



Time is Money:

New York State DOT's Experience with Advanced Construction Schedule Management

Moderator:

- David Unkefer, FHWA Resource Center, Constr. & Project Management Team



Speakers:

- Mark White, State Scheduling Engineer, NYSDOT – Office of Construction
- Manny Silva, Construction Supervisor, NYSDOT – Region 11/New York City
- Frank Perricelli, AECOM Transportation
- Scott Lowe, Principal, Trauner Consulting



Today's Agenda

- Introduction
- Establishing enterprise project/schedule management for construction
(Mark White)
- Alexander Hamilton Bridge project
(Manny Silva/Frank Perricelli)
- Consultant Perspectives on collaboration benefits & state of the practice
(Scott Lowe)
- Q&A



Introduction - Big picture

- Do we manage time like money in highway construction?
- 'Every Day Counts'
- Road user costs & benefits
- American infrastructure's great need





Introduction - Recent Activities

- ARRA reviews
- AASHTO SOC initiatives
- Project/Schedule Management Gaining Momentum



Washington State
Department of Transportation

January 2008

For more on WSDOT Project Delivery:
www.wsdot.wa.gov/accountability
www.wsdot.wa.gov/projects
metcalk@wsdot.wa.gov



**WSDOT delivered 18
Nickel and TPA projects
during the second
quarter of FY 2007**

Of the 18 projects, all projects
were completed on time and on or
under budget.

WSDOT Highway Project Delivery



New York State DOT

- Four year's experience with statewide system
- Used for construction and pre-construction project management
- Contractor's develop & maintain schedules on NYSDOT's servers inside the firewall
- Consultant's assist with schedule review on NYSDOT's servers



What you will gain from this webinar

- Lessons learned in deploying statewide system
- Costs
- Other resources
- Benefits/Payback
- Scalability for smaller programs

New York State Department of Transportation Construction Project Management & Controls

*"Time is
Money"*



December 15, 2011

sponsored by the Federal Highway Administration
Highways For Life Team
NHI Innovations -
Project & Program Management using Primavera



Mark O. White, PE

Manager - Construction Project Management & Controls Group

- State Scheduling Engineer (Oracle-Primavera P6)
- Project Controls (Oracle-Primavera Contract Manager)
- Contract Administration (Lettings, Time Extensions, Finals)

NYS DOT

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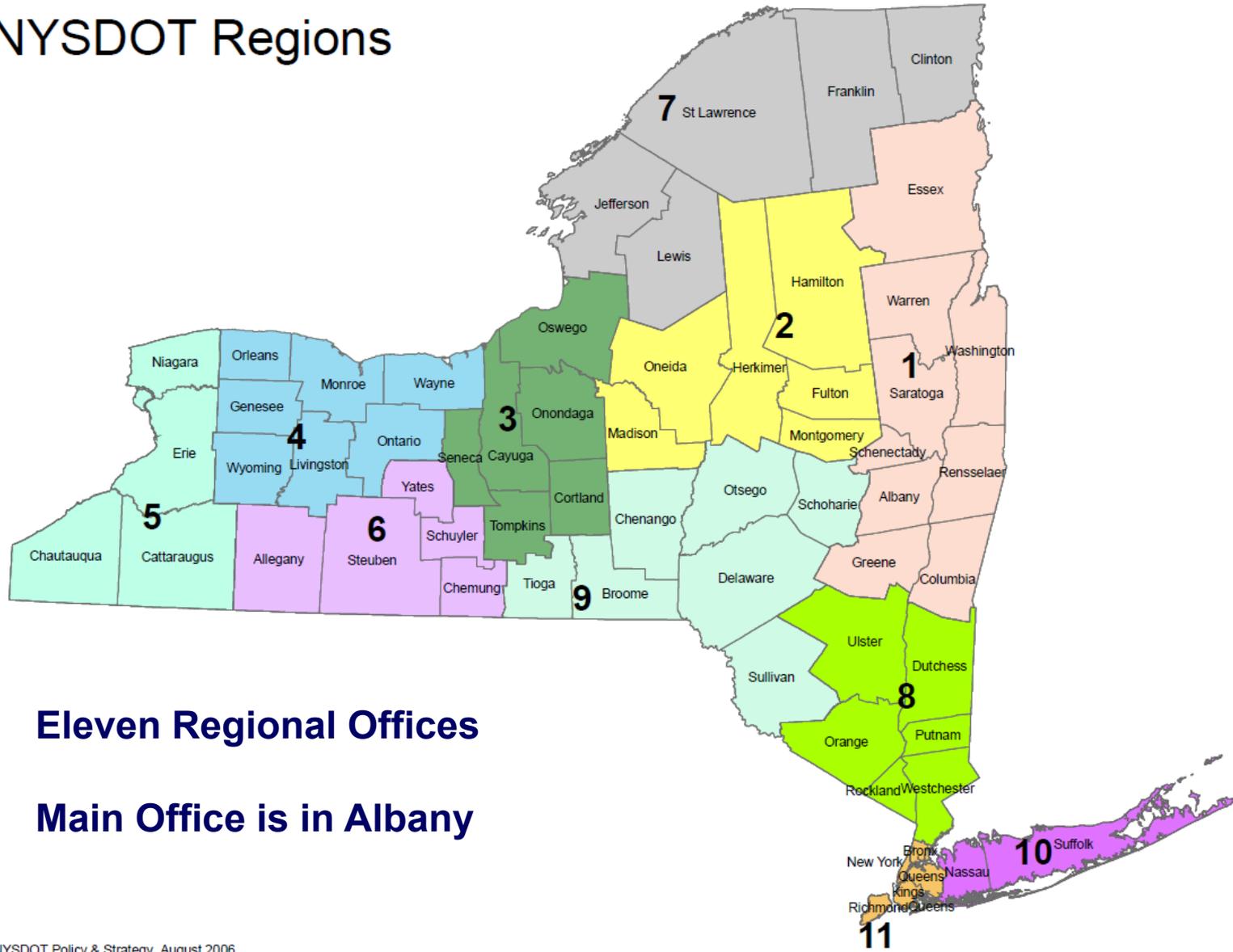


EXECUTIVE LEVEL BRIEFING



PRIMAVERA
How the world manages projects

NYSDOT Regions



Eleven Regional Offices

Main Office is in Albany

NYSDOT Policy & Strategy, August 2006

NYS DOT SCHEDULING

Project Field Office - perform progress schedule reviews, schedule analysis and delay mitigation strategies. EIC responsible for day to day project management, contract administration duties, and level one time-related delay disputes.

Regional Office - responsible for level two Time-Related Delay Disputes, review contract change orders and Time Extensions, and provide region wide program management oversight.

Main Office – responsible for policy, specifications, procedures, guidance, training, P6 software administration, second line HELPDESK Support, consultant management, level 3 time-related contract disputes.

Handle coordination with:

- Office of Legal Affairs – Claims Bureau
- Information Technology Division - responsible for network support, server support, database support, desktop support, network security, first line HELPDESK user support, software licensing, data backup & recovery.

The Big Challenge (GOALS)

- More transparency of capital program information through posting all project cost/schedule data on agency website, along with performance metrics.
- Meet agency Construction program performance goals (Goal for 2012 is 90% of projects delivered on time and with less than 5% cost overruns).
- Use enterprise systems to manage project related cost/schedule information, and feed enterprise data warehouse for reporting .
- Find software tool(s) that facilitate more efficient project management and increased collaboration between project stakeholders, and also make that information available to capital program managers.
- Replace various scheduling tools/versions with one tool that can be supported by agency IT HelpDesk staff, and program area training staff. Reduced licensing and support costs, and reliable data backup/recovery.
- Facilitate CPM / project management training to build body of knowledge.
- Reduce risks and costs associated with potential time related disputes

The Big Challenge (GOALS)

Look for a scheduling tool:

- for planning, design and construction staff to manage project schedules real time.
- that will allow various staff to access project schedules at the same time, and that facilitates collaboration and communication.
- allows access via the Internet, so data is available to all stakeholders wherever they are located.
- with customizable roles & security privileges to facilitate consultants and contractors building project schedules in your centralized database.
- That facilitates standardization of schedule methodologies to improve efficiency.
- That facilitates more timely submittal and review/approval of schedules.
- that facilitates collaborative analysis of time delays during construction and assists in avoiding, minimizing and mitigating those delays and related dispute and/or contract claim costs.
- that links schedules to a central document repository for easy retrieval by all project stakeholders. Project documents available to all project team members via Internet.

The Big Solution

NYSDOT has implemented Oracle-Primavera P6 release 6.1 SP2 on network servers. (\$4.7 million)

- P6 Client available through NYSDOT WAN and via CITRIX. (5 Citrix servers to balance user load)
- P6 WebPM available through web server.
- Oracle database platform
- 2500 Named User licenses + 10 concurrent user licenses. Licenses provided for all users.
- Multi-Tiered environment (Dev, Test, Prod, Train)

Moving toward P6 Release 8, currently performing User Acceptance testing. Will potentially require additional software licenses for P6 Analytics and Oracle Business Intelligence Enterprise Edition (OBIEE). BI Publisher to build customized reports.

NYSDOT has project underway to design and implement Enterprise Data Warehouse to join information from various enterprise applications for reporting purposes. Cost and schedule information will be available for all projects.

The Big Solution

ADDITIONAL CONTRACT SERVICES REQUIRED

- CSMIN Contract (currently with IBM) to provide construction Field Office wireless router, computers, printers, scanners, high speed Internet service, and maintenance (\$6 million annually for 300 sites).
- Software maintenance & support agreement with Oracle-Primavera. Higher level support agreement, with bi-monthly conference calls with Primavera technical support staff.
- One full time consultant staff to provide training courses on using Primavera P6 and Contract Manager.
- One full time consultant staff to handle P6 enterprise admin tasks & User HELPDESK support.
- Consultant contract (currently with Trauner) to provide construction support services & CPM scheduling services.

Critical Issues for Implementation

- Establish Executive Management vision/goals
- Need champions at Executive level
- Partnering with construction industry & consultant industry groups
- DOT Information Technology support/coordination
- Information gathering, including best practices
- Sufficient resources for implementation and maintenance of software system
- Training to improve project management skills and to become proficient using P6 software
- Development and issuance of technical policies, standards, and guidance (Scheduling Manual)

Critical Issues

- Phased implementation. Focus first on the most complex projects that have highest risks.
- Use Pilot projects. Seek volunteers that are motivated individuals, automation oriented, early implementer types, project manager mentality. Then support them.
- Design and Construction should jointly develop a preliminary schedule during Final Design and use it to determine contract completion date, and any intermediate milestone dates. Also use it for Constructability review.
- Provide all Bidders the Preliminary Construction Schedule prior to Letting, or schedule template after Letting.
- Later phase of implementation should include an electronic schedule for all active construction projects.
- Training for construction and consultant staff. Stress importance of Progress Schedule integrity, and that first priority of scheduling is to use it to manage the project.

Lessons Learned

- Specification issues:
 - Vary specification requirements based on project complexity.
 - Type 1 - Bar Chart, simple projects (Monthly)
 - Type 2A - CPM, routine projects (Monthly)
 - Type 2B – CPM, moderately complex (Bi-weekly)
 - Type 2C – CPM, complex projects (Weekly)
 - Contractor must develop and maintain Progress Schedule on DOT servers.
 - Needs to include criteria for minimally acceptable Progress Schedule submission.
 - Must have provisions for no payment for late Progress Schedule submissions.
 - Method Of Measurement – minimum Lump Sum
 - High level bidding requirements in specification. Scheduling Manual to supplement CPM specification and provide detailed scheduling requirements.

Lessons Learned

- IT issues:
 - Need higher level Oracle-Primavera Maintenance/Support agreement.
 - CITRIX server farm to distribute user load for P6 Client users for remote access.
 - P6 Web for Dashboards, reports, graphics.
 - Shared server for document collaboration.
 - Do NOT import schedules into enterprise database.
 - Automate reports on AD account usage and P6 account usage to program area administrators providing login/logout times.
- Program Area support issues:
 - Use Web page to disseminate policy & guidance to users.
 - Implement shared email address for Admin staff.
 - Implement group email contact list to notify user group of scheduled maintenance issues.
 - Regularly monitor security profiles and privileges for changes.

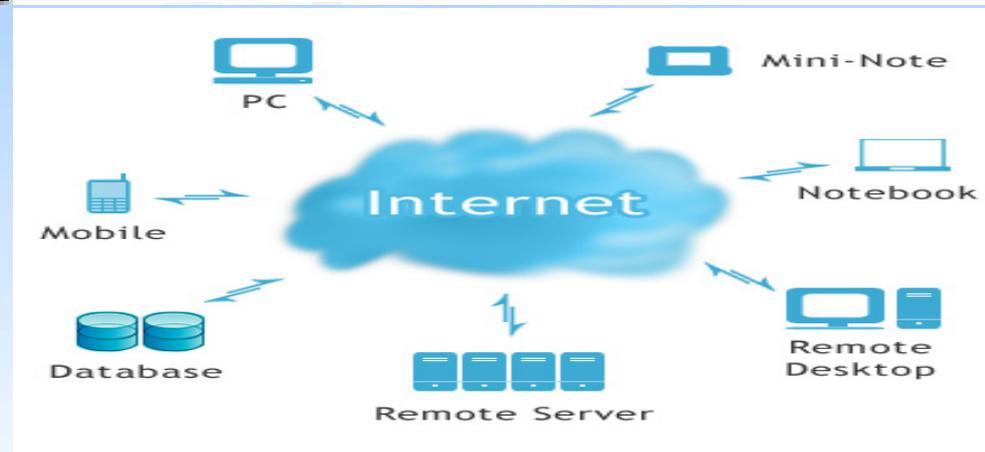
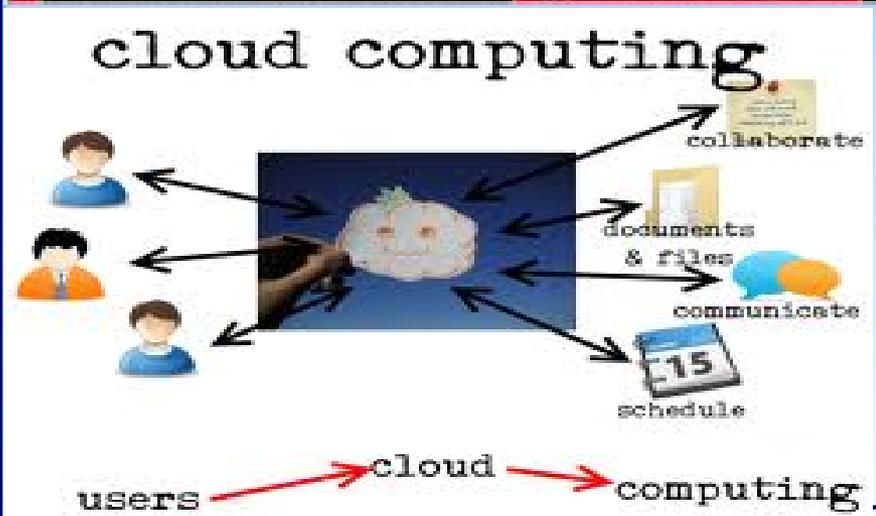
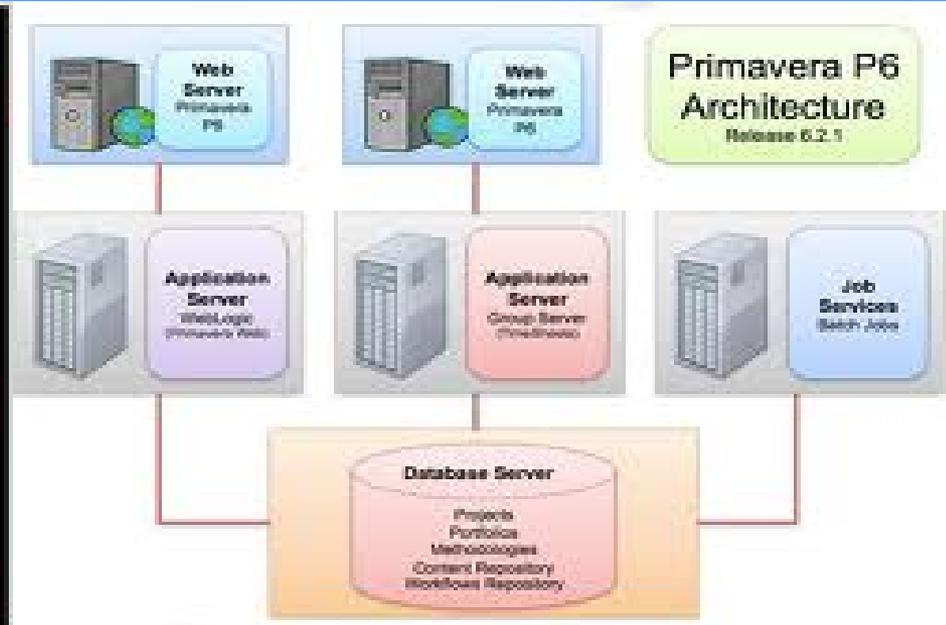
Lessons Learned

- Resource issues:
 - Initially required various levels of resource loading based on project complexity.
 - Contractors disliked resource loading, time consuming data entry and impression that DOT had limited use for data.
 - Have now shifted to requiring Productivity Rates instead of Resource loading.
 - Productivity Rates entered into activity Notebook tab, along with corresponding quantity.
 - Easier for both Contractor and for State review.

Lessons Learned

- Training issues:
 - Custom training manuals geared toward Primavera software that utilize highway/bridge example projects.
 - Use separate training database with example Progress Schedules to allow hands on training for course attendees
 - Use training AD accounts and P6 accounts. Accounts active only during training courses.
 - Use Master training database to restore training database after each training course.
 - Just in time training for construction Field Office staff.
 - Automation training rooms with one computer per course attendee.
 - Program Area facilitator at training courses to handle detailed construction policy issues, coordinate with IT HelpDesk staff to resolve problems, and assist attendees.
 - Train the Trainer not successful. Engineers do not want to provide training in scheduling software or project management.

Advantages of P6 Enterprise



ADVANTAGES OF P6 ENTERPRISE

NYSDOT Main Office provides all the IT support and user licenses for the enterprise systems, relieves burden from Contractor's, Consultants and project Field Office staff.

- Improved data security. Data integrity.
- Regular automated data backup.
- Only one software version needs to be maintained and supported by IT Division.
- More reliable automation training environment. Application software, training database, training user accounts are on network servers.
- No proprietary software issues with respect to contract specification.
- Also manages Consultant Term Agreement to provide assistance to EIC for schedule reviews and dispute resolution.
- Also coordinates additional assistance through Oracle Support contract.

ADVANTAGES OF P6 ENTERPRISE

- All project stakeholders using the same scheduling software.
Assures schedule used by entire project team is the same.
 - Helps standardize and speed schedule development
 - Standard Reports, Project Layouts, Activity Layouts, Filters, Global Activity Codes, Global Calendars, etc.
 - Schedules are calculated using the same settings.
 - Faster schedule reviews. No mailing disks, converting file formats, loading files, lost files.
 - Agency only has to support training on one software version.

ADVANTAGES OF P6 ENTERPRISE

- **One project record (Schedules/Narratives/Reviews) available to all concerned parties & available via WEB.**
 - Contractor
 - Project Field Office
 - Consultant Construction Support
 - Regional Office
 - Main Office (Construction, Legal, Executive Management)
- **Improves collaboration / communication between Agency, Contractor and Consultant.**
- **Improved project management and documentation reduces project delays and thereby reduces disputes. Less potential for Contractor claims for Extended Overhead costs.**

ADVANTAGES OF P6 ENTERPRISE

- Agency can maintain important data with schedule.
 - ✦ Project Codes
 - Contract D #, PIN #, Region, EIC, CS, Contractor, Scheduler, Reviewer, County, Town, Legislative District, etc.
 - Review Status
 - ✦ User Defined Fields (fields created by agency)
 - Letting Date, Award Date, Completion Date
 - Date Progress Schedule was submitted by Contractor.
 - Date Schedule was approved/accepted by agency.
 - Contract Bid Cost, Current Construction Cost.
 - ✦ Contractor's Narrative Report
 - ✦ Schedule Review Report

ADVANTAGES OF P6 ENTERPRISE

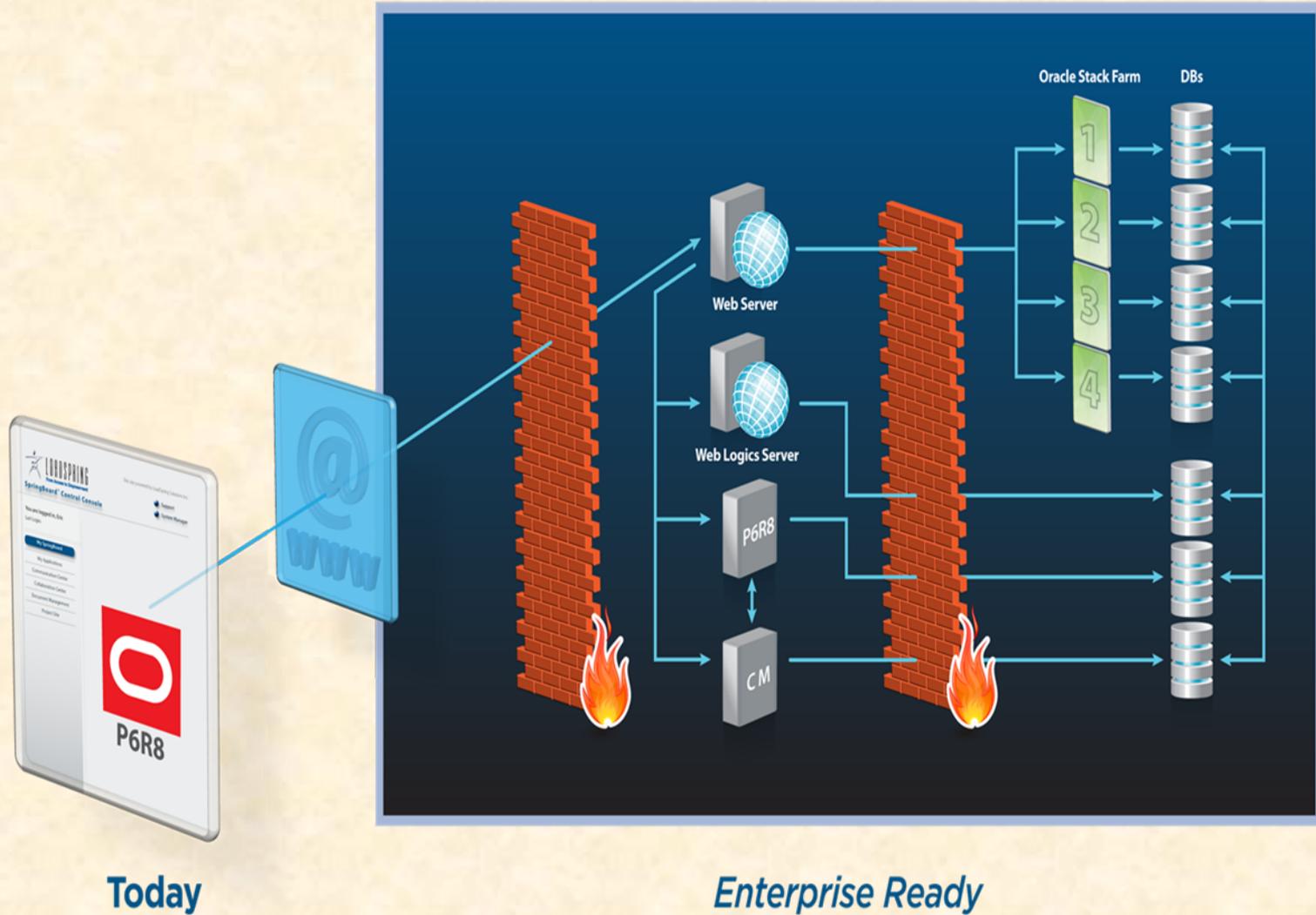
- Program Management Tool
 - Managers have access to all their project schedules.
 - Project Codes used to group, sort & filter schedules.
 - Performance Dashboards available through WEB Tool.
 - Quick identification of project performance.
 - Standard Global Reports for Managers.
 - Can set up Portfolios of projects (Strategic projects, bridge projects)

Scalability

Third Party Hosting Services

- Cloud Computing
 - Shared infrastructure and software
 - Easy internet access
 - Demand based
- Internal IT skills transitioned from providing infrastructure to extracting value from new technologies
- 24/7/365 maintenance and support (experienced staff)
- Faster deployment (days not months)
- No capital investment required
- Predictable costs
- Disaster recovery provided
- DOT responsible for providing user licenses

WHY USE CLOUD COMPUTING



Today

Enterprise Ready

BENEFITS OF CPM SCHEDULING



PRIMAVERA
How the world manages projects

PROJECT MANAGEMENT

Communication !

Communication !

Communication !

- A CPM schedule is an excellent written and graphic means of communication for all project stakeholders. It allows the detailed plan for the execution of a project to be fully modeled and presented.
- When properly prepared and maintained on a routine basis, the CPM will identify who is performing, who is delaying, what issues are becoming near critical and allow stakeholders the opportunity to discuss corrective actions should problems begin to occur.

PROJECT MANAGEMENT

– **Baseline Schedule.**

- Contractor's plan to complete all work within contract duration.
- Need schedule accepted within 1 month of Award

– **Monthly Progress Schedule Submissions**

- Record of dates when work was progressed or suspended.
- Models changes as they occurred, along with impact of the change.
- Contractor's Narrative Report documents assessment of schedule issues, such as potential risks, reason & tally of delays, responsibility for delay, etc.
- Need timely submittal (3 business days after end of month).

– **Regular Progress Schedule Meetings**

- Communication helps resolve problems early.
- Document impacts, responsibility, etc... Share meeting minutes.
- Status of Submittals of RFI's, discuss current priorities.

CPM SCHEDULING – Lessons Learned

- *State Schedule Review Reports:*

- EIC needs to prepare a detailed analysis, and timely respond in writing (within five business days) to the Contractor.
- EIC letter should accept or refute responsibility for issues raised in Contractor's monthly Narratives citing contract, specifications and performance as much as possible so that if only a small portion of an issue remains undetermined it is very well defined. Facts not opinions.
- Avoid deferring an issue or an analysis until the end of the project if possible. Avoidance, Minimization and/or Mitigation may be possible and thorough analysis opportunities may be provided.
- Documents if schedule submission meets specification requirements, and changes EIC requires Contractor to make to schedule before resubmission.

PROJECT MANAGEMENT

- What other time measuring / risk management engineering tool is available that is this effective?
 - There has to be a plan.....so why not record it, share it, modify it, measure it.....
 - Use it to build the project and administer the contract.
-
- **Time is Money ! \$\$\$**

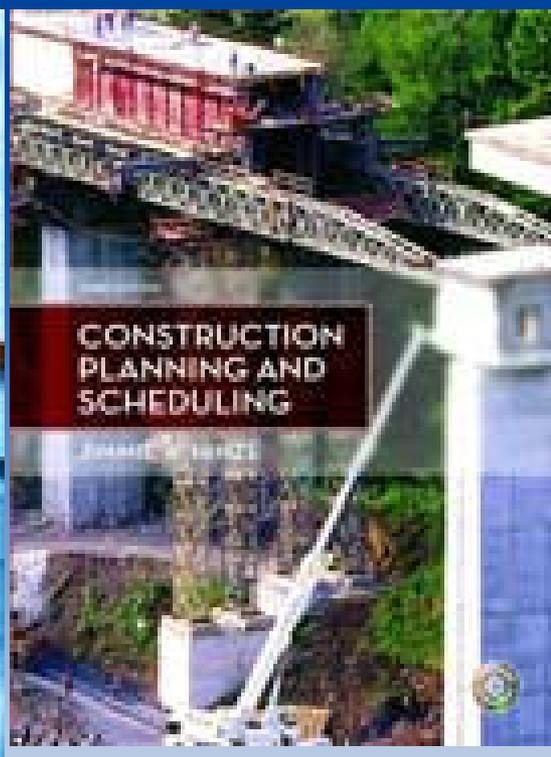
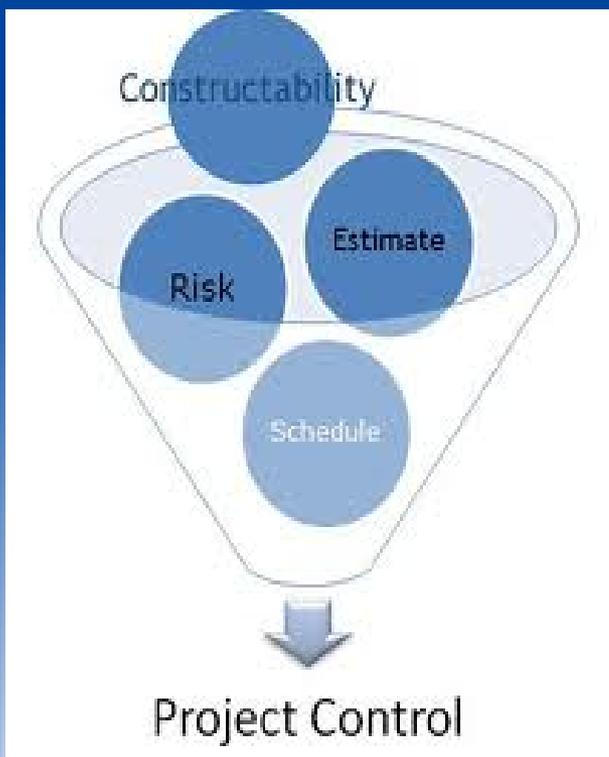
DISPUTE/CLAIM RESOLUTION

- At NYSDOT, project delay disputes and claims can easily dwarf the work related disputes and claims.
- Monthly extended overhead claims have been presented that total in excess of hundreds of thousands of dollars per month and valued at millions of dollars for a project that runs a year or more late.
- Accurate identification, quantification and apportionment of delays to the correct responsible party is critical with these high damages at stake.
- Opportunity for each stakeholder to mitigate delays as they occur rather than wait for disaster! Manage change as it occurs!

DISPUTE/CLAIM RESOLUTION

- There's an old Claims Engineer saying...."the side with the best paperwork, Wins"!
- It is difficult for an agency or Contractor to defend its position if they have not properly documented issues in the project records during the project. Even if you are right, documentation is necessary to demonstrate to the AG's Office, the Court's Judge.
- Another old saying "the one thing worse than bad news is bad news delivered late". EIC needs to communicate timely.
- Change Orders should include any associated and negotiated change in contract time, as "Time is Money".

Using CPM Scheduling as a Project Management Tool





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REGION 11 CONSTRUCTION

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Alexander Hamilton Bridge project

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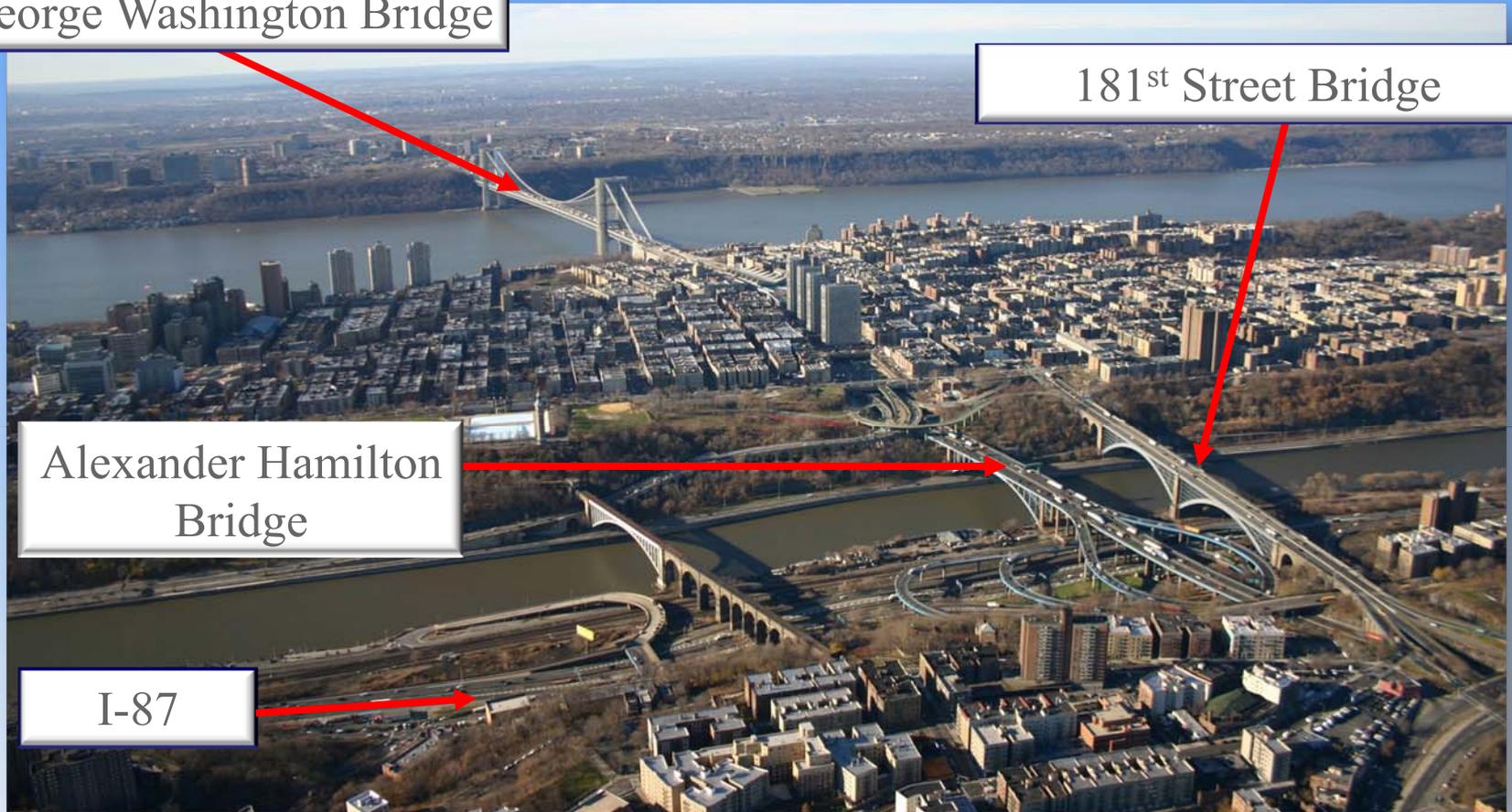
Alexander Hamilton Bridge and Highbridge Interchange

George Washington Bridge

181st Street Bridge

Alexander Hamilton
Bridge

I-87



Alexander Hamilton Bridge and Highbridge Interchange

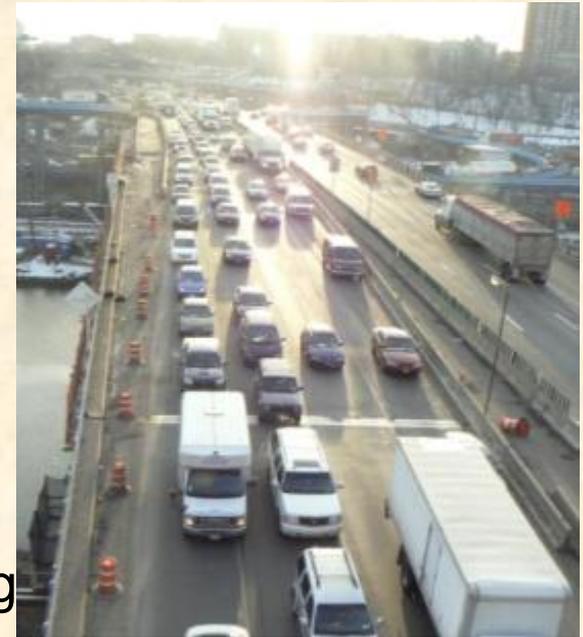


ALEXANDER HAMILTON BRIDGE AND HIGHBRIDGE INTERCHANGE

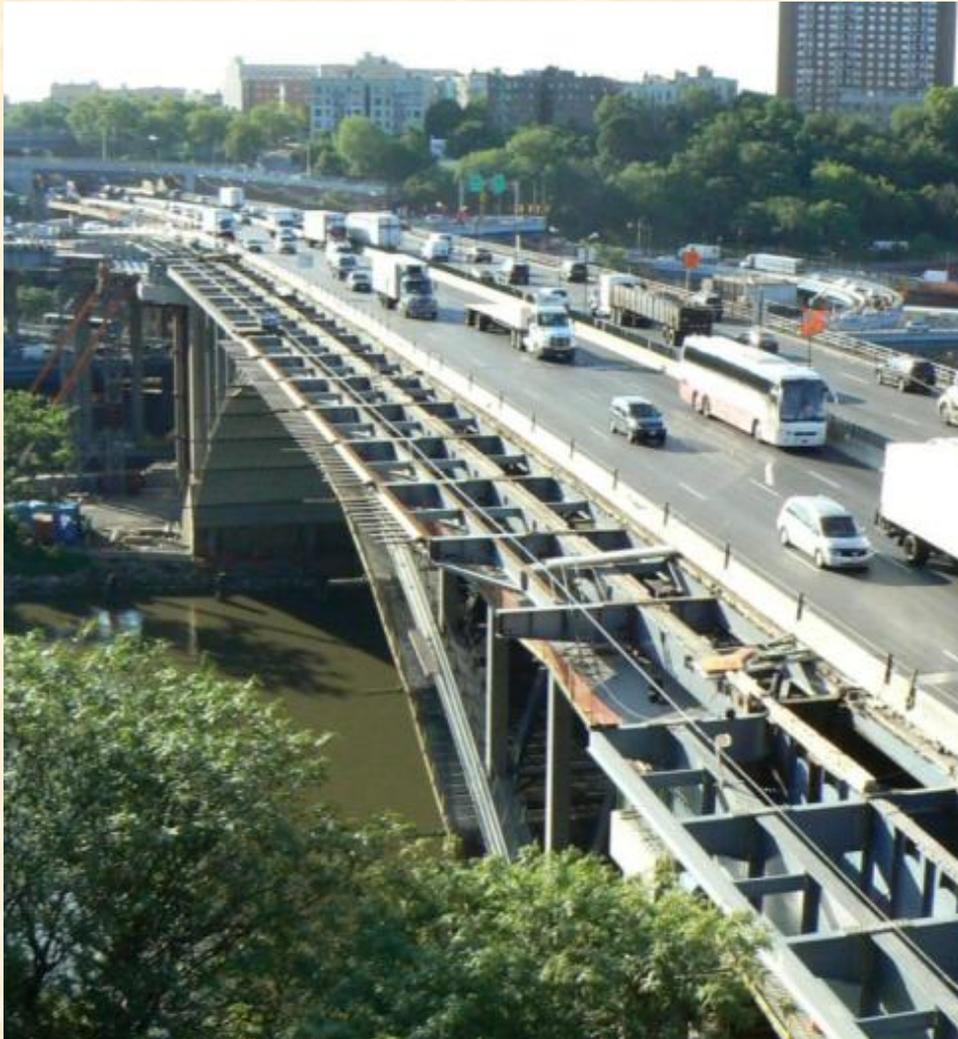
- Largest NYSDOT project let to date, low bid cost \$407 million.
 - Located at the intersection of the Cross Bronx Expressway (I-95) between Amsterdam Avenue in New York County and Undercliff Avenue in Bronx County and the Major Deegan Expressway (I-87).
- Nine bridges
- Main Bridge - Alexander Hamilton Bridge (AHB)
 - Main arch span and approach spans
- Ramp TE – curved tub girders
- Six Ramp Bridges (temporary ramp structures)
- Undercliff Avenue Bridge over 1-95.

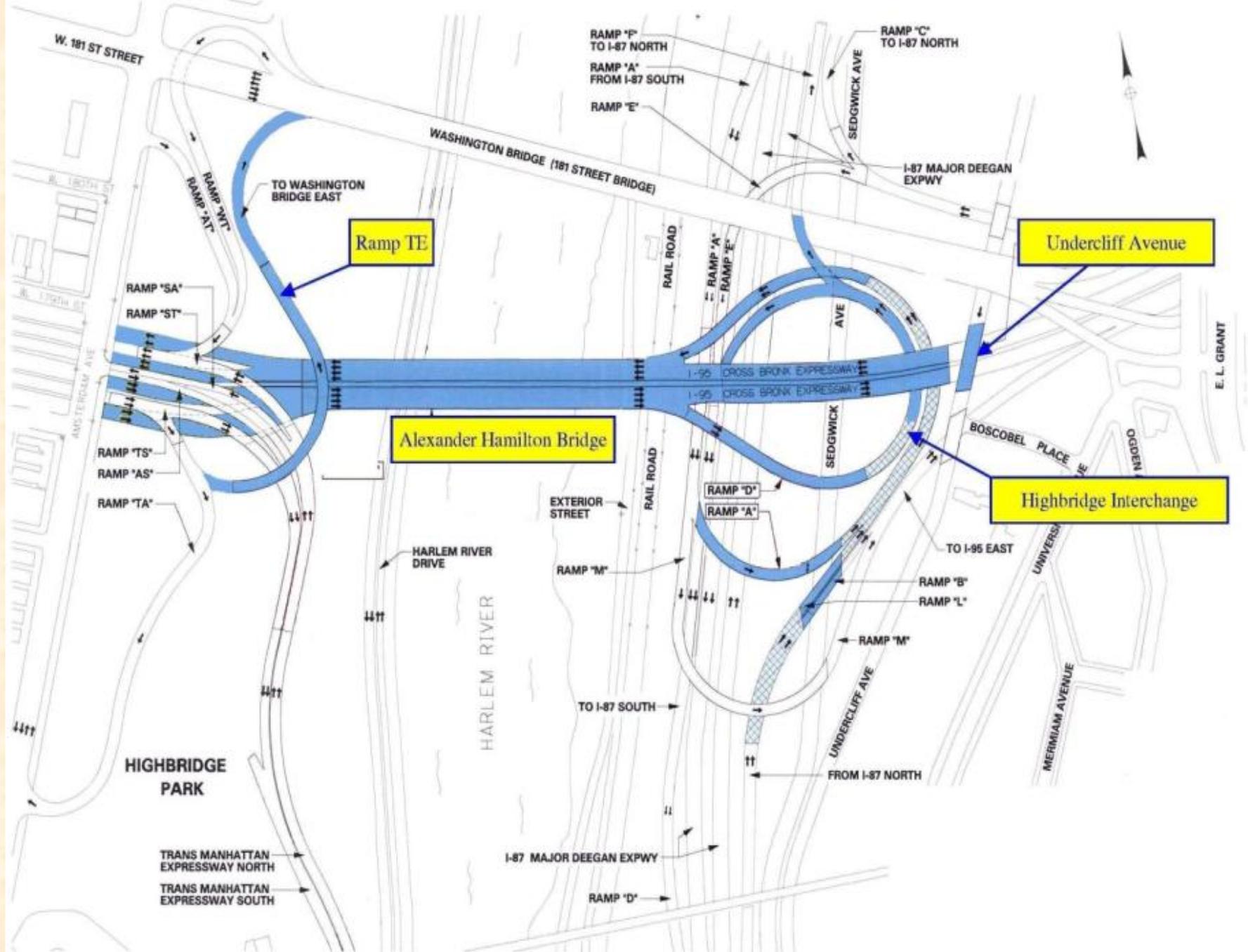
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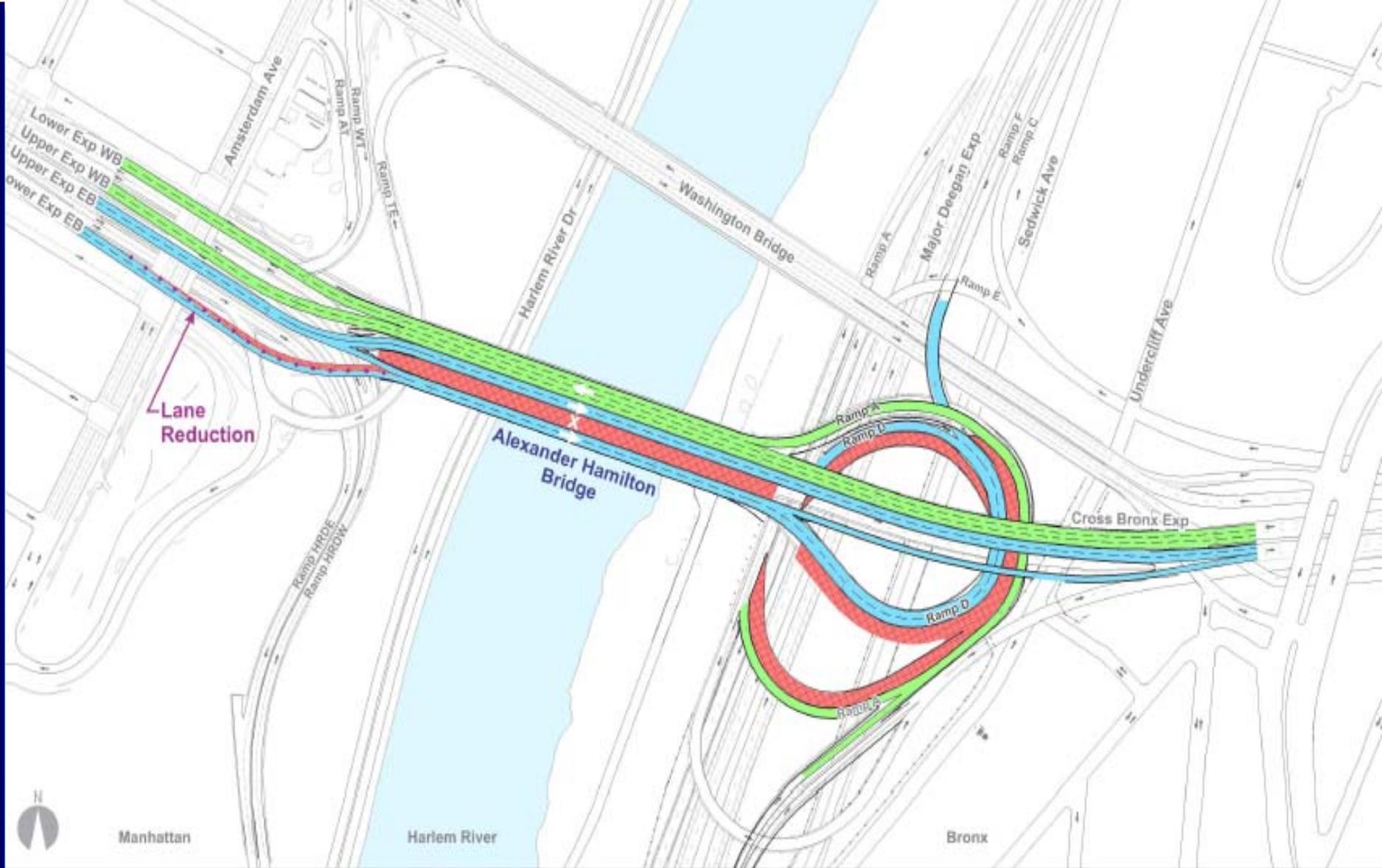
- Six Stages – extensive phasing within stages
- Structural construction includes:
 - Deck replacement
 - Complete bridge replacements
 - Bridge widening
 - Fracture critical steel elements
- Work includes:
 - Extensive traffic control
 - Precast roadway slabs
 - ITS elements
 - Sign structures
 - Extensive park landscaping and hardscaping
- ADT – 188,000 vehicles per day
- AHB has not undergone major repair since opening in January 1963



STAGE 2 - WIDENING

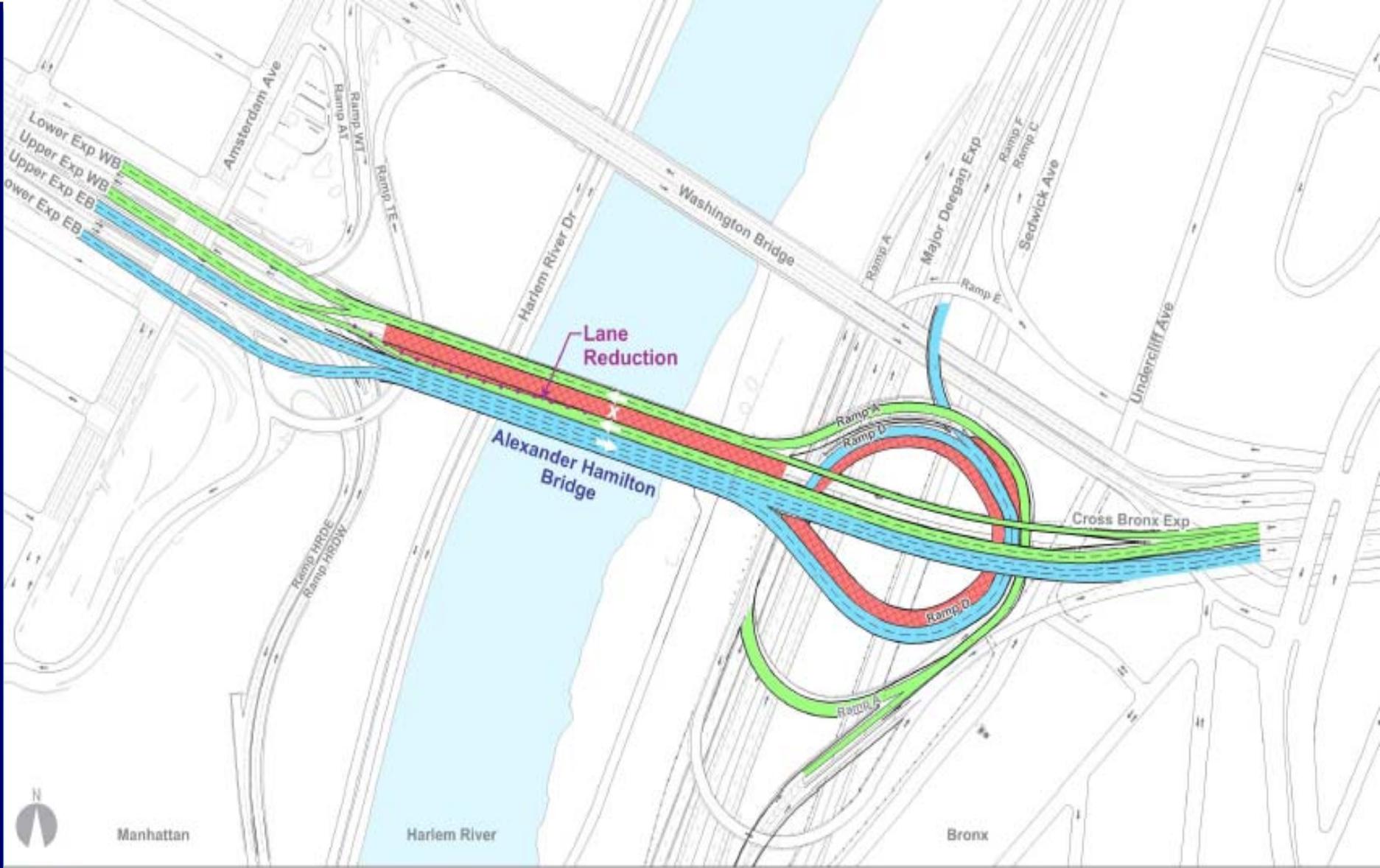






- Work Zone
- Eastbound Traffic
- Westbound Traffic

Stage IV Alexander Hamilton Bridge Reconstruction (June 2012 - December 2012)



Manhattan

Harlem River

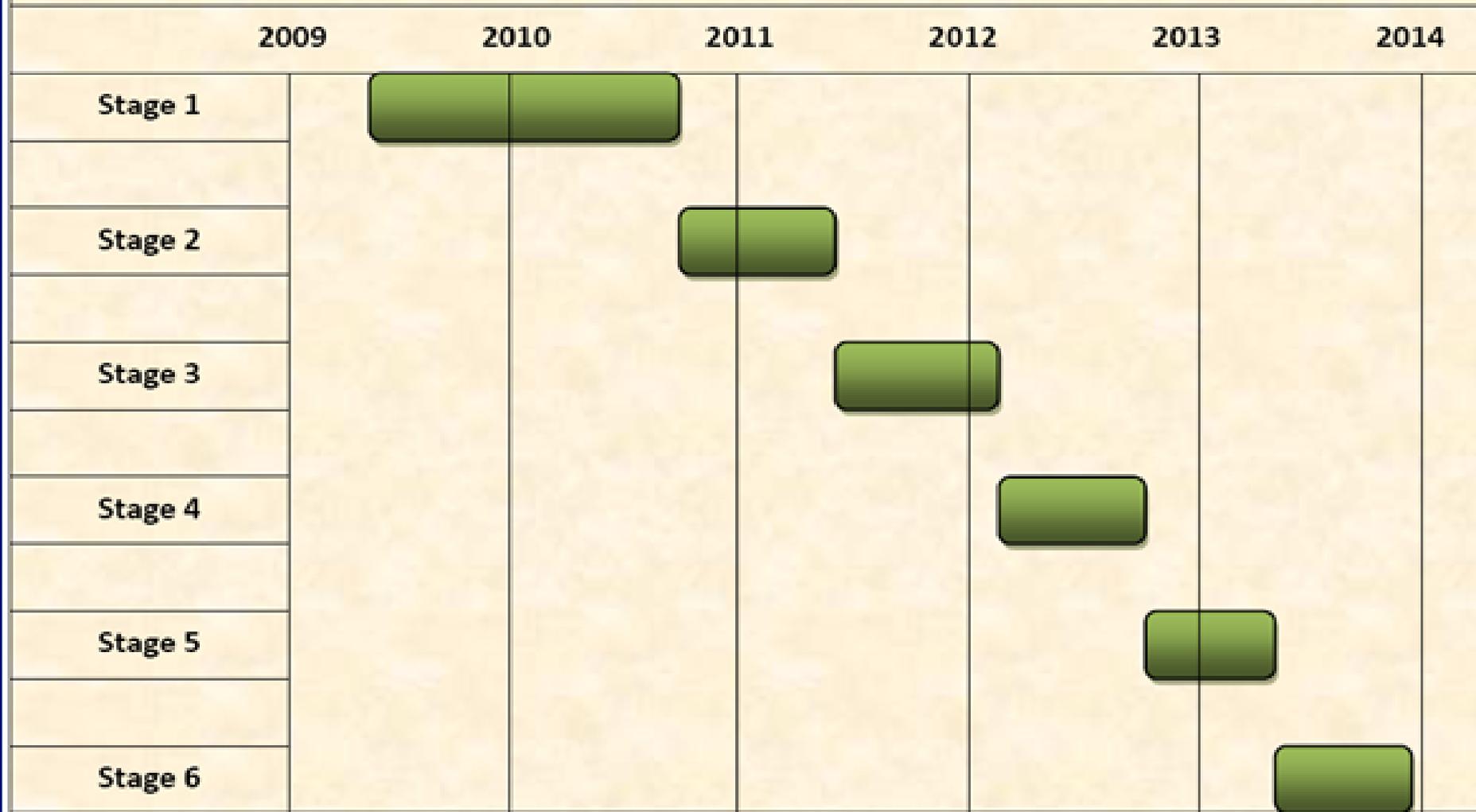
Bronx

- Work Zone
- Eastbound Traffic
- Westbound Traffic

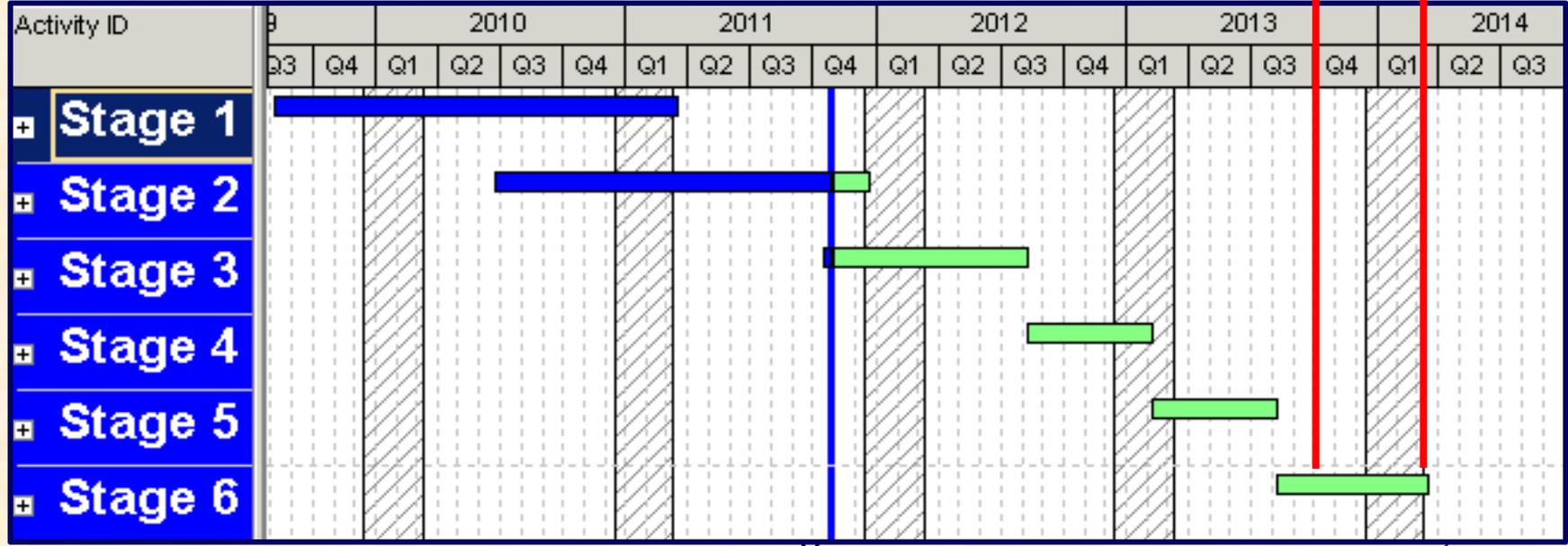
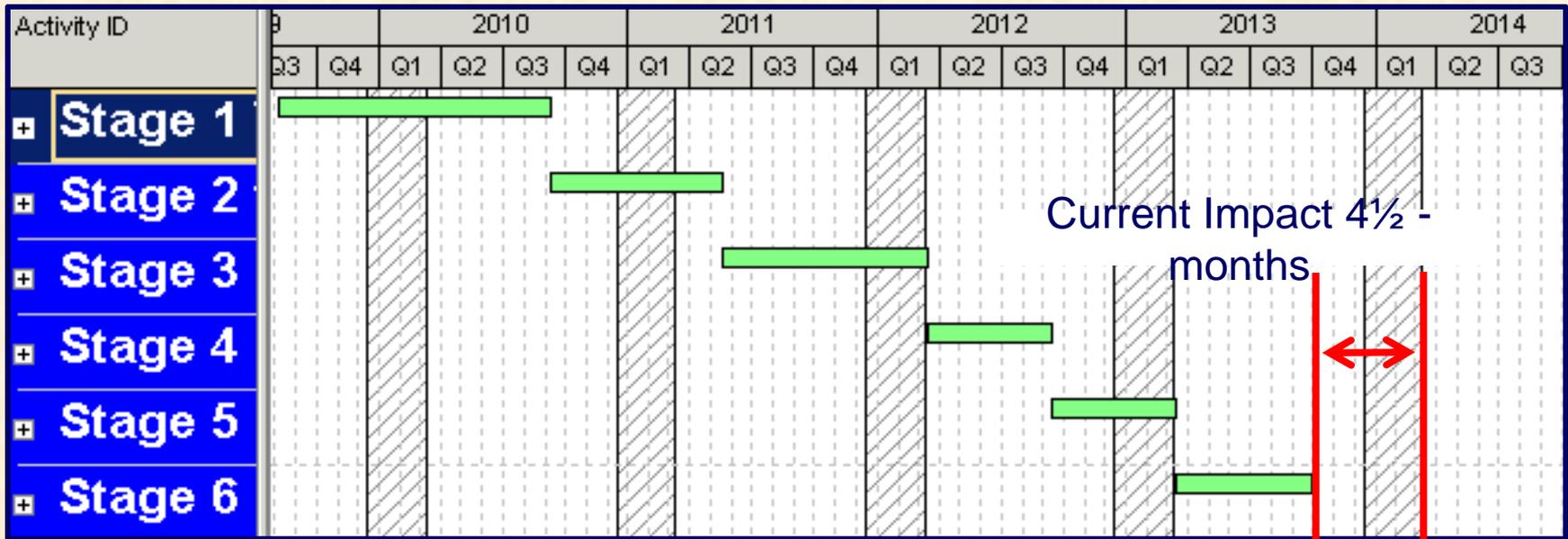
Stage V Alexander Hamilton Bridge Reconstruction (December 2012 - June 2013)

AHB - PRE-BID TIMELINE

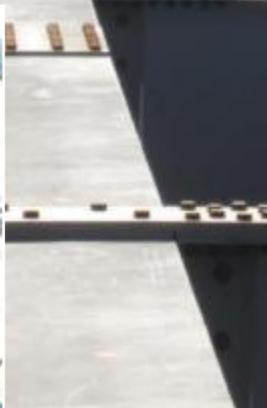
Staged Construction Timeline



AHB - CONTRACTOR BASELINE TIMELINE



ISSUE – FLOORBEAM DETERIORATION





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SCHEDULE ANALYSIS

- Goal – Maintain Integrity of the Schedule
 - Able to use schedule
 - Keeping schedule relevant
 - Tracking schedule impacts
 - Modeling mitigation
 - Modeling acceleration



2011 SCHEDULE STATUS

- **Update 22 – July 2, 2011 Data Date**
286- CCD behind schedule
- **Update 27- December 3, 2011 Data Date**
134- CCD behind schedule
Substantial Completion: February 14, 2014
- **Projections from arch floorbeam issue driving schedule**
 - **Schedule Plan**
 - Model impact in schedule immediately
 - Adjust frequently as more information comes available
 - Develop & model mitigation options
 - Make decisions

MITIGATION EFFORTS

- Split up Stage 2 – start Stage 3 early

- Original Logic

- Stage 2 Phase 1
- Stage 2 Phase 2
- Stage 2 Phase 3
- Stage 3

- New Logic

- Stage 2 Phase 1
- Stage 3 Early East & Stage 2 Phase 2
- Stage 2 Phase 3 - deferred
- Stage 3 Remainder

- Start Stage 6 west approach work early
- Speedy review of critical submittals
- Early opening of Temporary Bridge 7

ADDITIONAL MITIGATION EFFORTS

- Eliminate Stage 3 Phase 2
- Start Stage 4 early
- Acceleration program
- Used schedule to show how acceleration could mitigate impacts and move bridge decks for remaining stages into preferred construction season

IMPORTANT PROJECT AIDS

- Winter concrete specification and Bid Item
 - No winter calendars used on Bridge Deck concrete activities
 - Pay winter concrete with bid item
- Inspectors prepare electronic inspection reports
 - Each inspection report includes the schedule activity related to the operation
 - Inspectors choose schedule activity related to their operation
 - Scheduler can follow progress by reviewing inspection reports remotely

SCHEDULE SPECIFICATION

- P6 enterprise web based system
 - No import and export issues
- Weekly schedule updates
 - Maintain schedule
- Weekly schedule meetings
 - Constantly talk about schedule
- Monthly schedule submissions
 - Record all weekly data
 - Report on issues and impacts



BASELINE REVIEW PROCESS

- NTP – March 10, 2009
- Start field work – June 1, 2009
- First update – September 30, 2009

Schedule Name	Submission Date	Posted Date	Review Date	Review Assessment	Submittal Duration (CCD)	Review Duration (CCD)	
	Award Date	10-Mar-09					
BL1	Baseline 1	28-Apr-09	28-Apr-09	30-Apr-09	Immediate Rejection	49	2
BL2	Baseline 2	5-May-09	5-May-09	26-May-09	Revise and Resubmit	5	21
BL3	Baseline 3	12-Jul-09	13-Jul-09	22-Jul-09	Revise and Resubmit	47	9
BL4	Baseline 4	1-Sep-09	1-Sep-09	1-Sep-09	Revise and Resubmit	41	1
BL5	Baseline 5	2-Sep-09	2-Sep-09	10-Sep-09	Revise and Resubmit	1	8
BL6	Baseline 6	15-Sep-09	15-Sep-09	23-Sep-09	Revise and Resubmit	5	8
BL7	Baseline 7	25-Sep-09	28-Sep-09	2-Oct-09	Minor Correction	2	4
BL8	Baseline 8	2-Oct-09	2-Oct-09	5-Oct-09	Accepted as Noted	1	3
Totals					151	56	

BASELINE REVIEW PROCESS

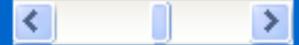
- NYSDOT Scheduler reviews plans and specifications so they understand project
 - Example – Missing detention basin in baseline
- Hard check of calendar non-workdays
- Hard check of schedule activities and logic



BASELINE REVIEW PROCESS

D260888 - AHB - Contractor 5 Day / 8 Hour Workweek

2010



January						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

March						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

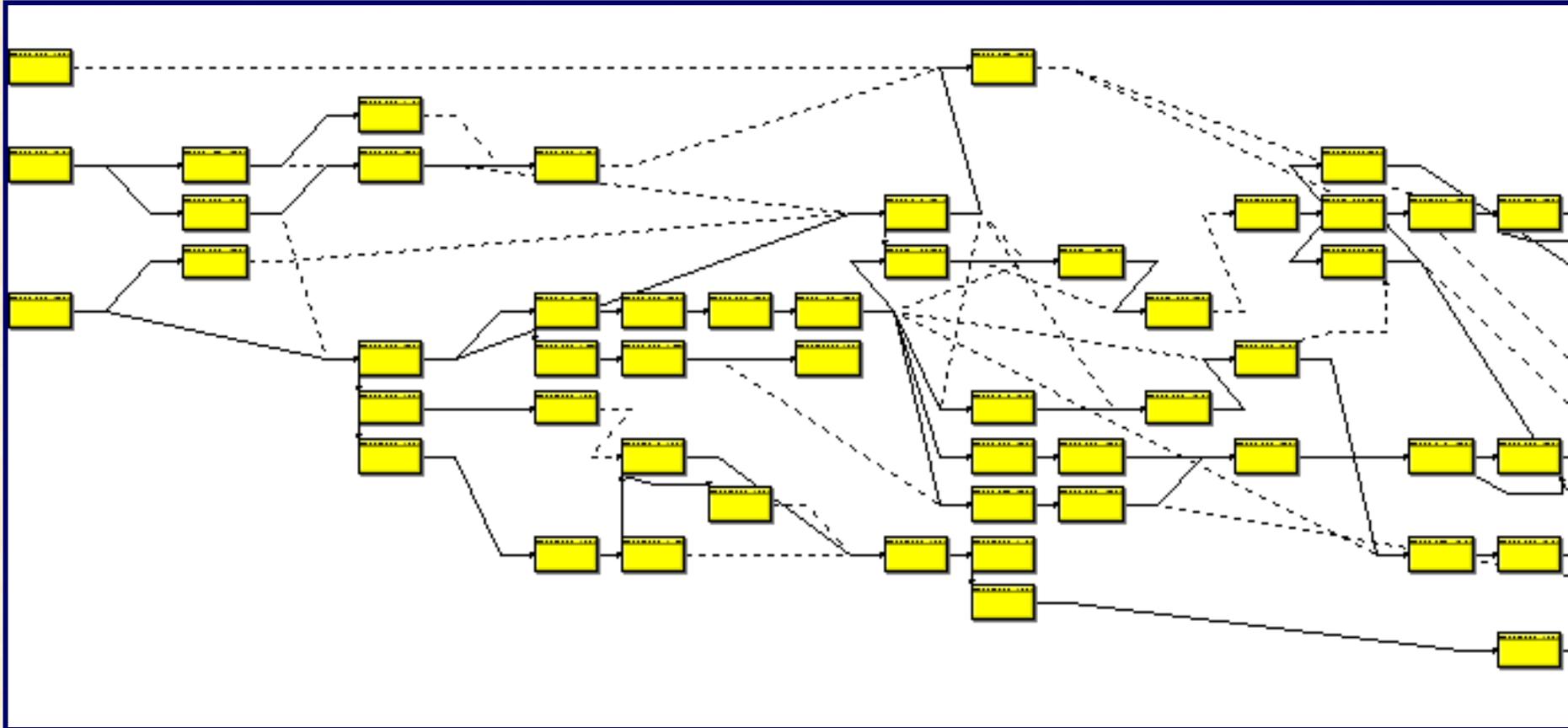
April						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

BASELINE REVIEW PROCESS

- Imperative that you review the schedule logic



WEEKLY UPDATE PROCESS

- Contractor uses schedule to get update status of activities
- Contractor sends update sheets to NYSDOT scheduler
- NYSDOT scheduler goes over update sheets with inspectors to verify progress
 - Discusses issues with inspectors
 - Discusses criticality of operations that inspectors are overseeing
- NYSDOT scheduler tours site to verify progress
 - Typically with a chief inspector, resident engineer or EIC
- NYSDOT scheduler records any issues with progress
 - Submits to contractor for discussion and correction at weekly schedule meeting

WEEKLY UPDATE PROCESS

- Contractor physically updates schedule with progress and prepares PDF prints for schedule meeting:
 - Weekly Update Critical Path
 - Weekly Update Look Ahead (3-4 months)
 - PDF of any proposed changes
- Also discuss additional changes that need to be made to schedule for monthly update

WEEKLY UPDATE SCHEDULE MEETING

- Status of schedule for the week
- Why did milestone dates move?
- Who is responsible?
- Key issues
 - Important submittals and how they are or can affect schedule
 - Construction issues and how they are or can affect schedule



WEEKLY UPDATE SCHEDULE MEETING

- Driving Critical Path activities
 - Do they make sense?
 - Are we working on them every day?
- Look ahead
 - Review low float or negative float activities
 - Why?
 - Can the schedule be adjusted to fix float?
- Review upcoming changes
 - Direct Contractor to adjust schedule based on changes
 - Allow Contractor to input changes – subject to review with monthly submission



WEEKLY UPDATE SCHEDULE MEETING

- Who attends?
 - NYSDOT Scheduler
 - Resident Engineer
 - Engineer in Charge
 - Area Supervisor
 - Submittal Coordinator
 - On-site Design Coordinator
 - Contractor's Scheduler
 - Contractor's Engineering Management



LESSONS LEARNED

- By-in by NYSDOT management is key
- Software Notebook function is excellent Tool
- Provide preliminary construction schedule to all Bidders or schedule/template to Contractor
- Minimum bid price for scheduling item
- Schedule Specification
- If you maintain the integrity of the schedule you can actually use it to manage the project



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Consultant Perspectives on Collaboration Benefits & State of the Practice





Learning Objectives

- Establishing the connection between scheduling and claims avoidance.
- The state of practice today as it relates to enterprise installations.
- A Consultant's perspective on the benefits of an enterprise installation.
- The Consultant's role in implementing enterprise applications.



Claims Avoidance

- Claims are essentially unresolved changes.
- Thus, to avoid a claim, we must reduce the number of changes.
- And, we must provide systems on the project to help us resolve disputes.



Claims Avoidance

- 99% of the claims we review have delay as a component; often the primary component.
- That means that delays are proving hard for the project team to prevent and tough to resolve.



The State of the Practice Regarding Enterprise Installations





The State of the Practice Regarding CPM

- Most state DOTs require CPM schedules on at least some of their projects.
- Many require CPM schedules on most of their projects.
- Many states are beginning to move from P3 to P6.
- Several states have implemented or are contemplating enterprise installations.



A Consultant's Perspective on NYSDOT's Enterprise





A Consultant's Perspective on NYSDOT

- Cutting edge enterprise installation of P6.
- Excellent infrastructure.
- Good practices in place regarding submission, review, and acceptance of schedules.
- Active management of schedules to address delays as they arise.



What are the Benefits?

There is no hard data as to benefits, but our observations are that:

- Schedule submissions are more timely
- They are better
- They are reviewed more quickly
- Problems are recognized more quickly
- We know of no claims on projects being scheduled in the NYSDOT enterprise.



A Note About Turnaround Times

We know of no major public owner that is able to routinely achieve 5-day schedule review turnaround times other than NYSDOT. This fast turnaround is possible for three reasons:

1. The Enterprise
2. The use of standard review forms in addition to the usual reports
3. The use of consultants to supplement NYSDOT staff when resources are stretched.



How Can a Consultant Help?

There is a lot of work associated with getting an enterprise system up and running. Here are some of the things we did to help NYSDOT:

1. Draft revised scheduling specifications
2. Draft schedule manuals
3. Provide training
4. Provide administrative support
5. Provide schedule reviews
6. Provide analytical assistance

Questions