I-65 Downtown Closure:
Saving time, Enhancing Safety

Presenters:
Kyle Muellner
Jim Reilman
Tom Heustis
Agenda

- Introduction
- Scope and Timeline
- The Decision to Close
- Design Implications
- Agency Implications
- Maintenance of Traffic Plan
- Is Closure right for your project?
Introduction

Why Close the Interstate?

• Various Pros & Cons
Introduction

Why Close the Interstate?

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**Why Close the Interstate?**

- Various Pros & Cons
- One of many options
Introduction

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**Why Close the Interstate?**

- Various Pros & Cons
- One of many options
Introduction

Why Close the Interstate?

• Various Pros & Cons
• One of many options
• Not a new concept
• Rural vs. Urban

• Case Study:
  ▪ I-65 Marion County Bridge Rehabs
Scope and Timeline

- On-call assignment for Greenfield District
Case Study: I-65 Marion County Bridges

Scope and Timeline

• On-call assignment for Greenfield District
  ▪ Bridge 1. I65-113-05669B
    ▪ I-65 SB over Ramps
Case Study: I-65 Marion County Bridges

Scope and Timeline

- On-call assignment for Greenfield District
  - Bridge 1: I65-113-05669B
    - I-65 SB over Ramps
  - Bridge 2: I65-113-05670B
    - I-65 Ramps (mid-level)
Case Study: I-65 Marion County Bridges

Scope and Timeline

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  - Bridge 2. I65-113-05670B
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  - Bridge 3. I65-113-05671B
    - I-65 NB over Ramps
Case Study: I-65 Marion County Bridges

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  - Bridge 3. I65-113-05671B
    - I-65 NB over Ramps
  - Bridge 4. I65-113-05673 DNBL & DSBL
    - I-65 over 16th Street
  - AADT: approx. 120,000 vpd
Case Study: I-65 Marion County Bridges

Scope and Timeline

• On-call assignment for Greenfield District
  ▪ Bridge 1. I65-113-05669B
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  ▪ Bridge 3. I65-113-05671B
    ▪ I-65 NB over Ramps
  ▪ Bridge 4. I65-113-05673 DNBL & DSBL
    ▪ I-65 over 16th Street
  ▪ AADT: approx. 120,000 vpd
  ▪ Bridge 5. (I65)I465-145-04567 DSBL
    ▪ I-65 SB Lanes over NB Connector Ramp
    ▪ AADT: 20,000 vpd
Case Study: I-65 Marion County Bridges

Scope and Timeline

- On-call assignment for Greenfield District

- Scope
  - Bridge Deck Overlays
  - Hydrodemolition
  - Patching
  - Joint Replacement
  - Replace Approach Slabs
Case Study: I-65 Marion County Bridges

Scope and Timeline

- On-call assignment for Greenfield District
- Scope
- Original Timeline:
  - NTP: May 2017
  - Scoping Meeting: May 2017
    - Joint and Overlays
  - Scoping Report: June 2017
  - Preliminary MOT Plans: July 2017
  - Final Plans: October 2017
  - FFC: November 2017
  - Tracings: December 2017
Case Study: I-65 Marion County Bridges

Closure: Design Implications
To Close or Not to Close?
Considerations

• Safety of the Travelling Public
Considerations

• Safety of the Travelling Public

• Safety of Every Worker on Site
Considerations

• Safety of the Travelling Public
• Safety of Every Worker on Site
• Quality Product that Will Last
Safety of the Travelling Public!

Concern: Accidents in the queue!
Safety of the Travelling Public!
Safety of Every Worker on Site!

Concentrate on the Work, not the Errant Vehicle.
Safety of Every Worker on Site!

Truck Ban, similar to that done on
Quality Product that will Last!
## INDOT LETTING PREPARATION SCHEDULE 2017-2023

**September 1, 2017**

All District documents are due to Contracts Administration by the Ready For Contracts Date - including the Ten Week Letter and the Contract Requirements Worksheet.

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December 2017

- December 4, 2017
- Final Tracing Submission Due
• December 7, 2017
• Meeting to Discuss Police Patrols of Work Zone and Enforcement of Truck Ban
• **December 11, 2017**

• **Meeting to Discuss Maintenance of Traffic and Construction Time Set Details**
December 2017

- December 11, 2017
- Meeting to Discuss Maintenance of Traffic and Construction Time Set Details
  - Conclusion: It was worth pursuing the full closure option with INDOT Executive Staff
    - Length of Queue
    - Accident in Work Zone results in Closure
December 2017

- December 12, 2017
- Discussed the Closure Option with INDOT Executive Staff
• December 12, 2017
• Discussed the Closure Option with INDOT Executive Staff
• Received Approval from INDOT Executive Staff to Proceed with Plans to Close Interstate 65
December 2017

• December 12, 2017
• Discussed the Closure Option with INDOT Executive Staff
• Received Approval from INDOT Executive Staff to Proceed with Plans to Close Interstate 65
• Informed Designer of Change in Maintenance of Traffic Plan
December 2017

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- **December 19, 2017**
- Meeting to Discuss Estimated Construction Schedule and Duration
- Estimate Duration of Closure and Allowable Time of Year
December 2017 / January 2018

- January 3, 2018
- Ready for Letting Documents to Contract Administration
  Deadline for March 14, 2018 Letting
• January 3, 2018

• Ready for Letting Documents to Contract Administration Deadline for March 14, 2018 Letting

• Designer had three weeks to make significant changes to approximately 71 plan sheets
• January 3, 2018
• Ready for Letting Documents to Contract Administration Deadline for March 14, 2018 Letting
• Designer had three weeks to make significant changes to approximately 71 plan sheets
• Letting Date moved one month to April 11, 2018
## INDOT LETTING PREPARATION SCHEDULE 2017-2023

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• **January 31, 2018**
• Ready for Letting Documents to Contract Administration Deadline for April 11, 2018 Letting
January 2018

- January 31, 2018
- Ready for Letting Documents to Contract Administration Deadline for April 11, 2018 Letting

- This move provided more time for the designer to complete the plan & contract changes
Case Study: I-65 Marion County Bridges

Closure: Design Implications

- Revised Traffic Modeling
  - Discussions with District

Start
Case Study: I-65 Marion County Bridges

Closure: Design Implications

- Revised Traffic Modeling
- Revised IHCP Waiver
Case Study: I-65 Marion County Bridges

Closure: Design Implications

• Revised Traffic Modeling
• Revised IHCP Waiver
• MOT modifications
  ▪ Plans
  ▪ Quantities
  ▪ Estimate
Case Study: I-65 Marion County Bridges

Closure: Design Implications

- Revised Traffic Modeling
- Revised IHCP Waiver
- MOT modifications
- Special Provision modifications
  - Timeset
  - A+B Bidding
  - 24-hour work
  - Lane and Ramp Closures
  - Sheet and Panel Signs
  - Black Tape to protect recent overlay
Case Study: I-65 Marion County Bridges

Closure: Design Implications

• Consider alternative concepts
Case Study: I-65 Marion County Bridges

Closure: Design Implications

- Consider alternative concepts
  - Goal: Aid in Contract Timeset
  - Goal: Maintain Quality
- Reduce hand-work
- Combine concrete elements
- Provide Options (LMC vs. SFMA)
Concurrent Tasks

• Since the decision was made to close the interstate, several things needed to be addressed:
Concurrent Tasks

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  • Check to see if Governor’s Office needed to be informed
Concurrent Tasks

• FHWA Indiana Division Office
Concurrent Tasks

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• INDOT District Environmental Services Office
Concurrent Tasks

• INDOT District Construction (time set, work schedule, available manpower, time of year for closure, affect on other projects, and duration of the closure)
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• City of Indianapolis Department of Public Works
Concurrent Tasks

• Traffic Modeling
Concurrent Tasks

- Traffic Modeling
- Noise Ordinance Waiver

Indianapolis - Marion County, IN Code of Ordinances

Sec. 391-302. - Unlawful noises.

(a) For purposes of this chapter, unreasonable volume, frequency, or pattern that presents danger to health, safety, welfare, prosperity, or extraordinary sensitivities within the city, which the sound is made.

(b) Except as otherwise provided in this
Concurrent Tasks

- Traffic Modeling
- Noise Ordinance Waiver

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Concurrent Tasks

• Request to and Approval from FHWA to close part of the National Network
Concurrent Tasks

- Request to and Approval from FHWA to close part of the National Network
- Obtain waiver of the Indiana Highway Congestion Policy
Concurrent Tasks

• Identify and meet with Key Stakeholders (schools, hospitals, emergency services, local agencies, elected officials) just to mention a few
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Concurrent Tasks

- Coordinate Public Involvement
Concurrent Tasks

• Contact the INDOT Freight Division

• Led the effort for early procurement of some materials

• Arranged and hosted pre-bid meeting

• Pre-letting questions

• Coordination with Indianapolis TMC and DPW regarding traffic signals
Original Maintenance of Traffic Plan

Design Goals

• Keep as many I-65 lanes open as possible
• Maintain ramp connection when feasible
• All work performed behind temporary concrete barrier (TCB)
• Reduce impacts to newly-constructed asphalt overlay of mainline

Design Results

• Two-phase construction sequence
• Single lane reduction on I-65
• Ramp closures in West Street interchange
Original Maintenance of Traffic Plan

I-65 NB over West Street ramps (SB similar)

Phase 1

Phase 2
Original Maintenance of Traffic Plan

I-65 NB over West Street ramps (SB similar)

Phase 1

Phase 2
Original Maintenance of Traffic Plan

I-65 NB over West Street ramps (SB similar)

Phase 1

Phase 2
Original Maintenance of Traffic Plan

I-65 NB over West Street ramps (SB similar)

Phase 1

Phase 2
Original Maintenance of Traffic Plan

I-65 over 16th Street

**Phase 1**

**Phase 2**
Undesirable Design Features

- 10-ft lanes, 1-ft shoulder during construction
- Level 1 design exceptions required for shoulder width and horizontal stopping sight distance
- Truck detour required for 10-ft lane width (enforcement required for duration of construction)
- Narrow working room behind TCB for contractor
- Single-lane reduction of I-65 created large queueing entering downtown
  - 19+ mile queue lengths
  - 2+ mile queue from 7am to midnight Monday thru Friday
- Several on-ramps closed due to unsafe merging conditions in work zone
Full-Closure Maintenance of Traffic Plan

Necessary Design Changes

• Safely close the interstate and route traffic onto side roads
Full-Closure Maintenance of Traffic Plan

Necessary Design Changes

• Modify existing signage if necessary
Full-Closure Maintenance of Traffic Plan

Necessary Design Changes

• Detour traffic onto alternative major roadways
Full-Closure Maintenance of Traffic Plan
Is a Full Closure Right for Your Project?

• Not all projects should close the roadway (duh)

• Combination of issues led to this closure:
  - Several less-than-desirable MOT design features (lane/shoulder width)
  - Truck restriction enforcement
  - Traffic backups on high-volume commuter route
  - Construction inefficiencies
  - Worker safety concern

• Northern bridge (I-65 SB over I-465 on NW side of Indy) needed full closure, so traffic was metered entering the city
Is a Full Closure Right for Your Project?

• **Detour Route** – is there a logical posted detour route for through traffic?

• **Diversion Routes** – are there alternative routes for local traffic?

• **Construction Inefficiencies** – does phased construction result in a less-than-ideal product for the client?

• **Worker safety** – does the work zone design result in a potentially dangerous site for the contractor?

• **Traffic safety** – does the work zone design result in a potentially dangerous site for vehicles traveling through?

• **High MOT costs / long schedule** – reductions in costs and/or time could be significant benefits to the client.
Photos
Photos
Photos
Photos
We Thank You for your Time!

Questions??