

(RISK 2498) LA Metro implements ProjectStatus for Collaborative Risk Tracking

By: Julie Owen, David Davies, Brian Criss

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QUESTIONS AND COMMENTS!



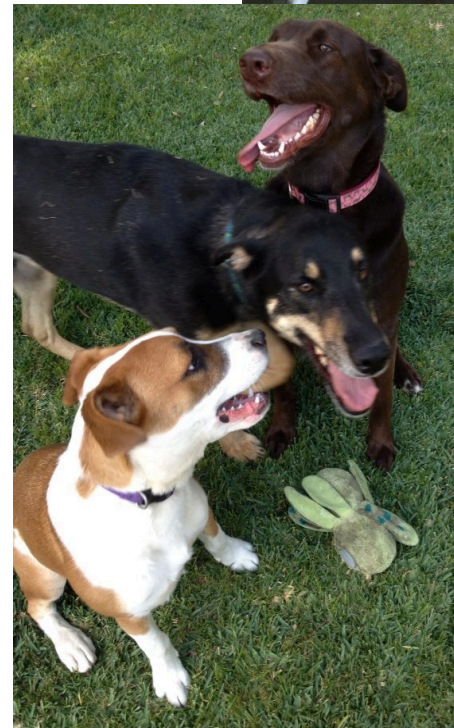
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- **LA Metro, DEO Program Control**
- **Degree and University:**
 - Texas A&M University
B.S Construction Mgmt
 - University of Redlands MBA
- **About me:**
 - Love Big Dogs
 - Scuba fan
 - Free! Off Board after 8 years!





- **Degree and University**
 - BS Technical Management, DeVry University (2015)
 - MS Business Continuity and Risk Management, Boston University (2018)
- **Years of Experience: 30+**
- **Professional Field:** Cost and Schedule Management, Risk and Claims Analysis
- **Something you don't know about me:**
 - Only one continent to go - Antarctica, but there are no trains there!!



- **Degree and University**

- **B.A., History**

- University of California, Los Angeles

- **M.A., Education**

- Azuza Pacific University



- **Years of Experience: 18**

- **Professional field: Project Controls**

- **Something you don't know about me:**

- **Played baseball for UCLA and coached many years at UCLA and Loyola Marymount University**



BACKGROUND: LOS ANGELES METROPOLITAN TRANSPORTATION AUTHORITY

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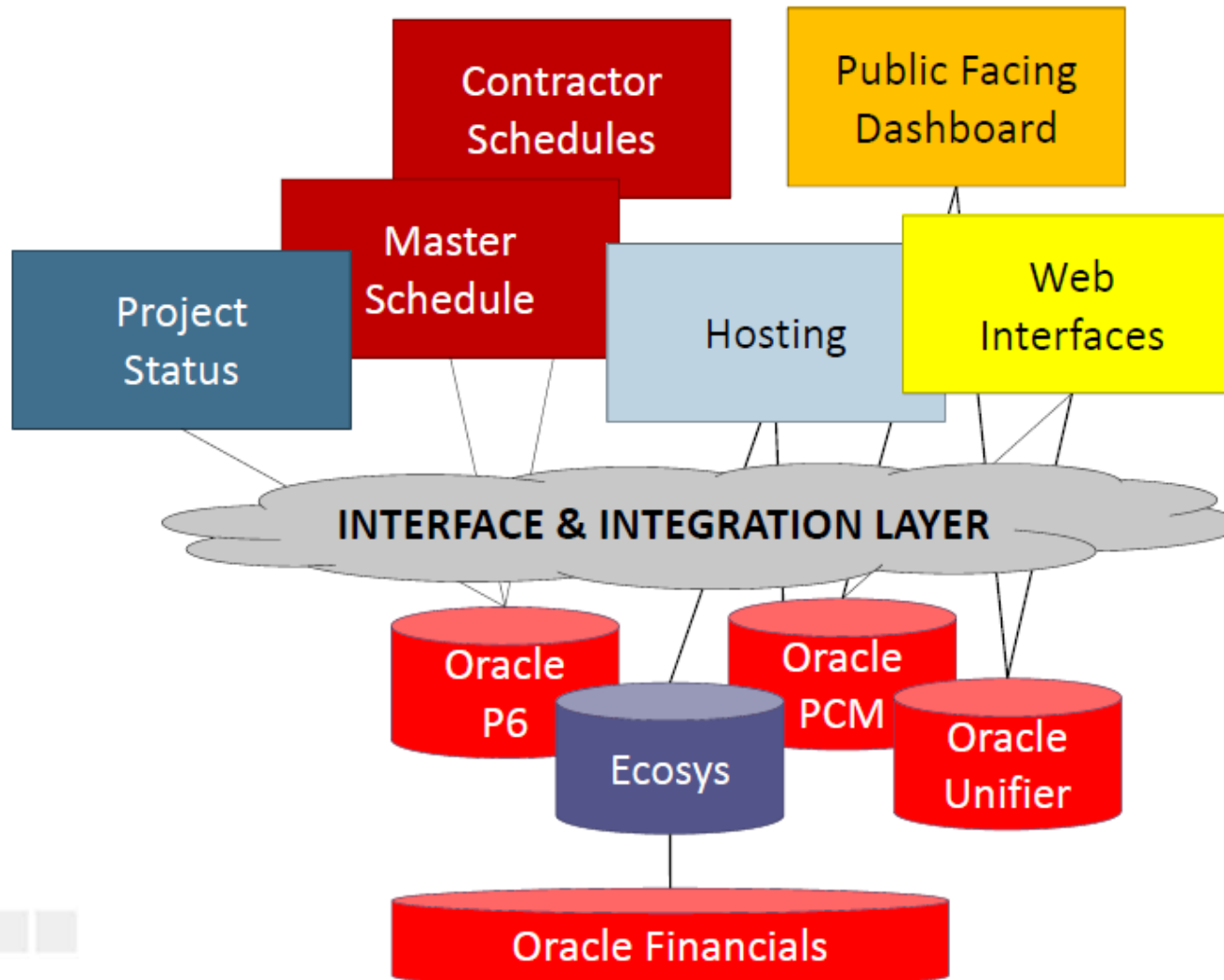


- 2nd largest public transportation system in US
- Most populous county in US at 10.4 million
- 88 incorporated cities
- Service area covers 1,433 mi²
- LACMTA transportation planner, designer, builder, operator
- Worst traffic delay in the US
annual delay per traveler
- Recent Transportation Investment ½ C Sales Tax
 - **Measure R (\$40B) – 2008**
 - **Measure M (\$120B) - 2016**





- Program Management Information System (PMIS)



RISK MANAGEMENT REQUIREMENTS FOR MAJOR TRANSIT PROJECTS WITH FEDERAL FUNDING

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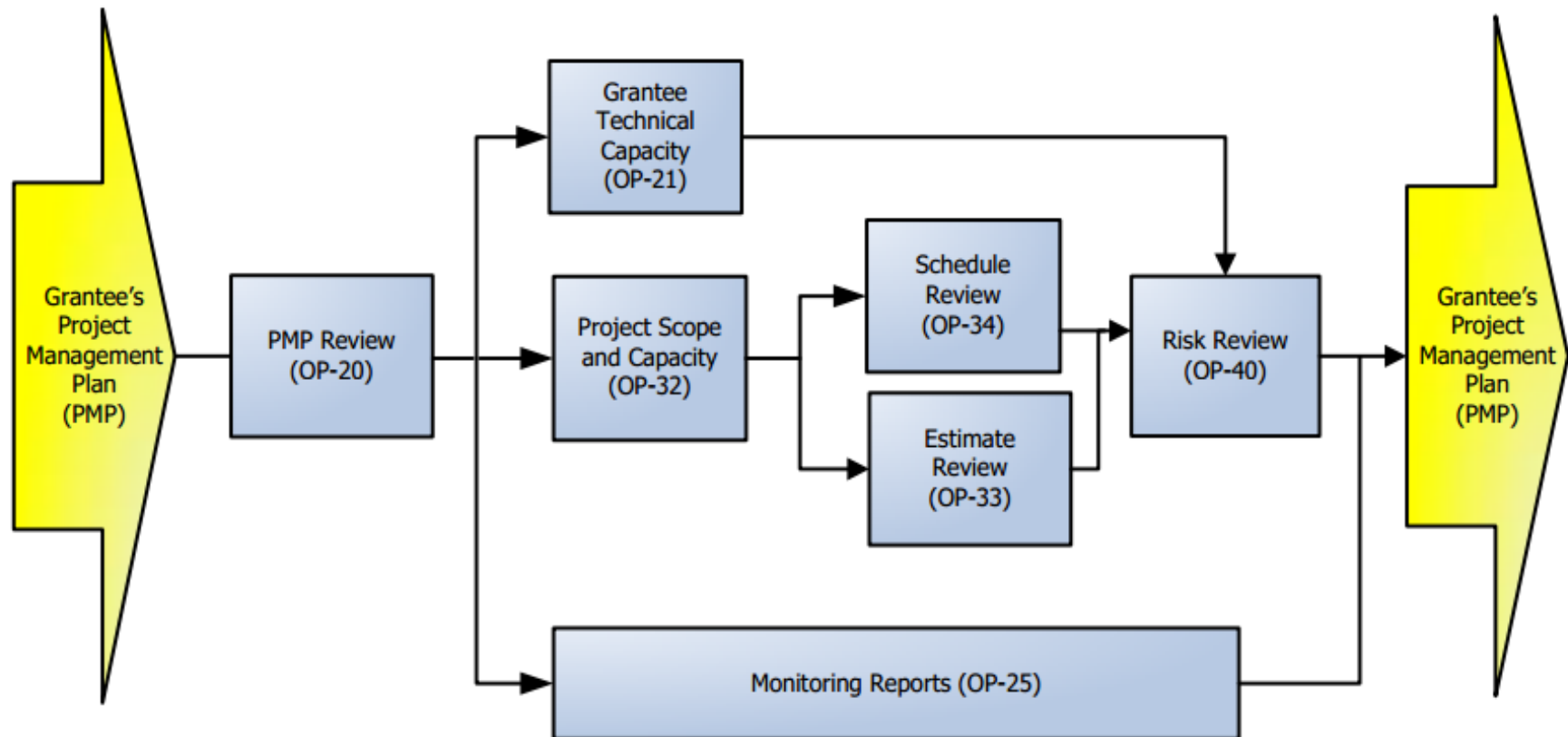


- US Federal Transportation Administration
 - **New Starts projects are defined as projects that are;**
 - **(a) projects with a capital cost of \$250m or greater, or**
 - **(b) seeking \$75m or more in funding**
- New Starts: \$250M - \$999M, Mega New Starts: >\$1bn
- Primary financial resource to support locally-planned, implemented, and operated transit "guideway" capital investments
- Oversight Procedure Governance and Project Management Oversight Contractor (PMOC) Review

Project Management Oversight



- This process is completed by the PMOC in stages

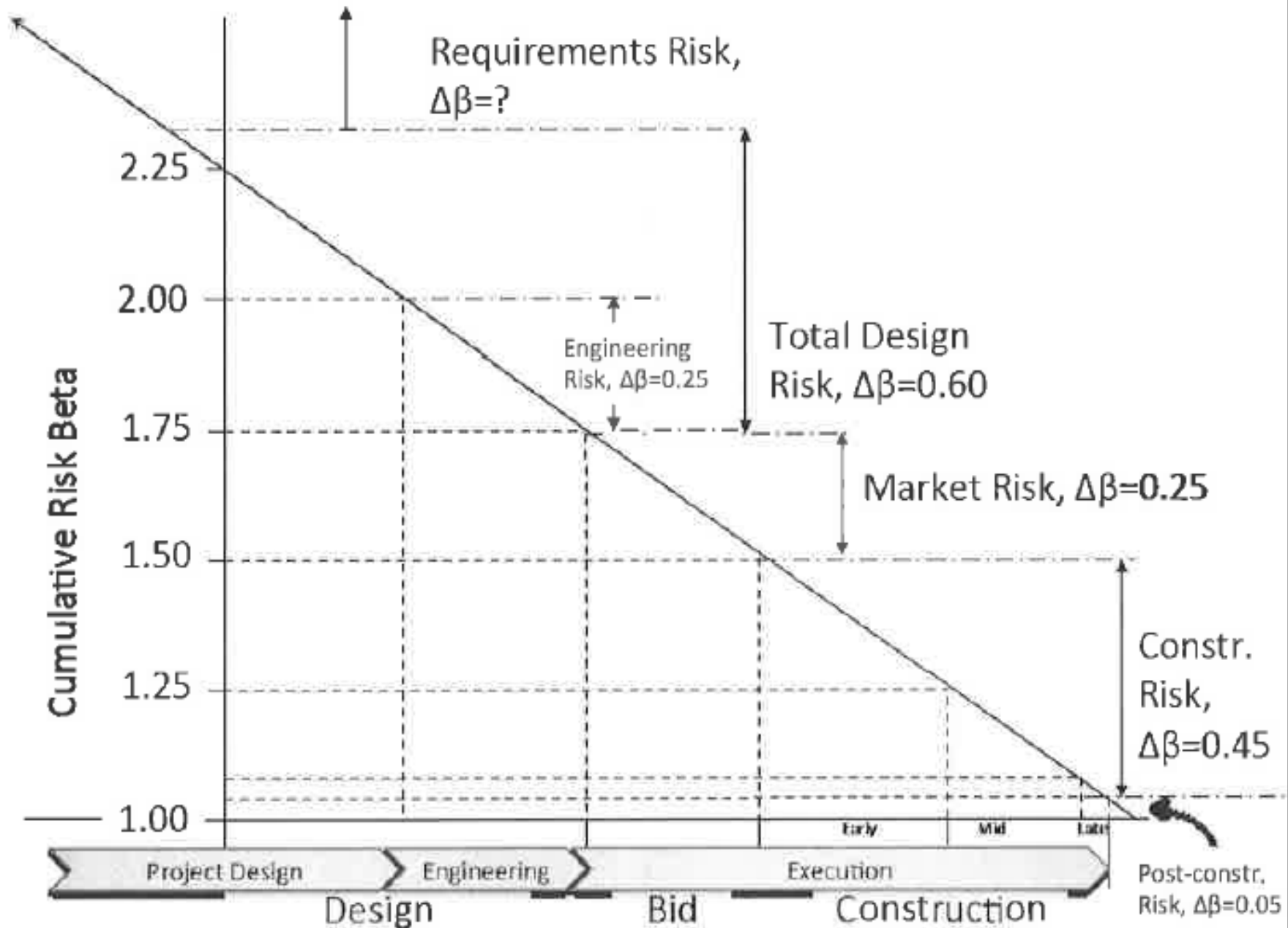




- Develop a Risk Register / Risk Workshop
- Categorize Risks:
 - **FTA Standard Cost Categories (SCC 1-100)**
 - **FTA Milestone: Lifecycle Stage Gates**
 - **Risk Type: Requirements, Design, Market, Construction**
- Assign Owners / Capture Mitigation Activities
- Proactive Risk Management / Risk Reduction
- Establish Risk Scoring Matrix

	Low (1)	Med (2)	High (3)	Very High (4)	Signifi cant (5)	Legend	
Probability	< 10%	10 - 50%	50 - 75%	75 - 90%	> 90%		Low (<= 3)
Cost Impact	< \$250K	\$250K - \$1M	\$ 1-3 M	\$ 3-10 M	> \$10 M		Medium(3 - 10)
Time Impact	< 1Mth	1-3 Mths	3-6 Mths	6-12 Mths	> 12 Mths		High (>=10)

Cost Risk Assessment

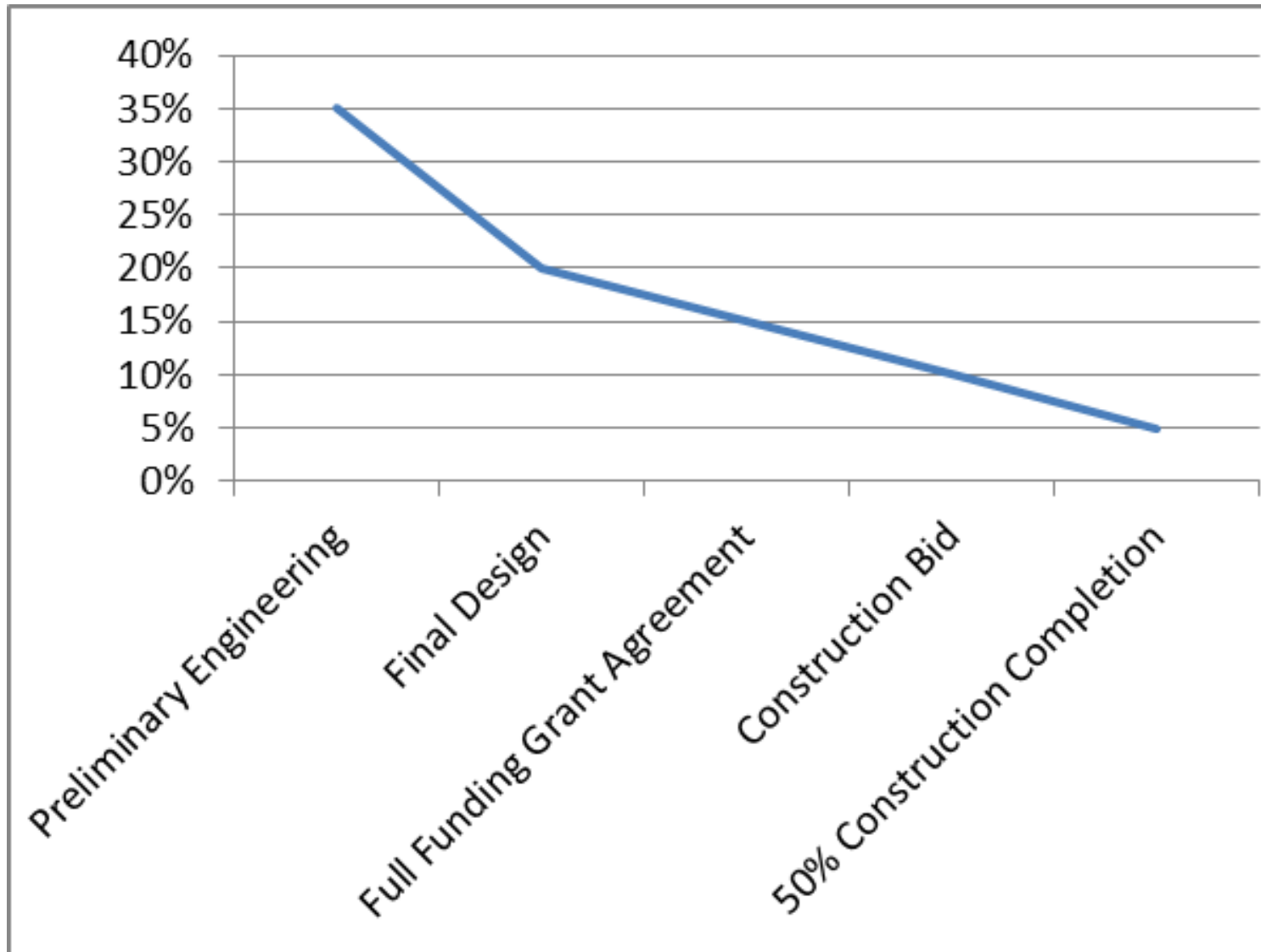


Contingency Requirements



FTA Oversight technical, cost, schedule risks

- Lifecycle gate review compliance



**Required cost contingency levels

PLUS

Schedule contingency as 20% of the project duration from final design to revenue service



- Risk Review by Lifecycle Phase
- Scope / Cost / Schedule / Contract Risk Review
- Risk Register Identifies Areas of Concern
- Grantee Modeling, Contingency Analyses and Independent FTA PMOC Review
- Contingency Management / Drawdown Control Curves
- Management tools that work;
 - **Risk and Contingency Management Plan (RCMP)**
 - **Awareness at all Project Organizational Levels**



- Background:
 - **Inspector General Construction Best Practice Audit:**
 - **Ingrain Risk Management into Project Delivery Culture**
 - **Implement Project Readiness Review Across Lifecycle**
 - **Employ Scaled Risk Management on All Projects**
 - **Enforce Risk Procedures to Manage Contingencies**
 - **Perform Overview of risk tracking practices prior to the implementation of the PMIS solution**
- Opportunity:
 - **Establish Uniform Risk Management Policy and Procedure**
 - **Implement Web-Based Centralized Risk Tracking**
 - **Manage Programmatic Risk and Apply Strategies**

PROJECTSTATUS

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ProjectStatus

- Develop application that integrates with P6
- Users authenticate to P6 via Web Services
- Security via OBS for access to projects
- Project Level security profiles all for edit or view of risk data



1. Coordinate with PB SME's to review current information and the requirements for risk tracking
2. Strategically map information to appropriate fields within P6
 - **Some native, some augmented with UDF's**
3. Develop import scripts to transfer data from MS Access to Primavera P6



Solution Requirements

1. Risk Register Snapshots

- Ability to take point in time snapshots of a project risk register for comparative analysis
- Provide additional security so that only administrators can perform this function

2. Drop down lists for UDF


- Users desired the ability to work with P6 UDF as dictionaries (similar to codes)

3. Review Comments / Justification

- Automatically move text Current, to Last, to History



- ✓ Risk Register Filters
- ✓ Reports available for download in pdf, excel, or csv file types
- ✓ Wizard styled data entry screens



Changed Risk Mitigation Plan

Purple Line Extension Section 2
Comparing Feb 2016 with Jan 2017

General Information		Previous	Current
Risk ID	290.2		
FTA Milestone	20% Constr	Risk Score: 5	Risk Score: 3
FTA Date		Risk Owner: Metro	
Risk Description	Handling and disposing of hazmat and contaminated materials at surface as well as underground contamination will increase cost and has potential for construction delays.		




Example Risk Register using Filters

ID	Description	SCC Code	Type	Risk Owner Group	FTA Milestone	Status	Score	Actions
20	Discovery	20	Construction Risk	RCC / Metro	50% Constr	Active	1 ■	Delete Edit
220	Contamin...	40	Construction Risk	Metro	50% Constr	Active	1 ■	Delete Edit
225	Inadequa...	10	Construction Risk	Metro	50% Constr	Active	10 ■	Delete Edit
236	As environmental issues are likely to be present during t...	10	Construction Risk	Metro	50% Constr	Active	1 ■	Delete Edit
248	Project may impact the Little Tokyo community beyond anti...	80	Construction Risk	Metro	50% Constr	Active	3 ■	Delete Edit
306	Discovery of historic artifacts during station box and cu...	20	Construction Risk	Metro	50% Constr	Active	2 ■	Delete Edit



Sample Risk Register Report grouped by SCC



Score	Low (1)	Med (2)	High (3)	Very High (4)	Significant (5)	Risk Score P*(C+T)/2
Probability (P)	< 10%	10-50%	50-70%	75-90%	> 90%	>= 10
Cost Impact (C)	< \$250K	\$250K - \$1M	\$1 - 3M	\$3 - 10M	> \$10M	3 - 10
Time Impact (T)	< 1 Mth	1 - 3 Mths	3 - 6 Mths	6 - 12 Mths	> 12 Mths	<= 3

Risk Register by SCC

Regional Connector Transit Corridor
Risk Register Version: Dec 2016

Identification				Assessment				Management					Most Recent Comments		
Risk ID	Risk Description	Risk Type	FTA Milestone	Date Assessed	Cost	Time	Prob	Risk Score	Risk Owner	Mngt Strategy	Action Items	Action By	Due Date	Action Status	Latest Review Comments
SCC 10 GUIDEWAY & TRACK ELEMENTS															
A Total of 9 Risks															
213	Law suits at Flower Street may delay the Project and increase costs.	C	20% Constr	12/09/2015	4	3	5	18	Rajni Patel	Mitigate	1. Strict compliance of MMRP requirements. 2. Review of RCC plans and activities. 3. Outreach to stakeholders. 4. Meeting weekly with Bonaventure to share work plans and discuss concerns/requests. 5. Interface with other Flower Street stakeholders to discuss on-going plans and issues.	1. RCC 2. Rajni Patel 3. Olga Arroyo 4. Rajni Patel 5. Rajni Patel		1. In Progress 2. In Progress 3. In Progress 4. In Progress 5. In Progress	10/14/2015 - SEIS has not yet been published - estimated for end of Dec 2015. 12/09/2015 - Risk score adjustment P 2-1. SEIS will be published on Federal Register 12/28. Metro prevailed on CEQA. There will probably be a 30 day moratorium on piling installation. [Update 1/13/2016 - injunction still in place]
225	Inadequate or incomplete system integration and testing efforts may precipitate delayed Revenue Service Date.	C	50% Constr	1/13/2016	3	2	4	10	Bert Langer	Mitigate	1. Organize Tiger Team comprised of Metro and RCC to plan systems installation, testing and acceptance. Identify interfaces with live facilities to plan track allocation, access facilities, systems equipment upgrade / replacement, ROC communication, etc. 2. Set up provisions of Tiger Team and work with Metro to identify them. 3. Revise organization chart and staffing plans. 4. Create access database to track systems/MEP issues. 5. Ongoing monthly meetings	1. Bert Langer 2. Bert Langer 3. Bert Langer 4. Bert Langer 5. Bert Langer	1. 12/31/2016 2. 08/10/2016 3. 08/10/2016 4. 07/05/2016	1. Complete 2. Complete 3. Complete 4. Complete 5. In Progress	9/9/2015 - Ongoing construction risk that must be coordinated with Metro Operations. 1/13/2016 - Risk score adjusted P 3-2. Working on coordination for Shoofly now.
304	Unknown obstructions may be encountered during station or cut/cover guideway excavation, or Support of Excavation installation; delays may ensue.	C	20% Constr		2	2	3	6	Pat Jolly	Accept	1. Study and monitoring on-going	1. RE Teams		1. In Progress	6/8/2016: Risk score adjusted P 5-3. Risk will continue until reaching inverts at all locations. Risk is getting less and less as excavation continues down to the invert. Biggest concern is utilities (and we know a lot



Risk Overview and Management

1 Risk Overview & Management 2 Assessment 3 Actions 4 Comments

General Information & Details

* Risk ID	FTA Milestone	Location		
<input type="text" value="Risk ID"/>	*R-001*	<input type="text" value="Select FTA Milestone"/>	<input type="text" value="Select Locations"/>	
* Type	* Status	* SCC L1	SCC L2	
<input type="text" value="Select risk type:"/>	<input type="text" value="Proposed"/>	<input type="text" value="Select SCC L1"/>	<input type="text" value="Select SCC Codes"/>	

Current Management

Risk Owner	Mitigation Strategy	Risk Reconciliation Date	Ongoing?	Program Level Risk
<input type="text" value="Select a Risk Owner Group"/> <input type="text" value="Select a Risk Owner"/>	<input type="text" value="Select a Mitigation Strategy"/>	<input type="text" value="Reconciliation Date"/>	<input type="checkbox"/>	<input type="checkbox"/>

Description

Current	Original
<input type="text" value=""/> B I U 14 A <input type="text" value=""/> <input type="text" value=""/>	<input type="text" value=""/>



Risk Assessment / Scoring

1 Risk Overview & Management 2 **Assessment** 3 Actions 4 Comments

Contingency Management

Dollar Impact to Project	Project Contingency Set-aside	Schedule Impact to Project in Working Days	Project Schedule Contingency in Working Days
<input type="text" value="0"/> *39000*	<input type="text" value="0"/> *50000*	<input type="text" value="Schedule Impact"/> *40*	<input type="text" value="Schedule Contingency"/> *90*

Quantitative Assessment

Dollar Impact	Schedule Impact
Minimum	Minimum
<input type="text" value="0"/>	<input type="text" value="Minimum Schedule Impact"/>
Most Likely	Most Likely
<input type="text" value="0"/>	<input type="text" value="Most Likely Schedule Impact"/>
Maximum	Maximum
<input type="text" value="0"/>	<input type="text" value="Maximum Schedule Impact"/>

Qualitative Assessment

Scores

Cost Impact

▼

Schedule Impact

▼

Probability

▼



Mitigation Action Plan including Owners and Due Date

1 Risk Overview & Management 2 Assessment 3 **Actions** 4 Comments

Actions

	Action Name	Action By	Action Status	Due Date
1	<input type="text"/> <i>0 of 255</i>	Select a Risk Owner ▼	Select a status ▼	Due Date
2	<input type="text"/> <i>0 of 255</i>	Select a Risk Owner ▼	Select a status ▼	Due Date
3	<input type="text"/> <i>0 of 255</i>	Select a Risk Owner ▼	Select a status ▼	Due Date
4	<input type="text"/> <i>0 of 255</i>	Select a Risk Owner ▼	Select a status ▼	Due Date
5	<input type="text"/> <i>0 of 255</i>	Select a Risk Owner ▼	Select a status ▼	Due Date

Cancel **Submit** Back **Next**



Comments (Justification for Change / Review Comments)

1 Risk Overview & Management 2 Assessment 3 Actions 4 **Comments**

Comments & Justifications

Justifications for Change

Current	Last	History
<p>New Justification</p> <p>B I U 14 A [List Icons] [Text Icon] [Link Icon] [Help Icon]</p> <p>0 of 255</p>		

Review Comments

Current	Last	History
<p>New Comments</p> <p>B I U 14 A [List Icons] [Text Icon] [Link Icon] [Help Icon]</p> <p>0 of 255</p>		

ProjectStatus –Risk Display



Assessment		
Scores		
Current	6	
Original	2	
Dollar Impact		
Minimum	Current	Original
	\$100.00	\$100.00
Most Likely	Current	Original
	\$250.00	\$250.00
Maximum	Current	Original
	\$400.00	\$400.00
Schedule Impact		
Minimum	Current	Original
	0	0
Most Likely	Current	Original
	0.25	0.25
Maximum	Current	Original
	0.5	0.5
Justifications for Change		
Current	11/30/2016: Time score changed from 1-2 during PMOC/FTA Risk Refresh.	
Last	6/8/2016: Risk score adjusted P 5-3. Risk will continue until reaching inverts at all locations. Risk is getting less and less as excavation continues down to the invert. Biggest concern is utilities (and we know a lot about utilities).	
History	5/26/2016: New risk split from Risk 194 to cover station boxes risk. Flower piling impacted by tie-backs. RCC, in coordination with Antonelli/Pendse/Patel for their respective areas.	
Review Comments		
Current	1/11/2017: Excavation ongoing at Broadway and Flower. Hope excavation is close to invert. Only other excavation is 1st St leg.	
Last	11/30/2016: Time score changed from 1-2 during PMOC/FTA Risk Refresh.	
History	5/26/2016: New risk split from Risk 194 to cover station boxes risk. Flower piling impacted by tie-backs. RCC, in coordination with Antonelli/Pendse/Patel for their respective areas. 6/8/2016: Risk score adjusted P 5-3. Risk will continue until reaching inverts at all locations. Risk is getting less and less as excavation continues down to the invert. Biggest concern is utilities (and we know a lot about utilities). 8/31/2016: 2nd/Broadway and Flower Street are still issues; risk remains. 10/11/2016: 1st/Central risk has gone away and excavation at 2nd/Hope is nearly complete (excavated 75 of 110 ft) with no obstruction issues.	

ProjectStatus – Risk Snapshots



Display previous versions of a project Risk Register including the ability to filter and sort by risk attributes

☆ Regional Connector Transit Corridor

Risks Risk Register

Risk ID Filter by Risk ID Type Filter by Risk Type Status Active

FTA Milestone Filter by FTA Milestone Score High Register Dates Select Register Dates Apply Clear

Issue Date	ID	SCC Code	Type	FTA Milestone	Score
⊕ Dec 2016					
⊕ Nov 2016					
⊖ Oct 2016					
	213	10	Construction Risk	20% Constr	18
	296	20	Construction Risk	20% Constr	20
	307	90	Design Risk	20% Constr	10
	313	40	Construction Risk	20% Constr	15
⊕ Sep 2016					
⊕ Jul 2016					
⊕ Jan 2016					
⊕ Dec 2015					

Scores
Cost Impact Very High
Schedule Impact High
Probability Significant

BENEFITS / NEXT STEPS

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- **Employ Standardized Risk Tracking Process**
- **Facilitate Centralized Risk Tracking Database**
- **Increase Awareness, Collaboration, Transparency**
- **Encourage Programmatic Risk Management**
- **Promote Risk Management Culture**
- **Next Steps**
 - **Deploy Risk Tracking All Transportation Modes**
 - **Develop Risk Process for All Capital Projects**
 - **Support Continuous Improvement**

QUESTIONS/COMMENTS? (PLEASE USE MICROPHONE)



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