

US 231 Relocation Study

Capstone Presentation

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What is a Capstone?

In academic terms, a **capstone project** is an opportunity to analyze an experience, problem or opportunity whose lessons learned can be used in a real world setting.

Value of This Capstone

The US 231 Relocation Project Capstone provides an opportunity to take a 'soft' look back on the evolution of the planning, environmental assessment, design and ultimate construction of this important project in West Lafayette.

The environmental study was initiated in 2001 and the project was **successfully constructed and opened to traffic in 2013.**

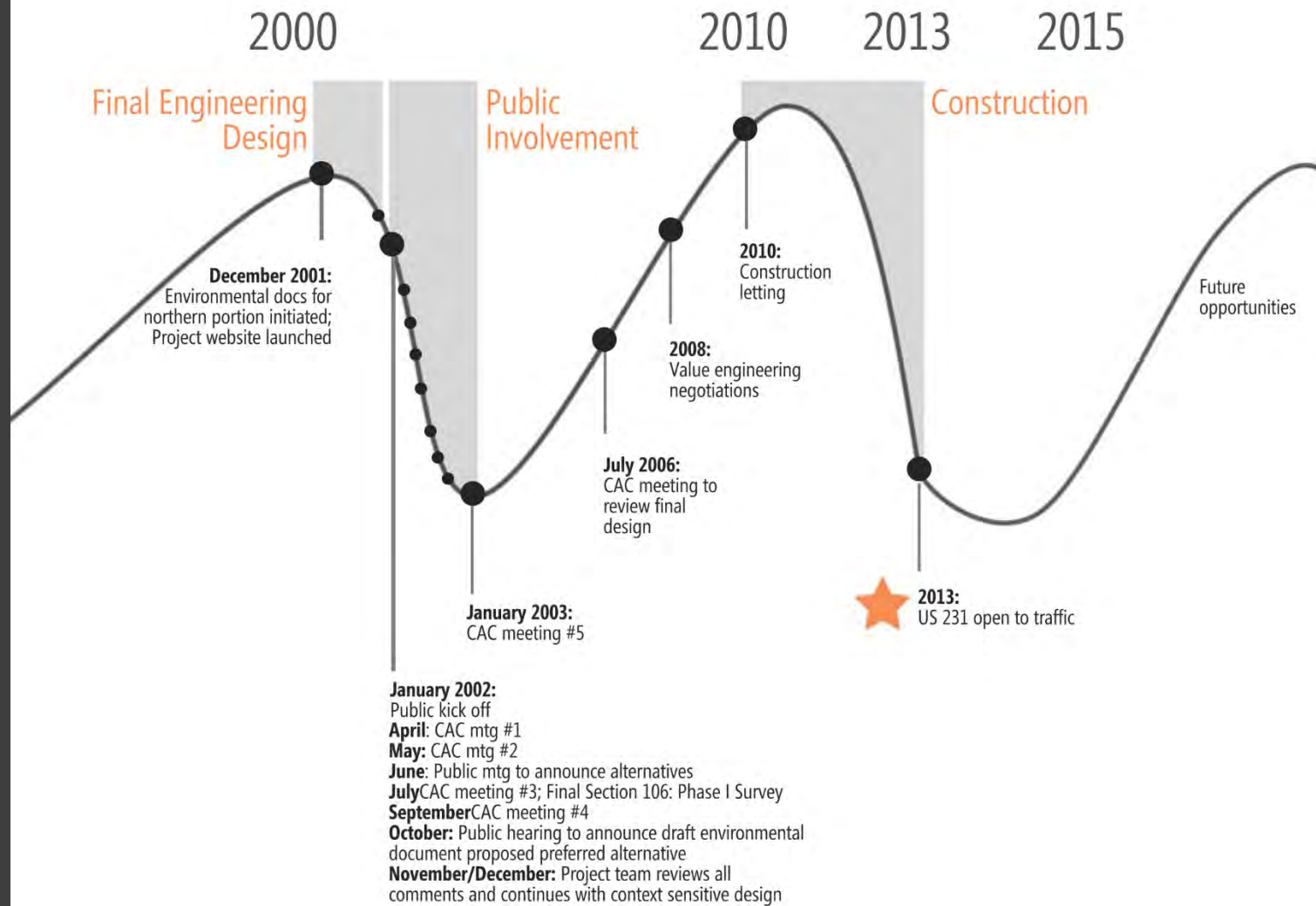
Why the US 231 Relocation Project?



In 2001, INDOT and FHWA agreed that the project presented an opportunity to explore the value of using a different approach to collaboration and impact assessment during the environmental study.

Did this decision change the ultimate outcome of the project?
Was there a lasting effect on policy and how projects are developed?

Brief History



Environmental Study Process

MPO as a **partner**

Purpose of the Project- relocation NOT bypass

Dynamic Community- Purdue Expansion

Enhanced Public Involvement

Community Impact Assessment Approach

Community Advisory Committee

Context Sensitive Design

Commitment to Continued Collaboration

Community Impact Assessment

- **Indiana's first formal CIA**
- **Community impacts are the primary project concern**
- **Very dynamic environment**
- **Able to use the CAC to provide detailed input**
 - CAC members provide input related to community issues and certain aspects of project development to the project team
 - CAC members serve as liaisons between the project team and the community by sharing information discussed at each meeting with area organizations and neighborhoods, thereby increasing public knowledge of the project

Enhanced Public Involvement

Detailed Public Involvement Plan

- Interwoven with CAC

Small group meetings

- Repeated meetings with target stakeholders (i.e. Purdue)

Robust website

- All documents posted and available to public

Media relations

- Live at 5





5 CAC meetings

Meeting 1:

- Project overview & role of the CAC
- NEPA and Community Impact Assessment
- Exercise: Identify Community Impact Issues
- Selection of CAC Spokesperson and Assistant Spokesperson

Meeting 2:

- Preliminary Alternatives Analysis & GIS Demonstration
- Section 106 / Historic & Cultural Resources
- The “Other” US 231 Study (Corradino Group)

Meeting 3:

- Review CAC Information Packet sent via mail (Purpose & Need, Alternatives Reduction Analysis, Traffic Report Synopsis, CIA Exercise, Community Impact Analysis)
- Exercise: Identify Neighborhood Impacts

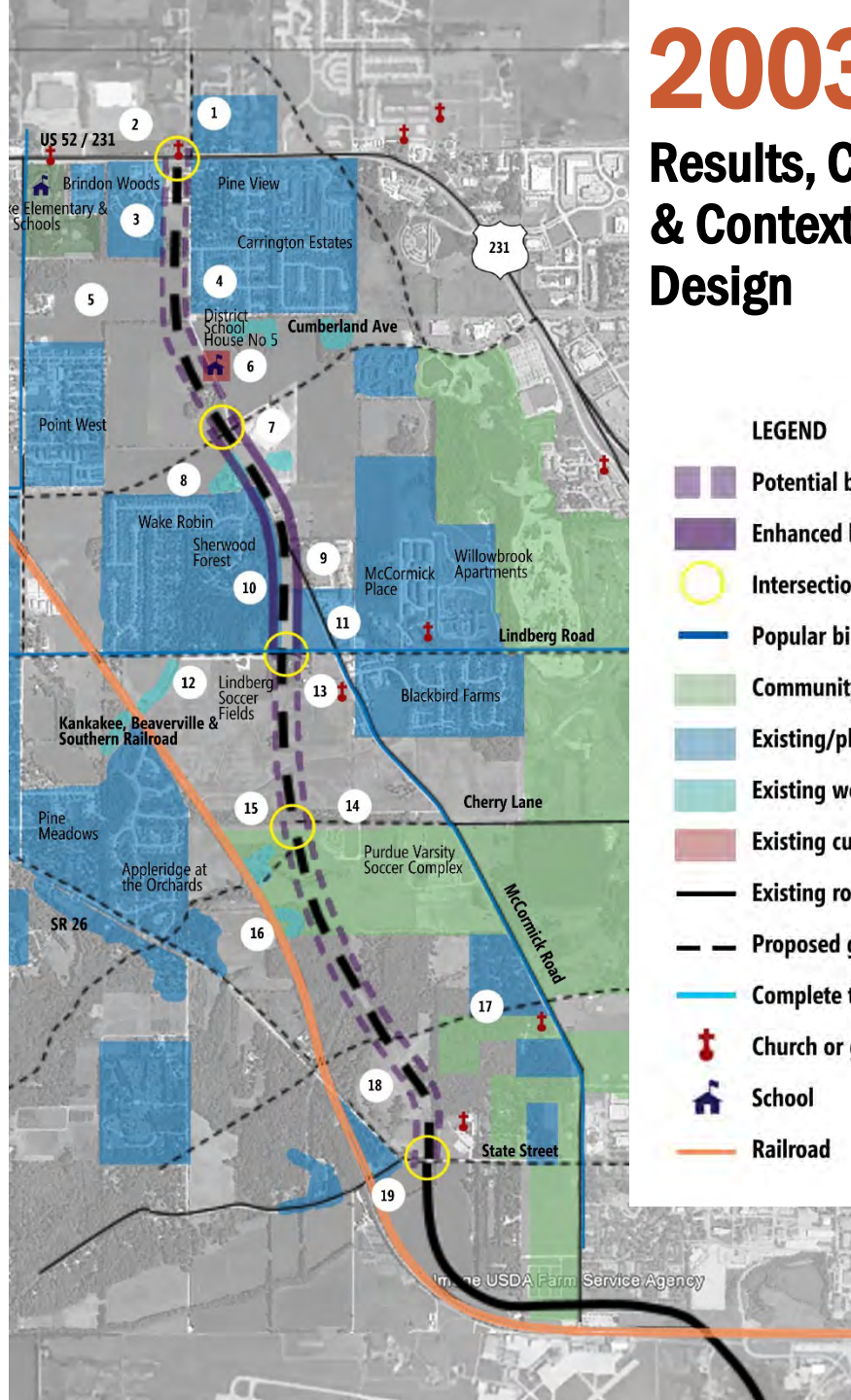
Meeting 4/5:

- **Envision the project after construction & suggest design/mitigation measures**
- **Evaluate the CAC process**

2003

Results, Commitments & Context Sensitive Design

CONTEXT SENSITIVE DESIGN OPPORTUNITIES DEVELOPED WITH CAC



- 1 Path extension to Hadley Lake
- 2 US 52 intersection
- 3 Enhanced buffers on each side
- 4 Neighborhood access with no relocation
- 5 Greenway link to schools and West
- 6 Avoid old schoolhouse
- 7 Enhanced intersection for future extension and bike paths*
- 8 Wetland impacts minimized
- 9 Enhanced buffers on both sides
- 10 Avoid wetlands
- 11 Intersection options
- 12 Avoid soccer fields
- 13 Monitor Construction for burials
- 14 Cherry Lane and greenway extension
- 15 Purdue Gateway intersection
- 16 Avoid two wetland areas
- 17 Greenway extension
- 18 Grade separated greenway crossing at stream
- 19 Purdue Gateway intersection

*Paved pathways on both sides of the roadway will be provided

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While the Project Waits for Funding...

- Things change over time
- Regulatory (ADA)
- Importance of transit and bike/pedestrian
- Sustainable communities, multimodal
- Purdue Master Planning
- New folks move in

The Unforeseen: Real Money

2003 Environmental Assessment

\$59 million

\$48 million construction

\$10 million right-of-way estimate

\$ 1 million utility

North portion
SR 26 to US 52

INDOT combined
north and south
(South River Road
to SR 26) portions

2006 Major Moves ★

\$87 million

\$62 million construction

\$23 million right-of-way estimate

\$ 2 million utility

2008 Before Negotiations

\$98 million

\$62 million construction

\$24 million right-of-way estimate

\$12 million utility

The **PURPOSE** of Value Engineering

Simply stated, VE is an organized application of **common sense and technical knowledge directed at finding and eliminating unnecessary costs in a project.**

Conducted to provide recommendations for:

- Providing the needed functions safely, reliably, efficiently, and at the lowest overall cost
- Improving the value and quality of the project
- Reducing the time to complete the project

The **VALUE** of Value Engineering

2008 before negotiation \$98 million

\$62 million construction

\$24 million right-of-way estimate

\$12 million utility

MPO conducts Value Engineering

2008 after negotiation \$88.7 million

(INDOT funding available \$76 million)

\$56.2 million construction

\$22.5 million right-of-way estimate

\$10 million utility

Ultimate Funding Outcome:

INDOT - \$76M

Tippecanoe County - \$8M

MPO - \$2.7M

Purdue - \$2M

2008

Final Design & Value Engineering

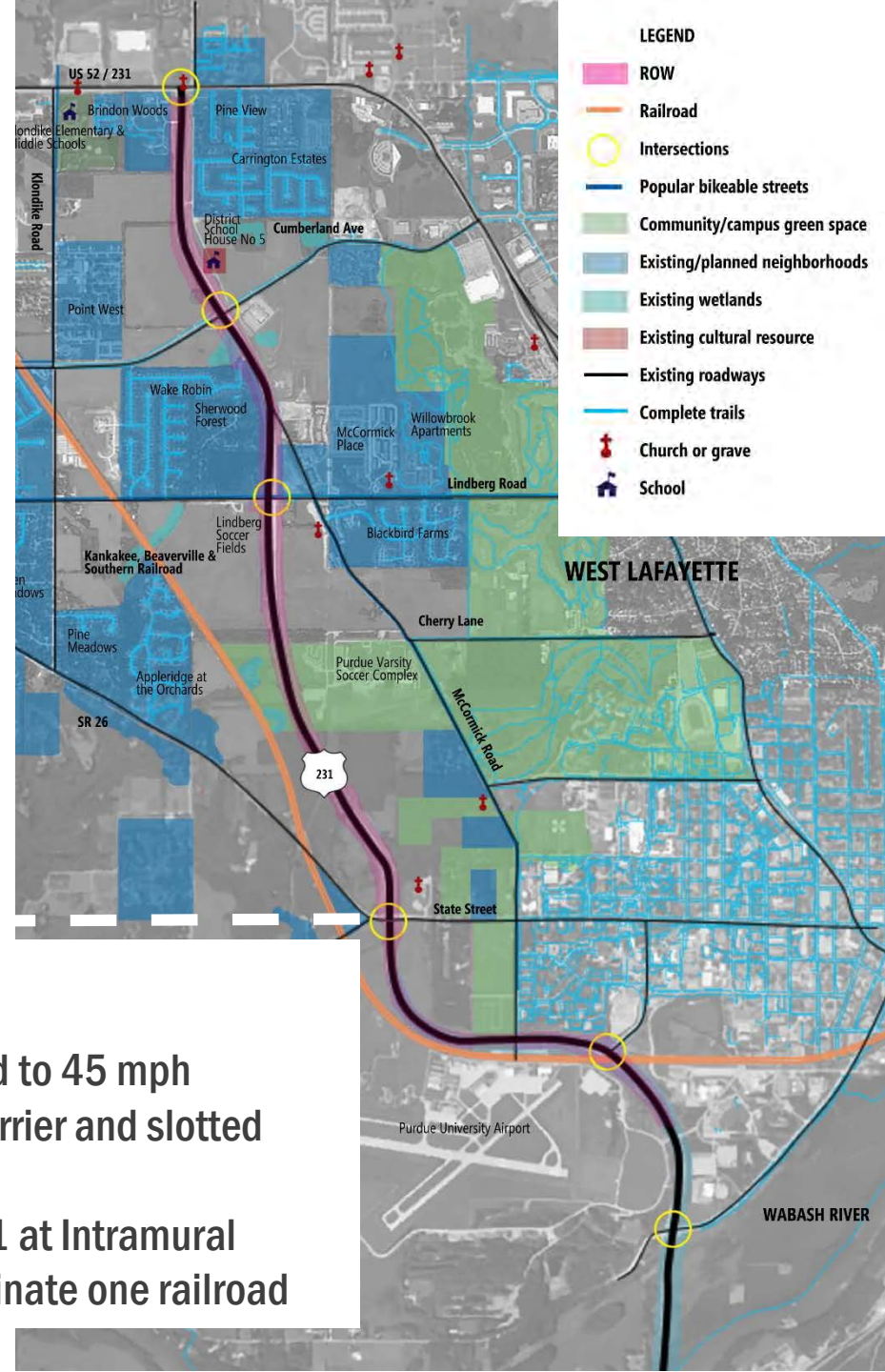
Value
Engineering
saved an
estimated **\$6.45
million** and
**preserved
commitments** to
the community

NORTHERN PORTION

- Reduced median width by 10 feet, saved 2.6 acres of ROW
- Reduced drainage structure length and saved \$345K

SOUTHERN PORTION

- Reduced design speed to 45 mph
- Eliminated median barrier and slotted drain
- Realignment of US231 at Intramural (Jischke) Drive to eliminate one railroad bridge



CONTEXT SENSITIVE DESIGN OPPORTUNITIES DEVELOPED WITH CAC

2013 Preserved Commitments



LEGEND

- ROW
- Railroad
- Intersections
- Popular bikeable streets
- Community/campus green space
- Existing/planned neighborhoods
- Existing wetlands
- Existing cultural resource
- Existing roadways
- Complete trails
- Church or grave
- School

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The Work is Never Done

- Planning, Environmental, Design, REPEAT
- Purdue is HOT
- Active Transportation
- Sustainability!
- It's about the system
- Go North!

Lessons Learned

- INDOT's **decision to do things differently** in 2001 matters
- Continuity of process, commitments and people is difficult
 - Multiple Project Managers
 - Multiple Consultants
- CIA/CAC established and preserved accountability
 - Documentation is important
- Value Engineering from MPO perspective is different
- Utilities! The struggle continues.....

Success

- The CIA/CAC approach fulfilled all NEPA requirements and served as a record of the community's input
- CIA/CAC approach gave the MPO funding allocation support
- This project changed the way INDOT does business:
 - Enhanced Public Involvement
 - The MPO as a partner; resource
 - Context Sensitive Design
 - Bridging the gap b/w planning, NEPA and design
- Money well spent

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One of the things we learned since 2003 is that a public involvement plan should be required... that's been a step in the right direction to get project management teams to pause and think about impacts to communities at the onset, figure some of the things we need to look at, and make a plan for moving forward.

Issues are being caught earlier, conversations are being had sooner. That can only be a good thing. //

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INDOT

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Thank you!

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