

Strategies and How-To's on Interstate Closures for MOT

March 11, 2020

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Discussion on INDOT's use of Interstate Closures

- Recent Closures
- Future Closures
- Considerations When Closure is an option
- Mitigation Considerations
- Lessons Learned
- The Future
- Handoff to Eryn Fletcher – FHWA Senior Transportation Engineer

Recent Closures (since 2018)

- I-65 north of Downtown Indianapolis (2018) – full bi-directional closure – 30 days
- I-465 SW side of Indianapolis (2018) – full directional closures – 9 days each direction
- I-65 NW side of Indianapolis (2019) – full directional closure – 17 days each direction
- I-65 from I-465 to North Split (2019) – Off peak directional closure – multiple weekends
- I-70 from I-465 to South Split (2019) – Off peak directional closures for multiple weekends plus a one week full bi-directional closure
- I-465 SE side of Indianapolis (2019) – Full directional closure – 17 days each direction

Future Closures

- I-70 in Indianapolis from I-465 to South Split (2020) – full directional closures for 30+ days each direction
 - Coordination with I-70 projects just to the east and just to the west
- I-70 in Indianapolis from I-465 to North Split (2020) – Truck detour for 30+ days each of two phases
- I-65/I-70 North Split Project (2021/2022) – movement closures – durations based on proposer team bids
- I-465 SW side of Indianapolis (2023/2024) – under evaluation but may include full directional closures and off-peak directional closures

Considerations When Closure is an Option

- Scope of overall project
- Predicted queuing without closures
- Duration of closure that may be needed
- Availability of alternate routes
- Safety to motorists and workers
- Opportunities to do other work in corridor if a closure is implemented
- Ability to provide mitigation for the closure

Mitigation Considerations

- Analysis of impacts to official and unofficial detour/diversion routes
- Signal timing changes on detour/diversion routes
 - State highways
 - Local intersections
- Use of appropriate signage
 - Modification of existing guide signs
 - Use of PCMS's and DMS's
- Communication plans to the public
 - Media updates
 - Social media options
 - Organizations
- Queue warning systems
 - Queue Trucks
 - Queue Warning Systems



Lessons Learned

- Coordination with other active projects (state and local)
- Look for future minor projects that can be done during closure
 - RPM lens replacement
 - Overhead sign modifications
 - Maintenance type activities
- Awareness of special events
- Ramp closures not always a negative
- Utilize CARS at least 14 days prior to a closure, even for a ramp closure
- Impacts may show up further away than anticipated

The Future

- Continue to utilize as a tool
- Primarily use has been in urban areas due to alternate interstate routes available
- Research beginning to look at candidates for rural areas
- Finalize process with FHWA to address documentation and analyses

Contact info

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FHWA

FHWA Policy

23 CFR 658.11

- *It is FHWA policy to provide a safe and efficient National Network of highways to safely and efficiently accommodate large vehicles*
- *FHWA must approve certain restrictions and closures on the National Network*

FHWA Policy

23 CFR 658.11 (cont.)

- Commercial Vehicle code
- Paraphrasing, Closure Requests must:
 - Analyze safety
 - Analyze impact on interstate commerce
 - Analyze alternate routes
 - Include coordination with local governments
 - Be signed by Governor or Governor's designee

FHWA Policy

23 CFR 658.11 (cont)

Good news...

- No longer requires publication in the Federal Register
- No longer requires coordination with FHWA Headquarters

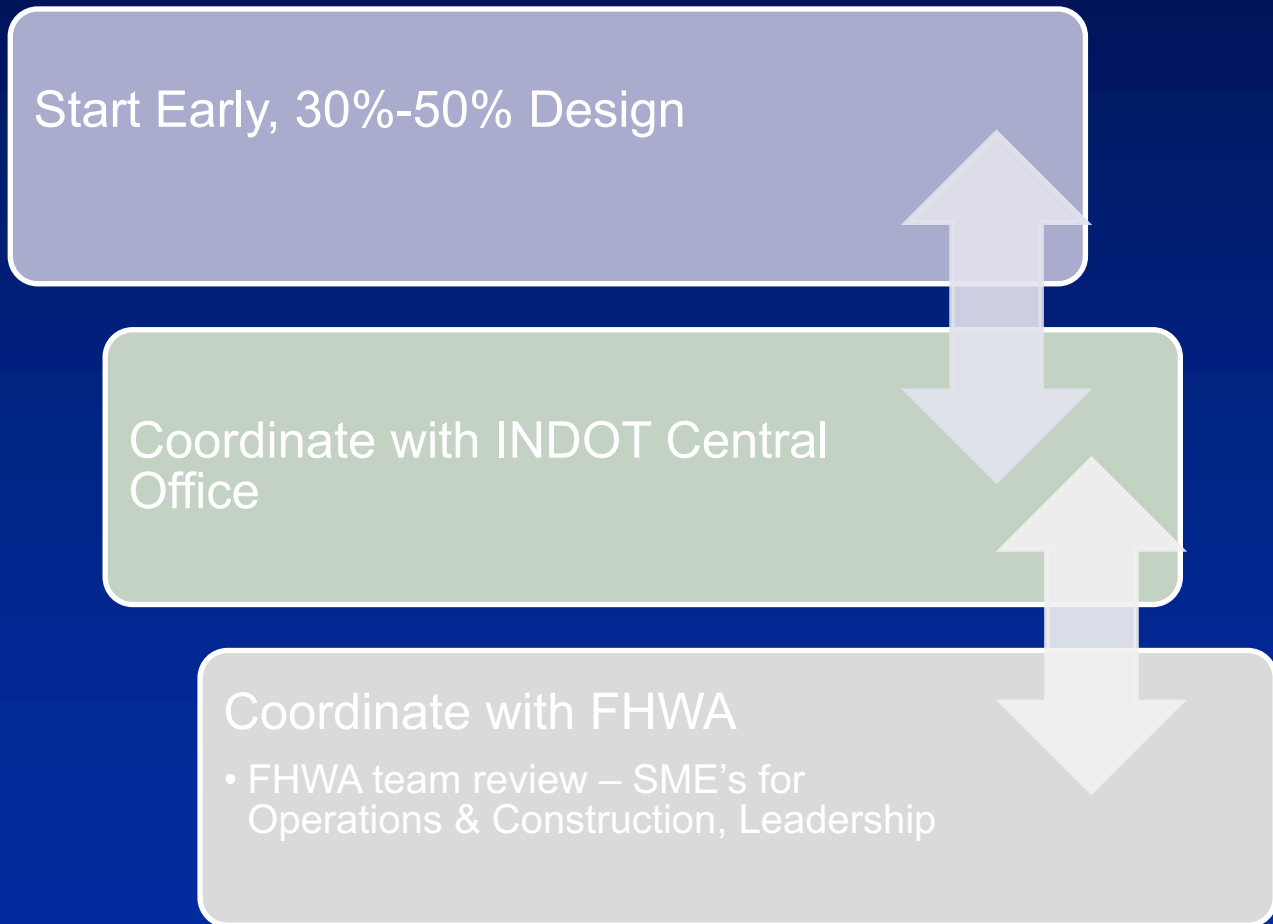
Both of these steps were required for the Lilly Day of Service

Process

- Interstate Closure Request
 - Off-peak closures
 - *Directional*
 - *Bi-directional*
 - Full Closures
 - *Directional*
 - *Bi-directional*
 - Limited Capacity Closure
 - *Restriction of truck traffic*
 - *Restriction of vehicular traffic*
- IHCP Request
 - Appropriate for Interstate to Interstate Ramp closures
 - Still requires FHWA approval

Process (2)

- Alternatives Evaluation
- Analysis Requirements
- Public Coordination

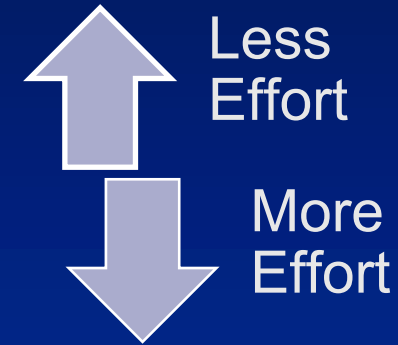


Interstate Closure Requests

- Endorsed by INDOT Commissioner or designee
- Address FHWA regulatory points:
 - Safety
 - Impact on interstate commerce
 - Alternate routes
 - Document coordination with local governments
- Tell the story...

Interstate Closure Requests (2)

- Three Tiers of Requests:
 - Tier 1: Off-peak Closures
 - Tier 2: Closures up to 3 weeks
 - Tier 3: Closures beyond 3 weeks
- Analysis, coordination and documentation vary by Tier



Interstate Closure Requests (3)

	Tier 1	Tier 2	Tier 3
Duration	Off-peak	Up to 3 weeks	Greater than 3 weeks
MOT Alternatives		Comparison Matrix	Comparison Matrix
Operations Analysis	Detour route capacity	Travel demand model/ macro-model for diversion analysis	Microsimulation model with DTA
Safety Analysis	Qualitative analysis	Qualitative analysis	Qualitative analysis
Mitigation Strategies		System monitoring/ signal timing adjustments	Signal re-timing, construction to relieve hotspots, other
Work zones on alternate/detour route	Allowed	Limited	Not Allowed

Increasing Effort 

Interstate Closure Requests (4)

	Tier 1	Tier 2	Tier 3
Duration	Off-peak	Up to 3 weeks	Greater than 3 weeks
Coordination with Local Governments	Notification	Meeting	Meetings, collaboration
Coordination with freight	Notify INDOT Freight Manager & Indiana Motor Truck Association; Verify OS/OW capacity of Alternate Route		Tier 1+ 2 and additional meeting or comment allowance for trucking industry
Public Outreach		PI Campaign	PI Campaign
Monitoring	TMC monitoring	TMC monitoring, pre-planned response strategies	TMC, project staff, identify and address issues
After-action Assessment	Not required	Optional	Required

Increasing Effort 

Interstate Closure Requests (5)

- Closure Request Outline:
 - Project description
 - *including quantities for major items or specific constructability issues*
 - MOT Alternatives considered
 - *MOT layout description,*
 - *Impact on: safety, mobility, cost, construction duration, quality*
 - Mitigation strategies for preferred alternative
 - Citation of CFR sections
 - *How the preferred alternative addresses the 4 requirements*
 - Attachments
 - *Maps, Analysis, Modelling results, Meeting minutes, etc*

* We're Not Alone


Other states that have closed interstates for construction

1. Alabama
2. Arizona
3. Michigan
4. Missouri
5. Tennessee
6. Texas
7. Nebraska
8. Oregon
9. Kentucky
10. Ohio
11. Delaware
12. California
13. *Others... list not comprehensive*

*Why consider Interstate Closure?

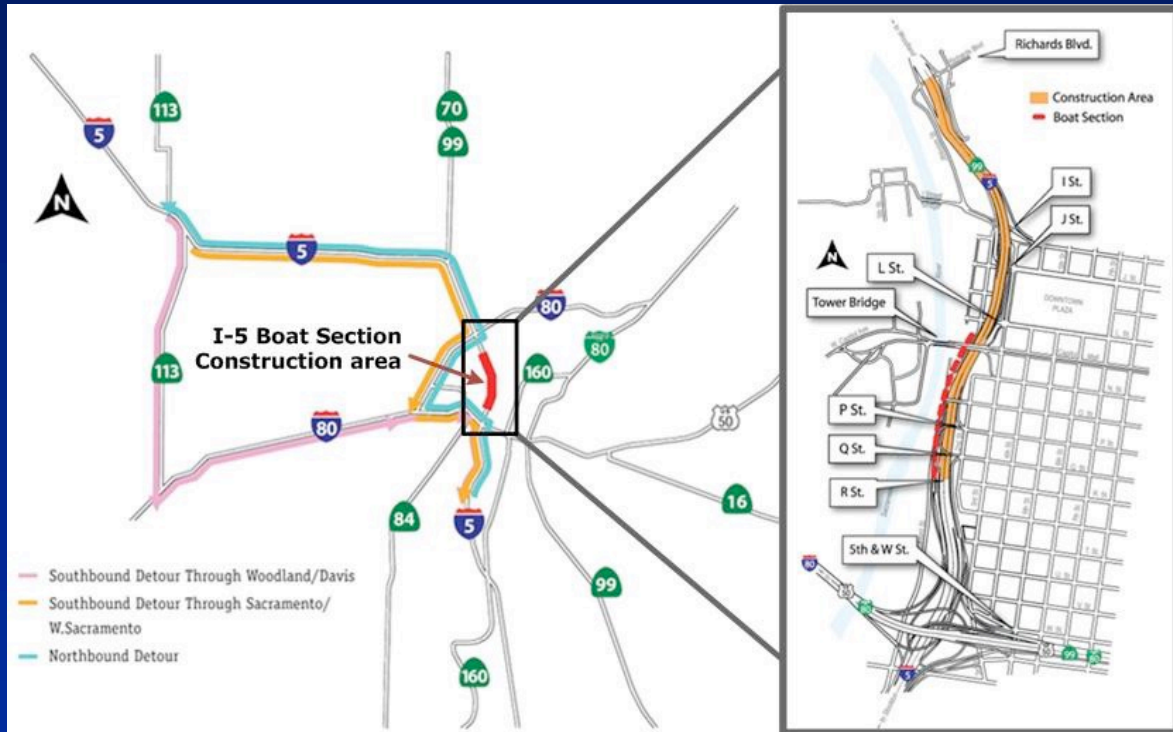
- Reduce impact of construction on motorists
- Expedite project completion
- Maximize work space
- Reduce overall congestion resulting from construction
- Improve quality
- Increase productivity
- Reduce severe crashes
- Increase worker safety

*Key Ingredients to Successful Closure

- Availability of Suitable Alternate Routes
 - Sufficient Lead Time
 - Public Outreach
 - Monitor Conditions
- 
- Coordination with:
 - Local government
 - Public
 - Commercial Vehicle
 - Business & stakeholders
 - Other projects
 - Traffic analysis
 - Prepare and construct mitigation projects
 - Approval Process

*Interstate Closure Select Case Study

Sacramento California, Fix I-5

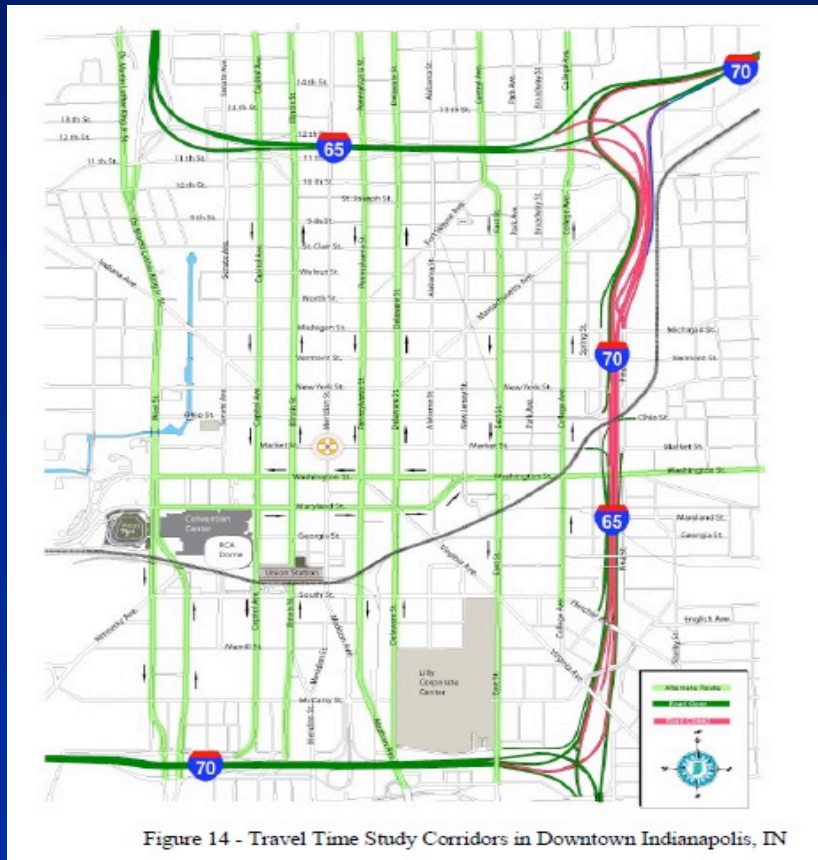


Multiple Directional Closures

- Demand reduction with decreasing returns
- Demand reduction during open interval
- Demand recovery within 1 month of opening
- Peak Hour Spreading
- Carpooling increase only during first round of closures

*Interstate Closure Select Case Study (2)

Indianapolis, Indiana Hyperfix (2003)

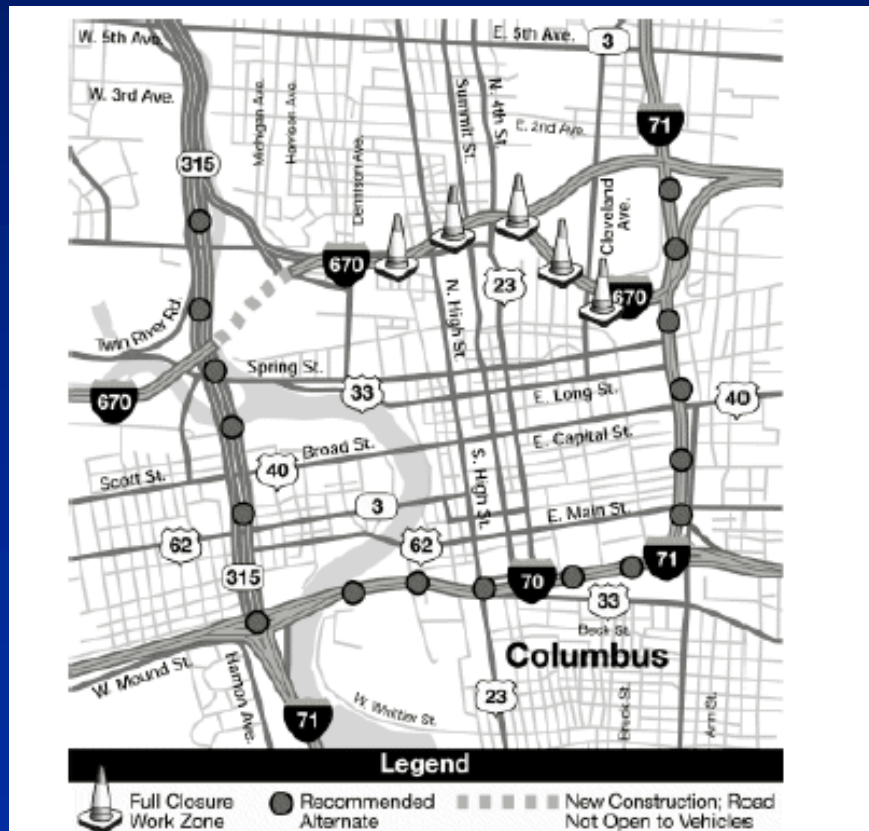


Full Closure to Thru traffic

- Survey Results
 - 89% No Effect on their travel
 - 56% changed travel routes
- Travel Time
 - Inbound perceived 7 minute impact
 - Outbound perceived 10 minute impact
 - 32% increase AM
 - 61% increased PM
- Detour Volumes
 - 14-38% increase in West leg and SE quad of I-465

*Interstate Closure Select Case Study (3)

Columbus, Ohio I-670



- 2002 \$36.7 M contract
- 63% reduction in contract time
 - 4 years phase to 18 months full closure
 - Finished 2 weeks early
- \$20,000/day incentive/disincentive
- Overall public approval
 - Public outreach expedited resolution of public complaints during construction

Contact Info

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