

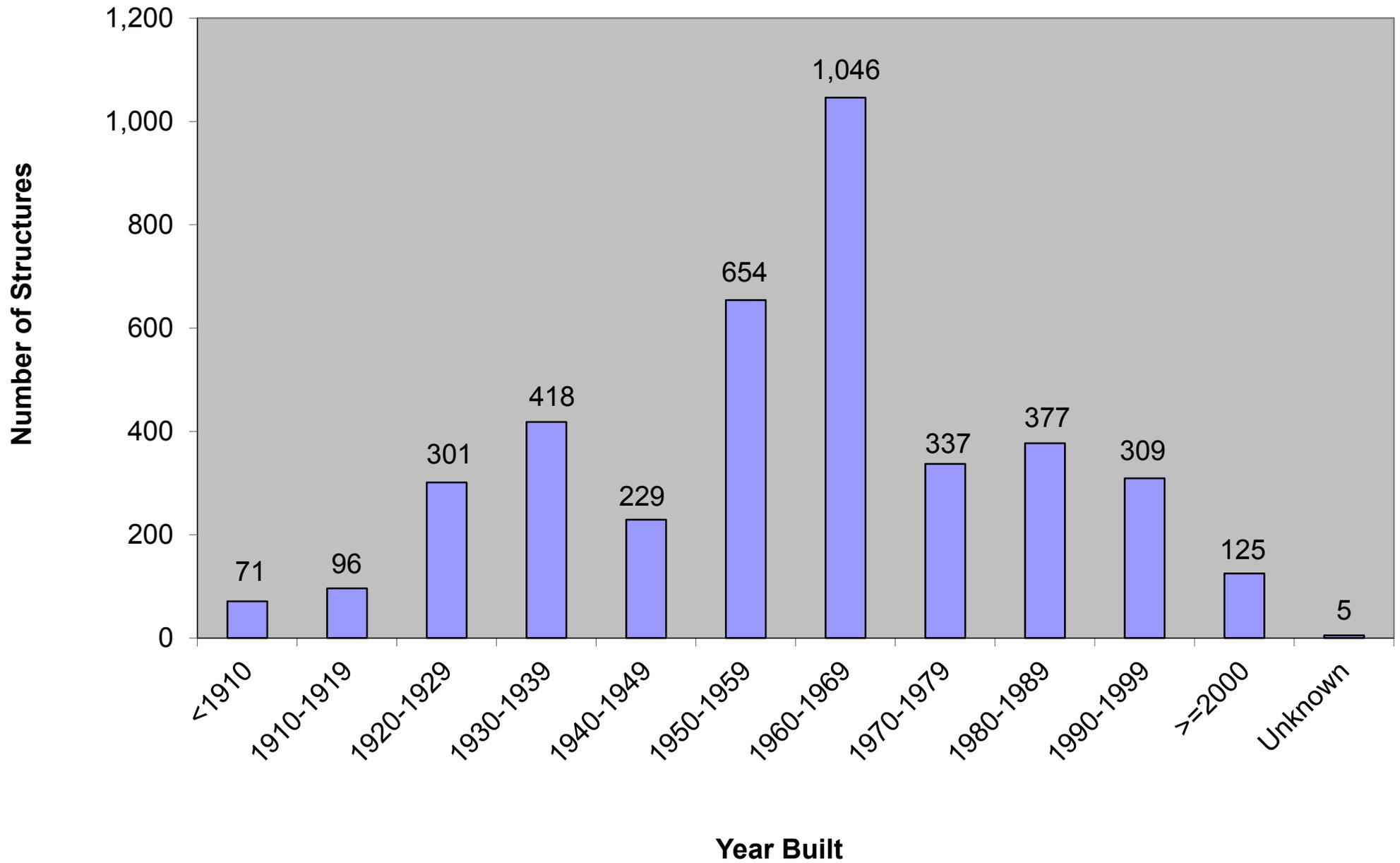
**Connecticut**  
**Department of Transportation**

**March 13, 2013**



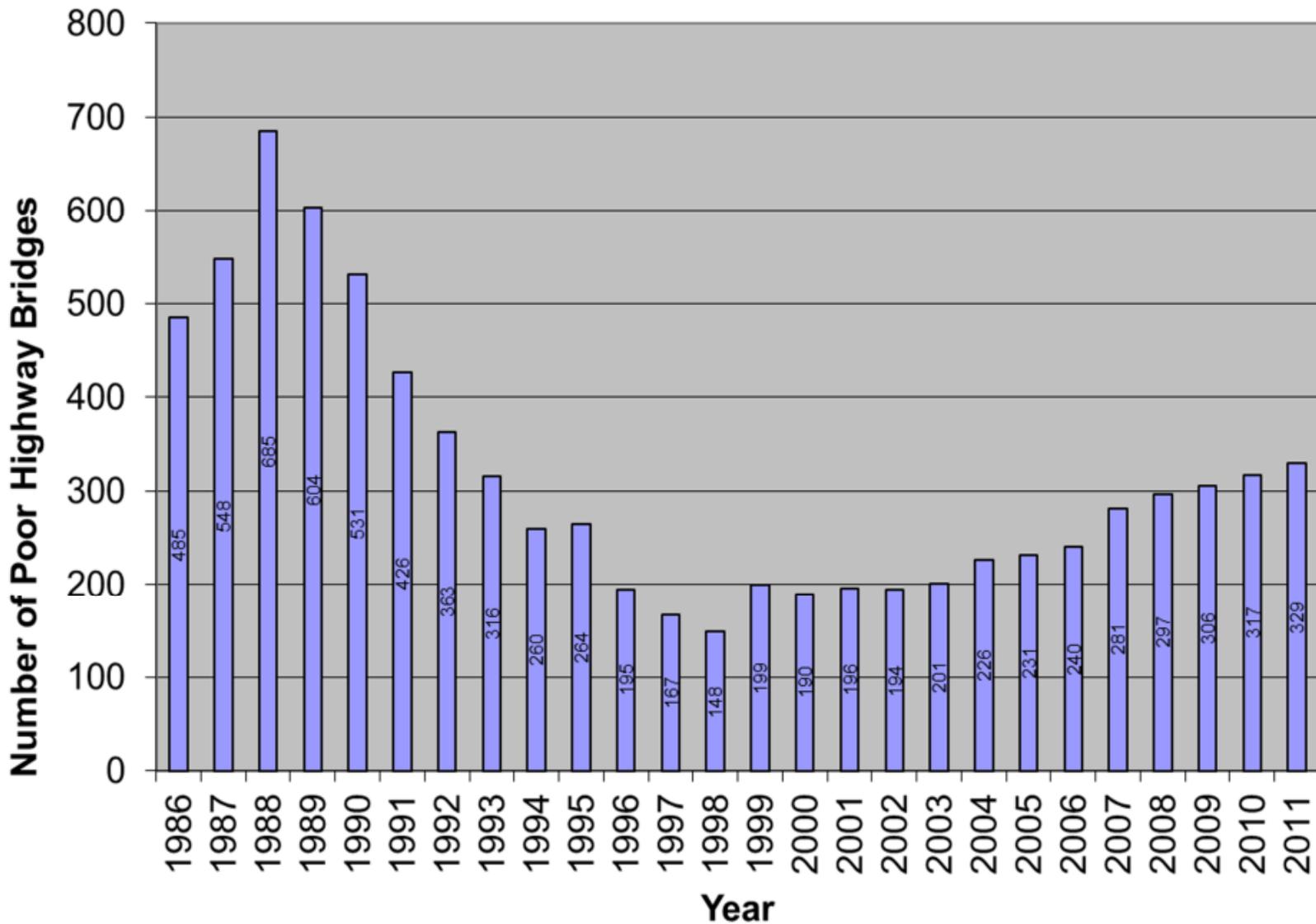
# Connecticut's Aging Infrastructure (Total Structures Maintained by CONNDOT)

Updated per 2010 NBI



# Connecticut's Poor Bridge Graph

(Highway Bridges Maintained by CONNDOT)



# Accelerated Bridge Construction in Connecticut



# **What is Accelerated Bridge Construction?**

**ABC uses innovative planning, design, and construction methods, in a safe and cost-effective manner, to reduce project delivery time and onsite construction time**



# Why Consider Accelerated Bridge Construction?

- **Improves Work zone safety - closures**
- **Reduces congestion – short duration**
- **Economic impact – business and families**
- **Reduces on site construction time with prefabrication off site.**
- **Durability**



# FHWA and ABC

- FHWA Highways for **LIFE** Program

- L** = Long lasting

- I** = Innovative

- F** = Fast Construction

- E** = Efficient and Safe



US Department of Transportation

- **Focus on innovations including ABC**

- Every Day Counts Initiative (EDC)

- Bringing new technologies and project delivery methods into the highway construction market

- **Goal: To reduce project delivery time by 50%**

- <http://www.fhwa.dot.gov/everydaycounts/>



# **FHWA and ABC**

**“We need to change the way we build highways. We need to build them faster, have them last longer, have them be safer and at a lesser cost.”**

**“Get In, Get Out, and Stay Out”**



# What has CTDOT done?

## Past projects

### Prefabricated decks

- I-84 Waterbury/Route 8 interchange
- Route 8 Viaduct Seymour

### Prefabricated substructure elements

- South Maple Street Bridge Enfield



# Prefabricated Elements in Connecticut

## I-84 EB to Route 8 NB Exit Ramp Waterbury



### Deck replacement project

- 6 Span Bridge (700 ft. long)
- Constructed in 48 days
- 22 years old – Very Good condition

Connecticut Department of Transportation



# Prefabricated Elements in Connecticut

## Route 8 Viaduct - Seymour

- Over 50 spans
- Weekend closures only
  - Old deck removed on Friday night
  - New deck erected on Saturday morning
  - Open to traffic Sunday night
- In service for 20 years
- Very good condition



# Prefabricated Elements in Connecticut

## South Maple Street, Enfield



### Bridge replacement project

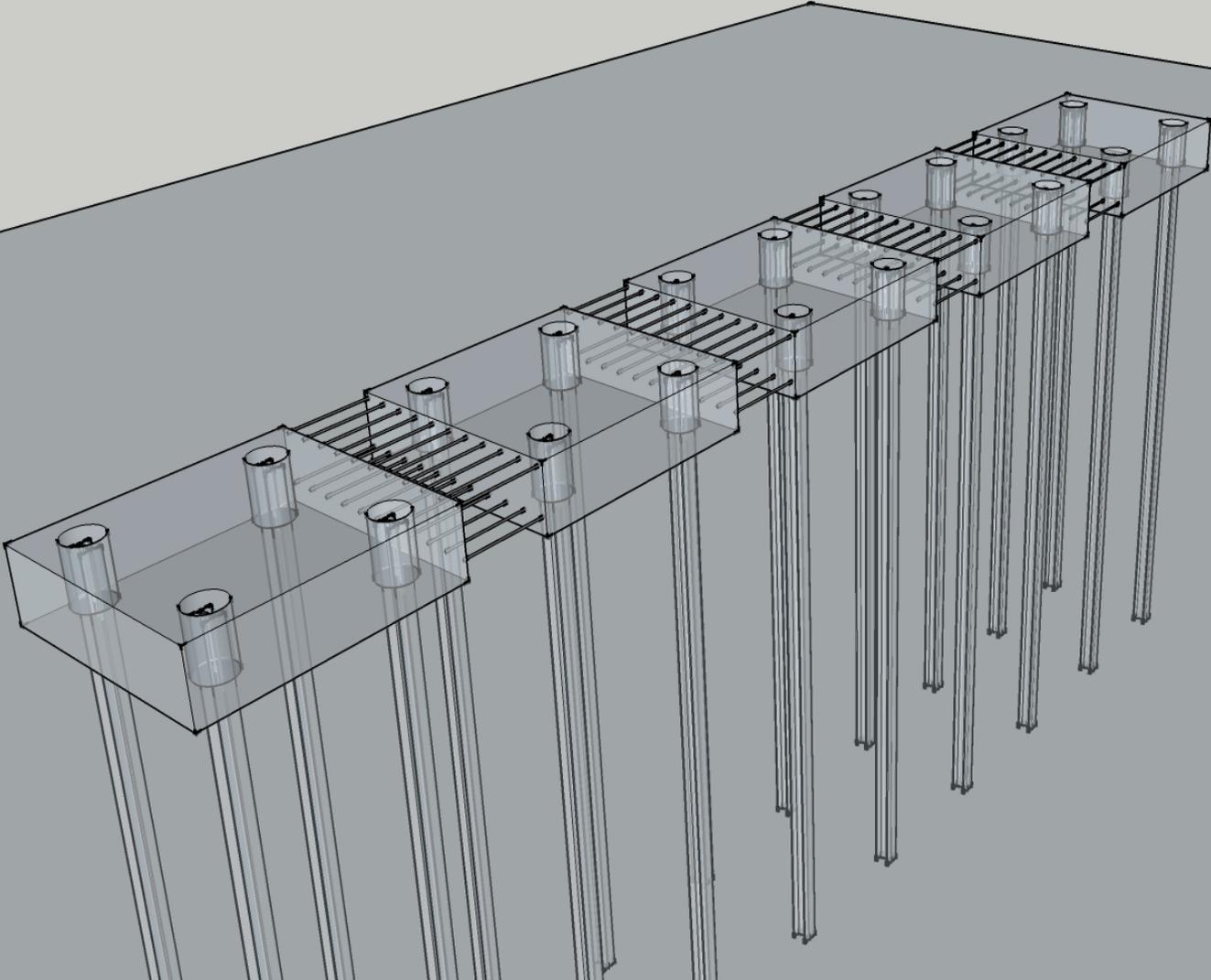
- Federal Local Bridge Program
- Single Span Bridge
- Entire bridge is precast concrete

# What is CTDOT doing?

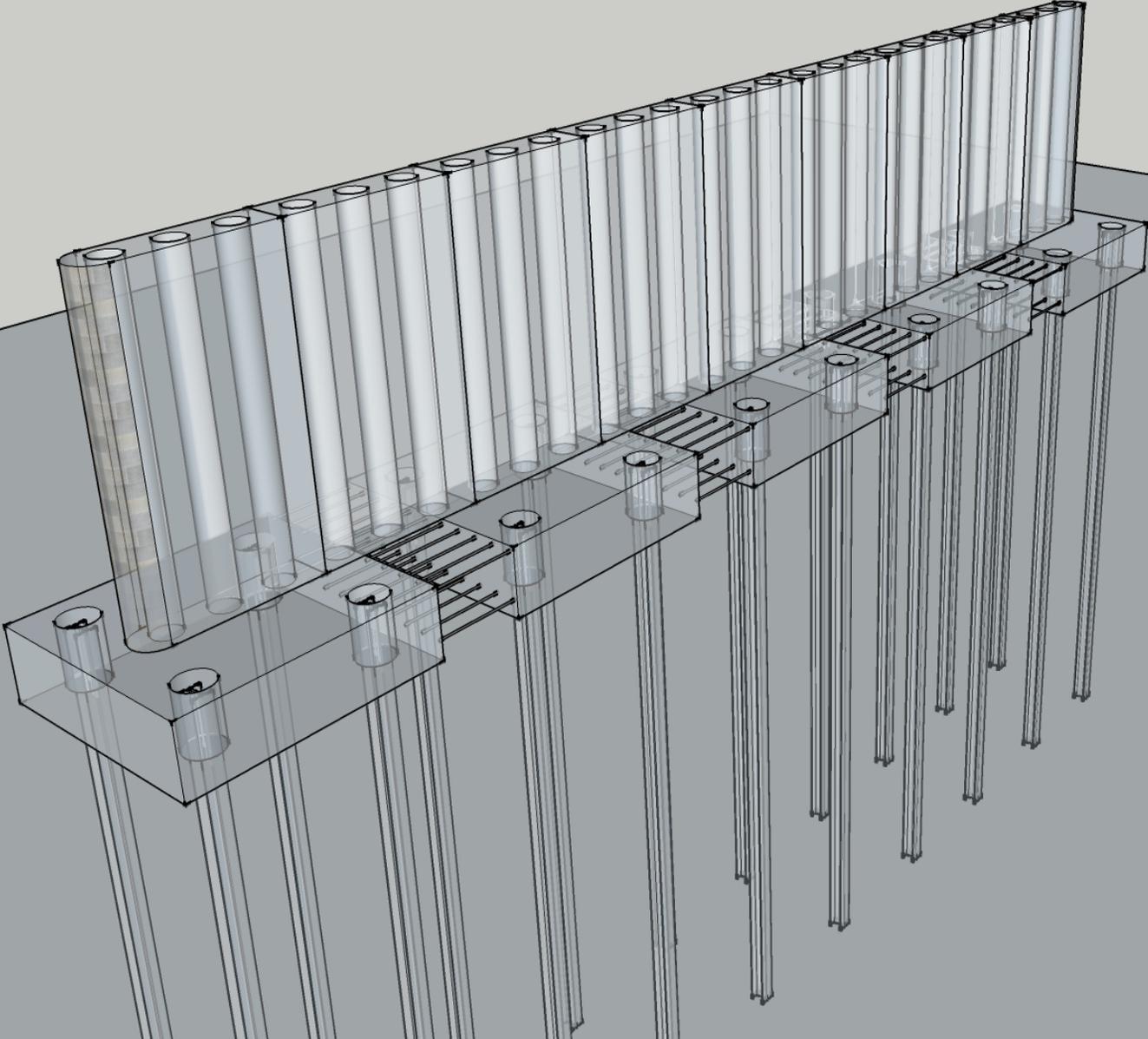
**Prefabricated Elements (Abutments & Piers)  
Hartford-New Britain Busway –CT Fastrak  
Flatbush Avenue Bridge**



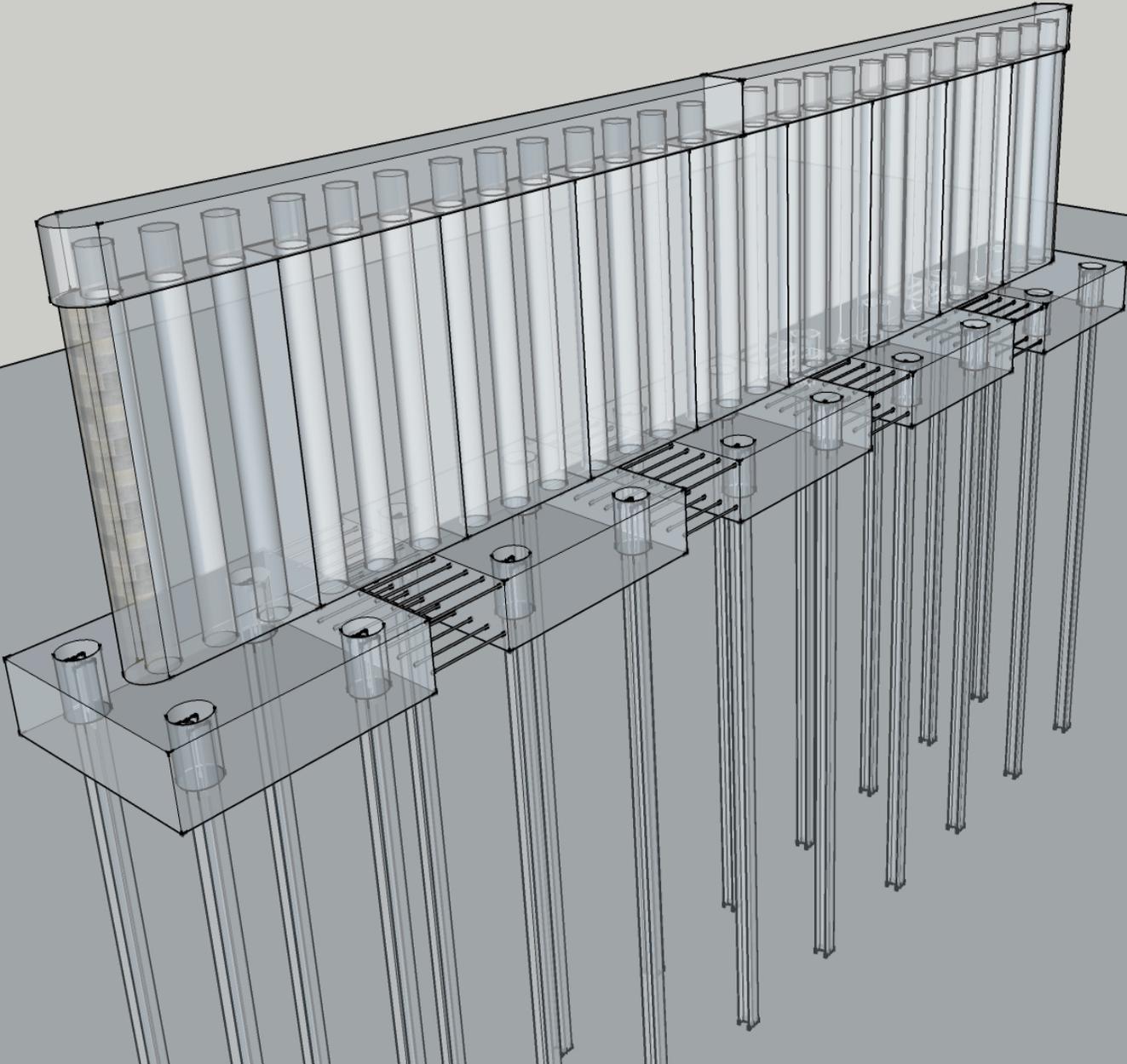
# Flatbush Ave. Pier Construction: Stage 1



# Flatbush Ave. Pier Construction: Stage 2



# Flatbush Ave. Pier Construction: Stage 3



# Flatbush Ave. Pier Construction: Completed Pier



# What is CTDOT doing?

Streamlining project delivery

<http://www.ct.gov/dot/cwp/view.asp?a=1399&q=260048>

CE Memo 11-05

<http://www.ct.gov/dot/cwp/view.asp?a=2303&q=421916>



# What will CTDOT be doing?

- **Project 131-194/195**
  - Rehabilitation of Bridges 01235 and 01236
  - I-84 EB and WB over Marion Avenue, Southington
  - Superstructure replacements ~ 102 ft.
  - AASHTO girders replaced by NEBT
  - Built in gore area, Exit 30
  - I-84 closed one weekend for demo and replacement using SPMTs
  - Advertising February 20, 2013





# I-84 over Marion Ave, Southington

Connecticut Department of Transportation





## Bridge 01236 (WB) Looking Toward Plantsville Center

Connecticut Department of Transportation



# Large Scale Placement Methods



**Build Superstructure Offsite  
Move using Self Propelled  
Modular Transporters**

Connecticut Department of Transportation



# What will CTDOT be doing?

## Project 75-129

- **SSR 450 (Hammonasset Connector), Madison**
- **Replacement of Bridge 05466 over Huzzle Guzzle Brook**
  - **Precast concrete arch frame**
  - **Precast substructure**
  - **Road closure: 2 weeks**
  - **Construction planned for 2014**





## Bridge 05466 Location

Connecticut Department of Transportation





## Bridge 05466 Elevation

Connecticut Department of Transportation



# What will CTDOT be doing?

## Project 82-298

- **Replacement of Bridge 02190**
- **Route 17 over Long Hill Brook, Middletown**
  - **Precast concrete arch frame**
  - **Road closure: 1 weekend**
  - **Construction planned for 2014**





**Bridge No. 02190**  
**East Elevation**

Connecticut Department of Transportation





**Bridge No. 02190**  
**Location: South of Rt. 155**

Connecticut Department of Transportation



# What will CTDOT be doing?

## Project 157-083

- **Route 57, Weston**
  - “Bridge in a backpack”
  - Replacement of Bridge 01023 over West Branch Saugatuck River
  - 28 ft. span arch increased 44 ft.
  - Developed in Maine
  - Concrete filled carbon fiber arch tube
  - Several have been built in New England
  - Construction planned for 2015



# What will CTDOT be doing?

## Atlantic Street Bridge - Stamford



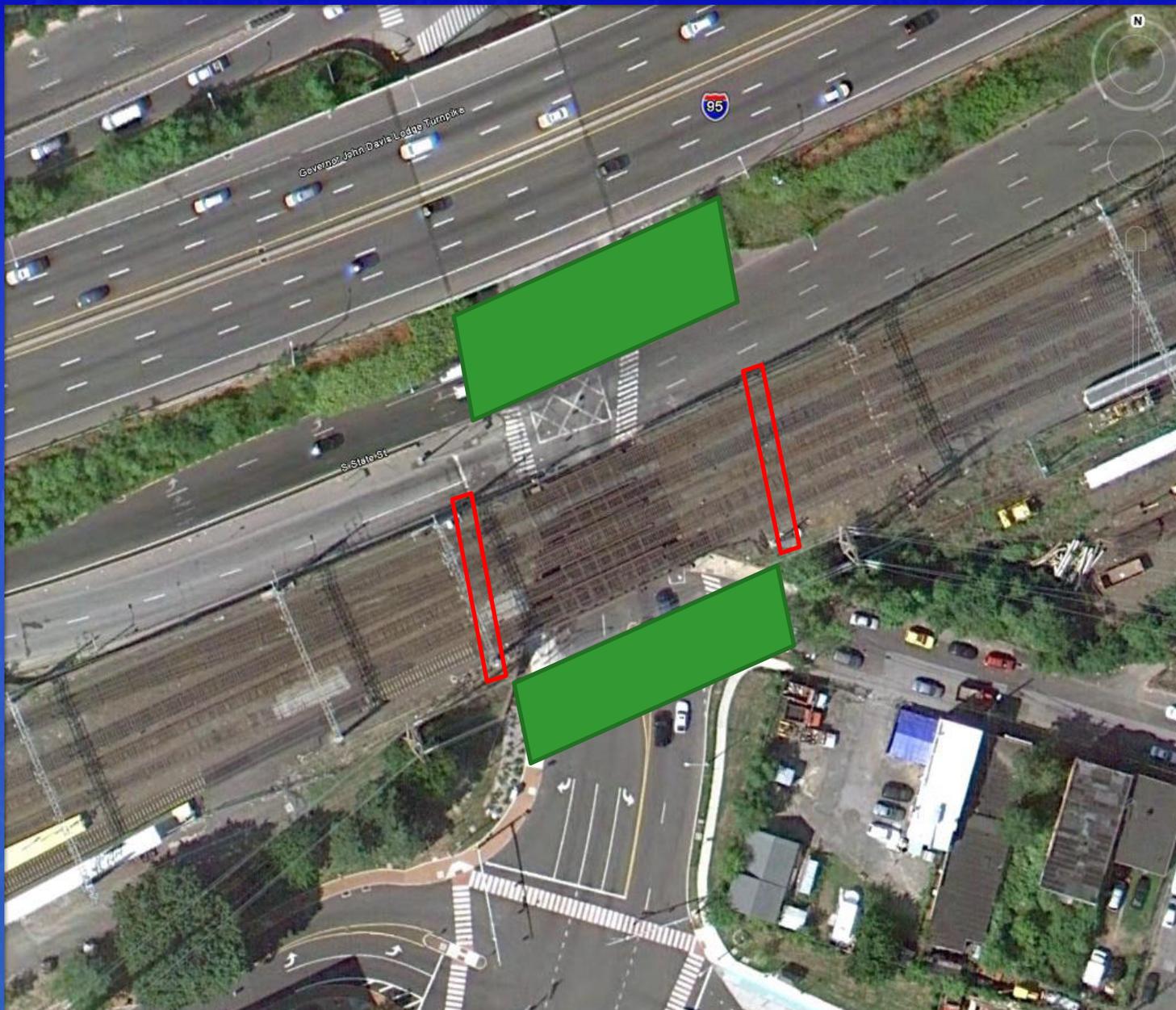
### MNRR Bridge over Atlantic Street Project 135-301

- **Build Superstructure Offsite**
- **Move using Self Propelled Modular Transporters**
- **Reduces Construction from 5 years to 18 months**
- **2016 Construction**

Connecticut Department of Transportation



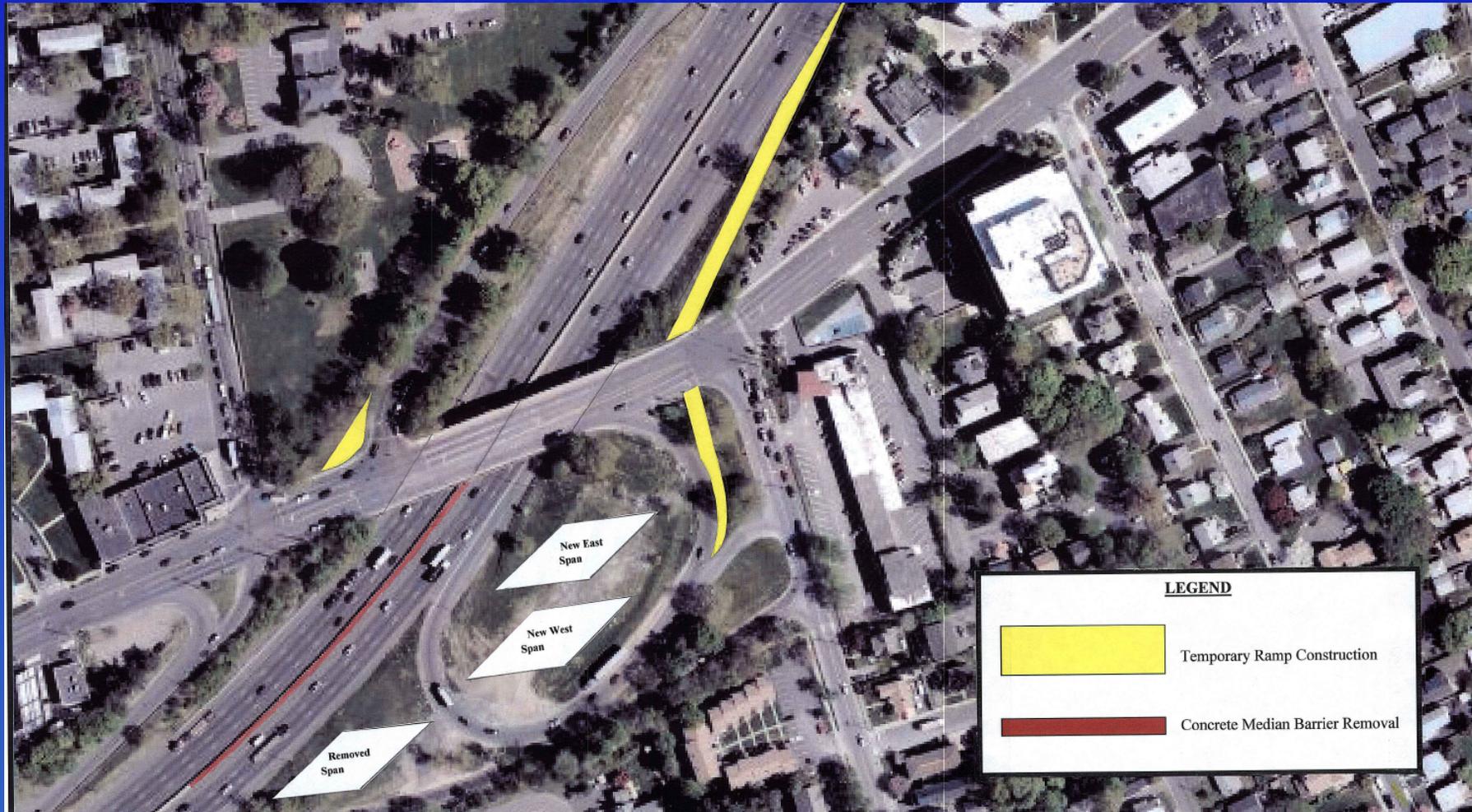
# Proposed Atlantic Street Construction



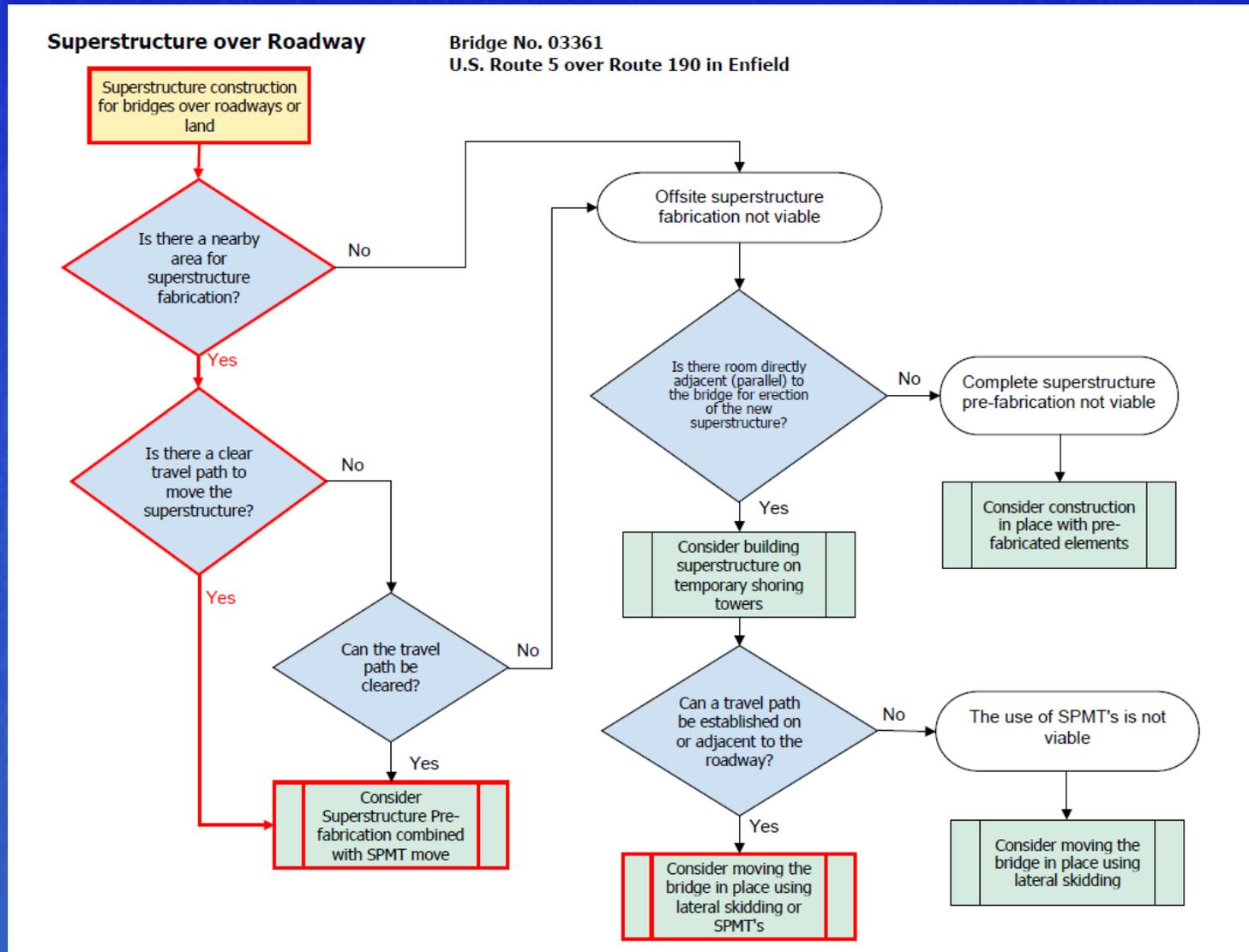
# What will CTDOT be doing?

## Accelerated Bridge Construction

### Bridge No. 00037, U.S. Route 1 over I-95, Stamford



# What will CTDOT be doing?



# Conclusions

- **CTDOT is committed to using ABC**
  - Several successful projects have been built in the past
  - Several are in the pipeline
  - We are establishing an ABC program
  - We have experts on board to assist and train Department staff
  - Improved Safety and Reduced Mobility Impacts are the key driving factors

## Contact

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**2800 Berlin Turnpike, P.O. Box 317546**

**Newington, Connecticut 06131-7546**

**(860) 594-3402 or [mary.baker@ct.gov](mailto:mary.baker@ct.gov)**



# ALTERNATIVE CONTRACTING IN CONNECTICUT

Connecticut Department of Transportation



# **PUBLIC ACT NO.**

## **12-70**

**“AN ACT CONCERNING DEPARTMENT OF  
TRANSPORTATION PROJECT DELIVERY AND  
PROJECT LABOR AGREEMENTS FOR CERTAIN  
PUBLIC WORKS PROJECTS”**

**PASSED MAY 2012**



# What is permitted by the legislation for CMAR?

- **Construction Manager at Risk (CMAR)**
  - “Guaranteed Maximum Price”
  - Subcontractors selected by low bid
  - Designer and Contractor selected from list recommended by “selection panel”
  - Contract shall be based on a competitive proposal
  - Contract must clearly state responsibility of contractor, date to be completed and maximum cost



# What is permitted by the legislation for Design-Build?

- **Design-Build (DB)**

- Design-Build team selected from short listed teams
- “Best Value” Selection process
- Prequalification metric shall include scoring for qualifications and past performance
- Proposals scored on technical merit of proposal, cost and unique criteria for each project
- Cost proposals opened at a public ceremony
- Contract shall clearly state responsibilities of DB Team, date of completion, maximum cost and if applicable ROW acquisition



# WHY USE ALTERNATIVE CONTRACTING METHODS IN CT?

- Get projects on the street faster
- Promote ingenuity from the industry
- Help control cost overruns
- Small percentage of projects will be advertised using alternative contracting methods



# WHAT WILL THE DEPARTMENTS PROCESS LOOK LIKE?

- Modeled after other states
- Transparent process
- 2 phase - “Best Value” selection process



# Proposed Design Build Approach

- Step 1: Preliminary Project Development
  - Work done by CTDOT or consultant
  - Survey
  - Preliminary Design – Identify viable concepts
  - Preliminary geotechnical
  - Preliminary Maintenance & Protection of Traffic
  - Hydraulics
  - Preliminary Drainage
  - Right of Way Acquisition
  - Environmental Permitting
  - Begin public involvement process
  - Complete NEPA



# Phase 1

- LOI / RFQ advertised through Office of Consultant Selection
- Selection committee established
- Optional interviews
- Develop short list of three



# RFQ Process

•Project Initiation

## Consultant Selection Committee (CSC)

Comprised of a minimum of 4  
Evaluators

Includes Design and Construction Staff

Includes FHWA Representative (non-voting member)

Includes Process Witness 1 (non-voting member)

Tasks:

Review Statement of Qualifications Submissions (SOQ)

Interview and short list DB teams

Employee Level: Use existing panels

Teams

•Consultant Selection Office



## Phase 2

- Solicit proposals
- RFI's
- ATC's
- Proposals submitted through Office of Contracts



# RFP Process

## Technical Support Committee (TSC)

Comprised of technical experts and process coordinator

### Tasks:

Develop project scope and preliminary design

Develop weighted scoring criteria  
(in consultation with originating unit)

Review and approve Alternative Technical Concepts (ATCs). Hold "confidential" meetings.

Develop the Engineers Estimate

Assist Technical Review Committee with technical issues such as:

Technical solutions

Public Involvement

Quality

M&P of T

Schedule

Structures

Traffic Engineering including lighting

Soils & Foundations

Utilities, ROW, Env. Compliance, etc.

Environmental

Employee Level: Supervising Eng. and Above

Can include owner's consultant where applicable

- 
- 
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- ew and d to RFIs Contracts
- te Review ATCs Contracts
- al Meetings Teams Improve ATCs Support Committee (Confidential)
- ost-Award with Non-ams Contracts



# Alternative Technical Concepts

- Submitted through Office of Contracts
- Confidential meetings
- “Go / No Go” / Go with conditions from technical support Committee



# RFP Process

## Technical Review Committee (TRC)

Comprised of a minimum of 5 evaluators  
Include FHWA representative (non voting member)

Include Process Witness 2 (non voting member)

Tasks:

Evaluate and score technical proposals  
Employee Level: Principal Eng. and Above

Office of Contracts



# EXAMPLES OF POST AWARD ACTIVITIES

- Schedule with Milestones
- Design submissions at key points
- Quality Management Plan submission



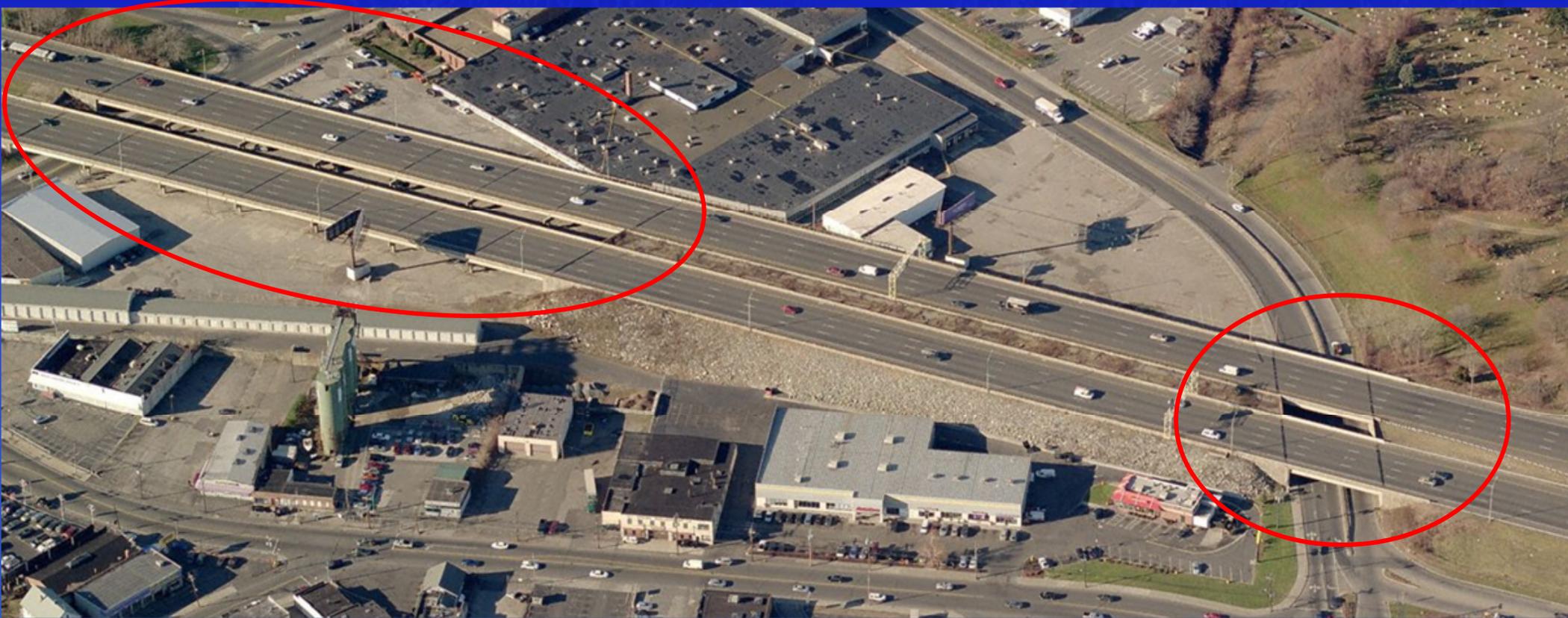
# WHAT IS THE DEPARTMENT DOING NOW?

- Developing and refining the procurement process
  - Help from other states and FHWA
- Establish an “Alternative Contracting” web page
  - Will be updated frequently for stakeholders
- Developing plans and specifications for pilot project



# Fast Track Contracting – Design Build

## Route 8 - Bridgeport



Superstructure replacements – ABC with Design Build

- 4 bridges – Modular Construction (similar to Fast 14)
- Impact to travelers reduced from 2+ years to just days
- Project Delivery Time reduced by 1 year using Design Build contracting

Connecticut Department of Transportation



# Conclusions

- **CTDOT is moving forward with Design-Build**
  - Launch and continuously update the “Alternative Contracting” website
  - Design Build Manual will follow in the future and will incorporate lessons learned
  - Contact

Mr. Andrew Cardinali

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**Thank you for your time!**

Connecticut Department of Transportation

