

2015 NYSICA & NYPRIMA  
Internal Control & Risk Management  
Conference



## 2015 NYSICA & NYPRIMA Internal Control & Risk Management Conference May 21, 2015 Albany, NY

### Managing Risks for Large, Complex Projects

Daniel D'Angelo, P.E., PMP, PMI-RMP, PfMP  
Deputy Chief Engineer  
New York State Department of Transportation



2015  
Internal Control & Risk Management  
Conference

**Division of Construction Engineering and Management**

**BRIDGE ENGINEERING**  
*Distinguished*

**Transportation Research Board  
94th Annual Meeting**  
January 11–15, 2015 • Washington, D.C.

Beavers Headwaters

**Risk Management**

Daniel D'Angelo, P.E., PMP  
Deputy Chief Engineer  
New York State Department of Transportation

**Risk Management Session**

Daniel D'Angelo, P.E., PMP  
Deputy Chief Engineer  
New York State Department of Transportation

**TRB 2015 Annual Meeting**  
January 12, 2015  
Washington, D.C.

**Session 273 -  
Risk Management in Construction:  
You Cannot Ignore It!**

Daniel D'Angelo, P.E., PMP, PMI-RMP  
Deputy Chief Engineer  
New York State Department of Transportation



## Outline –

1. Project Background
2. Project Goals
3. Not a perfect world
4. Alignment = communication

3



## Risk Background –



BS Civil Engineering  
 MBA Organizational Leadership  
 PE, PMP, PMI-RMP, PfMP

International Scan Co-Chair – ERM  
 NYSDOT Capital Project Risk Manual  
 SHRP 2 R09 - RM Guide

4



## Risk Management Process

### ➤ PIER-C

Risk Responses	
<u>Threats</u>	<u>Opportunities</u>
Transfer	Share
Avoid	Exploit
Mitigate	Enhance
Accept (Actively or Passively)	

5



## Liaison Role



**Federal Highway Administration  
Supplement to the New York Division Office  
Stewardship/Oversight Agreement for the  
Oversight of the Tappan Zee Hudson River Crossing Project/The New NY  
Bridge Project**

This Project Specific Oversight Agreement serves as a supplement to the FHWA New York Division Office Stewardship / Oversight Agreement for Design and Construction (effective January 11, 2012) with the New York State Department of Transportation (NYSDOT). The roles and responsibilities, policies, procedures and standards found in the New York Division Office Stewardship / Oversight Agreement for design and construction will continue to apply to this project unless as modified in this document.

6



## 1. Project Background

7

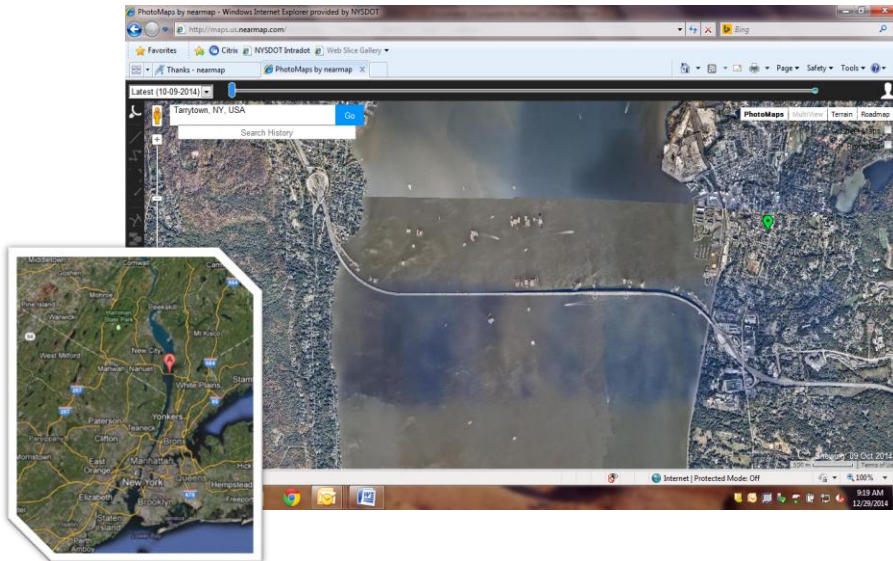


### Design-Build

- EIS, BV procurement – parallel
- \$3.9B
- 5-years (April 2018)
- 100-year Service Life Design, transit ready



2015  
Internal Control & Risk Management  
Conference



9



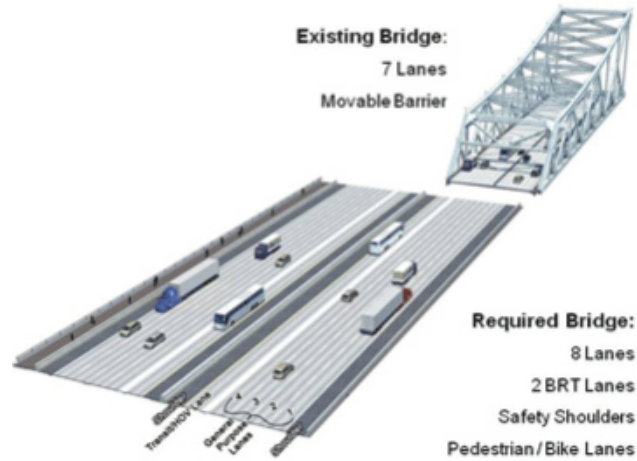
2015  
Internal Control & Risk Management  
Conference



10



2015  
Internal Control & Risk Management  
Conference



11



2015  
Internal Control & Risk Management  
Conference



12



2015  
*Internal Control & Risk Management  
Conference*

## RFP Risk Management Requirements

- “...key risks anticipated and the mitigation methods proposed that will result in a world-class project.”
- Initial PMP

13



2015  
*Internal Control & Risk Management  
Conference*

## Project Execution

- PMP, RMP
- Quarterly updates or if significant risk id'd

14



## 2. Project Goals

15



### Project Mission Statement:

“...to successfully execute the design and construction of THE NEW NY BRIDGE...”

16





2015  
Internal Control & Risk Management  
Conference

## Project Charter – common project goals

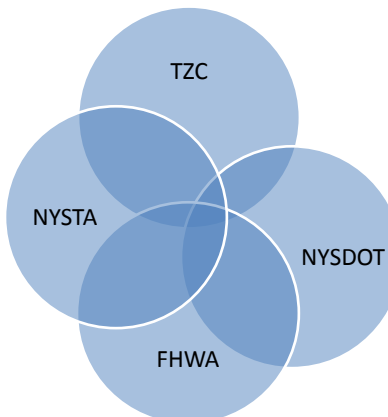
- outstanding safety record
- on schedule, within budget
- meet contract requirements
- high ethical standards
- stakeholder, community partnering
- proactive communication
- deliver on commitments
- quick resolution of issues
- rewarding work environment

17



2015  
Internal Control & Risk Management  
Conference

## Alignment ?



18



### 3. Not a perfect world

19





#### Owner risk definitions

- cost
- time - schedule
- quality
- reputation
- health & safety
- environment



20

 		2015 Internal Control & Risk Management Conference			
Impact	Insignificant 1	Minor 2	Moderate 3	Significant 4	Severe 5
Cost	< \$10 M	\$11 – 25 M	\$26 – 50 M	\$51 – 100 M	> \$100 M
Time	< 1 week	1 wk - 1 month	1 – 2 months	3 – 6 months	> 6 months
Quality	no risk	acceptable as-is, minor repairs	reject and re-work	significant effort to repair or replace	practically irreversible structural compromise and/or lack of final project acceptance
Reputation	no press coverage; no stakeholder reaction	press coverage is neutral; stakeholders' reaction is neutral	press coverage and stakeholder reaction is generally negative; local or regional coverage	majority of press coverage and stakeholder reaction is negative; local, regional or Statewide coverage	press coverage is negative; stakeholder reaction is negative; regional, Statewide or National coverage
Health & Safety	no injuries or illness	injury or occupational illness not resulting in a lost work day	injury or occupational illness resulting in one or more lost work day(s)	permanent partial disability, injuries or occupational illness that may result in hospitalization	could result in death, or permanent total disability
Environment	no environmental impact	minimal environmental impact	reversible moderate environmental impact	reversible significant environmental impact	irreversible significant environmental impact

21

 		2015 Internal Control & Risk Management Conference			
---	--	--	--	--	--

## TZC risk definitions

- price
- schedule
- meeting contract requirements
- liability
- insurance
- engineering



22



## TZC risk definitions

- all in terms of costs

< \$500k to > \$10 M



23



## NYSDOT risk definitions

- cost
- schedule
- quality
- reputation

24



2015  
Internal Control & Risk Management  
Conference

## FHWA risk definitions



- environment
- design
- construction
- civil rights
- funding
- procurement
- project management

25



2015  
Internal Control & Risk Management  
Conference

## Owner sample risks

- SLD
- D-B
- Oversight
- Batch-plant capacity
- Specialized equipment
- Contract changes



26



2015  
Internal Control & Risk Management  
Conference

## TZC sample risks

- Owner design oversight
- Utility coordination
- Steel, fuel, concrete/cement price escalation
- Pile installation
- Water work/weather
- DBE goal
- Permitting



27



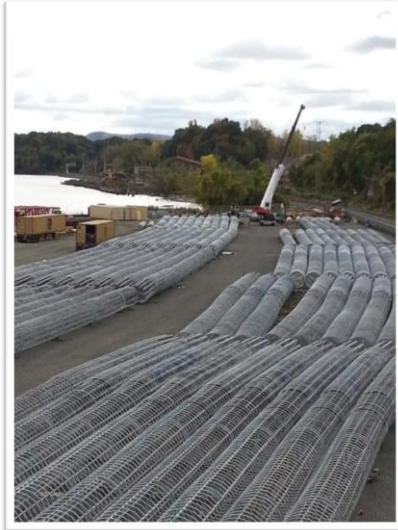
2015  
Internal Control & Risk Management  
Conference



28



2015  
Internal Control & Risk Management  
Conference



29



2015  
Internal Control & Risk Management  
Conference



30



2015  
Internal Control & Risk Management  
Conference



31



2015  
Internal Control & Risk Management  
Conference

## NYSDOT sample risks



- technical assistance
- timely assistance
- high cost
- program impact
- D-B direct request

32





2015  
Internal Control & Risk Management  
Conference

## FHWA sample risks



- environmental permit requirements
- schedule
- oversight staffing
- quality verification
- design

33



2015  
Internal Control & Risk Management  
Conference

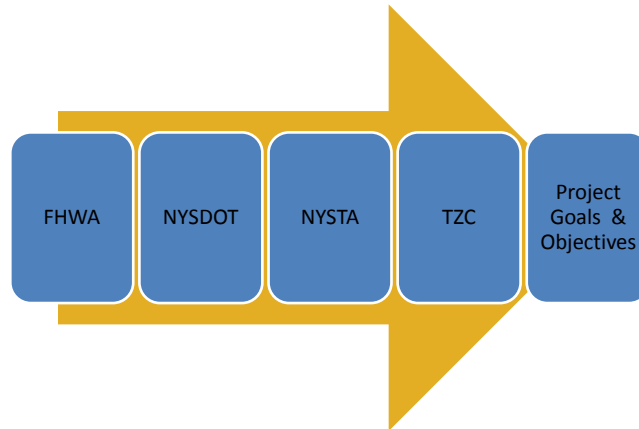
## 4. Alignment = Communication

34



2015  
Internal Control & Risk Management  
Conference

## Alignment, Alignment, Alignment



35



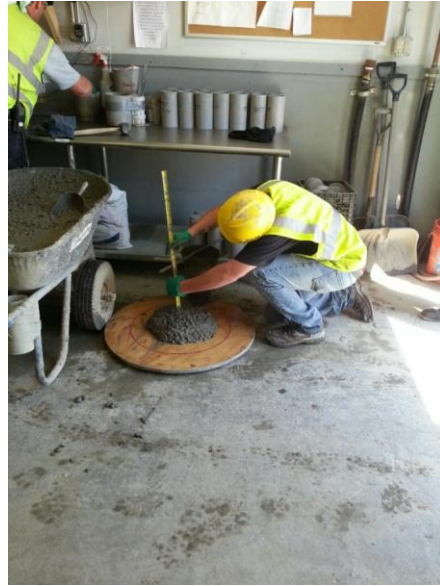
2015  
Internal Control & Risk Management  
Conference



36



2015  
Internal Control & Risk Management  
Conference



2015  
Internal Control & Risk Management  
Conference





2015  
Internal Control & Risk Management  
Conference



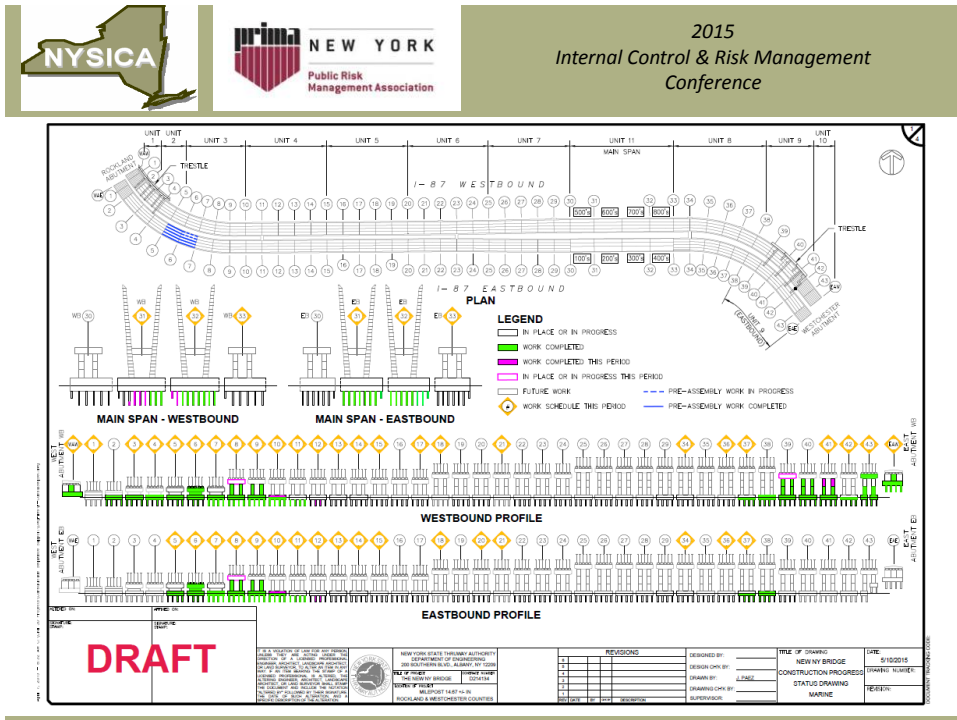
39



2015  
Internal Control & Risk Management  
Conference



40



## Summary

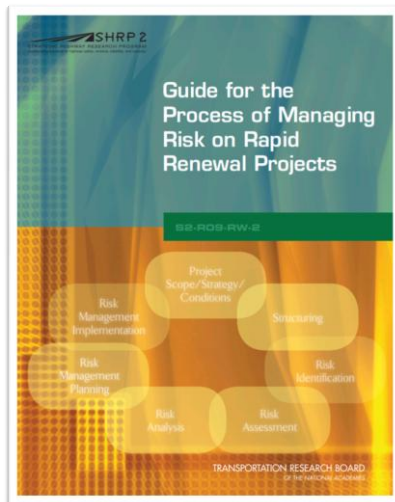
## Risk Management Strategies for Major Projects

### Key Take-aways

- #1** procurement/proposal vs. execution is different
- #2** different parties different goals
- #3** RM is a continuous effort - stuff happens
- #4** alignment, alignment, alignment



2015  
Internal Control & Risk Management  
Conference



## SHRP 2 – R09

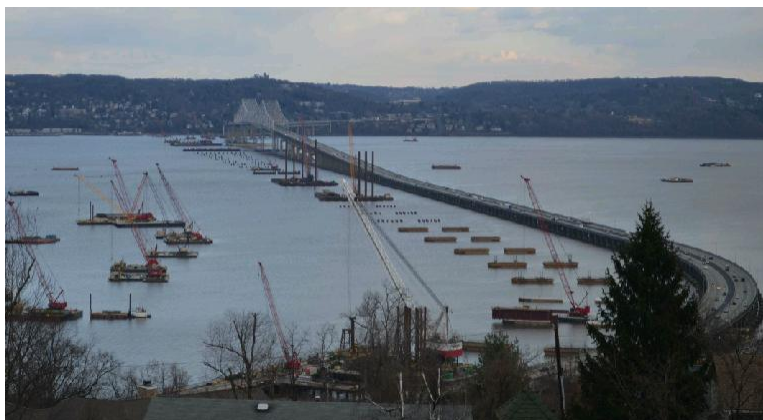
<http://www.trb.org/main/blurbs/168369.aspx>

or Google  
“SHRP 2 R09”

43



2015  
Internal Control & Risk Management  
Conference



December 31, 2014

44





2015  
Internal Control & Risk Management  
Conference

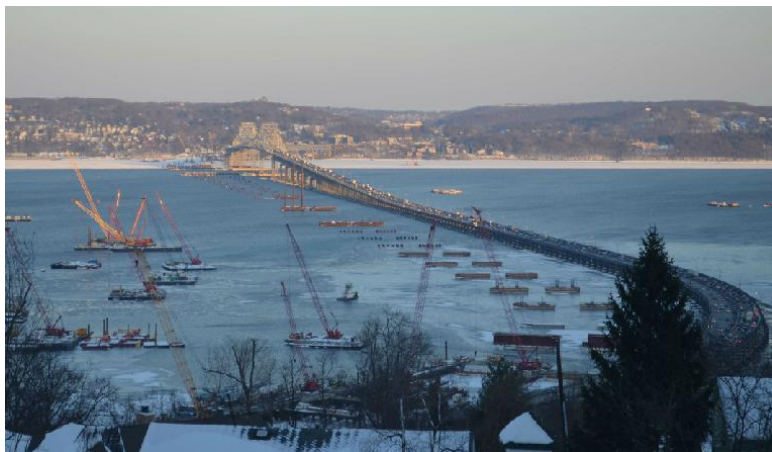


March 2, 2015

45



2015  
Internal Control & Risk Management  
Conference



March 2, 2015

46



2015  
*Internal Control & Risk Management  
Conference*

## Managing Risks for Large, Complex Projects

Daniel D'Angelo, P.E., PMP, PMI-RMP, PfMP  
Deputy Chief Engineer  
New York State Department of Transportation

[daniel.dangelo@dot.ny.gov](mailto:daniel.dangelo@dot.ny.gov)

O (518) 485-9288

C (518) 487-0007

