



OHIO DEPARTMENT OF TRANSPORTATION

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Cleveland Urban Core Projects

The Innerbelt Plan



Early Deployment Projects

- **Quigley Road Connector: OPEN**
- **GCRTA Park-N-Ride Lot Expansions:**
 - Strongsville – OPEN North Olmsted – OPEN
 - Westlake – 2010 Triskett – TBD



Cleveland Urban Core Projects

The Innerbelt Plan

Early Deployment Projects

- **Intelligent Transportation System (ITS):**
Construction begins spring 2009
- **East 55th St over I-90: NOW OPEN**
- **CSX over East 55th Street: TBD/Pending**
further coordination with the Port



Cleveland Urban Core Projects

The Innerbelt Plan

2009 Activities

- **Winter 2009:** ODOT Revise Draft Environmental Impact Statement, Access Modification Study and Preliminary Engineering Study
- **Winter 2009:** FHWA Approve Distribution of Draft Environmental Impact Statement
- **Spring 2009:** Public Hearing
- **Spring 2009:** Final Environmental Impact Statement
- **Summer 2009:** Record of Decision



I-90 Innerbelt Bridge Safety Plan



Innerbelt Bridge Safety Plan Milestones

- **May 23, 2008:** W. 14th St. entrance ramp to I-90 eastbound was closed and remains closed.
- **September 30, 2008:** One lane in each direction was closed and remains closed.
- **October 1, 2008:** Second lane in each direction was closed.
- **November 19, 2008:** Trucks over 8 tons officially banned and detoured via I-490 and I-77.
- **December 1, 2008:** Lanes closed on October 1, 2008 reopened to light vehicle traffic.

**Note: multiple ramp closures have also been associated with lane closures; to date, only the W. 14th Street entrance ramp and Ontario Street entrance ramp remain closed.*



Innerbelt Bridge Safety Plan Current Configuration

- One lane of traffic in each direction - as well as the Ontario Street ramp to I-90 westbound and W. 14th Street ramp to I-90 eastbound— remain ***closed***. Heavy truck traffic is detoured via I-77 and I-490.



Innerbelt Bridge Safety Plan

Current Condition

- The Innerbelt Bridge is safe today in its current configuration.
- ODOT has taken a cautious approach in dealing with lane/ramp closures.
- Deterioration of lower chord member “L300-301S” dictates current lane closures and restrictions to truck traffic. Repairs are tentatively scheduled to begin in 2009.



Innerbelt Bridge Safety Plan Current Condition



(Above) Inside of affected member (L300-L301S).

(Below) Affected member looking at north web.



Innerbelt Bridge Safety Plan

W. 14th Street Ramp Condition

- Closed to traffic in May 2008 after inspectors noted displacement of a connection and abnormal movement or “oil-canning” in the girder’s web.
- The ramp was added to the Innerbelt Bridge during the 1980s by connecting a girder to the truss.
- The combination of girder and truss systems is very unique and their interaction is very difficult to predict.
- ODOT is currently in the process of reviewing the complex analysis. Once the analysis is finalized, repair methods will be developed for this very unique situation.

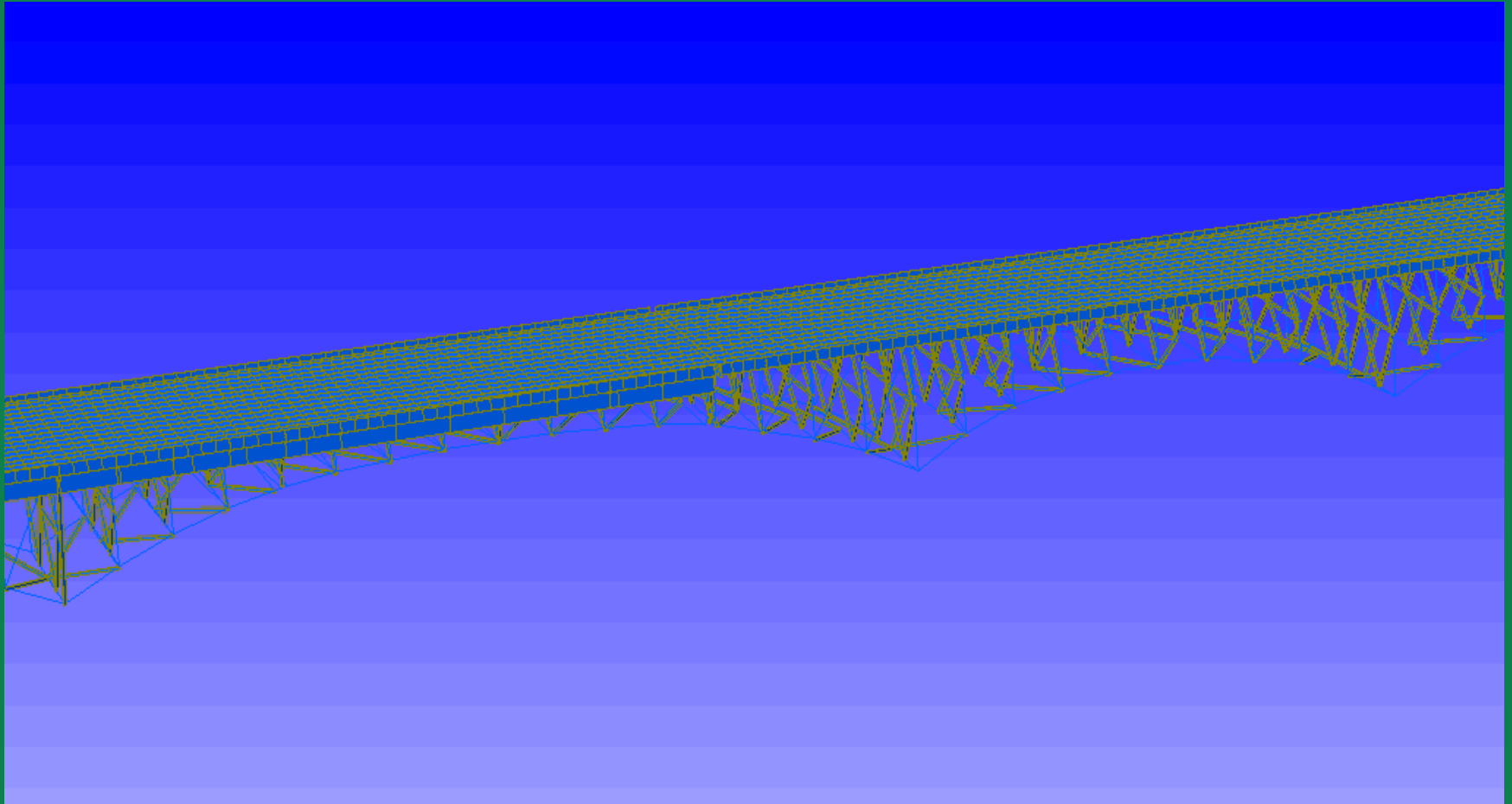


Innerbelt Bridge Safety Plan Assessment & Examination

- Performed safety analysis of the new traffic patterns at the ramp from I-90 eastbound to E. 22nd Street and at the ramp from E. 14th Street to I-77 southbound and determined that closures are not necessary
- Conceptualizing possible repair methods for both affected member and W. 14th Street ramp
- Reviewing Midas (3-D) Structural Analysis
- Formulating possible repair procedures based on Midas Analysis



Midas Analysis



Innerbelt Bridge Safety Plan Assessment & Examination

- Completing Abaqus model for bridge analysis (Finite Element Analysis)
- Refining Abaqus model to include possible repair methods
- Working with the City of Cleveland to enforce "No Trucks" ban. (Monitor Automated Traffic Recorders (ATRs) for truck volumes)
- Monitoring I-77/I-490 detour for function



Innerbelt Bridge Safety Plan Scheduled Improvements

- Finalizing design plans to reset the west truss spans to ensure expansion joints are adequately functioning. Work anticipated to occur in spring 2009.



Innerbelt Bridge Safety Plan Scheduled Improvements

- 2008 – Gusset Plate Repair, *complete*



Innerbelt Bridge Safety Plan Scheduled Improvements

- Winter 2009 – Joint Repair, *nearly complete*



Innerbelt Bridge Safety Plan Scheduled Improvements

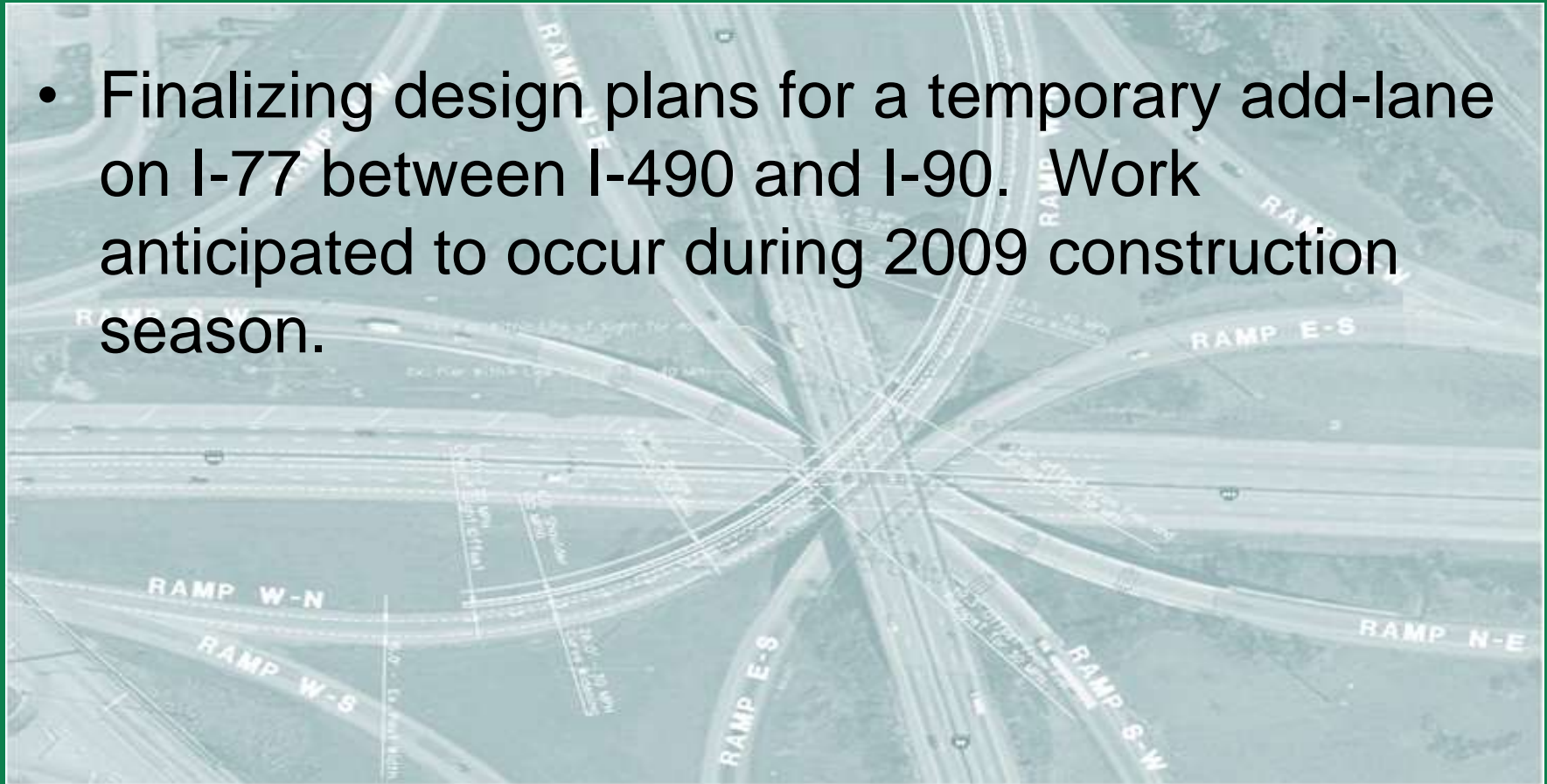
- Spring 2009 – Jack and Reset Truss
- Spring 2009 – Widen Ramp from I-490 WB to I-77 NB
- 2009 – Structural Steel Repairs

The goal of the department is to reopen all lanes and ramps to all vehicles by late 2009/early 2010.



Innerbelt Bridge Safety Plan Scheduled Improvements

- Finalizing design plans for a temporary add-lane on I-77 between I-490 and I-90. Work anticipated to occur during 2009 construction season.



Challenges in Meeting Proposed Timeline

- **Construction:** Duration of construction is directly related to number and magnitude of repairs, which will not be known until analyses are complete, all substandard members are identified and repair methods are defined.
- **Contract sale:** Process typically takes between 6 and 18 weeks.
- **Materials:** Industry supply and demand dictates availability.



Possible Rehab/Replacement Options & Timeline

Current Plan*:

- 2010 – Rehabilitate existing bridge (4 lanes eastbound and 4 lanes westbound), *maintain at minimum two lanes in each direction. Estimated cost: \$210 million*
- 2012 – Build new bridge (5 lanes westbound). *Estimated cost: \$300 million*
- 2015 – Reconfigure existing bridge (5 lanes eastbound). *Estimated cost: \$65 million*

TOTAL ESTIMATED COST: \$575 MILLION

* Announced December 2007



Possible Rehab/Replacement Options & Timeline, *Continued*

Alternate Plan:

- 2010 – New bridge (5 lanes westbound). *Estimated cost: \$300 million*
- 2013 – Rehab/replace existing bridge (5 lanes eastbound). *Estimated cost: \$250 million*

TOTAL ESTIMATED COST: \$550 MILLION



Innerbelt Bridge Safety Plan

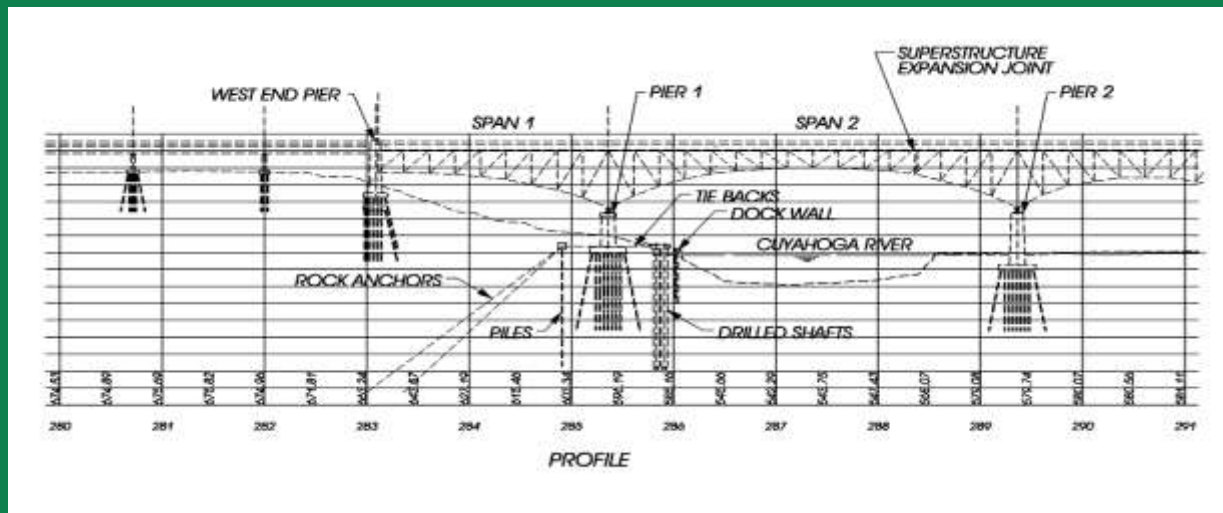
Fire/EMS Concerns

- November 2008: Met with City of Cleveland emergency crews to discuss bridge condition/begin to develop incident plan.
- January 2009: Completed installation of unique delineators to mark spacing for emergency vehicles.



Innerbelt Bridge Safety Plan Slope Stabilization Efforts

- 1995 – Purchased Right-of-Way
- 1998 – Constructed stabilization structure (\$8 million)



Slope has been instrumented and monitored for movement since 1990.



Comments/Questions?

