

Appendix D

Railroad Coordination



Project Meeting Notes

Meeting Date: January 6, 2011
Time: 9:00 am
Location: Conference call
From: Paul Satterly
Subject: CSX Coordination

Client: City of Terre Haute
Project Name: Railroad Relocation Study
Project Number: 25627422
Issue Date: January 14, 2011 (Revised)

Attendees:

- Larry Ratcliffe, Director of Network Planning, CSX
- Rick Schroeder, URS
- Paul Satterly, URS

The purpose of this meeting was to introduce the project and start the coordination process with CSX. The topics shown below in italics correspond to the topics listed in the Project Information Request outline.

1. *Train Operating Data* –

The railroad lines through Terre Haute consist of two core routes, Chicago to Evansville (north-south) and Indianapolis to St. Louis (east-west). These routes are part of two separate divisions, two separate regions and run by two managers.

Larry will gather the requested train operating data and forward to URS. Operating speed on the north-south line is 40 mph through the city (except for 25 mph at the INRD crossing at S. Dewey) and the east-west line track speed is restricted to 25 mph adjacent to the ISU campus.

The next generation of rail traffic needs to be considered as part of the study. There is now corporate cooperation between all rail lines within Terre Haute. CSX has part ownership of Indiana Railroad (INRD), but INRD operates independently. CSX does not dictate operating terms to INRD.

CSX will be running longer trains in the future and the design must accommodate this increase in train length.

Seasonal rail traffic consists of grain and potash in the fall.

Two tracks are required for each mainline to allow for passing and to accommodate switching.

Ingle Siding south of Terre Haute is still on the list of projects to be constructed. Atherton Siding (both designed by URS) located just north of Terre Haute, is still being considered for construction. This siding likely could tie into a potential two track relocated corridor.

Existing yard capacity needs to be matched for both Baker Yard and Duane Yard if they are to be relocated. Longer yard tracks are preferred.

Two trains per day in each direction use the Danville Secondary west of Terre Haute. The trains originate in Indianapolis and set out cars at Duane Yard. One train continues west to Paris, Illinois and the other train continues to Decatur, Illinois.

Baker Yard is used by INRD to exchange cars with CSX. This yard is also used by the south local to block cars for switching at the Vigo County Industrial Park.

Duane Yard is used to set out cars by the Indianapolis to Decatur train for INRD and CSX local destinations. Cars are switched between Duane Yard and Van Yard for INRD via the Con-Mil Connection. The Duane Yard switching capability will be needed in the future with any of the east-west corridor alternatives. A connection between Duane Yard and Baker Yard will need to be maintained. Currently cars are transferred back and forth between Baker Yard and Duane Yard. A local train originates at Duane Yard and goes west toward St. Louis.

A coal train from St. Louis is interchanged with INRD at Terre Haute using the Con-Mil Connection. This train continues to Sullivan where it is routed to a power plant west of Newton, Illinois. The empty train returns via Terre Haute. INRD recently installed a siding south of Terre Haute over 10,000 ft. in length that may also be used for interchange of certain traffic between CSX and INRD.

General freight bound for INRD is handled from Chicago by CSX and is delivered at Baker Yard. This traffic can consist of up to 60 to 80 cars per day.

2. *Review of Potential Corridors, Meet in Terre Haute to Field Review RR Corridor Alternatives and Areas of Concern?* –

Larry may be available during the middle part of February to field check the project corridors with URS staff. This field check should be scheduled for the day of the first Community Advisory Committee (CAC) meeting. Conceptual alignment drawings will be developed before the field check meeting.

David Clark will likely be the design reviewer for CSX.

3. *Valuation Mapping* – Larry will check on authorization for URS to use Valuation mapping we have on file that is used with our GEC contract.
4. *Standard Drawings* – Larry will check on authorization for URS to use CSX Standard Drawings we have on file that is used with our GEC contract.
5. *Relocated Haley Interlocking Requirements* –

Two main tracks are required for all approaches to the relocated interlocking. The higher speed line would ideally be designed as the through route using the straight side of the turnouts through the interlocking with the lower speed route running through the turnout side of the No. 20 turnouts.

CSX does not have specific train volume warrants for a grade separated railroad crossing. Previous studies had not considered a grade separated alternative. URS will develop grade separated alternatives to check their feasibility. If the new Haley is double track for both routes, it should be designed to allow parallel moves on either route.

Four quadrant connections are needed for the relocated interlocking or in the Terre Haute area. Currently, CSX has two quadrant connections (EB to NB and NB to EB) and uses

INRD for an EB to SB connection. A SB to EB connection is the missing fourth quadrant connection.

6. *Relocated Baker Yard / Duane Yard Requirements –*

No. 10 turnouts should be used on ladder tracks. Yard tracks should be 20-25 ft. from the mainline. Yard tracks should be spaced 15 ft. apart. At relocated Baker Yard, tracks are needed for locomotive storage, fueling access and a rip track. Relocated Baker Yard should be able to be switched from both ends. A rail connection will be needed to Duane Yard or to the relocated Duane Yard.

If future yard capacity allows, relocated Baker Yard will be used to stage a local that would run north of Terre Haute.

A replacement building for offices and welfare will be needed for a relocated Baker Yard. There may be an opportunity to have a consolidated facility with INRD. Currently, train crews go on duty at Duane and Baker Yards for CSX and Van Yard for INRD. Relocated Baker Yard should be the interchange for both CSX lines with INRD if possible.

7. *Spring Hill Interlocking –* CSX does not have any near term plans to modify the Spring Hill Interlocking. The interlocking may require modification to accommodate changes made as part of the overall project.

8. *Danville Secondary –* The train using the Danville Secondary originates in Indianapolis. Therefore, a direct connection needs to be maintained to accommodate the movement off of the east-west mainline.

9. *Industrial Connections –* CSX switches the Vigo County Industrial Park south of the City. There is no industry on CSX immediately east of Terre Haute.

10. *Other Proposed Design Parameters –*

A design speed of 50 mph for freight and 60 mph where possible for intermodal would be acceptable if the alignment can accommodate these speeds. The design speed of the alternative corridors will need to be reduced where the existing track geometry has sharp curvature.

Maximum grade will be 0.75% and the grade will be compensated for curvature. Steeper ruling grades exist on both mainlines, but a maximum grade of 0.75% will be used as the goal.

Baker siding is 13,000 ft. in length and should be replicated as part of a build alternative. Any siding should be designed to accommodate a minimum 10,000 foot train (11,000 between home signals).

Access roads shall be included with the build alternatives. Access is needed for the control point areas and yard areas.

Please notify us of any corrections to these meeting notes.

Thank you,

Signed: Paul B. Satterly

URS Corporation



Project Meeting Notes

Meeting Date: January 20, 2011
 Time: 2:30 pm
 Location: Indiana Rail Road Office
 From: Paul Satterly
 Subject: Coordination Meeting

Client: City of Terre Haute
 Project Name: Railroad Relocation Study
 Project Number: 25627422
 Issue Date: January 25, 2011

Attendees:

- Peter Ray, Vice President, Engineering, The Indiana Rail Road Company
- Paul Satterly, URS

The purpose of this meeting was to introduce the project and start the coordination process with the Indiana Rail Road (INRD). The topics shown below in italics correspond to the topics listed in the Project Information Request outline.

1. *Train Operating Data* -

INRD trains in the Terre Haute area consist of the following:

<u>Train Description</u>	<u>Commodity</u>	<u>Number of Cars</u>	<u>Frequency</u>
Gavalon Grain	Grain	90 – 35 cars switched at a time	As needed, using new connection
Hulman Yard Local	Miscellaneous	Varies	Daily
South Local	Miscellaneous	Varies	Daily
Van Yard to Baker Yard Local	Miscellaneous	Varies	Daily
Terre Haute to Jasonville	Chicago traffic	50	Daily
St. Louis Coal	Western Coal	143	1 load, 1 empty per day, via Con-Mil connection
Martin to Fayette Coke	Coke	100	3 loads, 3 empties per week, staged at Martin siding
Cayuga Coal	Coal	100	4 loads, 4 empties per week, staged at Martin siding
NIPSCO Coal	Coal	110	1 load, 1 empty per week, staged at Martin siding
Fayette Power Plant	Coal	100	4 loads, 4 empties per week

Length of coal or plastic (covered hopper) cars are approximately 60 ft.

CSX handles the Chicago to Terre Haute traffic for INRD. This traffic is interchanged at Baker Yard. INRD picks up the cars and takes them to Jasonville (30 miles south) where they are sorted for destinations including Indianapolis, Illinois and Louisville. Carloads assembled in Jasonville bound for Chicago are delivered to CSX at Baker Yard.

The diamonds at Belt junction and Spring Hill limit CSX train speeds to 40 mph. The diamond at Dewey Junction limits CSX train speeds to 25 mph. Maximum train speed on the INRD is 25 mph and the speed limit drops to 10 mph over the Wabash River bridge to the power plant at Fayette.

Unit trains are staged at Martin siding south of the Spring Hill interlocking. Trains are exchanged at this siding between CSX and INRD.

Van Yard is used to store cars waiting to be delivered to local industry.

2. *Review of Potential Corridors, Meet in Terre Haute to Field Review RR Corridor Alternatives and Areas of Concern?* –

Peter Ray and other staff will attend the Community Advisory Committee meeting scheduled for mid-February.

3. *Valuation Mapping, Track Charts, Timetable and As-Built Drawings* -

Valuation mapping is available in pdf format for the Terre Haute area. These valuation maps were copied on a flash drive for use by URS. Copies of track charts and the timetable of the area were provided to URS.

Plans for the Spring Hill interlocking area were provided to URS in hard copy and pdf format. INRD would like to have the features shown in their Spring Hill interlocking plans included in the proposed alignment alternatives developed for the east INRD corridor.

4. *CSX Standards Acceptable for Indiana Rail Road Design?*-

INRD uses CSX standards for design.

5. *Relocated Haley Interlocking Requirements* -

INRD operations will not be affected by a relocated Haley Interlocking.

6. *Relocated Van Yard / Baker Yard Requirements* –

Van Yard is used for car storage. All rail car classification and switching is done at Jasonville. INRD needs to be able to pick up and set out Chicago cars at the relocated Baker Yard.

7. *Spring Hill Interlocking* –

INRD needs to maintain their connections to Gavalon Grain, Hulman Yard and Martin Siding. INRD needs to retain track connections as shown in the INRD proposed alignment drawings.

8. *Industrial Switching Connections –*

The GATX car repair facility and yard located south of the Ft. Harrison industrial area is active.

The Jacore industrial area located along the old PRR right-of-way, west of the INRD east corridor, is active.

9. *Other Proposed Design Parameters -*

INRD desires their own mainline track on the INRD east corridor in addition to what is required by CSX for their relocation. CSX has indicated that two CSX tracks will be needed for the relocated north-south corridor for the purposes of passing trains, holding trains and stopping trains to set out and pick up cars at the relocated Baker Yard. A total of three mainline tracks will be required for the east corridor. The western most track should be dedicated to INRD since they will need to access three industrial areas, Van Yard and the Fayette power plant; all located on the west side of the corridor. It is likely that all three tracks will be used by both railroads to provide flexibility in operations. A series of crossovers will be needed at the south end of the corridor at Spring Hill to cross INRD trains over CSX tracks to access the west track. Crossovers will be needed at the north end of the corridor to provide INRD access to the relocated Baker Yard.

CSX based design parameters are acceptable to INRD since they use CSX design standards for design.

Additional Topic (not on the agenda) –

Need to add Jim Merritt to the list of invitees for the CAC meetings.

Please notify us of any corrections to these meeting notes.

Thank you,

Signed: Paul B. Satterly

URS Corporation



Project Meeting Notes

Meeting Date: February 23, 2011
Time: 1:00 pm
Location: Girl Scout Office, Terre Haute
From: Paul Satterly
Subject: Conceptual RR Alignment Review

Client: City of Terre Haute
Project Name: Terre Haute Urbanized Area Railroad Corridor Study
Project Number: 25627422
Issue Date: February 28, 2011

Attendees:

- Chuck Ennis, Terre Haute City Engineer
- Ron Hinsenkamp, Chief Transportation Planner, Metropolitan Planning Organization, West Central Indiana Economic Development District, Inc.
- Larry Heil, Federal Highway Administration
- Larry Ratcliffe, Director of Network Planning, CSX
- Peter Ray, Vice President, Engineering, The Indiana Rail Road Company
- Bob Babcock, The Indiana Rail Road Company
- Jim Rice, Hannum Wagle and Cline
- David Cleveland, Corradino, LLC
- Sarah Hoch, Corradino, LLC
- Liz Solberg
- Rick Schroeder, URS
- Randy Zilz, URS
- Paul Satterly, URS

The purpose of this meeting was to review and provide comments on the conceptual railroad alignment alternatives. The topics shown below are grouped by the conceptual railroad corridor alternatives presented at the meeting.

1. General Comments –

The alternatives presented are conceptual designs and are to be used for the review of railroad operations to see if they are feasible from a railroad operating standpoint. If the alternatives can meet the operating needs of the railroads, then they will be carried further in the development as alternatives.

Larry Heil suggested that for the purpose and need statements, separate the North-South alternatives from the East-West alternatives since they can be considered as stand-alone projects and are not dependent on each other. The alternatives have been developed so the North-South and East-West alternatives can work together in any combination. For the environmental analysis, the North-South alternatives and the East-West alternatives will be compared independently.

Design speed for the East-West Alternative A corridors and the North-South Alternative A and B corridors is 60 mph with a maximum curvature of 2°30'. The design speed for the East-West Alternative B corridor is 40 mph using a maximum curvature of 4°00'. The design speed for major mainline connections is 45 mph (with No. 20 turnouts) and 30 mph for minor connections (with No. 15 turnouts, 8° curvature).

Build alternatives under study will be fully grade separated and therefore would not have train horn noise impacts. Train noise will be limited to wheel and exhaust noise. Wheel noise is minimized with the use of welded rail and exhaust noise is noticeable primarily when pulling up a grade.

There are approximately 30 to 35 trains per day on the North-South CSX line and approximately 25 to 30 trains per day on the East-West CSX line. These train volumes are anticipated to grow with the improving economy. The North-South train volumes will likely grow at a rate faster than the East-West volumes.

Train yard operational issues need to be worked out between the railroads. Connection speeds between rail lines should be reviewed. Some connection speeds may have to be increased to accommodate future traffic.

The railroads prefer longer yard tracks where possible. Yards need to be accessed from either end by trains setting out or picking up cars in either direction. Pull back tracks or lead tracks need to have adequate length to function with the longer yard tracks.

Peter Ray indicated that if Van Yard can be replaced or reused, then there is a possibility that Hulman Yard could be retired.

2. Independently Usable Projects –

Baker Yard could be relocated to the Ft. Harrison industrial area ahead of the relocation of the North-South CSX mainline (Alternative A-1, A-2 and A-3). This would allow the reduction in conflicts at the 19th and Margaret Street grade crossing. Only trains needing to use the yard would use the Indiana Rail Road alignment and through CSX trains would continue to use the existing mainline. Consider centering the yard in the Ft. Harrison industrial park so that sufficient lead track can be provided in either direction and to maximize the length of the yard tracks. The design of the relocated Baker Yard should consider the final alignment of a relocated CSX mainline. Roadways would be grade separated within the limits of the relocated yard and lead tracks.

CSX requires a siding track at least 10,000 ft. long to replace the Baker Siding. The development of a Baker Yard replacement needs to include a replacement siding which would include grade separations along its length.

3. CSX East-West Alternative A-1 Conceptual Alignment –

There is concern about the cost of a new river bridge crossing, although three existing railroad bridges could be retired with the construction of one new bridge. The Alternative A corridors are approximately two to three miles longer than the existing East-West alignment.

4. CSX East-West Alternative A-2 Conceptual Alignment –

This alternative is the same as East-West Alternative A-1 with the exception of the west end where it loops around the east side of the Izaak Walton Lake. The A-2 alignment is 1 mile longer than the A-1 alignment.

5. CSX East-West Alternative B Conceptual Alignment –

The profile grade for this alignment 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. Larry Ratcliffe is concerned about drainage of a depressed railroad corridor

and the water table elevation relative to the railroad corridor elevation. Preliminary investigation shows that the depressed profile grade would be higher than the flood stages of the river (approximately 10 ft.) but there would be a conflict with a combined sewer (8 ft.) which runs beneath Lafayette Avenue. Depressing the railroad along a new corridor would be more cost effective than depressing the existing corridor due to the added temporary track construction cost, the added cost of temporary right-of-way and the added cost of right-of-way restoration. The proposed alignment would run through the Sherwin Williams (MAB) property and would reuse the US 41 overpass with modifications. This alternative alignment is about one mile in length. An increase in train speed through this area from 25 mph to 40 mph would reduce nearby grade crossing wait times by half.

There is a preference for leaving the railroad profile at grade to minimize drainage issues. Earth berms should be used for sound attenuation.

Indiana State University and Union Hospital own about half of the property within the proposed corridor. Many homes have been torn down in the last five years. The proposed alignment works well within the RHIC plan for this area.

Traffic patterns would need to be changed for the streets adjacent to the proposed corridor. 7th, 8th and 9th Streets may need to be combined for one grade separation. Pedestrian bridges would help to address pedestrian circulation issues across the corridor.

6. CSX/INRD North-South Alternative A-1 Conceptual Alignment –

The North-South Alternative A corridors share the same alignment from Spring Hill interlocking up to the US 40 overpass. The other A alternatives vary by using an alternative yard location and variations in the mainline alignment and connecting track alignments at the north end of the corridor.

Grade separations would be considered for roadways that cross the North-South corridor including Margaret Avenue, Hulman Street, Poplar Street, Fruitridge Avenue and Ohio Street/Deming Park. Roadways like College Avenue may be closed at the railroad corridor.

The Con-Mil connection is limited to 10 mph. The North-South A Alternatives should consider the realignment of the Con-Mil connection to provide higher speeds (30 mph). Other southwest connection alternative locations include Otter Creek junction and where the proposed North-South A corridor joins the existing East-West corridor. For the movement of coal trains from St. Louis, CSX would like to have a staging track for these coal trains next to and parallel to the relocated CSX yard, so crews can be changed or the train handed off to the INRD. This track could also be parallel to the Van Yard depending on the preferred CSX yard location.

The replacement yard(s) for Baker Yard, Van Yard and Duane Yard should be in the same general area. Duane Yard should be incorporated into other yards if possible or relocated as necessary. The yards could be combined into a single yard if operations can be worked out between the railroads. Access between yards is needed to facilitate interchange. Check the grades for the proposed yards. The yards should have a flat grade and possibly a bowl shape to help keep cars in the yard. The yard lead track should be as long as the longest yard track.

Deming Park and the Ohio Boulevard neighborhood are historic districts. This area will present challenges in terms of impacts to the park entrance and the connectivity between the park and the Ohio Boulevard neighborhood. Suggestions were made to relocate the Deming Park entrance farther north off of Fruitridge Avenue or off of Poplar Street. If the park entrance stays in its current

location, the railroad will likely be elevated and cross over the park entrance, Fruitridge Avenue and Poplar Street.

Indiana Rail Road prefers crossovers at Spring Hill interlocking so that their trains would be able to cross over CSX and get to the west side of the corridor as soon as feasible. Other crossovers should be added throughout the corridor to allow use of all the tracks by both railroads.

7. CSX/INRD North-South Alternative A-2 Conceptual Alignment –

The North-South Alternative A corridors share the same alignment from Spring Hill interlocking up to the US 40 overpass. This alternative has its yard located farther north than Alternative A-1 within the Ft. Harrison industrial park and has a variation in the mainline alignment and connecting track alignments at the north end of the corridor.

8. CSX/INRD North-South Alternative A-3 Conceptual Alignment –

The North-South Alternative A corridors share the same alignment from Spring Hill interlocking up to the US 40 overpass. This alternative is the same as Alternative A-2 with another variation in the mainline alignment and connecting track alignments at the north end of the corridor.

9. CSX/INRD North-South Alternative B Conceptual Alignment -

The North-South Alternative B corridor shares the same alignment with the Alternative A corridors from Spring Hill interlocking up to the US 40 overpass. The Alternative B alignment is about 2 miles shorter in terms of new track construction than the A Alternatives.

The current configuration of the North-South B alignment has the North-South alignment going over either the existing East-West alignment or the proposed East-West Alternative A alignment. The approaches to this grade separation (30 ft. elevation difference) would be approximately one mile in length and would likely use “T” walls to support the embankment on the south approach. Due to the anticipated higher volumes on the North-South corridor, the East-West grade separation over the North-South alignment should be investigated to assess the impacts. Issues that may be a problem with this scenario is the construction of the elevated track while maintaining train traffic on the existing mainline track and the replacement of the Ft. Harrison Road grade separation.

Evansville to Indianapolis trains need the capability to set out and pick up cars from the relocated yard. The northeast quadrant connection (Indianapolis connection) track needs to run parallel to the relocated yard. An alternative design may be to provide set out and pick up tracks parallel to the Indianapolis connection that would be serviced by the yard crews and switched from the south end of the yard. Either option would involve crossing the CSX mainline tracks to access the yard.

Please notify us of any corrections to these meeting notes. Please provide written comments on the conceptual railroad alignment corridors by March 7, 2011 so your comments can be considered with the development of the preliminary plan and profile drawings.

Thank you,

Signed: Paul B. Satterly

URS Corporation

cc: Duke Bennett, Mayor, City of Terre Haute
Judy Anderson, Vigo County Commissioner

Jerry Netherlain, Vigo County Engineer



Project Meeting Notes

Meeting Date: January 12, 2012
Time: 1:30 PM
Location: MPO's Office
From: Sarah Hoch
Subject: Railroad Coordination Meeting

Client: City of Terre Haute
Project Name: Terre Haute Urbanized Area Railroad Corridor Study
Project Number: 25627422
Issue Date: January 23, 2012

Attendees:

- Mayor Duke Bennett, City of Terre Haute
- Ron Hinsenkamp, Chief Transportation Planner, Metropolitan Planning Organization, West Central Indiana Economic Development District, Inc.
- Chuck Ennis, City of Terre Haute, City Engineer
- Jerry Netherlain, Vigo County Engineer
- Judith Anderson, Vigo County Commissioner
- Larry Ratcliffe, CSX Transportation
- Peter Ray, Indiana Rail Road
- Bob Babcock, Indiana Rail Road
- Paul Satterly, URS
- Jim Rice, Hannum, Wagle & Cline
- David Cleveland, Corradino
- Dean Munn, Corradino
- Sarah Hoch, Corradino
- Liz Solberg

The purpose of this meeting was to update CSX Transportation and Indiana Rail Road (INRD) on the progress of the study analysis and to seek consensus on recommended projects of independent utility.

An Environmental Assessment Corridor Study is being completed per the NEPA process. The study will identify projects of independent utility, which will require a full NEPA document. The NEPA work in the planning study can be used in the full NEPA document for each recommended project, as it is carried forward, and should give the project a competitive edge for funding. The Federal Highway Administration (FHWA) and the Federal Railroad Administration (FRA) both subscribe to this process.

The Consultant presented the following information, which is included in the attached PowerPoint.

The Purpose and Need Statement is comprised of four main areas of focus: mobility, public safety, community sustainability, and railroad operations. The alternatives analysis is a tiered process. The first tier focuses on the overall rail corridors. Items from the Purpose and Need are metrics in the Tier 1 matrix. Critical factors such as expense and feasibility of phased implementation are also metrics used in the analysis. The ability to construct the project in fundable, independently usable portions is a key component of the Tier 1 analysis. In the Tier 2 analysis those alternatives identified in Tier 1 as having the most merit are studied in greater detail.

Public Input is also part of the process. At the first Community Advisory Committee (CAC) meeting, the project team asked the public to identify their priorities. The community had the opportunity to complete a survey on-line or at the Public Information meeting. There were 395 respondents that filled out the survey. The survey was hosted on the project website and was promoted through local media. Of the 395 respondents, 91% answered yes to the City and County

continuing their effort to reduce the adverse effects of rail operations on the community, even if a significant amount of tax dollars must be committed to the venture.

The project team calculated current and future train volumes based on observed data and publications on future freight rail growth. The data was collected by the MPO using motion-activated cameras at strategic crossings that recorded when the crossing arms were activated. These numbers were originally distributed to the railroads for review in August 2011 and revised in October based on CSX comments.

Two alternatives were eliminated as part of the Tier 1 analysis—the Purple and Orange alternatives. The Purple alignment is very similar to the Pink, which remained in analysis. The difference is the Purple includes a rail-over-rail grade separation, which provides more than the required capacity and adds cost to the project. The Orange alignment was eliminated due to the additional mileage incurred by the railroads and reaction from resource agencies about the potential wetland impacts. The US Environmental Protection Agency (USEPA) will likely not sign-off on such a large wetland impact considering all the other available alternatives.

The Tier 2 analysis uses travel demand modeling techniques and software to focus on key grade separation locations. The key locations were chosen from the Tier 1 alternatives based on the expected amount of congestion reduction, spacing, feasibility, and community needs. For the north-south line, two locations each were chosen for the analysis of the northern, downtown and southern locations. For the east-west line, two locations not in the segment concurrent with the north-south line were chosen for analysis. The full build Yellow, Pink, and Blue Alternatives were also analyzed.

The delay reduction was quantified using the travel demand model. In the travel demand model, additional links were coded to represent the railroad crossing. Depending on the scenario, delay can be added or removed, or the crossing can be closed to traffic. The amount of delay added to each crossing was quantified based on the probability a train would be encountered, as well as the probability a motorist would divert rather than wait for the train to pass. Crossing blockage data was gathered by the MPO using motion-activated cameras at the crossing gates.

The consultant led the discussion on the modeling methodology and how the benefits and costs were calculated to produce benefit-cost (B-C) ratios for the various alternatives. The benefits include vehicle-miles traveled, vehicle-hours traveled, and congested vehicle-miles traveled. An increase in congested vehicle-miles traveled may indicate that a particular alternative, i.e. grade separation, requires more traffic to travel on an already congested roadway. The congestion could likely be mitigated by roadway improvement projects. The Yellow and Blue alternatives increased congestion. This is likely due to the roadway closures in these scenarios. The benefits are monetized in three categories: travel time cost savings, operating cost savings, and safety cost savings, all following typical INDOT practice for such analysis. The monetized benefits and planning level cost are used to calculate the B-C ratio. The timing of the benefits and costs are considered in the calculations. A 3% discount rate was used because TIGER grants use this rate. Lower rates yield projects more favorable, so a higher rate would be more conservative. The B-C ratio is a core part of past TIGER applications and is emphasized more each year. Air quality analysis was not included in the analysis, as it is not part of the INDOT process. Air quality analysis could potentially make projects more competitive. It is required for CMAQ funding, which is a potential funding source. Not all of the projects identified at this point would yield a B-C cost ratio greater than 1.0. Comparing B-C ratios for individual grade separations versus groups of grade separations, reveals a pattern of diminishing returns associated with grade separations.

Fifteen projects were analyzed including eight individual grade separations, two groups of two grade separations, two groups of three grade separations, and three full corridor build-outs. Results for the analysis of the fifteen projects are included in the PowerPoint presentation. The consultant briefly reviewed the results of the analysis. Regarding the Pink Alternative, the consultant noted that while the Pink Alternative does provide many benefits to the motoring public of Terre Haute, the high cost dramatically reduces the B-C ratio for this project. The railroads asked if the Pink Alternative was analyzed in phases, and if not, is it possible to do that. The consultant responded that it was not analyzed in phases but it is possible to do so. The Railroads commented that an estimated six trains per day could be relocated from the Yellow Alternative to the Pink Alternative following the first phase of Pink. These would be the six highest delay trains per day. These trains performing yard operations are responsible for a significant portion of the delay, particularly at the

Margaret Avenue crossing. The delay for the north-south line will be re-quantified by removing approximately six of the longest delay trains from Margaret Avenue and six through trains from all of the north-south line. The Railroads commented that in the first phase of Pink, the additional six re-routed trains would use the existing INRD line bridges over Wabash Avenue, Locust Street, and Beech Street. The Management Team commented that the first phase of Pink would need to include a grade separation at Steelton Road so that we are not just simply moving the Baker Yard crossing blockage issue to Fort Harrison.

The Tier 1 analysis includes standard NEPA categories, B-C ratio, and construction cost. The full build corridor alternatives were analyzed in Tier 1: Yellow, Orange, Blue, Purple, Pink, and Teal. The Pink Alternative was anticipated to perform well, but the cost of a new yard and railroad corridor had a significant impact on the benefit-cost ratio. The timing of benefits and implementation also decreased the B-C cost ratio. The investment will not yield benefits until the end of phase two in 20 years. Six to nine trains will reroute to use the new yard, which costs about \$100 million to build. The project could be a tough sell to the public, because of the perception and timing of benefits.

The next steps are to identify, prioritize, and pursue projects. The study will be presented to the policy committee for adoption. The recommendations will be based on a public input component and a modeling/congestion relief component. The modeling/congestion relief includes more than the benefit-cost ratio. The projected train volumes are also considered because a crossing or corridor with a higher future volume has a greater effect in congestion reduction over time. The proximity of a grade separation to existing grade separations will also be considered. Locations near the existing grade separations will have a limited impact on congestion reduction. The existing US 41/3rd Street bridge is near the 5th Street/Lafayette Avenue location, so its impact to reduce congestion is limited. The existing I-70 bridge is near the Margaret Avenue location; however, there is limited access to the interstate, so Margaret Avenue is not significantly affected by the existing grade separation.

The Consultant wrapped up the presentation and asked if there were any additional questions or comments. The following discussion occurred.

The Consultant noted that only the community benefits were monetized, no railroad benefits were calculated in the analysis. The practical aspect is fundability. The Management team provided the group with a list of TIGER grant projects nationwide for recent years. The average award size is now less than \$20 million. The Railroads shared their recent experiences with TIGER noting that recently as many as half of all applications are being rejected due to little or no sophistication or economic analysis. A well done analysis is important to be competitive. The maximum TIGER III grant was \$25 million. Some of the study alternatives are significantly more than \$25 million.

The Consultant will model the Pink Phased Option to determine its merits. The scope of the alternative for the first phase will include a new yard of equivalent size as the Baker Yard and a grade separation at Steelton Road. The consultant will assume that the 6 largest delay trains at the Baker Yard will be relocated as part of the Phased Pink Alternative. The replacements of the existing structures on the INRD line were in the original scope; however, routing 6 additional trains will not require immediate upgrades. Over time the structures will need to be replaced. When they are due for replacement, the Railroads noted that they will be included in their internal bridge program. The additional connections for CSX to utilize the yard are a requirement for Phase 1. While this project won't give the immediate benefits that a grade separation at Margaret Avenue & 19th Street would, it is part of a larger plan to remove trains from downtown Terre Haute.

The Railroads noted that selecting a grade separation at Margaret Avenue & 19th Street as a project of independent utility eliminates the possibility of abandoning the Yellow Alternative through downtown. In the event of abandonment, the city envisions a rails-to-trails project. The case for abandoning the downtown railroads was discussed. While the railroad presence downtown doesn't hinder economic growth, it is certainly a safety concern and a nuisance. The railroads no longer serve downtown customers and are not likely to have downtown customers in the future. The Pink alternative has the potential to greatly benefit the community, but the cost is substantial. Assuming funding can be acquired, the local match for the projects would take up all of the city's funds. The community benefits of the alternative were discussed. At the public meetings, there was a subtle distinction between moving trains and parked trains. The public emphasized that

the parked trains performing yard operations blocking Margaret Avenue were the concern. The yard operations were also discussed. Baker Yard is currently where trains are built and local customers are served. The operations at Duane Yard will probably not be necessary if the new yard is built. The idea of building a grade separation at Margaret Avenue and allotting room for Baker Yard to expand was brought up. Most trains should fit between Hulman Street and Davis Drive. It is expensive to expand the existing yard. Depending on how much the improvements would cost, it might be a win-win situation for everyone. A grade separation at Margaret Avenue would be built to accommodate future railroad plans.

The Consultant's cost estimates were discussed. The unit costs used in the estimates are based on past projects. There were no comments challenging the cost estimates at this time; however, the railroads were given a copy of the Consultant's cost estimate to review. The scope of the costs was briefly discussed. Roadway improvements are not included in the cost estimate. A previous study indicated the cost to improve the Margaret Avenue corridor to a 4-lane section and build an overpass was \$28 to \$29 million.

The entire approach of the study was discussed. It is truly a cooperative and unique effort between the city, county, and railroads. Public-private partnerships are the way of the future. Infrastructure funding is more competitive than it was in the past and a study of this nature sets a project up for success.

The next topic was ITS. An ITS project can be pursued in the near future to provide immediate relief and an interim solution. The grant money the city has already obtained can be used for ITS. The ITS system can be constructed quickly because it is not likely to require right-of-way, so it may not require NEPA documentation. The Margaret Avenue area is the main focus of the system. The system would include Margaret Avenue, Hulman Street, Davis Drive, 25th Street, and Canal Road. The purpose of the system is to give notice that the crossing is blocked. The ITS system will need to tie into the preempt circuit. While there aren't any problems with the technical aspect, there might be policy issues. The Railroads will check to see if there is a policy issue. The discussion transitioned into more details on the ITS system. The system could show whether or not a crossing is occupied. It can also indicate how long a crossing has been occupied with a count-up timer. While a count-up timer might be useful, the community is more interested in how much longer the train will be there. The ITS system might be able to indicate whether the train blocking a crossing is moving northbound or southbound. Color coding the amount of time based on the minutes the crossing has been blocked was also discussed. There is another way to get information to feed the ITS system. Predictive methods are used to predict when the crossing will be blocked based on data collected a distance from the crossing. The railroad indicated predicting the arrival of trains is largely unreliable, due to the unpredictability of train movements. The key is a balance between too much information and not enough information. Giving any information can cause a driver to divert from their original route; however, the diversion may not be beneficial. If information leads a driver to make a decision that lengthens their trip rather than shortening it, the driver will become frustrated. Too much information can also lead to drivers choosing risky behaviors, like trying to beat a train to the crossing. It is also important to educate the public on how to use the ITS system to make decisions. A benefit to the ITS system described is that it can be converted to supplement a future grade separation at Margaret Avenue. While the north-south line is the focus of the ITS efforts, the east-west line might also benefit from ITS.

Please notify us of any corrections to these meeting notes.

Thank you,

Signed: Sarah Hoch

The Corradino Group

Attachments:
Presentation Slides
TIGER Grant Analysis
ITS Handout



Project Meeting Notes

Meeting Date: January 30, 2012

Time: 1:30 PM

Location: GoToMeeting

From: Sarah Hoch

Subject: Railroad Coordination Meeting

Client: City of Terre Haute

Project Name: Terre Haute Urbanized Area Railroad Corridor
Study

Project Number: 25627422

Issue Date: February 6, 2012

Attendees:

- Ron Hinsenkamp, Chief Transportation Planner, Metropolitan Planning Organization, West Central Indiana Economic Development District, Inc.
- Chuck Ennis, City of Terre Haute, City Engineer
- Jerry Netherlain, Vigo County Engineer
- Larry Ratcliffe, CSX Transportation
- Peter Ray, Indiana Rail Road
- Bob Babcock, Indiana Rail Road
- Paul Satterly, URS
- David Cleveland, Corradino
- Dean Munn, Corradino
- Sarah Hoch, Corradino
- Liz Solberg

The purpose of this meeting was to address questions and comments from CSX and INRD on the cost estimates and analysis for Pink Phase 1.

The scope of the Pink Phase 1 update was discussed first. This analysis relocates the six trains each day with the longest delay from the Yellow corridor to the Pink corridor. The model results and the benefit-cost (B/C) ratio did not change significantly for Pink Phase 1, primarily because so few trains are being relocated with this alternative.

It was emphasized that the existing INRD line could be used for Pink Phase 1 without adding a second track for added capacity; however, there are a number of improvements that would need to be made for train operations. Paul Satterly noted that the Pink Phase 1 assumes no improvements south of Wabash Avenue. Proper connectivity, additional signals, tracks at Fort Harrison industrial park, and a yard that is a replica to Baker Yard are necessary and are included in Pink Phase 1. A sensitivity analysis for the B/C ratio revealed the cost for Pink Phase 1 must be \$17 million for a 1.0 B/C ratio with the quantified benefits. The cost estimate for Phase 1 is \$74 million.

The fundability of the project was discussed. TIGER grants are the most likely source of funding. The construction of the new yard will create temporary construction jobs; however, the project is not an obvious source of permanent job creation. TIGER I allowed including construction jobs as a benefit; however, it was not allowed in TIGER II or III. The cost of Phase I also far exceeds past TIGER Grants.

The concern that building a grade separation at Margaret Avenue eliminates the possibility of removing trains from downtown, as a long term solution, was discussed. This is a concern shared by the railroads and the management team. Unfortunately, the Pink Alternative, in all of its possible phases, is too

expensive. The group, including CSX, INRD, local officials, and the consulting team, concurred that the Pink corridor alternative should be eliminated from further consideration.

The group then focused on selecting the highest priority grade separation to pursue for Yellow and/or Blue. Based on modeling results for delay, B/C ratio, and public input, the entire group concurred that a grade separation at Margaret Avenue near 19th Street is the top priority. Mr. Hinsenkamp noted that environmental documentation is already in place for the Margaret Avenue corridor, which will help position a Margaret Avenue improvement for TIGER scoring.

Mr. Hinsenkamp will meet with the steering committee members discuss the Margaret Avenue project as well as other projects of independent utility to make sure that everyone is on the same page and agrees on the direction of the study. It is likely that a TIGER application will be prepared for the Margaret Avenue project.

The following meetings will be scheduled: Resource Agency, Community Advisory Committee (CAC), and Public Information. The consultant will wrap-up the study based on the consensus reached during the meeting.

Please notify us of any corrections to these meeting notes.

Thank you,

Signed: Sarah Hoch

The Corradino Group