SFMTA

San Francisco Municipal Transportation Agency

Improving Project Delivery

San Francisco County Transportation Authority
April 13, 2021

Introduction

When the SFMTA struggles to deliver key agency construction projects on time and on budget, it impacts our ability to provide reliable service for our riders and safety to all street users.

- Knowing this, SFMTA has had a **focused effort on improving project delivery** since and internal assessment 2016.
- The assessment led to the development of the 2016 Project Delivery Framework, a project delivery maturity model and the establishment of the SFMTA's Project Management Office (PMO) in 2017.
- Many of the findings of the recent Controller's Audit confirm prior internal findings and some of the actions the SFMTA has already taken.
- Since the PMO's establishment, several the Project Delivery Framework recommendations have been implemented and reforms introduced.
- The goal is to have an **organizational mindset that focuses on investing in the workforce and constant improvement through lessons learned**.
- These **lessons learned have led to recent project successes** in small project delivery, mid-size project delivery and large project delivery including the Vision Zero Quick Build Program/Projects, the Subway Task Force Projects and the Potrero Modernization Project.

2016 Project Delivery Framework

A key objective and action in the SFMTA strategic plan is to implement constant improvements to the project delivery process.

- In 2016, an internal assessment of all of the project delivery arms of the SFMTA was completed including: infrastructure, street, technology, facility and fleet procurement projects.
- Findings from this assessment led to the development of the 2016 Project Delivery Framework, a plan for investment in our project delivery professionals and constant improvement through lessons learned.

February 2016

August 2016

The Agency's transition to an organization that delivers complete curb-to-curb improvements requires various project delivery disciplines to work in concert.

This matrixed delivery organization requires a clear and consistent management structure, effective tools and processes and a governance structure so problems can be resolved, and critical path decisions made. Weaknesses in these areas can lead to project delays, cost increases or project objectives not being achieved.

August 2016

Project Management Office

One of the recommendations of the framework was that the Agency establish a Project Management Office (PMO) to oversee implementation of improvements.

- The PMO includes participants from all delivery arms of the SFMTA.
- Changes in procedure are considered agency-wide and consider best practices in project delivery implementation.
- General Notices set the standards by which all project delivery professionals should ensure adherence to scope, schedule and budget and successful project delivery.

April 2017

Project Delivery Framework Implementation

#	Recommendation	Status (as of 3/18/21)
1	Fully implement PDIG Project Delivery Playbook Agency-wide.	In-Process
2	Clearly define and implement the role of Capital Program Manager (CPM) within the SFMTA.	Complete
3	Develop a Project Pipeline Analysis at the Portfolio Level and review with the DOT/Executive Team regularly (recommend quarterly).	In-Process
4	Develop a Project Delivery Staffing Resource Plan and update it regularly (recommend quarterly).	Complete
5	Continue expansion of CPCS to fully integrate Transit Division Projects, and FIT/IT Projects.	Complete
6	Develop an agreed upon standard for data entry in the Capital Project Controls System (CPCS) and implement Agency-wide.	Complete
7	Develop and formalize Project Management Training Program within the SFMTA.	Complete
8	Develop an Apprenticeship program to prepare staff for next level project management roles.	Not Initiated
9	Discuss impacts at project, program and portfolio levels at the Transportation Capital Committee (TCC); add impact to program and SFMTA portfolio as part of recommendations to TCC.	In-Process
10	Develop guidelines and thresholds to guide decisions at the Capital Program and Agency Portfolio levels – i.e. Strategic Plan Impacts, Operational Impacts, Staffing Resources, Divisional Impacts, etc.	In-Process
11	Develop a Communications Plan and process for procedural changes within the Agency.	Complete
12	Establish PDIG Steering Committee as Project Management Oversight Committee/Project Management Office (PMO).	Complete
13	Establish metrics (KPIs) to evaluate SFMTA Project Delivery at the program and portfolio levels.	Complete
14	Conduct an assessment regularly of conformance with the Framework and maturity levels.	In-Process

PMO General Notices Adopted

#	General Notice(s)	Effective Date
2016-001	Management of Project Schedules	December 20, 2016
2017-001	Capital Program Managers	May 15, 2017
2017-002	Management of Project Contingencies	May 15, 2017
2017-003	Programmatic and Early Project Management	August 31, 2017
2017-004	Standardized Data and Automated Reporting	September 4, 2017
2018-001	Interdepartmental Service Agreements	February 5, 2018
2018-002	Construction Mitigation	February 5, 2018
2018-003	Project Cost Estimate Development	October 1, 2018
2019-001	Public Outreach and Notification Requirements	January 1, 2019

PMO *Rolling 6-Month Plan* through May 2021

ID	Initiative
1	Develop/implement project closeout process/workflow
2	Establish metrics to evaluate project delivery at program and portfolio levels
3	Implement contractor reviews per Controller requirement
4	Develop tool to be added to standard cost template for cashflow development
5	Implement Agencywide project delivery playbook
6	Develop project pipeline analysis at the portfolio level
7	Develop guidelines/restrictions to guide decisions at capital program and agency portfolio levels
8	Project delivery resource management
9	Implement TCC member onboarding and annual training
10	Conduct an assessment of conformance with framework and maturity levels
11	Issue PMO general notice of force account planning and joint-BART Projects

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August 2016

Project Delivery Process – *The Playbook*

A core recommendation of the Project Delivery Framework was to map out standards for the project delivery process.

- SFMTA Project Delivery Phases have been mapped out, to show the various stages, deliverables and requirements.
- This allows for constant review, and refinement, as certain processes need adjustment or additional controls put in place.
- The Project Delivery Playbook is currently in version 2 and will allow anyone starting at the SFMTA to have an initial overview on how to deliver a transportation project in San Francisco no matter the discipline.

July 2019

Draft Still in Revision 2.0

Project Delivery Phases and Required Deliverables

I. INCEPTION	Addition to the Capital Plan and Capital Improvement Program Identify a Capital Need to include in the 20 Year Plan, and capital project in the 5 Year *Capital Improvement Program and 2 Year Budget
II. PLANNING	Pre-Development Report (PDR) Further Defining a CIP Line Item as a Project
III. PRELIMINARY ENGINEERING	Preliminary Engineering Report (30% design) Test Project Feasibility and Engineering it to 30% Design
IV. DETAIL DESIGN	Complete Biddable Package (100% design) Completing Project Design (100%) Readying it for Construction
V. CONTRACTING	Awarded Construction Contract + Notice to Proceed Produce Bid Packages, Advertise the project, and Select a Project Contractor
VI. CONSTRUCTION MANGEMENT	Constructed Improvement Constructing the Project as Designed
VII. ADMINISTRATIVE CLOSURE	Capitalized Asset & Closure Report Completing all the Paperwork to Close the Project

Considering Various Types of Delivery

	Infrastructure	IT Projects	Fleet Projects
INCEPTION	Addition to the Capital Plan and CIP	Scope, Schedule, Budget & Objective	Objective (Fleet Plan/Service)
PLANNING	Pre-Development Report	Requirements Gathering	Requirements Gathering
PRELIMINARY ENGINEERING	Preliminary Engineering Report	*Multiple Drafts of Requirements Document*	*Final Technical Specifications*
DETAIL DESIGN	Complete Biddable Package (100% design)	Design	RFQ/RFP Contract+ NTP
CONTRACTING	Awarded Construction Contract + NTP	Deliver/Test	Vendor Designs
CONSTRUCTION MANGEMENT	Constructed Improvement	Quality Assurance	Production/ Delivery/Test Acceptance
ADMINISTRATIVE CLOSURE	Capitalized Asset	Closure	Warranty Closure

Phase/Process Review with Full Deliverables

Each phase of work has been clearly identified, in each a detailed process map has been developed, as well as the necessary deliverables, tools, knowledge and support that would be needed for success.

Project Phases

PRELIMINARY ENGINEERING

Deliverables:

Preliminary Engineering Report

With:
Environmental Determination
Legislation (if required)

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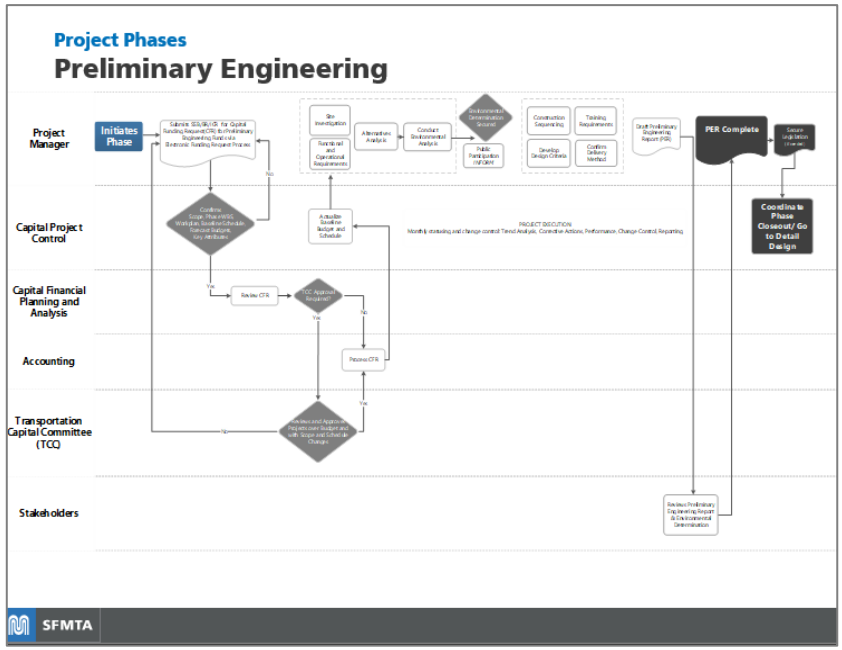
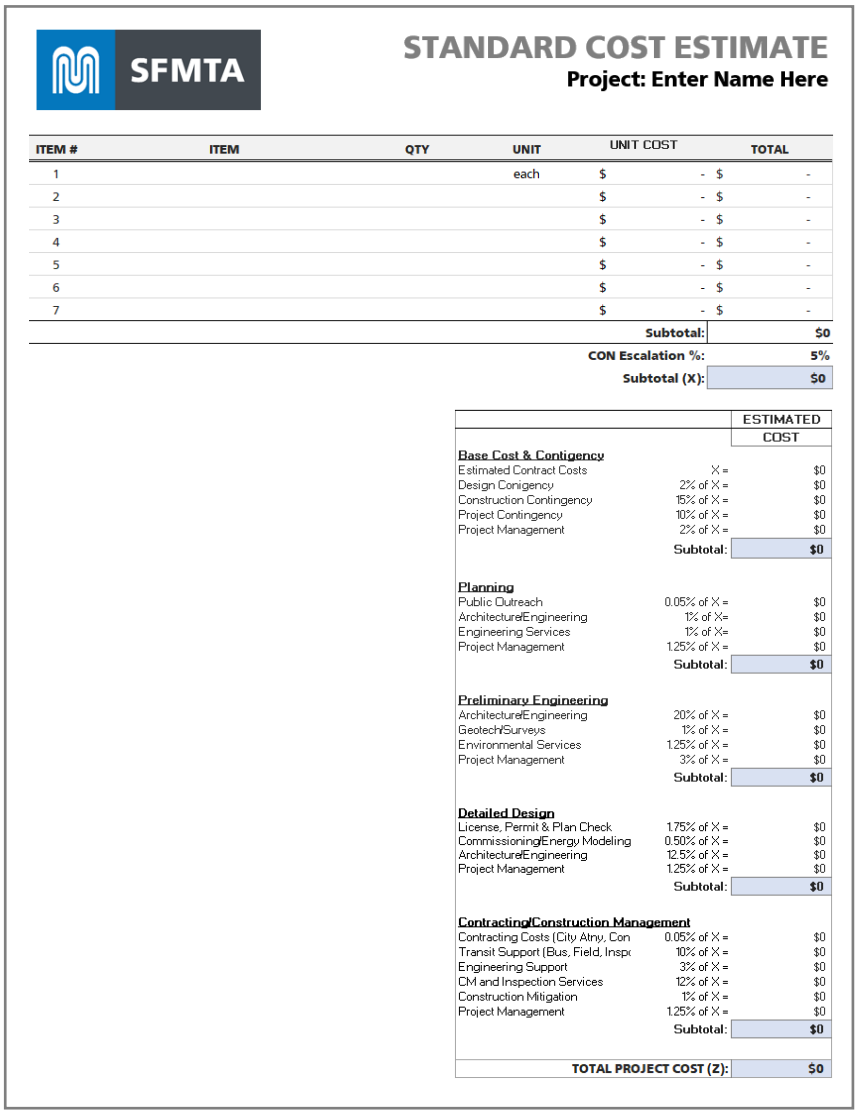


Tools - Cost Estimate Template



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STANDARD COST ESTIMATE

Project: Enter Name Here

ITEM #	ITEM	QTY	UNIT	UNIT COST	TOTAL
1			each	$ -	$ -
2				$ -	$ -
3				$ -	$ -
4				$ -	$ -
5				$ -	$ -
6				$ -	$ -
7				$ -	$ -
				Subtotal:	**$0**
				CON Escalation %:	**5%**
				Subtotal (X):	**$0**

		ESTIMATED COST
Base Cost & Contigency		
Estimated Contract Costs	X =	$0
Design Conigency	2% of X =	$0
Construction Contingency	15% of X =	$0
Project Contingency	10% of X =	$0
Project Management	2% of X =	$0
	Subtotal:	**$0**
Planning		
Public Outreach	0.05% of X =	$0
Architecture/Engineering	1% of X=	$0
Engineering Services	1% of X=	$0
Project Management	1.25% of X =	$0
	Subtotal:	**$0**
Preliminary Engineering		
Architecture/Engineering	20% of X =	$0
Geotech/Surveys	1% of X =	$0
Environmental Services	1.25% of X =	$0
Project Management	3% of X =	$0
	Subtotal:	**$0**
Detailed Design		
License, Permit & Plan Check	1.75% of X =	$0
Commissioning/Energy Modeling	0.50% of X =	$0
Architecture/Engineering	12.5% of X =	$0
Project Management	1.25% of X =	$0
	Subtotal:	**$0**
Contracting/Construction Management		
Contracting Costs (City Atny, Con	0.05% of X =	$0
Transit Support (Bus, Field, Inspe	10% of X =	$0
Engineering Support	3% of X =	$0
CM and Inspection Services	12% of X =	$0
Construction Mitigation	1% of X =	$0
Project Management	1.25% of X =	$0
	Subtotal:	**$0**
	TOTAL PROJECT COST (Z):	**$0**

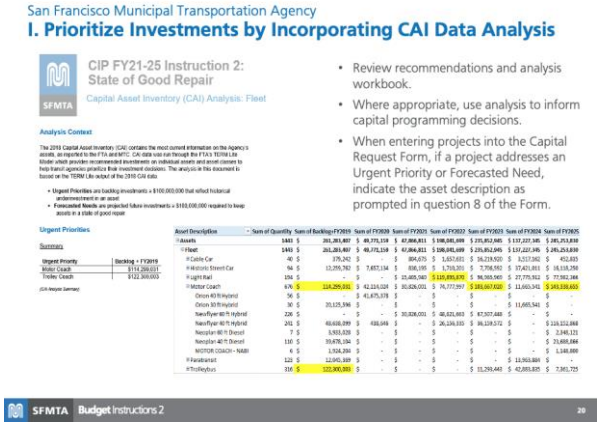
In 2018, a standard cost estimating template was developed to support our project delivery professionals generate better initial costs.

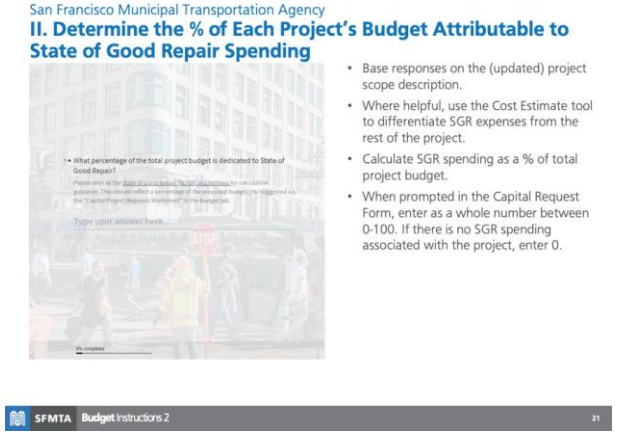
- The template requires hard construction costs.
- Adds a tool to include escalation.
- Took the average final costs of a set of completed projects to develop average % for various phases.
- Update and refinement currently in process – revising data and adding additional tool for estimating cashflow needs over the planned project schedule.

Tools – Asset Management Data for Project Prioritization and Development

As part of the FY 2021 & FY 2022 budget Asset Management data was used for the first time as part of the CIP development process.

- Included data on current program backlog by specific asset/location
- Included data on future State of Good Repair investment areas based on useful life.
- Tried to set a standard baseline for future analysis of cost/benefit for the investment in next cycle.





Investing in the Workforce

Making tools, providing information and training are key components and priorities for the PMO. Data, tools and trainings are available on internal intranet PMO site. We will expand on these trainings.

Resources include:

- Standards and procedures
- Standard phases and deliverables
- Trainings and information
- Links to Project Controls Systems
- Construction Mitigation Templates

We are grateful for the insights that the Controller's Office provided us through their audit to further this work.

- Many of the recommendations confirmed our prior findings, and the actions we are taking will move us in the right direction
- We found of particular value the audit's review of inter-divisional collaboration and communication and its impact on project delivery. **This is an area that still needs work**.
- Out of the 16 recommendations included in the audit report, **five have been marked as closed/implemented by the auditors based on actions we have already taken and three have been partially implemented.**

SFMTA Capital Programs Audit Follow-Up

While we work through the findings in the audit, we are also beginning strategic discussions with public and private sector partners to understand best practice approaches to:

- Investing in our **project delivery expertise**, from cost estimating to specialized design to on-site engineering and inspection.
- Driving down costs by **building a better bid environment**, where more contractors compete harder to work for SFMTA contracts.
- Reducing schedule delays by **shifting risk from the agency to our contractors** though new contracting arrangements.

We remain focused on continuous improvement to project delivery within the agency and the work of the audit team and recommendations will help us get there.

There are many areas of success within our portfolio of nearly 300 projects.

16th Street Transit Priority Project

Successful collaborative effort involving multiple SFMTA divisions and SFPUC deliver infrastructure upgrades with minimal changes to the contract.

Geary Rapid Project

Delivering this complex complete street project on time and on budget including upgraded traffic signals and streetlights, sidewalk extensions at bus stops and intersection corners, improved median refuges and roadway repaving.

Subway Task Force Projects

The Task Force is modeling new ways of internal collaboration and breaking down internal silos. The projects include an inter-disciplinary approach to fixing the problematic Eureka Curve while minimizing community impact during the COVID-19 subway shutdown.

Vision Zero Quick Build Projects

We have quick-built over 50 miles of our most dangerous streets since 2018. designed to swiftly improve street safety by using low-cost, reversible traffic engineering tools and employing our own in-house designers and skilled trades.

Potrero Modernization Project

This is an $800 million project advancing the lessons learned from numerous other projects including contract management, outreach and environmental review. The Board of Supervisors approved special legislation in March 2021 supporting the first of its kind joint-development process as an alternate delivery method.


Thank you.