

Highway-rail grade crossings: planning and environmental linkages studies

November, 2020



Grade crossings

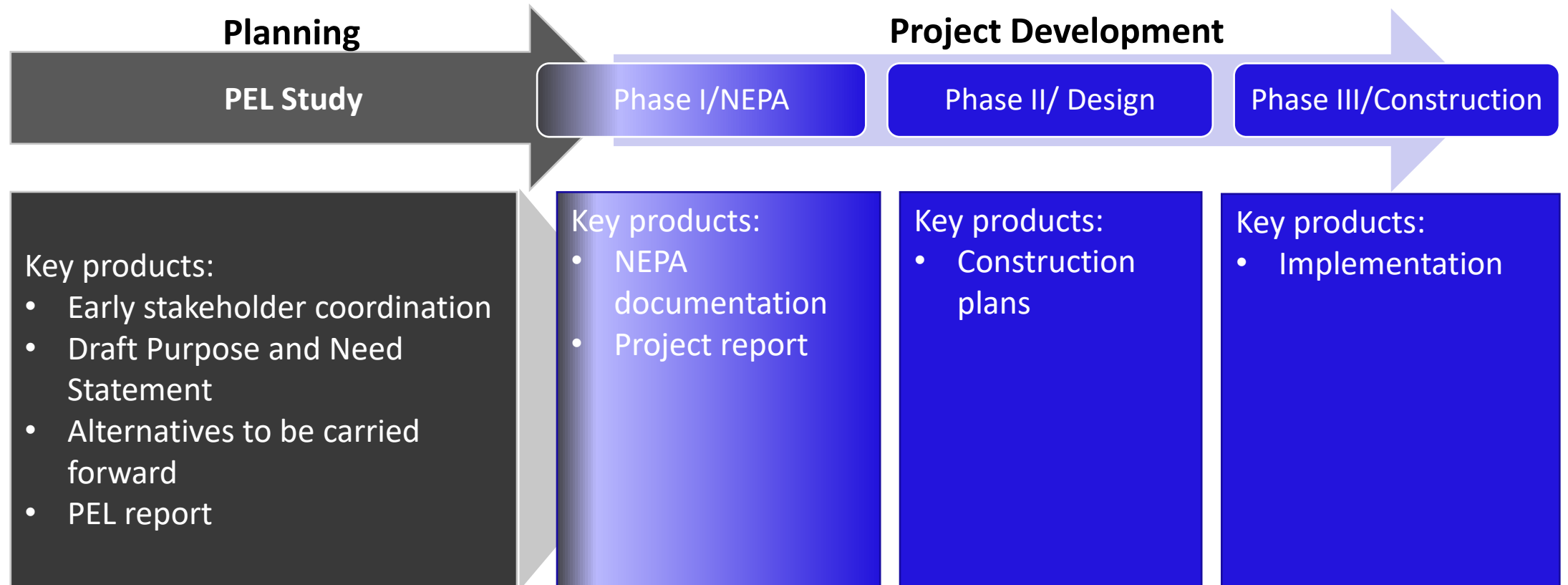
Planning and environmental linkages (PEL) studies
Joliet – Laraway Road

Planning and environmental linkages (PEL) studies



PEL studies inform NEPA

PEL studies produce planning analysis and decisions that can be incorporated into subsequent project-level environmental reviews



Integration of PEL studies into NEPA

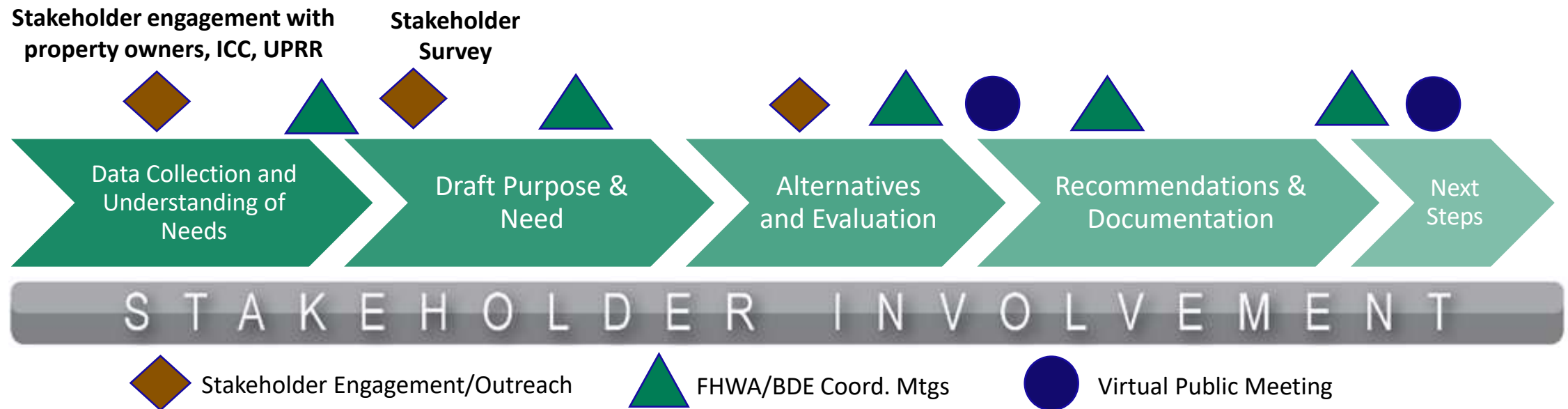
Results or decisions of PEL studies may be used as part of the overall project development process consistent with NEPA and FHWA regulations

P E L S t u d y	Responsibility <ul style="list-style-type: none">• Review and approve PEL study• Provide guidance	<pre>graph TD; FHWA[Federal Highway Administration] --- IDOT[IDOT]; IDOT --- Line(()); Line --- CMAP[CMAP]; Line --- LA[Local agency]</pre>	Objectives <ul style="list-style-type: none">• Assist in gauging public support for the project• Advance a project that does not have full Phase 1 funding• Assist a subsequent Phase I project meet FHWA time constraints
	<ul style="list-style-type: none">• Develop PEL study• Gather partners to the table		

Roles and responsibilities

CMAP will be the project sponsor through the PEL process. CMAP regularly engages local agency once the project is initiated.

ONGOING COORDINATION BETWEEN LOCAL AGENCY – CMAP – PEL STUDY TEAM



Revised Budgets and Schedules

Study	Budget
Project Startup	\$17,420
Laraway Road	\$139,823
Berwyn-Riverside	\$192,657
Total	\$349,900

Laraway Road: 1st quarter 2020 – 2nd quarter 2021

Berwyn/Riverside: 4th quarter 2020 – 1st quarter 2022

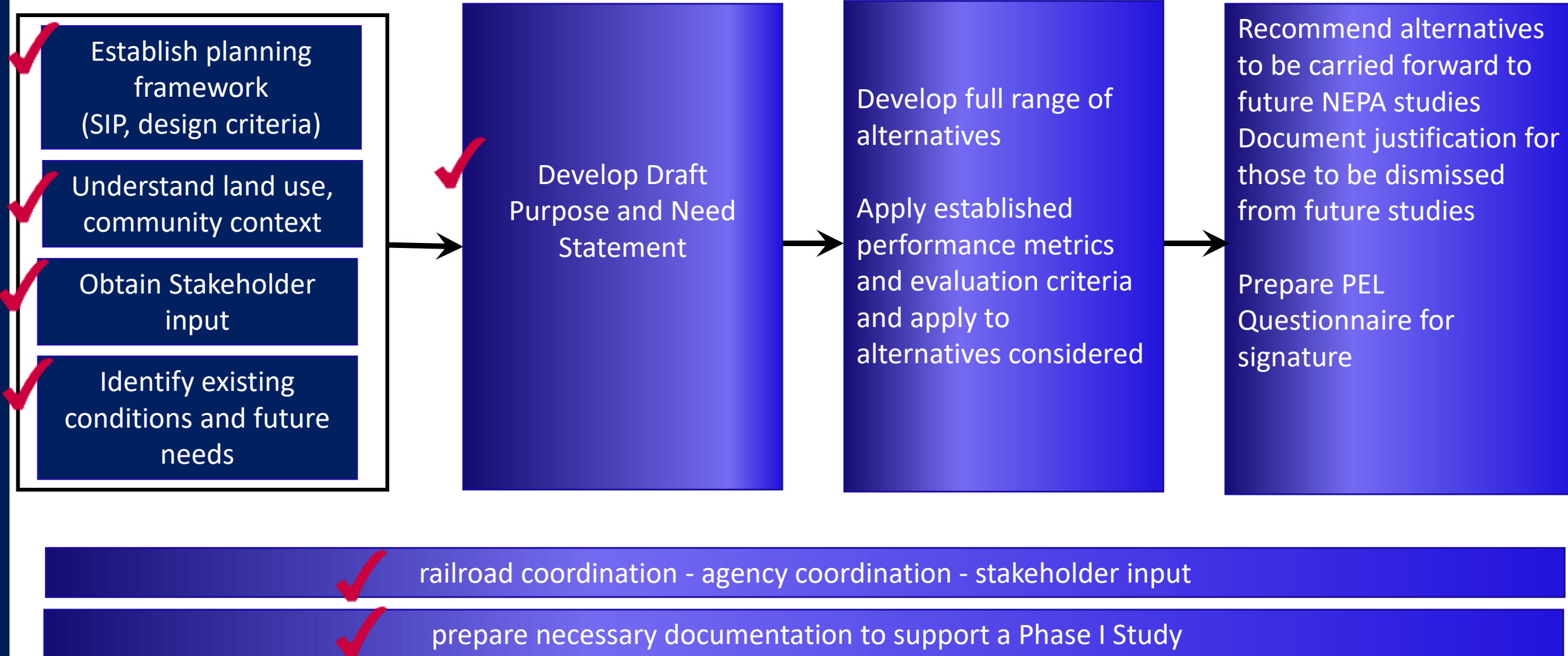
Laraway Road PEL study



Level of effort: Laraway Road

Task	Hours
PEL study planning framework	18
Public involvement and engagement	268
Existing and 2050 no-build conditions analysis	151
Purpose and need	58
Alternatives development and evaluation	274
Study documentation	224
Total	993

Laraway Road PEL study progress



Study Location

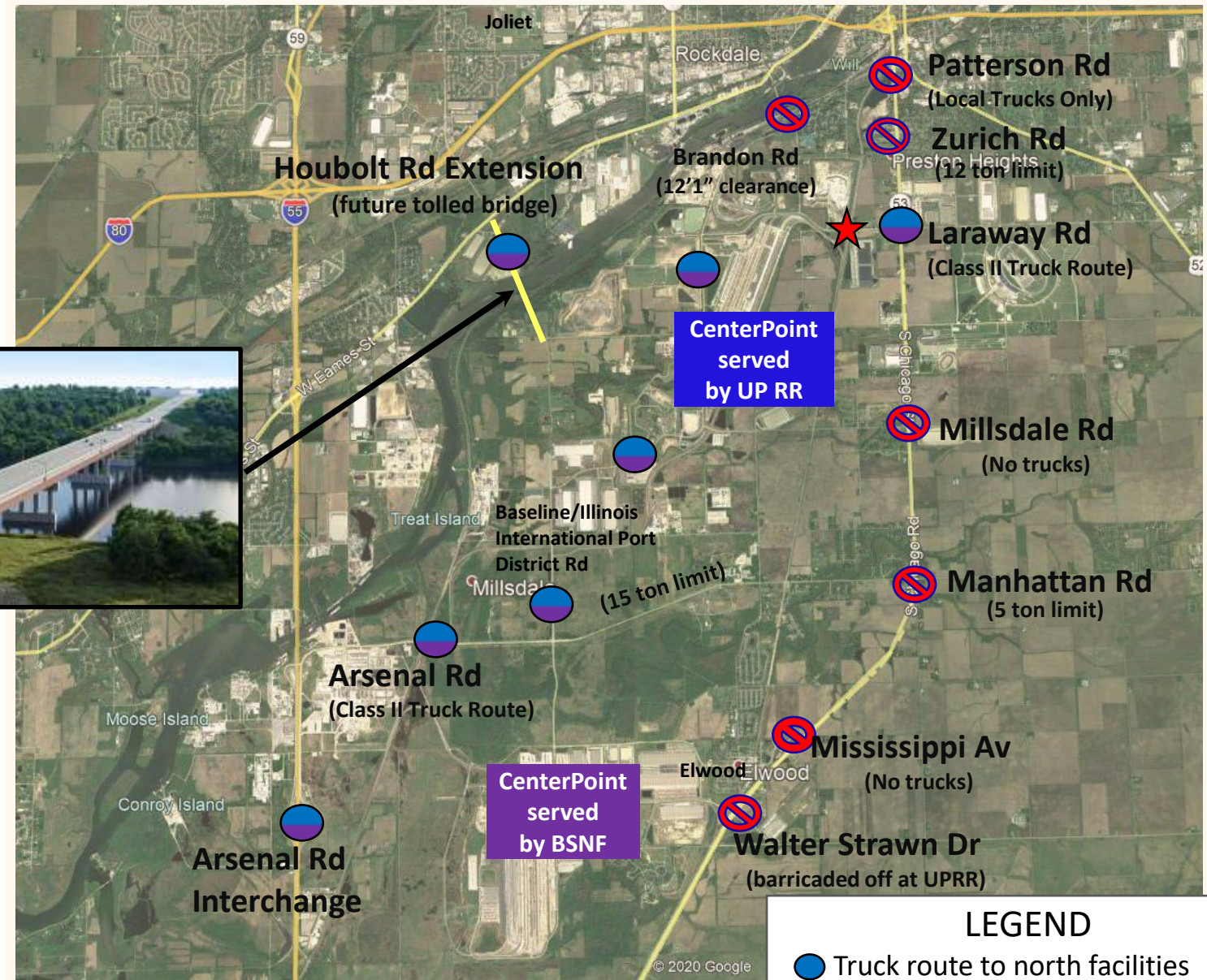
- Limits: Laraway Road (Brandon Rd to IL 53 - 1.3 miles)
- At-grade railroad crossing with Union Pacific Railroad (UPRR)
- Industrial area located in southeast Joliet
- Houbolt Road bridge across Des Plaines River will connect to I-80



Truck access

- I-80 access
 - Future tolled Houbolt Road extension
- I-55 access
 - Arsenal Rd
- IL 53 access
 - Zurich Road (12 ton limit)
 - Laraway Road (Class II Truck Route)
 - Manhattan Rd (5 ton truck limit)

**Greater than 75% trucks
along Laraway Rd**



LEGEND

- Truck route to north facilities
- Truck route to south facilities
- ⊘ No truck access

UPRR at-grade crossing

- 95-ft wide UPRR crossing:
 - 2 mainline tracks
 - 1 CenterPoint wye
- Four-quad gates
- Extended red flasher time
- UPRR access
- Laraway Road is one thru lane each direction



77 minutes of daily railroad gate down time

Gate closures significantly disrupt Laraway Road traffic flow in both directions of travel throughout the day

Union Pacific Railroad operations

Daily train crossings

- 10 Amtrak, 6 freight, 6 switching
- Wye to Joliet Intermodal Center (CenterPoint)
- Amtrak speeds up to 90 mph by end of 2020 with increase to 110 mph in coming years
- 1.5 minute advance warning for Amtrak plus passing time
- 7 to 10+ minutes for UP freight and switching trains



Traffic delays

Existing Traffic (2017)

10,700 AADT

57% trucks

6,100 trucks daily

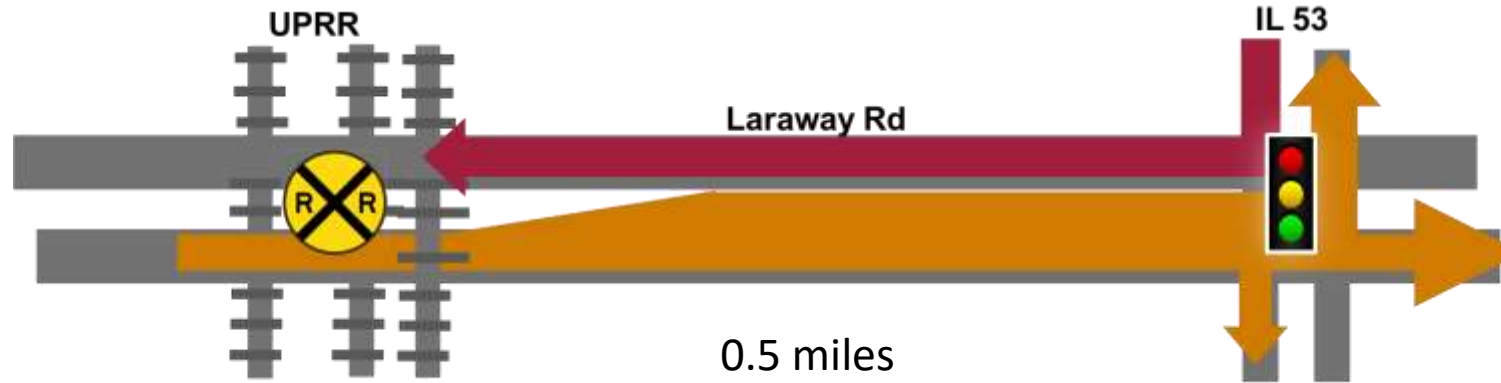
47% Growth

Forecast Traffic with Houbolt Bridge (2050)

15,800 AADT

38% trucks

6,000 trucks daily



- Limited green time at IL 53 intersection for E-N movement results in queues extending through the Union Pacific at-grade rail crossing
- WB queues extend into the IL 53 intersection
- Safety stops at the at-grade railroad crossing disrupt the flow of traffic.

Stop-gap safety improvement

- Truckers do not anticipate, and often ignore extended queues from IL 53, stopping on the tracks with no ability to escape
 - Gate crashing
 - Queue not expected to lessen
 - Increased volumes will increase safety risk
 - Future 110 mph operation



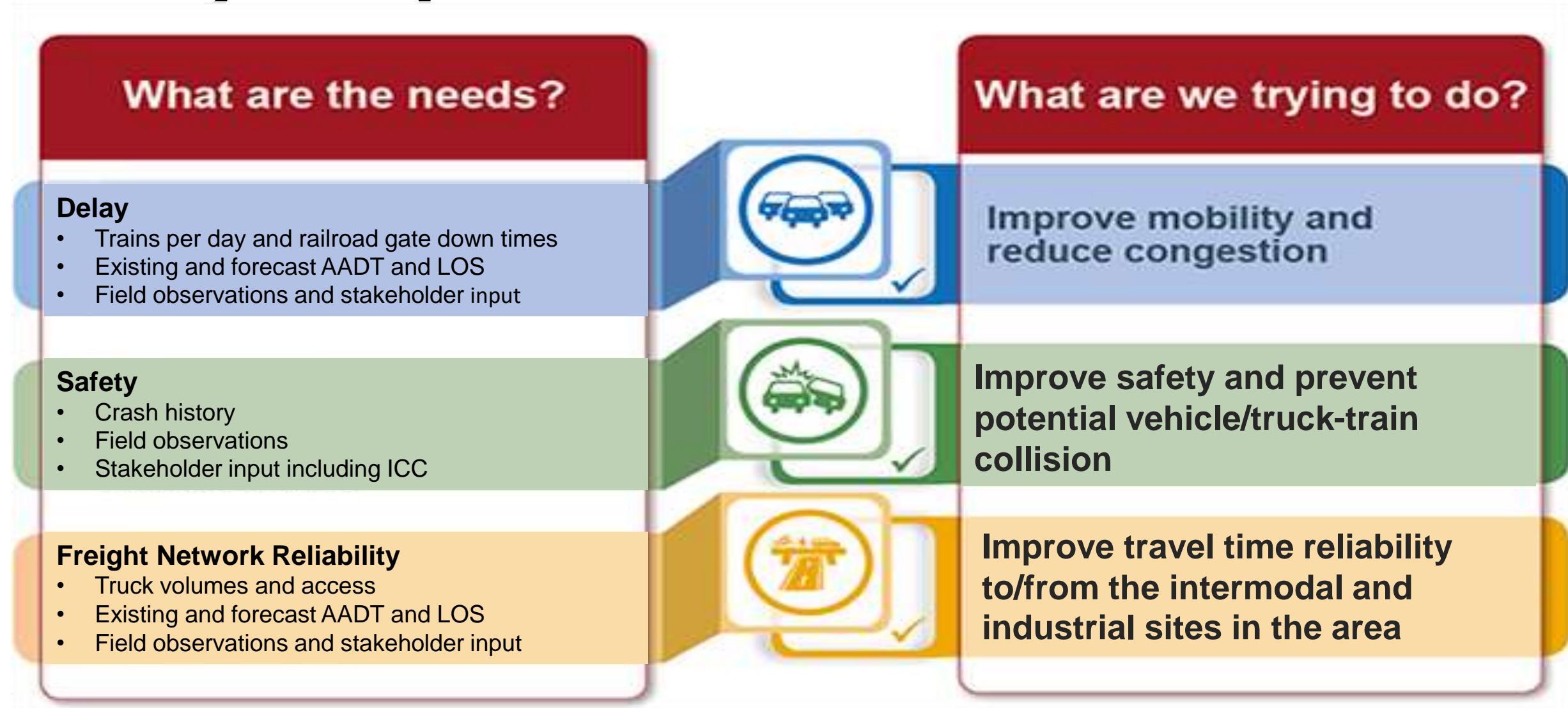
ICC considering active warning devices to address safety concerns in near-term

Impacts of unreliable freight network

- Traffic delays to truckers freight can impact their number of loads per day
- Affects on-time delivery schedules
- Truck delay and travel time reliability are expected to worsen with increased traffic volumes and decline in LOS.



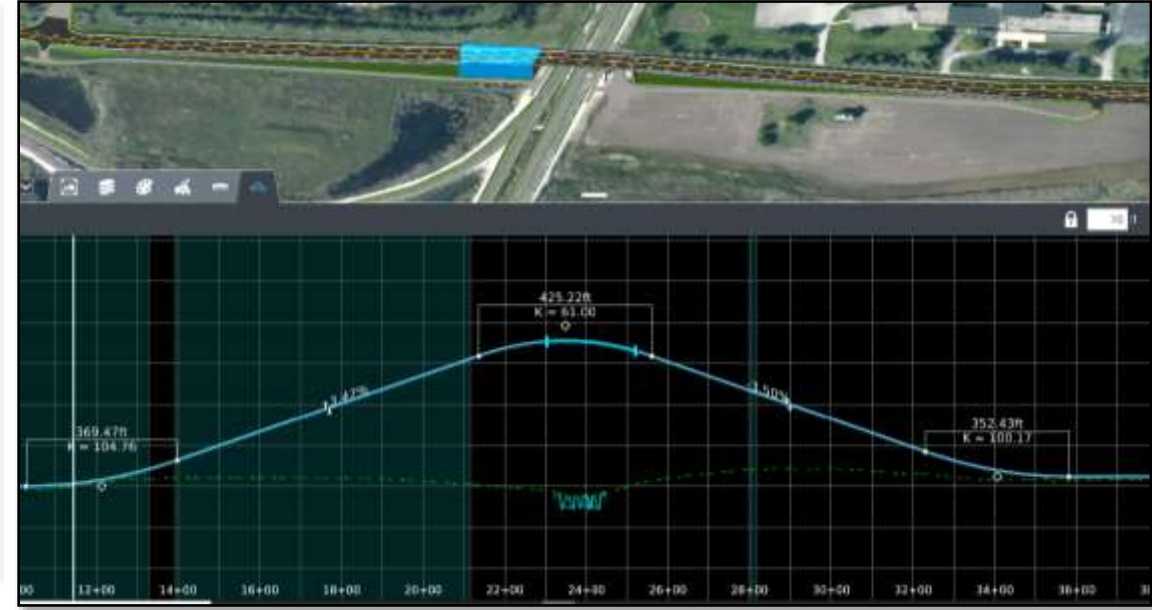
Study Purpose and Need



Draft Purpose of and Need for the Proposed Project

The purpose of the project is to improve the efficiency of the study area's transportation system by reducing travel delays along Laraway Road for all users caused by extended gate closures; to improve safety by reducing the potential for trains to collide with vehicles; and to improve the freight network reliability to the intermodal and industrial sites in the study area.

Four alternatives for evaluation



- Road raised over railroad grade
- Railroad raised over road grade
- Road lowered under railroad grade
- Railroad lowered under road grade

Grade Crossings

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