	2.30
Project 6	*Build Grade Separation at 13th/8th*	$ 19.50	$ 35.44	$ 19.54	$ 0.94	1.86
Project 7	*Build Grade Separation at Margaret Ave. and at Locust Street*	$ 25.50	$ 40.35	$ 25.31	$ 1.22	1.64
Project 8	*Build Grade Separation at Margaret Ave.and at 13th/8th*	$ 36.00	$ 55.22	$ 35.54	$ 1.73	1.60
Project 9	*Build Grade Separation at Margaret Ave,.at 13th Street, and at Locust Street*	$ 35.90	$ 45.78	$ 35.20	$ 1.72	1.35
Project 10	*Build Grade Separation at Margaret Ave,.at 13th Street, and at 13th/8th*	$ 46.40	$ 59.71	$ 45.16	$ 2.23	1.37
Project 11	*Build Grade Separation at 5th Street/Lafayette Ave.*	$ 8.70	$ 17.79	$ 8.72	$ 0.42	2.09
Project 12	*Build Grade Separation at 7th Street*	$ 9.80	$ 20.37	$ 9.82	$ 0.47	2.12
Pink	*Upgrade INRR, Divert all Yellow CSX*	$ 240.90	$ 52.31	$ 180.11	$ 10.90	0.35
Yellow	*Upgrade Yellow (N-S) CSX to 60 mph*	$ 162.20	$ 16.38	$ 129.64	$ 7.79	0.19
Blue	*Upgrade Blue (E-W) CSX to 60 mph*	$ 94.10	$ 57.41	$ 75.21	$ 4.52	0.82

Terre Haute Urbanized Area
Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization

Public Information Meeting

Cooperative – Comprehensive – Continuous Planning

Agenda

- Welcome & Background Info
- Brief Review
- Tier 1 Analysis
- Public Input Survey
- Tier 2 Analysis

Purpose & Need

- Mobility
- Public Safety
- Community Sustainability
- Railroad Operations

Stages of Analysis

Stage 1 - "Conceptual" corridors

- Ability to be broken into individual projects
- Financial viability
- Motorist delay reduction
- Railroad operations
- Established long-range plans
- Environmental impacts

Stage 2 – Individual projects

Existing Railroads

2011 – 19 trains/day
2021 – 27 trains/day
2031 – 34 trains/day

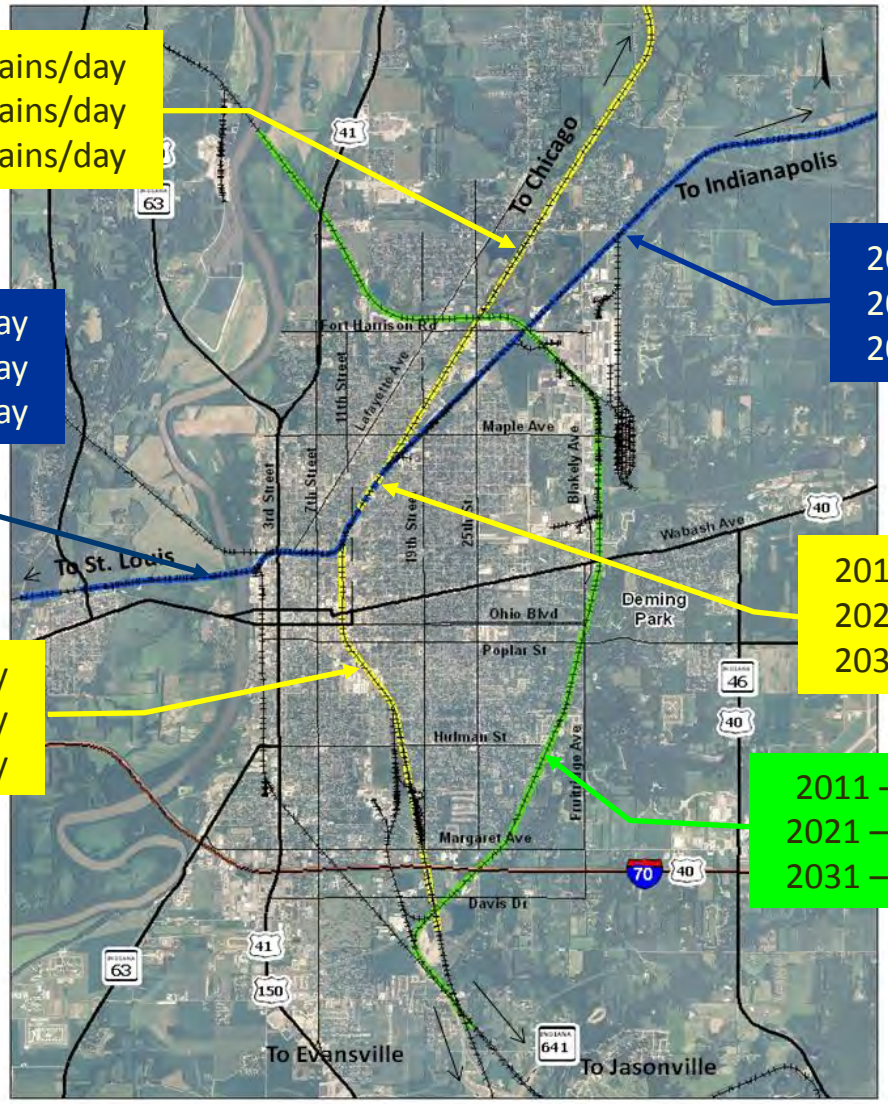
2011 – 27 trains/day
2021 – 35 trains/day
2031 – 43 trains/day

2011 – 17 trains/day
2021 – 22 trains/day
2031 – 27 trains/day

2011 – 47 trains/day
2021 – 63 trains/day
2031 – 80 trains/day

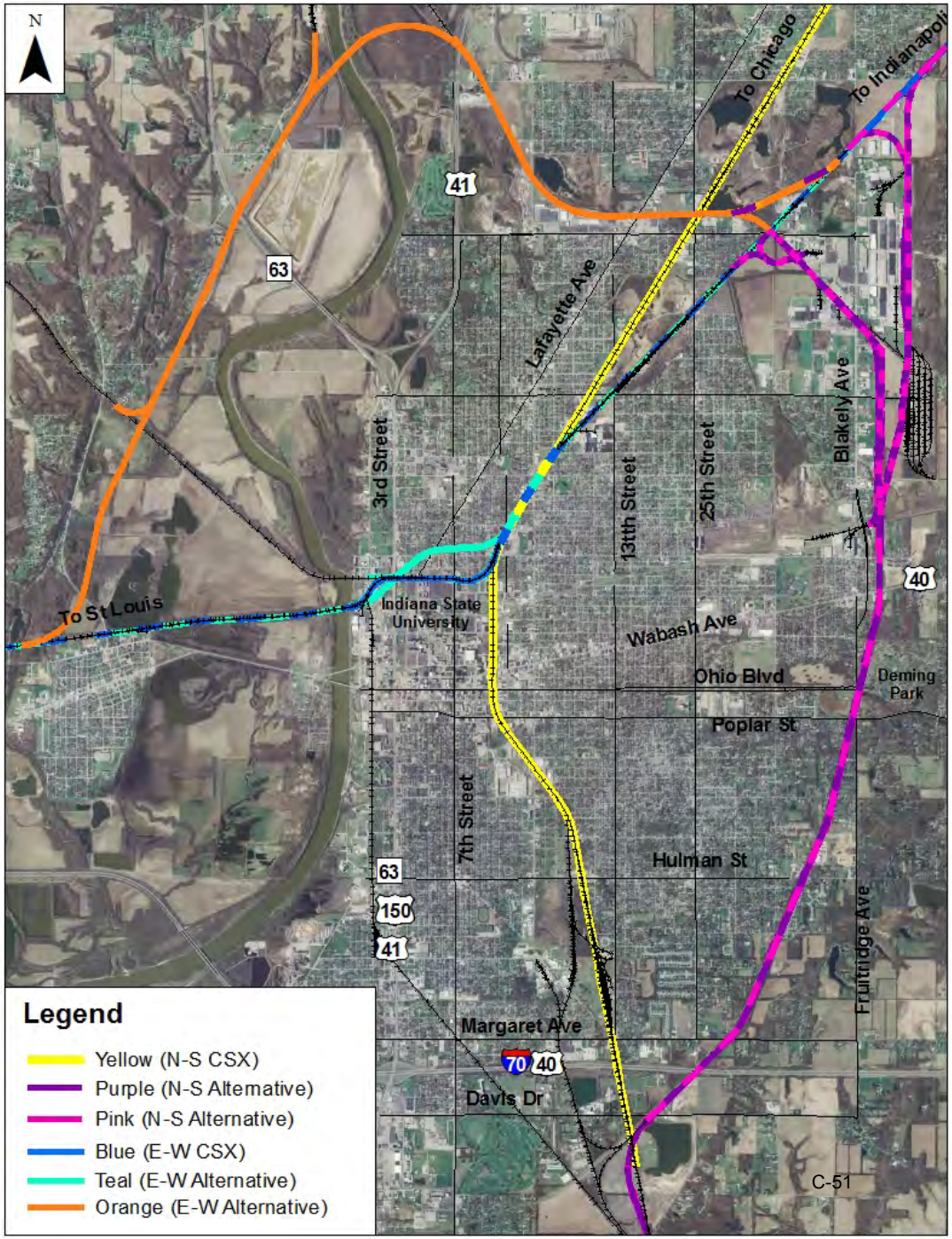
2011 – 26 trains/day
2021 – 36 trains/day
2031 – 47 trains/day

2011 – 7 trains/day
2021 – 11 trains/day
2031 – 13 trains/day



CSX TRANSPORTATION Yellow (N-S)
Blue (E-W)

THE INDIANA RAIL ROAD Green



Terre Haute Urbanized Area
Railroad Corridor Study

Stage 1 Corridors

Stage 1 Analysis Matrix

Evaluation Criteria	E-W Alternatives				N-S Alternatives			
	Blue	Teal	Orange	No Build	Yellow	Pink	Purple	No Build
(1) Feasibility of phased implementation	●	●	●	n/a	●	●	●	n/a
(2) Planning Level Cost [Million USD]	$ 65.50	$ 100.60	$ 226.20	$ 0	$162.20	$ 274.20	$ 304.30	$ 0
(3) Reduction in Motorist Delay [veh-hr]	593	593	517	0	600	340	340	0
(4) Railroad Operations	●	●	●	●	●	●	●	●
(5) Compatibility with established long-range and economic development plans	●	●	●	●	●	●	●	●
(6) Potential Environmental Impacts								
(6a) Residential Relocations	63	110	8	0	86	47	68	0
(6b) Commercial Relocations	10	14	14	0	37	4	5	0
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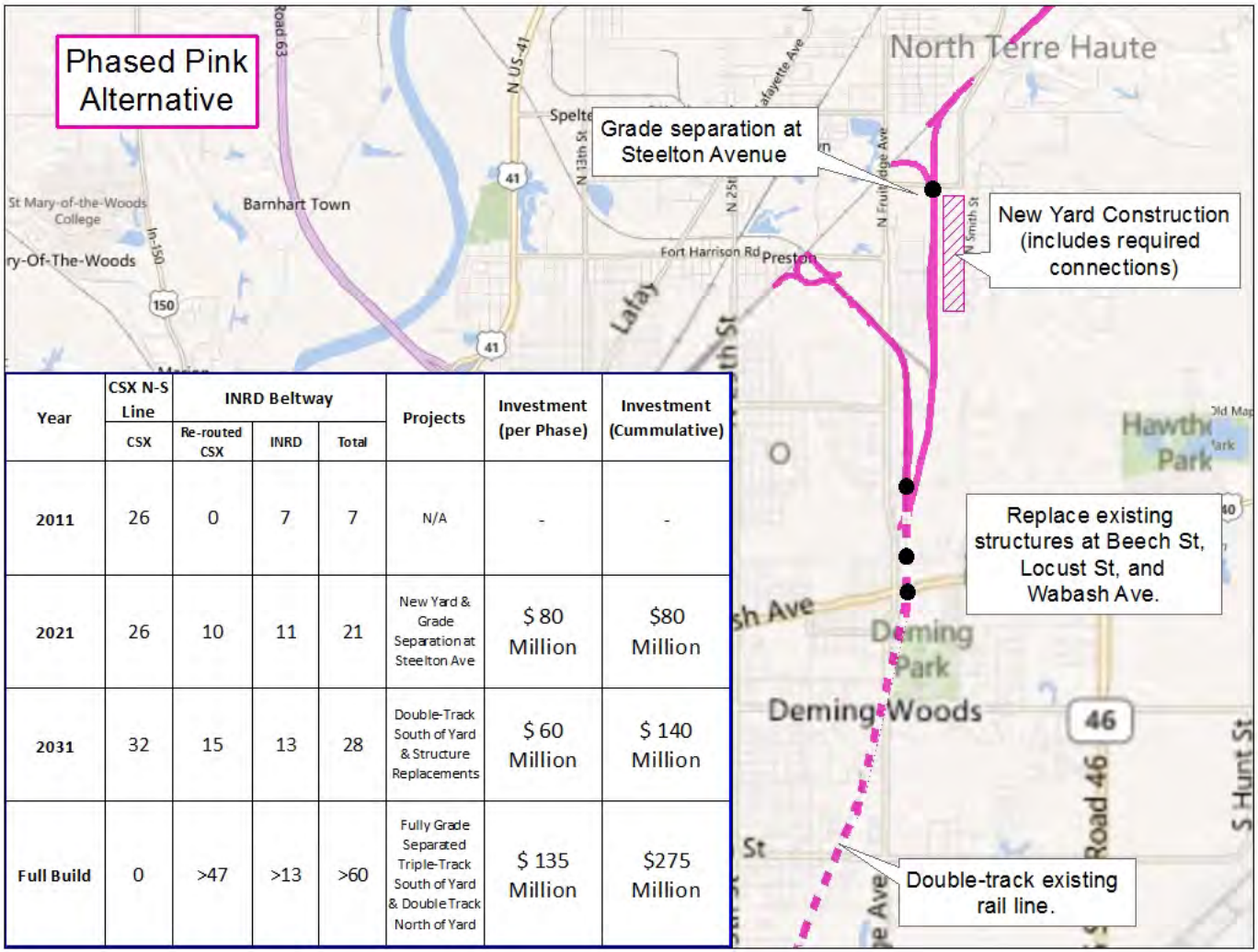
(6g) Waterways	0	0	830 ft	n/a	0	2,180 ft	580 ft	n/a
(6h) Forested Areas	0	0	32 acres	n/a	0	11 acres	11 acres	n/a

Terre Haute Urbanized Area Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization



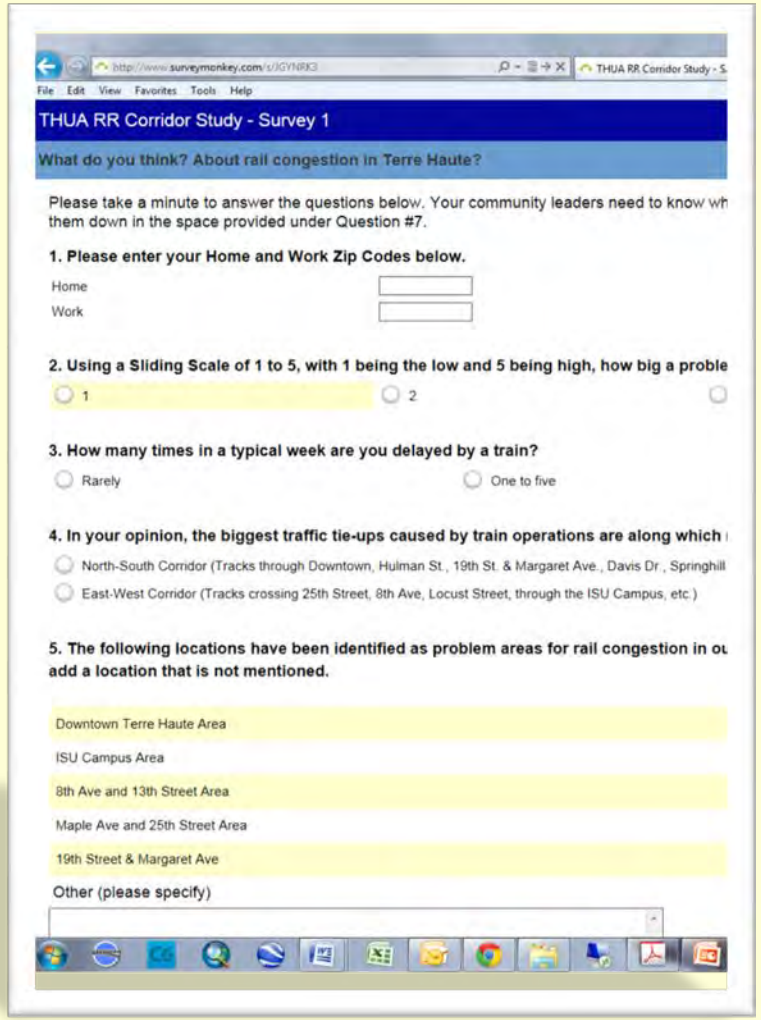
Year	CSX N-S Line	INRD Beltway			Projects	Investment (per Phase)	Investment (Cummulative)
	CSX	Re-routed CSX	INRD	Total			
2011	26	0	7	7	N/A	-	-
2021	26	10	11	21	New Yard & Grade Separation at Steelton Ave	$ 80 Million	$80 Million
2031	32	15	13	28	Double-Track South of Yard & Structure Replacements	$ 60 Million	$ 140 Million
Full Build	0	>47	>13	>60	Fully Grade Separated Triple-Track South of Yard & Double Track North of Yard	$ 135 Million	$275 Million

Stage 1 Corridors Proceeding to Stage 2

- Existing CSX Yellow and Blue corridors

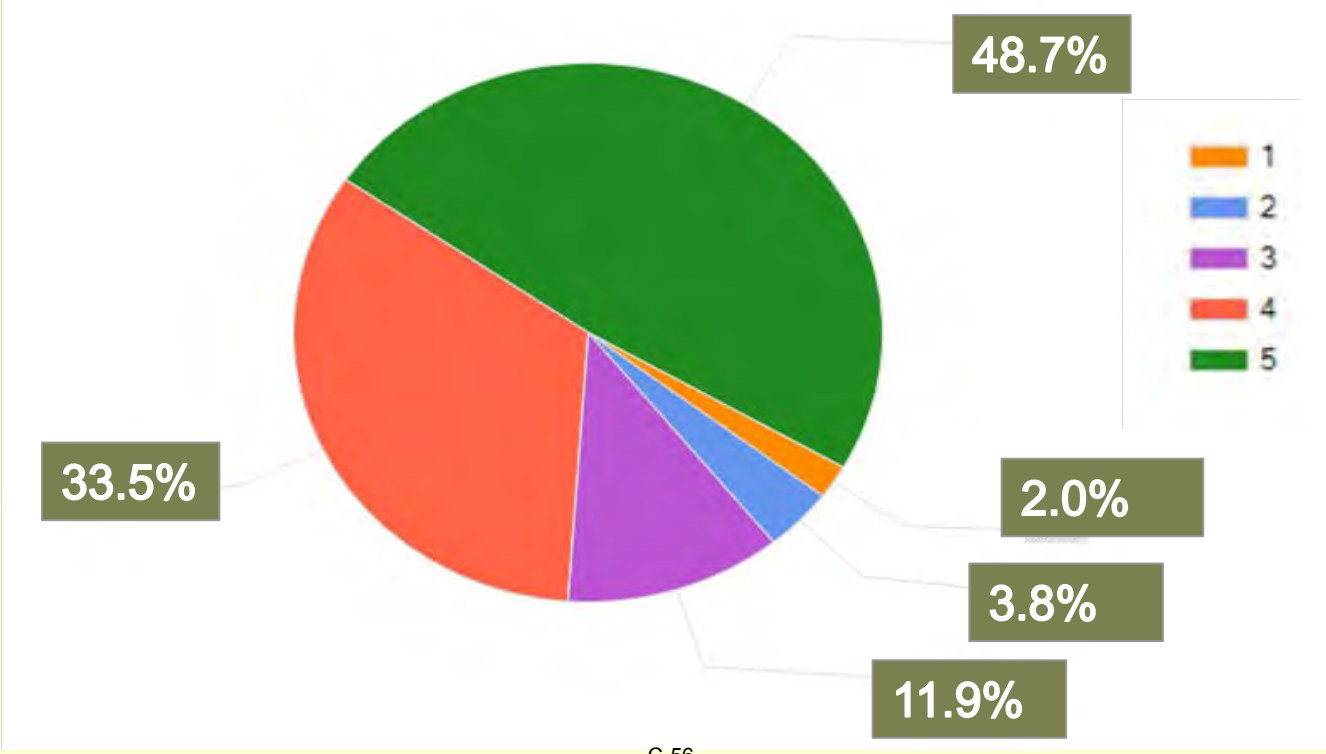
Public Input

- Community Advisory Committee
- Public Information Meeting
- On-line Public Survey Results



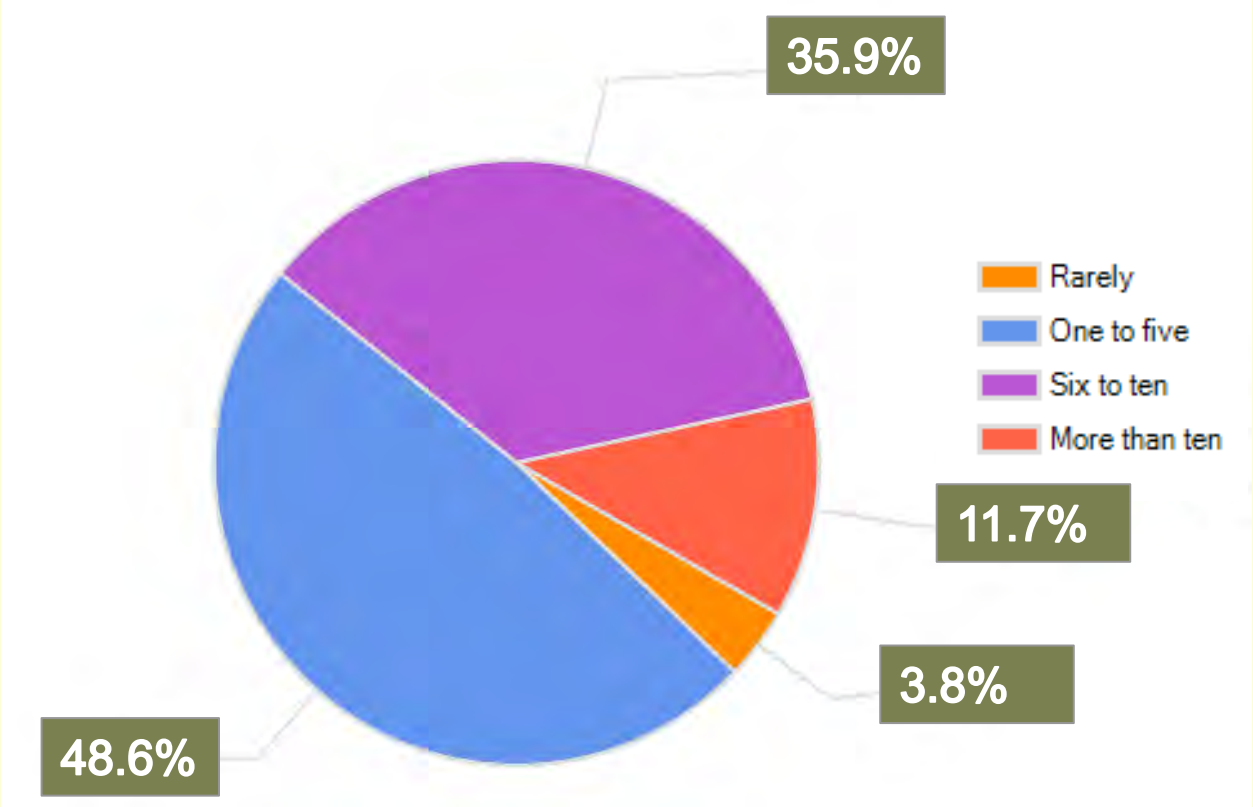
Survey Info

Using a sliding scale of 1 to 5, with 1 being low and 5 being high, how big a problem is rail related traffic congestions in the Terre Haute area?



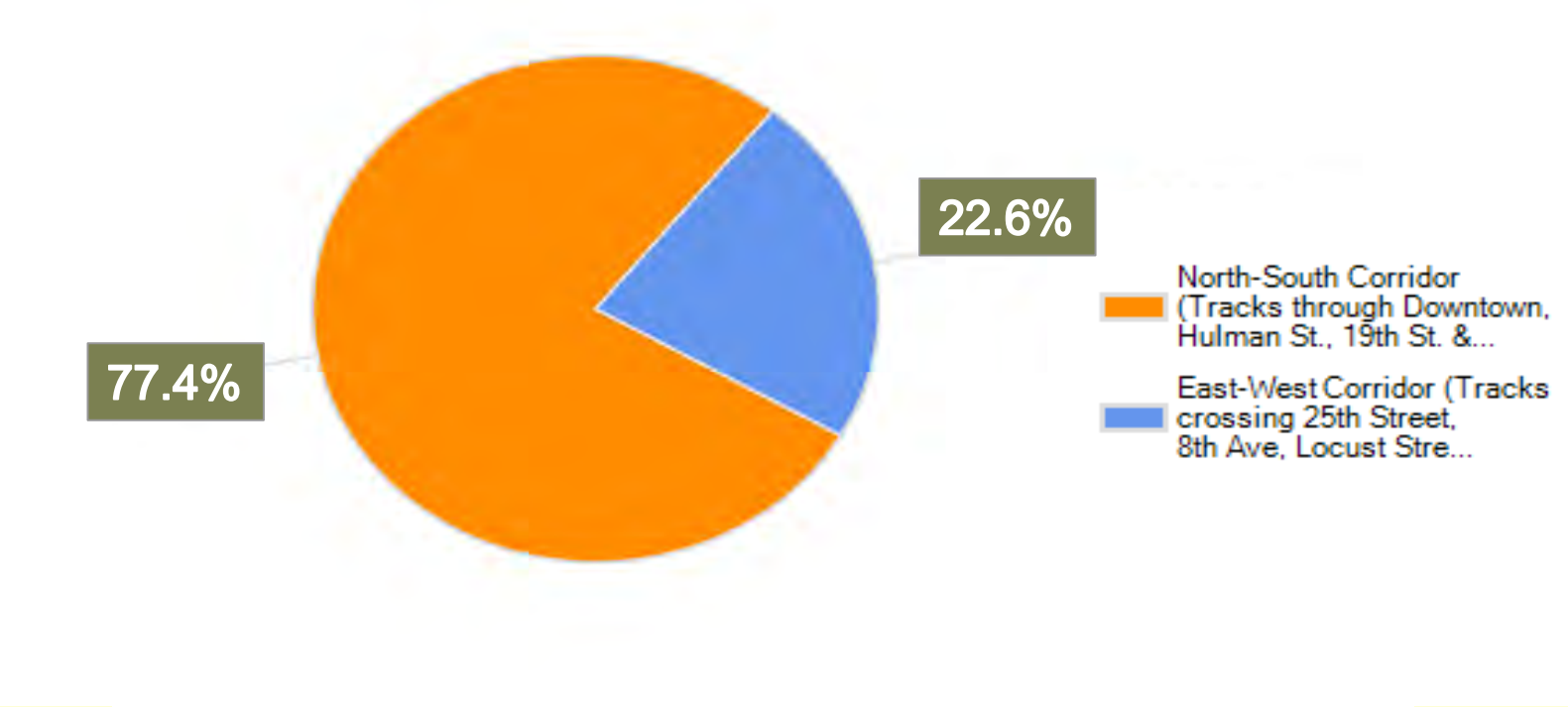
Survey Info

How many times in a typical week are you delayed by a train?



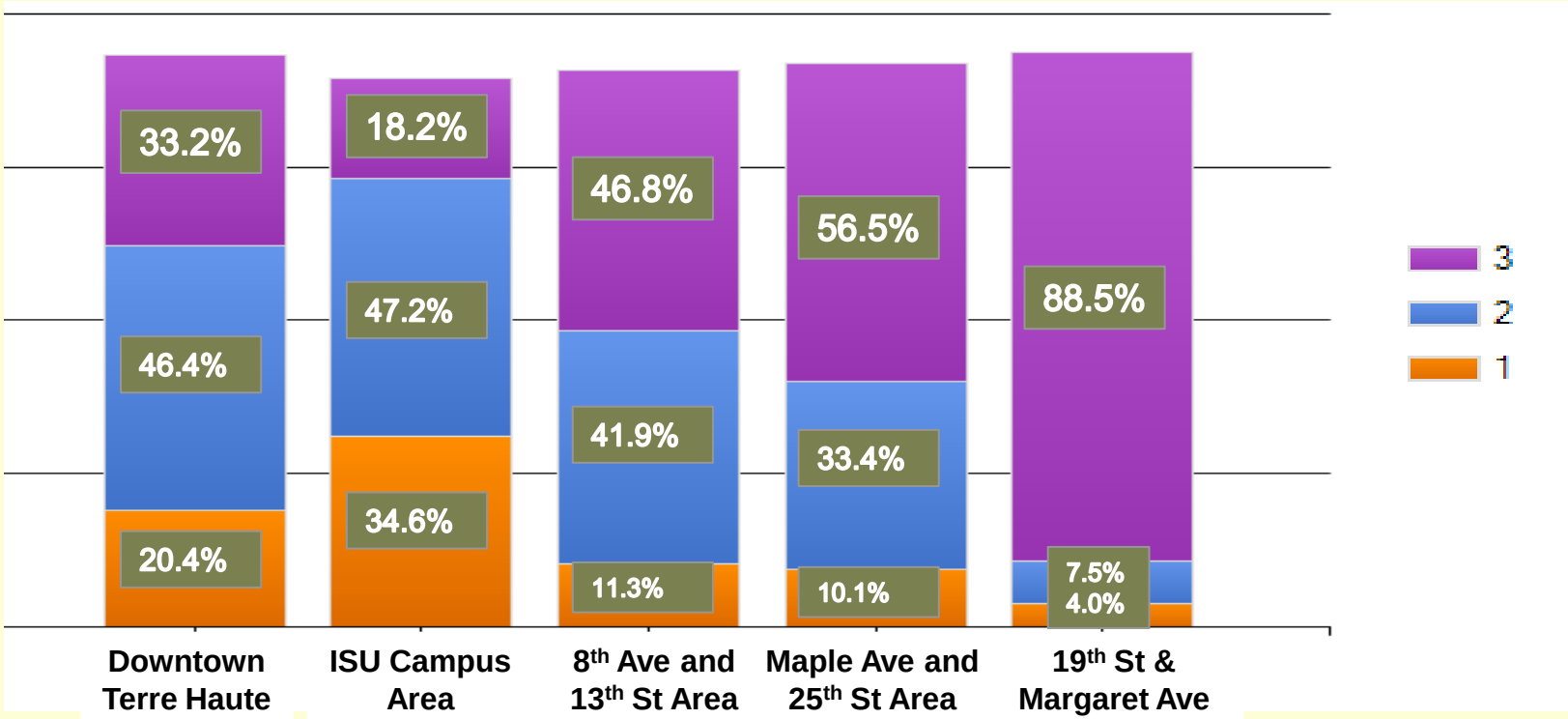
Survey Info

In your opinion, the biggest traffic tie-ups caused by train operation are along which major rail corridor?



Survey Info

The following locations have been identified as problem areas for rail congestions in our community. Do you agree? Rate these locations with 1 being little or no problem and 3 being very congested.



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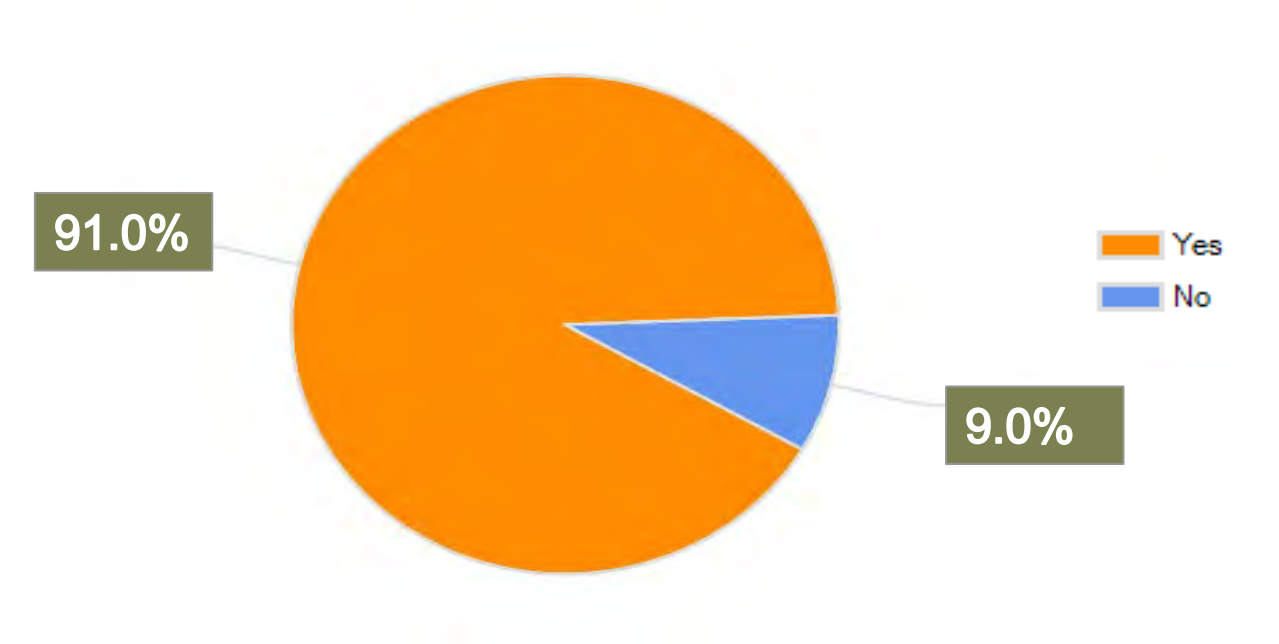
The City and County will likely have to commit and significant amount of local tax dollar, in the form of matching funds, to reduce the adverse affects that train operation have on the Terre Haute community. Do you want this work to continue?



Community Input Summary

			Hot Spots					Other Locations Identified		
	Ranking Criteria	Weight	Downtown Terre Haute	ISU Campus Area	8th Ave & 13th Street Area	Maple Ave & 25th Street Area	19th Street & Margaret Ave	Fruitridge Street	Haythorne Street	1st Street
Community Advisory Committee	First Priority	5	0	0	0	0	100%	0	0	0
	Second Priority	4	20.00%	40.00%	20.00%	20.00%	0.00%	0.00%	0.00%	0.00%
	Third Priority	3	60.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%
	Fourth Priority	2	20.00%	20.00%	40.00%	0.00%	0.00%	20.00%	0.00%	0.00%
	Fifth Priority	1	0.00%	25.00%	0.00%	25.00%	0.00%	0.00%	25.00%	25.00%
	Category Ranking*		**1.2**	**2.25**	**1.6**	**1.05**	**5**	**0.4**	**0.25**	**0.25**
Public Input Survey	Very Congested	3	33.20%	18.20%	46.80%	56.50%	88.50%	-	-	-
	Somewhat Congested	2	46.40%	47.20%	41.90%	33.40%	7.50%	-	-	-
	Little to No Problem	1	20.40%	34.60%	11.30%	10.10%	4.00%	-	-	-
	Category Ranking*		**2.1**	**1.8**	**2.4**	**2.5**	**2.8**	**-**	**-**	**-**
	Composite Ranking		**3.3**	**4.1**	**4.0**	**3.5**	**7.8**			

Category Ranking = Sum of Each Ranking Criteria x Each Weight

Stages of Analysis

Stage 1 - "Conceptual" corridors

Stage 2 - Individual projects

- Intelligent Traffic Systems (ITS)
  - Message Boards
  - Emergency Response System
- Underpasses or overpasses
- Independently usable projects that fit within
- master plan

Problem Areas

- Downtown Terre Haute Area
- ISU Campus Area
- 8th Avenue & 13th Street Area
- Maple Avenue and 25th Street Area
- 19th St. & Margaret Avenue

Stage 2 Alternatives

- Bridge Locations Modeled

Analysis Methodology

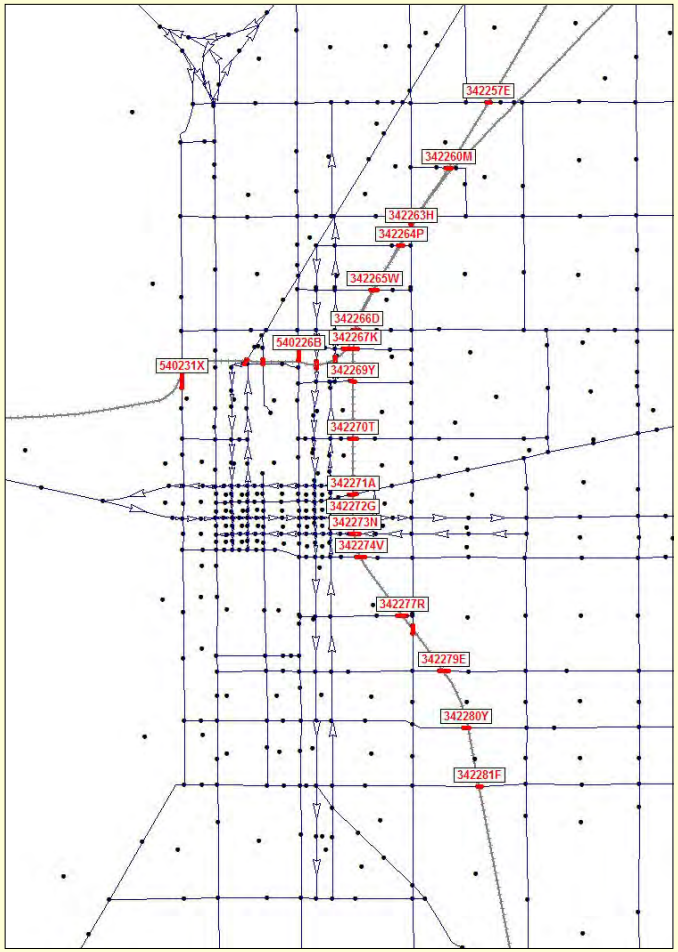
Travel Demand Model

- For each alternative, how will traffic divert?
- What are the level of service impacts, if any?
- How much road-user benefit will be accrued by building each alternative?

Analysis Methodology

Travel Demand Model

- Created short links for each at-grade crossing
- Added delay by creating short links for at-grade crossing.
- Modeled each scenario.
  - At-grade = MPO delay data
  - Grade separated = Remove delay
  - Closed = break link



Analysis Methodology

Model Outputs:

- Vehicle Hours Traveled (VHT)
- Vehicle Miles Traveled (VMT)

Calculate Road-User Benefits:

- Travel time cost savings
- Operating cost savings
- Safety cost savings

Road User Benefit-Cost Analysis

Project Description	Current Year (Million USD) Construction Costs	Delay Reduction (vehicle-hours per day)	30 Year Period Net Present Value (Million USD)			
			Benefits	Costs	Residual	B/C
Build Grade Separation at Margaret Ave.	$ 16.50	114	$ 32.51	$ 16.54	$ 0.79	2.01
Build Grade Separation at Hulman Street	$ 14.00	44	$ 13.89	$ 14.03	$ 0.67	1.04
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Grade Separation Summary

	Grade Separation(s)	Public Input Composite Score*	B-C Ratio	Projected Train Volume (2031)**	Cost (Million USD)
Individual Grade Separations	Margaret Avenue	7.8	2.01	47	$16.50
	Locust Street	4.1	2.30	80	$9.00
	7th Street	4.1	2.12	27	$9.80
	5th Street/Lafayette Avenue	4.1	2.09	27	$8.70
	13th Street/8th Avenue	4.0	1.86	80	$19.50
	13th Street	4.0	1.80	47	$10.40
	Ohio Street (2-way)	3.3	1.24	47	$10.90
	Hulman Street	3.3	1.04	47	$14.00
Three Grade Separations	Margaret - 13th Street - Locust St	5.3	1.35	58	$35.9
	Margaret - 13th Street - 13th Street/8th Ave	5.3	1.37	58	$46.4
Two Grade Separations	Margaret Ave - Locust Street	6.0	1.64	64	$25.5
	Margaret Ave - 13th Street/8th Ave	4.1	1.60	64	$36.0

*Public input composite score for multiple grade separations is an average of the individual grade separation scores.

**Projected 2031 train volumes for multiple grade separations is an averge of the projected train volumes of the associated individual grade separations.

Next Steps

- Coordinate, finalize and adopt study
- Intelligent Transportation System (ITS)
- Develop a strategy to fund, develop, design identified projects.

URS

Project Meeting Notes

Meeting Date:	June 12, 2012	Client:	City of Terre Haute
Time:	10:00 AM	Project Name:	Terre Haute Urbanized Area Railroad Corridor Study
Location:	GoToMeeting/Corradino Office		
From:	Sarah Hoch	Project Number:	25627422
Subject:	Agency Review Meeting	Issue Date:	June 15, 2012

Attendees:

- Alice Alexander, Federal Railroad Administration
- Susan Herre, Federal Railroad Administration
- Ron Hinsenkamp, Metropolitan Planning Organization, West Central Indiana Economic Development District, Inc.
- Larry Robbins, City of Terre Haute
- Leslie Ellis, City of Terre Haute
- Paul Satterly, URS
- Jim Rice, Hannum, Wagle & Cline
- Dave Cleveland, Corradino
- Sarah Hoch, Corradino
- Liz Solberg

1. *Introduction*

The goal of the study is to produce a rail master plan, which will identify and prioritize projects of independent utility to be independently funded and pursued over the next 25 years. The study was adopted by the Metropolitan Planning Organization's (MPO's) policy committee, subject to final review and approval by the Federal Railroad Administration. The adoption adds the recommended projects to the long-range transportation plan.

The study was a collaborative effort between the MPO, the City of Terre Haute, and Vigo County to mitigate the effects of the railroad on the community. There have been several past studies; however, none of the recommended solutions have reached implementation. The studies lacked public involvement and recommended projects were not funded. This study was completed in the context of the National Environmental Policy Act (NEPA), which includes formal public involvement, Purpose and Need Statement, and preliminary environmental analysis. The Purpose and Need Statement in the report can be applied to all recommended projects of independent utility, which will reduce the steps required to implement the projects. The type of NEPA document required for all recommended projects (i.e. CE, FONSI, etc) are identified in the report.

The Federal Railroad Administration (FRA) and Federal Highway Administration (FHWA) intend to sign a letter of approval for the study. Larry Heil (FHWA) and Ron Hinsenkamp discussed the approval letter with Andrea Martin (FRA), who supported the concept. Larry Heil will draft a proposed letter for sign off and will share the draft with Susan Herre.

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www.urscorp.com

2. Public Involvement

   The public involvement process included a Community Advisory Committee (CAC), public information meetings, project website, and electronic survey. The public information meetings and electronic survey were promoted through local media and the project website. The electronic survey received nearly 500 responses, which exceeded the team's expectations.

3. Analysis

   The analysis was completed in two stages. The first stage focused on conceptual corridors for future investment. Once corridors were identified in stage 1, individual projects of independent utility were analyzed in stage 2. Stage 1 analysis focused on the ability for corridors to be broken into individual projects and their fundability. The analysis was completed from the public's perspective. The project "Need" established in the Purpose and Need Statement included motorist mobility, public safety (motorist, non-motorized, and pedestrians), community sustainability, and railroad operations. The study team collaborated with the railroad companies, CSX Transportation and Indiana Rail Road (INRD), throughout the project. The goal of the study was to not hinder railroad operations, as the railroads are private entities that have the right to continue their operations. CSX and INRD provided guidance on the current and forecasted rail traffic, and reviewed all cost estimates and analysis. They were active in the public information and CAC meetings. The pink alternative, which would provide benefit to the community and to the railroads, was further investigated in phases before elimination. A phased pink alternative included a relocated Baker Yard and re-routing trains from the existing CSX north-south tracks to the INRD tracks east of downtown. The road-user benefits (delay reduction, reduction in operation costs, and improved safety) did not outweigh the high cost of the project. CSX and INRD agreed that the recommendations of the study were in the community's best interest.

   The stage 2 analysis focused on projects along the existing CSX railroads. Projects included individual grade separations, intelligent transportation systems (ITS), and other types of projects. Grade separation locations were chosen for further analysis based on the road's functional classification, roadway spacing, and public input. Travel demand modeling techniques and benefit-cost analysis were the tools used in stage 2. Eight individual grade separations were analyzed. Two grade separations were selected on roads north of downtown, two south of downtown, two central to downtown, and two along the east-west CSX line near the ISU campus. The best performing grade separations were analyzed in combinations with the other best performing grade separations. The groups of two grade separations generally included a northern and southern location. The groups of three grade separations generally include a northern, southern, and central location. Benefit-cost analysis was completed for the individual grade separations and combinations of grade separations during the stage 2 analysis. The benefits included the roadway user benefits: delay reduction, reduced operation costs, and safety cost savings. The costs included the project cost estimate and maintenance. The benefit-cost ratio was calculated using tstandard methods used by the Indiana Department of Transportation (INDOT).

4. Recommendations

   The final recommendations include five projects of independent utility. The first priority project is a train monitoring system which will provide E911 dispatchers the capability to monitor train traffic traveling through the urbanized area so they can relay information about blocked or potentially blocked crossings to emergency services personnel responding to emergencies. The second and third priorities are grade separations at Margaret Avenue and at 13th Street/8th Avenue. The fourth priority project is a pedestrian and bicyclist safety improvement project next

to the ISU campus. The fifth priority project is an additional grade separation, which is likely to be centrally located in the downtown area.

5. Discussion

There was open discussion during and following the presentation. The timing of the recommended projects was discussed. The second grade separation, 13th Street/8th Avenue, has a 2025 target date. The rationale behind the eight-year gap between grade separation projects is to allow time to secure funding. The third grade separation at an undesignated location was also discussed. The concept behind this recommendation is that while a centrally located grade separation is desirable, the exact location has not been determined. Only five projects were included in the recommendation. Other projects studied had merit, but were not included in the recommendation because the community does not want more projects than can possibly be advanced. Previous studies have come up with big plans that simply were not feasible. The goal of this study was to come up with projects that can realistically be pursued within the planning timeframe. The details of the pedestrian and bicycle safety improvements were discussed. The purpose of the pedestrian and bicyclist safety improvements is to reduce the instance of trespassing onto railroad property by channeling pedestrians and bicyclists to designated crossings. Options to accomplish this include fencing, walls, and barriers.

A few modifications will be made to the report. FRA commented that overall the study was very good and the following minor modifications should be made:

- The funding source for each project should be identified for each recommended project.
- A recommended project summary table should be added, similar to the table used in the presentation. The table should also include the targeted funding source, targeted completion date, and cost estimate for each project.
- The recommendations chapter should be improved to better explain the recommendation process and the recommended projects.
- It is apparent that CSX and INRD have been cooperative and are in support of the study; however, their support is not well-documented in the report. Letters of support from CSX and INRD should be added. Ron Hinsenkamp will contact CSX and INRD.
- Request a letter from FRA and FHWA the indicates that a proper alternative analysis process (considering NEPA requirements) was followed and that individual projects can be progressed from this study to NEPA documentation using the information developed in this study.

Please notify us of any corrections to these meeting notes.

Thank you,

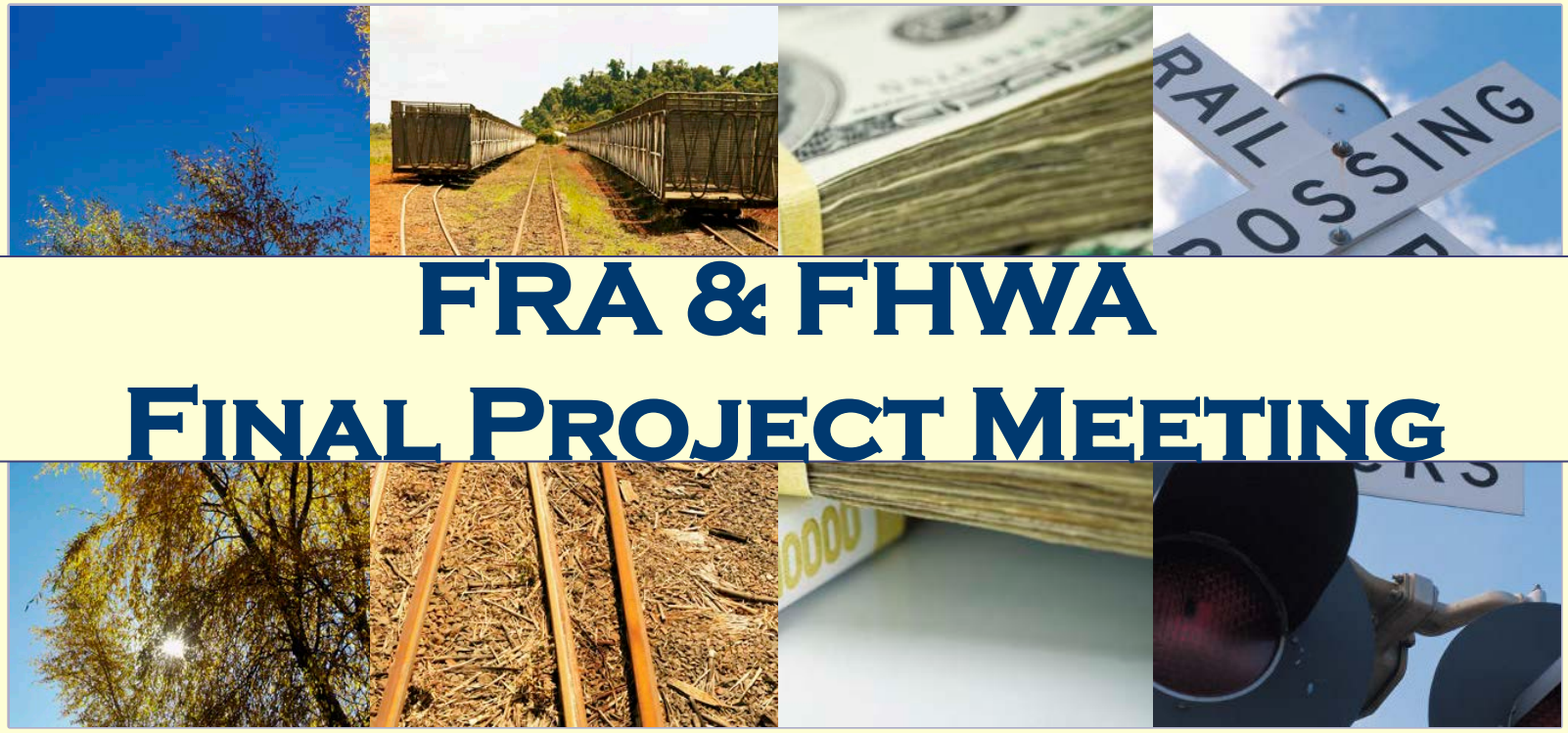
Signed: Sarah Hoch

The Corradino Group

Attachment: Presentation

Terre Haute Urbanized Area
Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization



FRA & FHWA
Final Project Meeting

Cooperative – Comprehensive – Continuous Planning

The Study Process

- **Past Studies**
  - Limited public involvement
- **Study Area**
- **Goals of the Study**
  - Identify a series of individual projects that can be incrementally advanced over the next 5 to 20 years
  - Develop a rail line corridor improvement plan
  - Practical and affordable projects

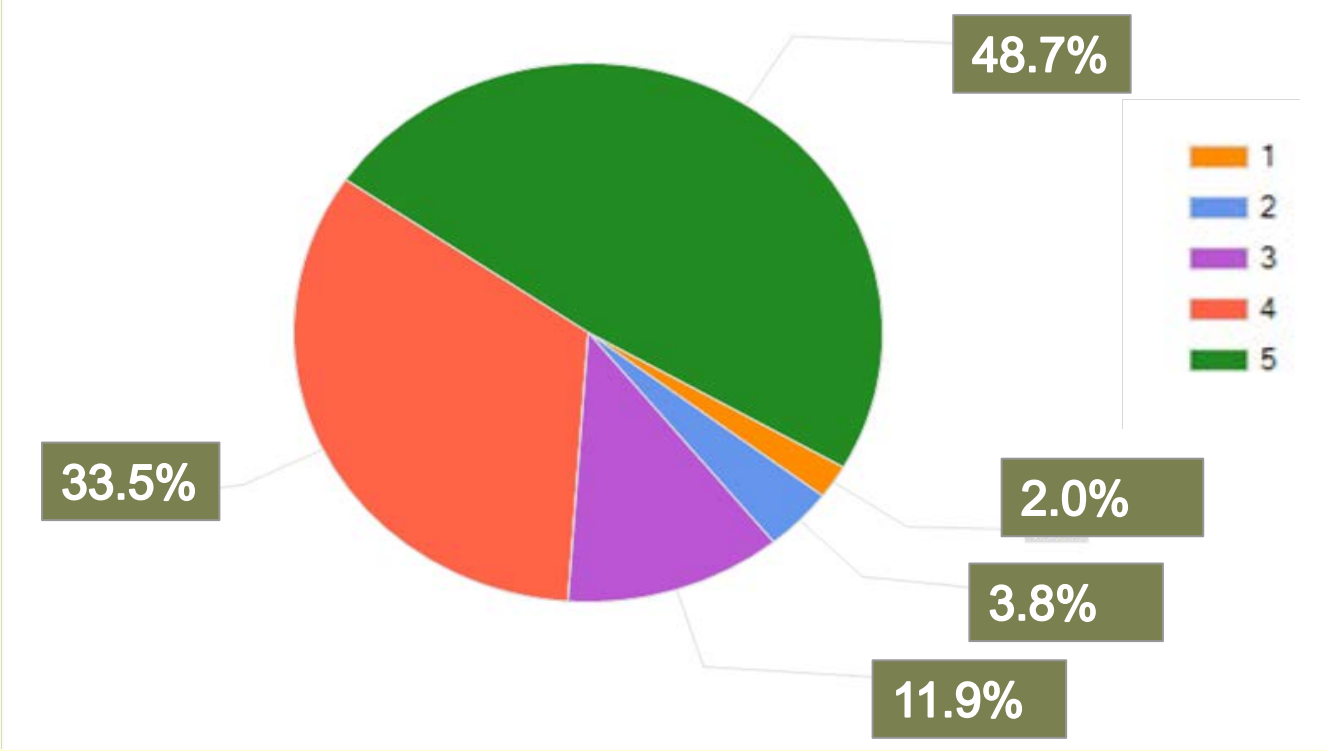
The Study Process

Purpose & Need

- Mobility
- Public Safety
- Community Sustainability
- Railroad Operations

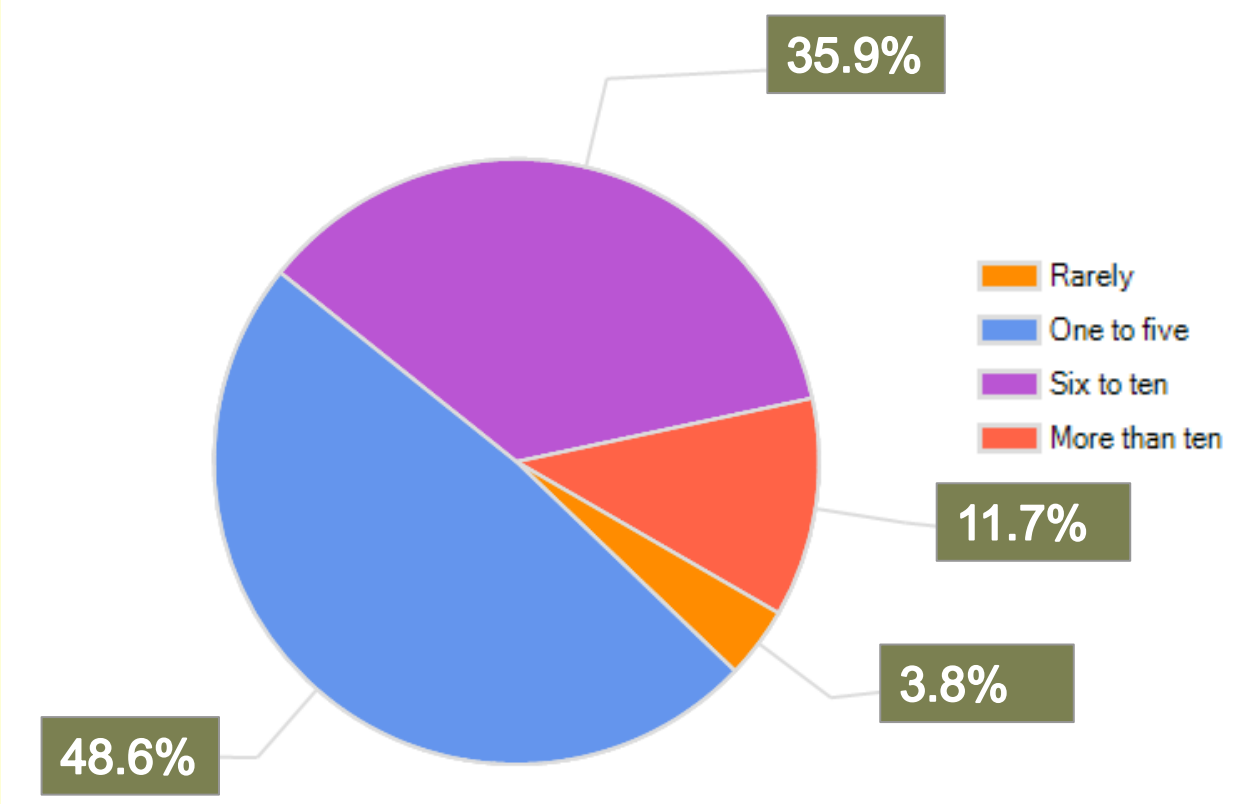
Survey Info

Using a sliding scale of 1 to 5, with 1 being low and 5 being high, how big a problem is rail related traffic congestions in the Terre Haute area?



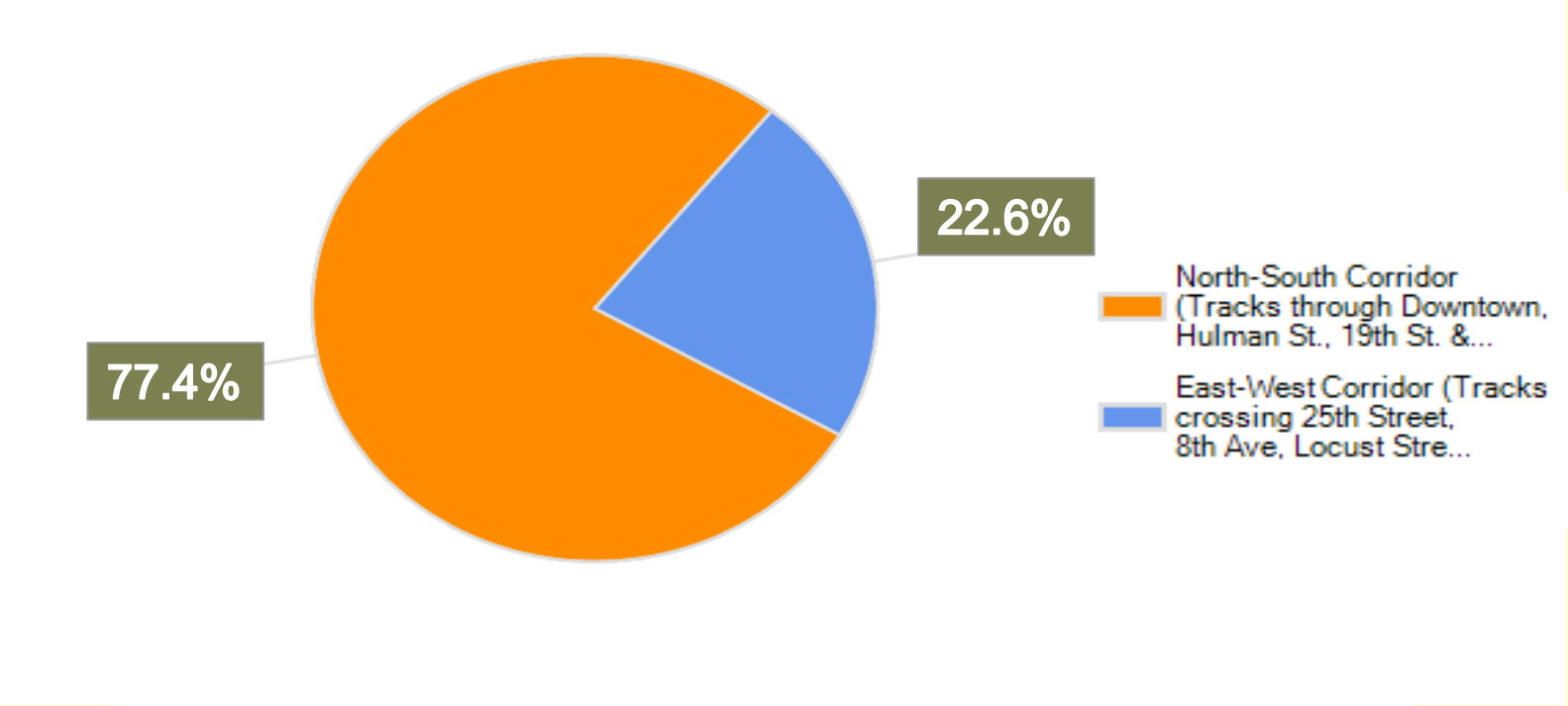
Survey Info

How many times in a typical week are you delayed by a train?



Survey Info

In your opinion, the biggest traffic tie-ups caused by train operation are along which major rail corridor?



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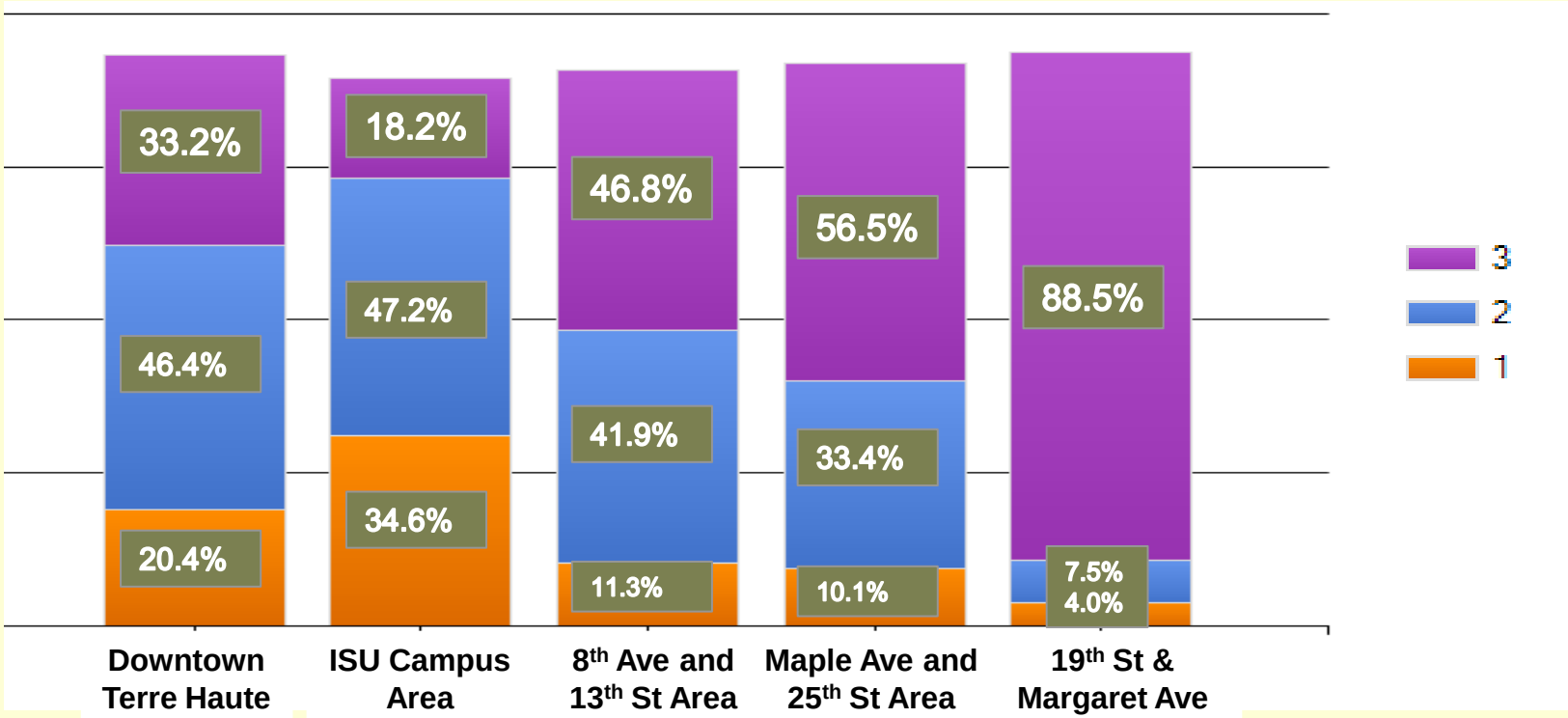

Survey Info

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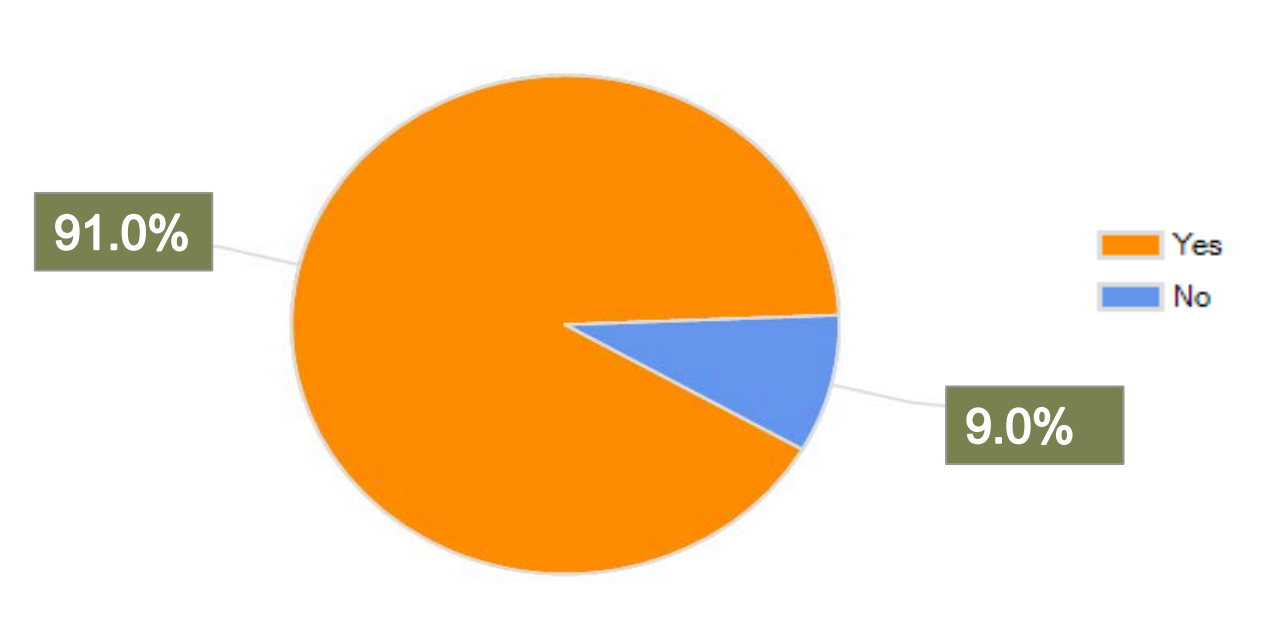


Existing Railroads

2011 – 19 trains/day
2021 – 27 trains/day
2031 – 34 trains/day

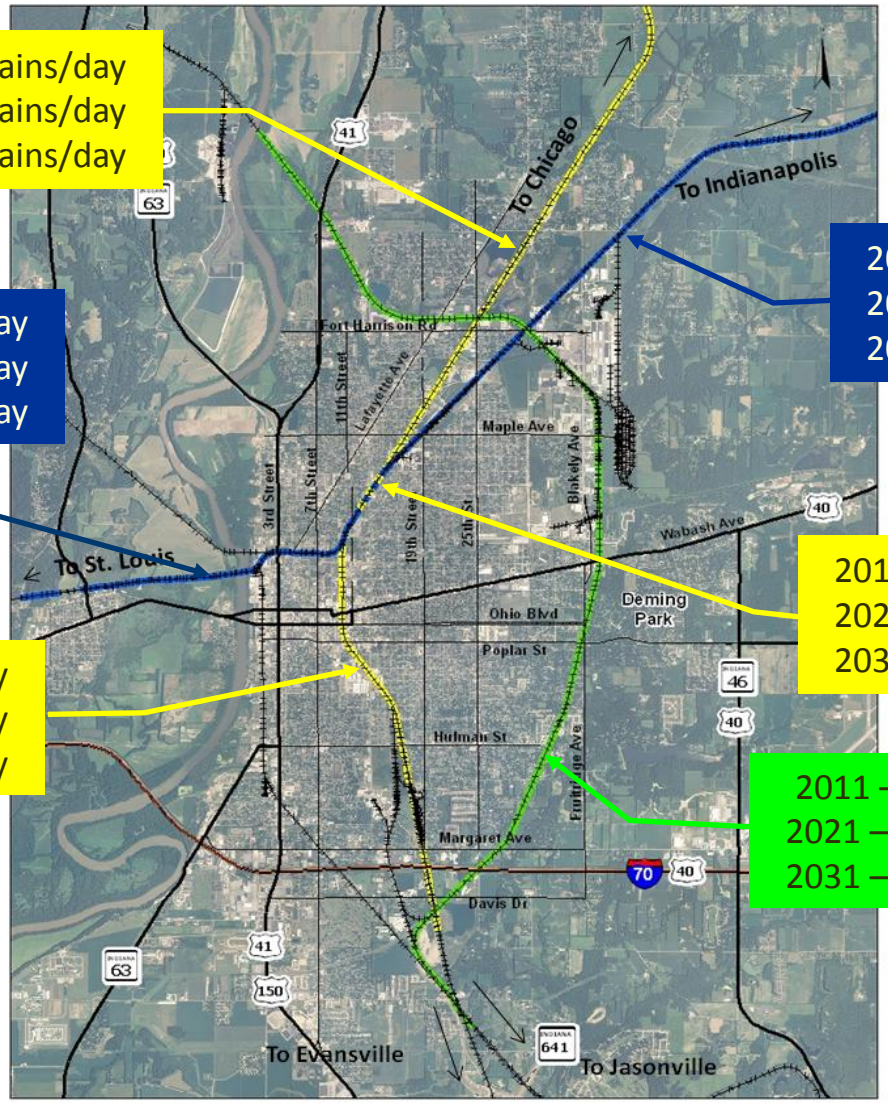
2011 – 27 trains/day
2021 – 35 trains/day
2031 – 43 trains/day

2011 – 17 trains/day
2021 – 22 trains/day
2031 – 27 trains/day

2011 – 47 trains/day
2021 – 63 trains/day
2031 – 80 trains/day

2011 – 26 trains/day
2021 – 36 trains/day
2031 – 47 trains/day

2011 – 7 trains/day
2021 – 11 trains/day
2031 – 13 trains/day



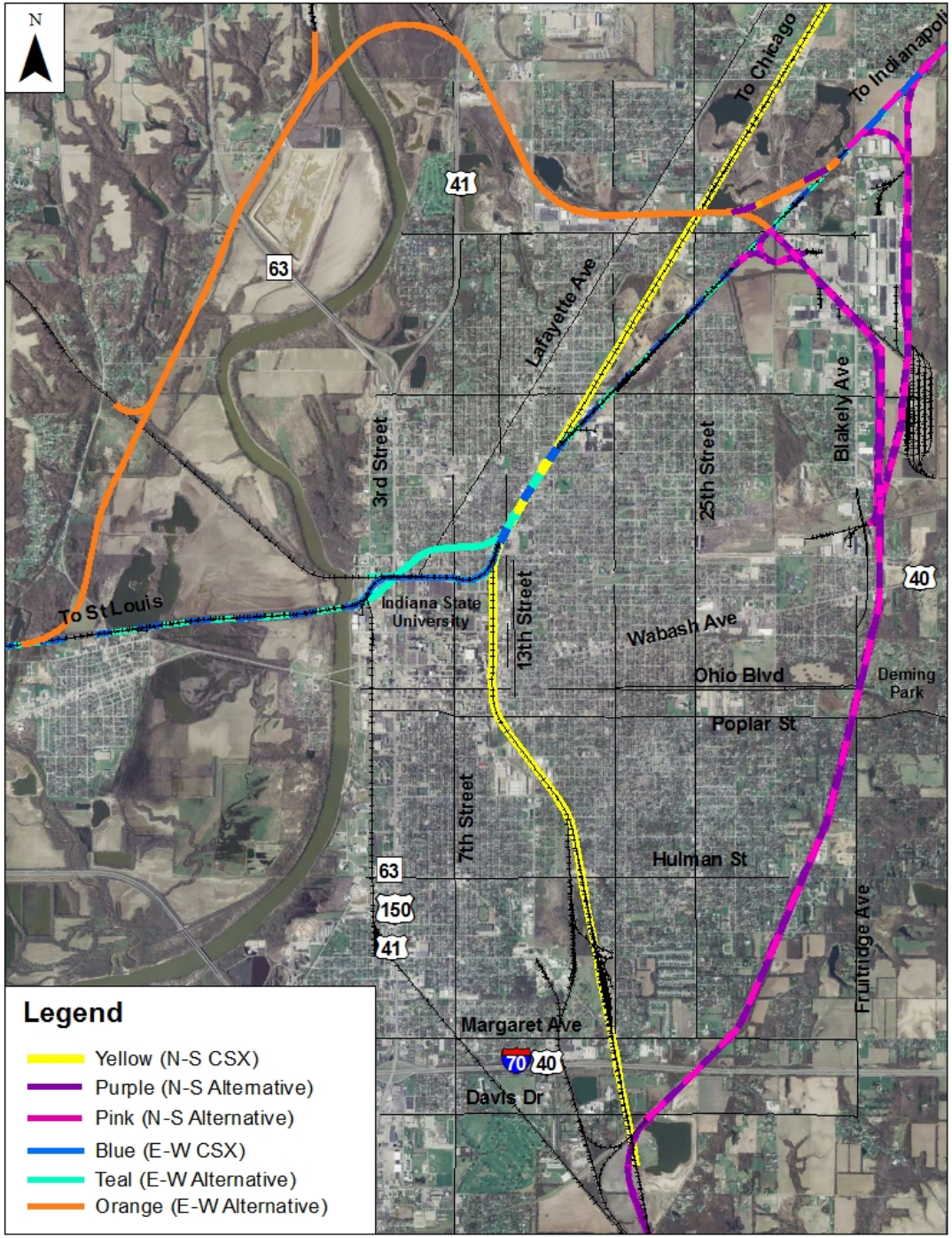
CSX TRANSPORTATION — Yellow (N-S)
Blue (E-W)
THE INDIANA RAIL ROAD — Green

Stages of Analysis

Stage 1 - "Conceptual" corridors

- Ability to be broken into individual projects
- Financial viability
- Motorist delay reduction
- Railroad operations
- Established long-range plans
- Environmental impacts

Stage 2 – Individual projects



Terre Haute Urbanized Area
Railroad Corridor Study

Stage 1 Corridors

Stage 1 Analysis Matrix

Evaluation Criteria	E-W Alternatives				N-S Alternatives			
	Blue	Teal	Orange	No Build	Yellow	Pink	Purple	No Build
(1) Feasibility of phased implementation	●	●	●	n/a	●	●	●	n/a
(2) Planning Level Cost [Million USD]	$ 65.50	$ 100.60	$ 226.20	$ 0	$162.20	$ 274.20	$ 304.30	$ 0
(3) Reduction in Motorist Delay [veh-hr]	593	593	517	0	600	340	340	0
(4) Railroad Operations	●	●	●	●	●	●	●	●
(5) Compatibility with established long-range and economic development plans	●	●	●	●	●	●	●	●
(6) Potential Environmental Impacts								
(6a) Residential Relocations	63	110	8	0	86	47	68	0
(6b) Commercial Relocations	10	14	14	0	37	4	5	0
(6c) Industrial Relocations	18	18	0	0	11	1	9	0
(6d) Agricultural Relocations	1	1	5	0	1	8	2	0
(6e) Wetlands	< 1 acre	< 1 acre	32 acres	n/a	0	7 acres	11 acres	n/a
(6f) Floodplains	< 1 acre	< 1 acre	114 acres	n/a	0	26 acres	19 acres	n/a
(6g) Waterways	0	0	830 ft	n/a	0	2,180 ft	580 ft	n/a
(6h) Forested Areas	0	0	32 acres	n/a	0	11 acres	11 acres	n/a

Terre Haute Urbanized Area Railroad Corridor Study

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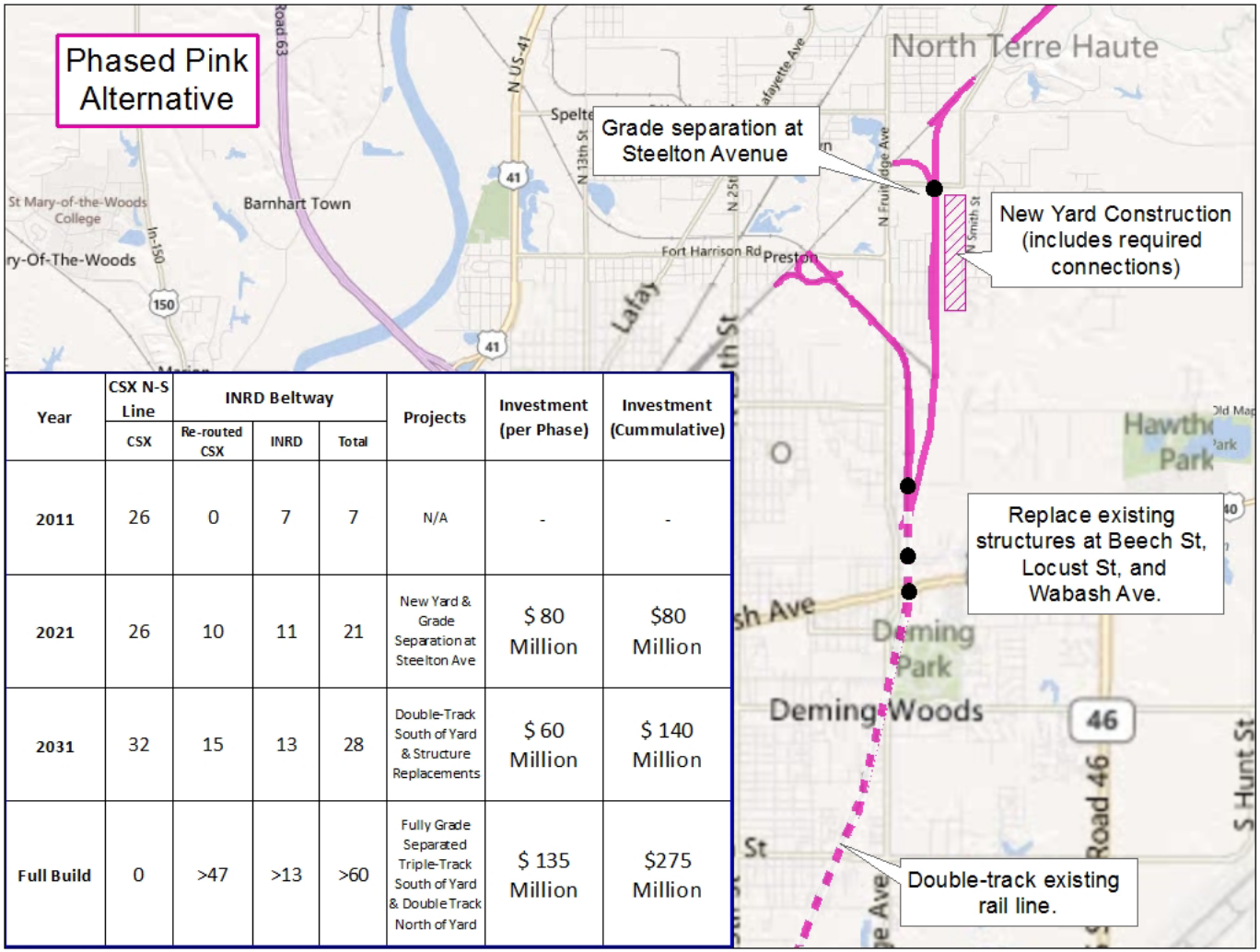
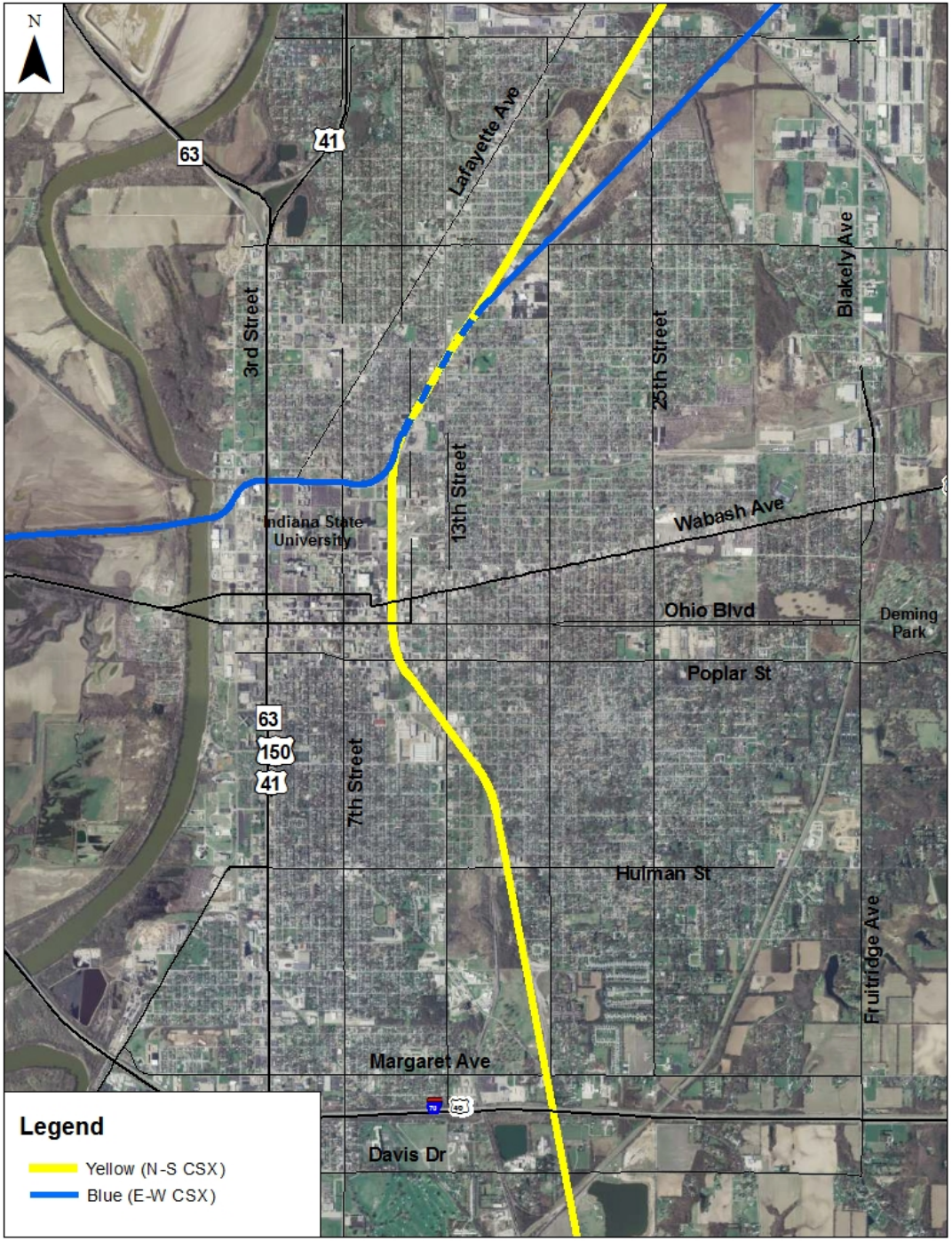


Year	CSX N-S Line	INRD Beltway			Projects	Investment (per Phase)	Investment (Cummulative)
	CSX	Re-routed CSX	INRD	Total			
2011	26	0	7	7	N/A	-	-
2021	26	10	11	21	New Yard & Grade Separation at Steelton Ave	$ 80 Million	$80 Million
2031	32	15	13	28	Double-Track South of Yard & Structure Replacements	$ 60 Million	$ 140 Million
Full Build	0	>47	>13	>60	Fully Grade Separated Triple-Track South of Yard & Double Track North of Yard	$ 135 Million	$275 Million

Cooperative – Comprehensive – Continuous Planning



TERRE HAUTE URBANIZED AREA RAILROAD CORRIDOR STUDY

Stage 1 Corridors Proceeding to Stage 2

- Existing CSX Yellow and Blue corridors

Stages of Analysis

Stage 1 - "Conceptual" corridors

Stage 2 - Individual projects

- Railroad Corridor Monitoring System
  - Message Boards
  - Emergency Response System
- Underpasses or overpasses
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Problem Areas

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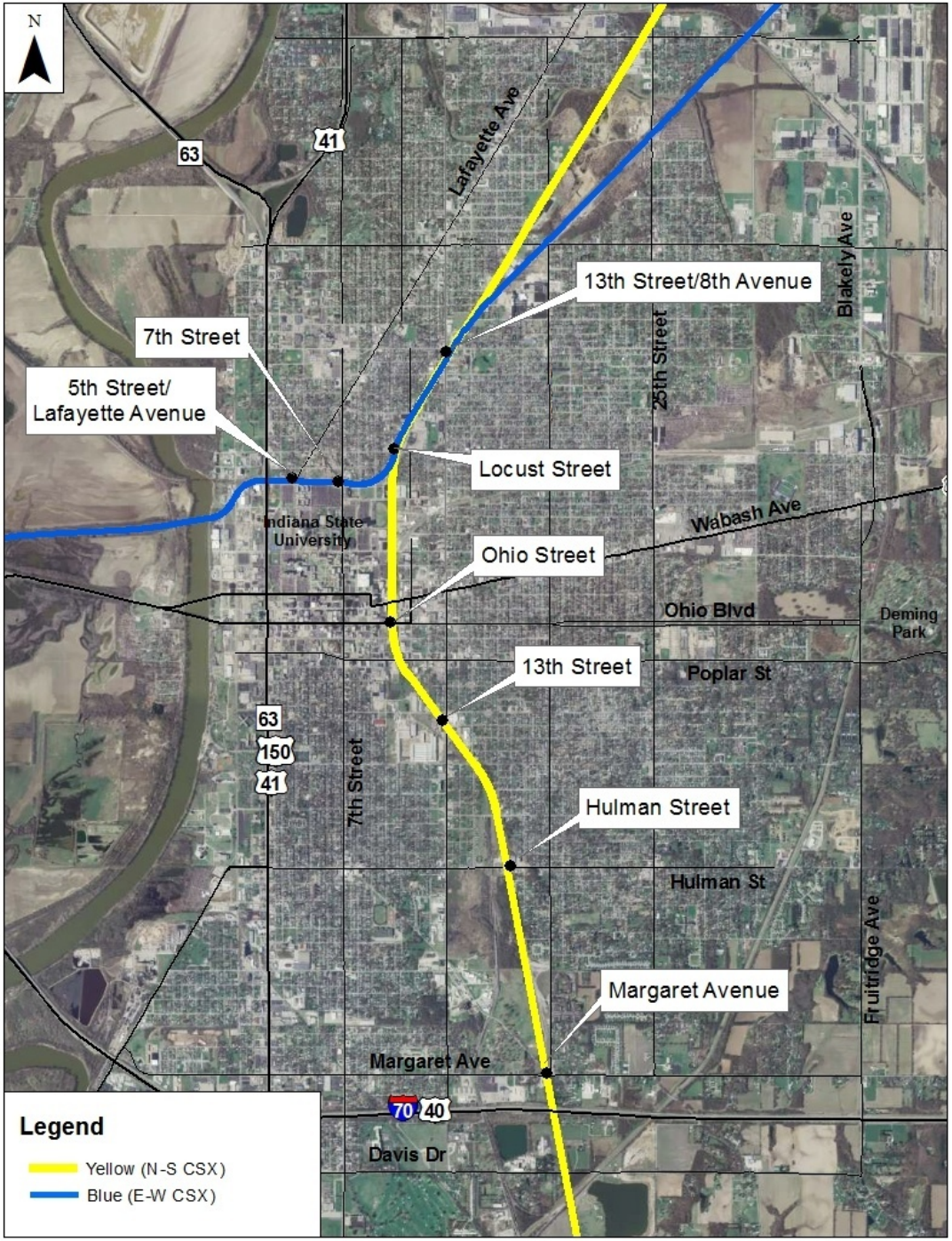

Stage 2 Alternatives

- Bridge Locations Modeled

Analysis Methodology

Travel Demand Model

- For each alternative, how will traffic divert?
- How much road-user benefit will be accrued by building each alternative?

Model Inputs:
•Traffic counts
•Rail delay collected by MPO
•Roadway network

Model Outputs:

Vehicle Hours Traveled (VHT)
- •Number of vehicles x average delay
- •Can be greater than 24 hours

Vehicle Miles Traveled (VMT)

Calculate Road-User Benefits

Terre Haute Urbanized Area Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization

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Community Input Summary

			Hot Spots					Other Locations Identified		
	Ranking Criteria	Weight	Downtown Terre Haute	ISU Campus Area	8th Ave & 13th Street Area	Maple Ave & 25th Street Area	19th Street & Margaret Ave	Fruitridge Street	Haythorne Street	1st Street
Community Advisory Committee	First Priority	5	0	0	0	0	100%	0	0	0
	Second Priority	4	20.00%	40.00%	20.00%	20.00%	0.00%	0.00%	0.00%	0.00%
	Third Priority	3	60.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%
	Fourth Priority	2	20.00%	20.00%	40.00%	0.00%	0.00%	20.00%	0.00%	0.00%
	Fifth Priority	1	0.00%	25.00%	0.00%	25.00%	0.00%	0.00%	25.00%	25.00%
	Category Ranking*		**1.2**	**2.25**	**1.6**	**1.05**	**5**	**0.4**	**0.25**	**0.25**
Public Input Survey	Very Congested	3	33.20%	18.20%	46.80%	56.50%	88.50%	-	-	-
	Somewhat Congested	2	46.40%	47.20%	41.90%	33.40%	7.50%	-	-	-
	Little to No Problem	1	20.40%	34.60%	11.30%	10.10%	4.00%	-	-	-
	Category Ranking*		**2.1**	**1.8**	**2.4**	**2.5**	**2.8**	**-**	**-**	**-**
	Composite Ranking		**3.3**	**4.1**	**4.0**	**3.5**	**7.8**			

Category Ranking = Sum of Each Ranking Criteria x Each Weight

Grade Separation Summary

	Grade Separation(s)	Public Input Composite Score*	B-C Ratio	Projected Train Volume (2031)**	Cost (Million USD)
Individual Grade Separations	Margaret Avenue	7.8	2.01	47	$16.50
	Locust Street	4.1	2.30	80	$9.00
	7th Street	4.1	2.12	27	$9.80
	5th Street/Lafayette Avenue	4.1	2.09	27	$8.70
	13th Street/8th Avenue	4.0	1.86	80	$19.50
	13th Street	4.0	1.80	47	$10.40
	Ohio Street (2-way)	3.3	1.24	47	$10.90
	Hulman Street	3.3	1.04	47	$14.00
Three Grade Separations	Margaret - 13th Street - Locust St	5.3	1.35	58	$35.9
	Margaret - 13th Street - 13th Street/8th Ave	5.3	1.37	58	$46.4
Two Grade Separations	Margaret Ave - Locust Street	6.0	1.64	64	$25.5
	Margaret Ave - 13th Street/8th Ave	4.1	1.60	64	$36.0

*Public input composite score for multiple grade separations is an average of the individual grade separation scores.

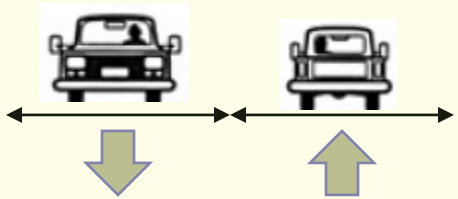
**Projected 2031 train volumes for multiple grade separations is an averge of the projected train volumes of the associated individual grade separations.

Margaret Avenue

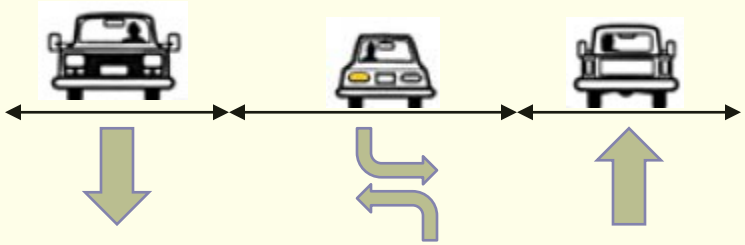
- Ongoing project to improve Margaret Avenue
  - US 41 to 7th Street – under construction
  - 7th Street to 13th Street/Canal Rd – under construction
  - 13th St/Canal Road to 25th Street

Margaret Avenue 14th St/Canal Rd to 25th St

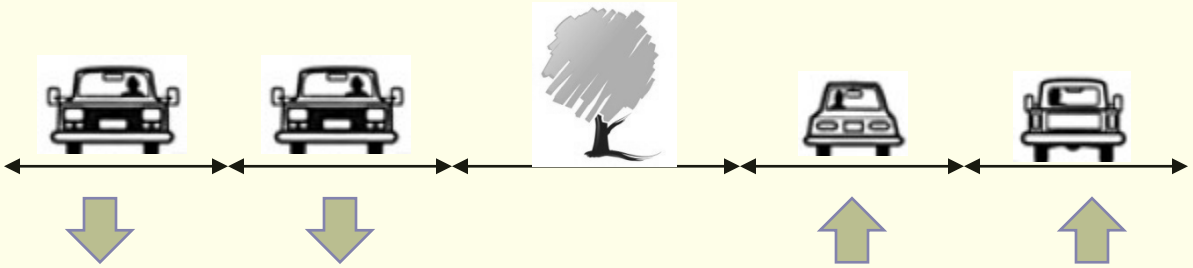
Capacity Analysis



Current
2 Lanes Wide
2062 LOS: F



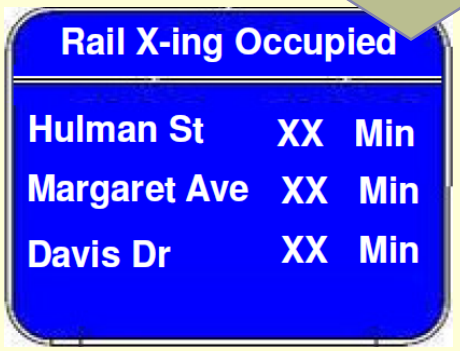
Two-Way Left-Turn Lane
3 Lanes Wide
2062 LOS: C-D

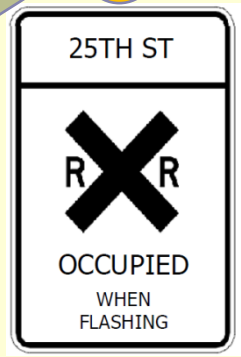


Boulevard Style
4-5 Lanes Wide
2062 LOS: C

Railroad Corridor Monitoring System

Laser/Radar Sensors





Quiet Zones

- Railroad Participation
- Qualification
- Supplemental Safety Measures
  - Four-Quadrant Gates
  - Gates with Channelization
  - One-Way Streets with Gates
  - Closure
- Federal Rail Administration Approval
- Updates to Report

Terre Haute Urbanized Area Railroad Corridor Study

City of Terre Haute
Vigo County Board of Commissioners
Metropolitan Planning Organization

ISU Campus Area

Project Selection and Prioritization

Grade Separations

- Benefit-Cost analysis
- Public survey results
- Traffic patterns
- Key destinations
- Spacing
- Future rail traffic

ITS Projects, Pedestrian Improvements, etc.

- Purpose & Need
- Public Input

Recommendations

Project	Targeted Completion
Intelligent Transportation System (ITS) Application for Emergency Services	Two years (2014)
Margaret Avenue Grade Separation with N-S CSX	Five years (2017)
8th Avenue/13th Street Grade Separation with N-S and E-W CSX	13 years (2025)
Pedestrian and Bicycle Safety Improvements Near ISU Campus	15 years (2027)
Grade Separation with N-S and/or E-W CSX	20 years (2032)