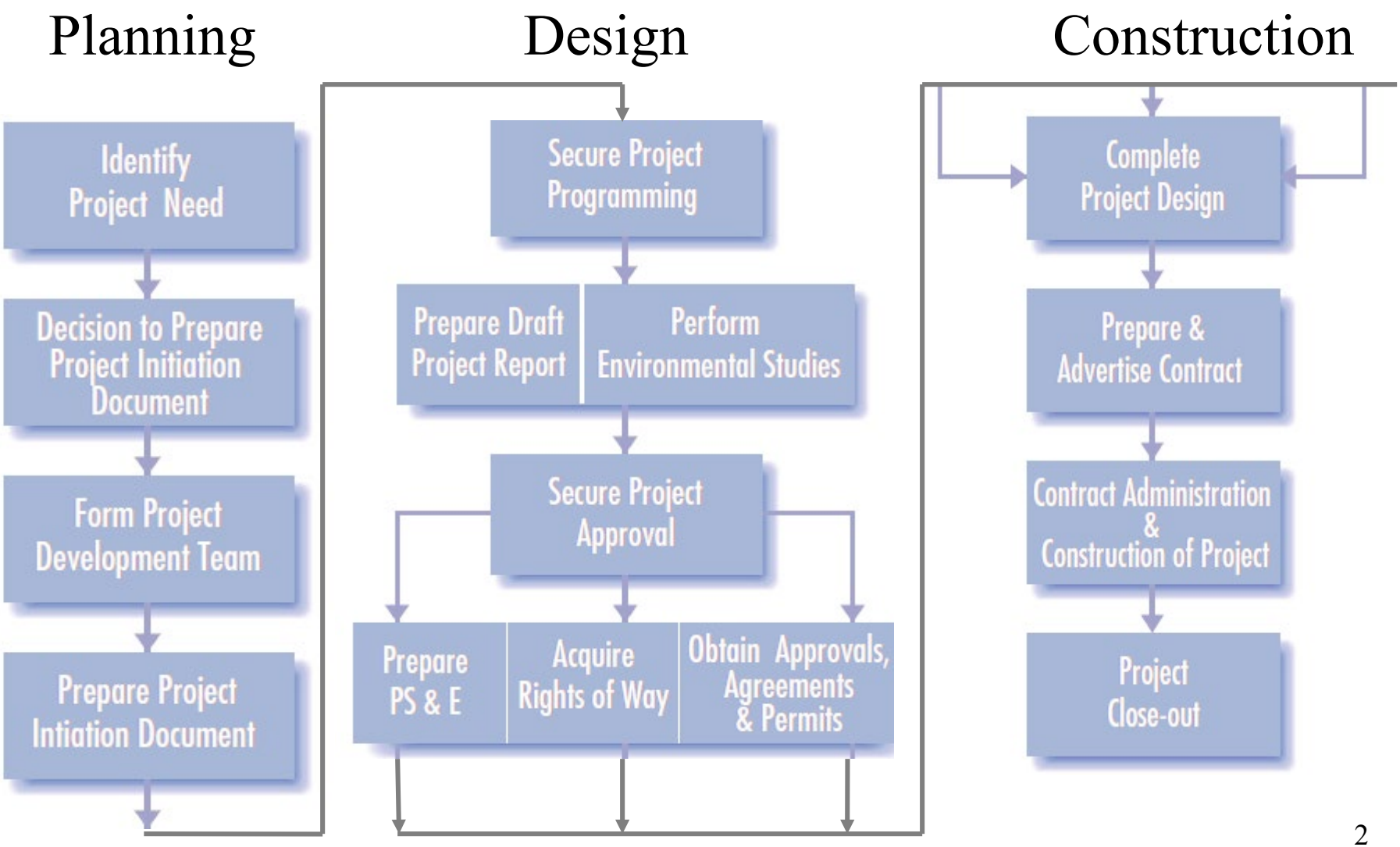
California Transportation Commission Project Delivery Workshop

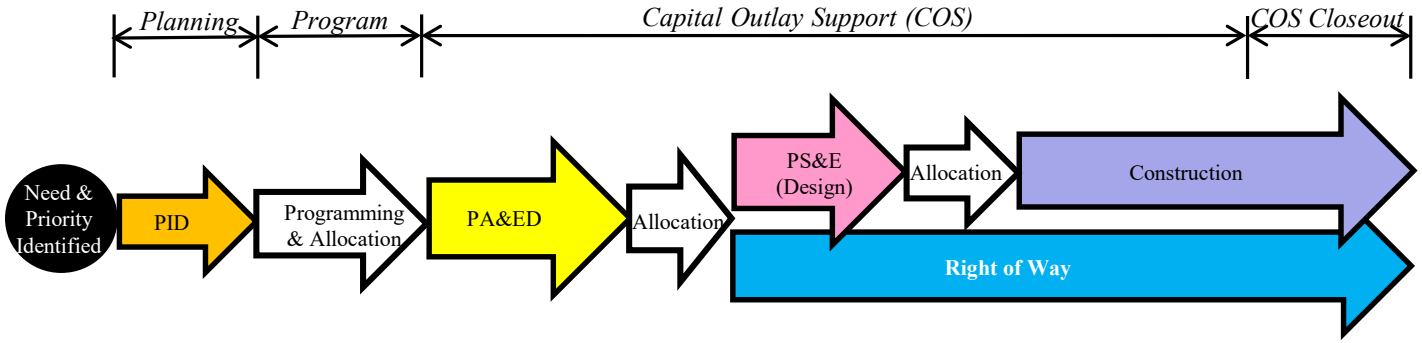
Caltrans Capital Outlay Support Budget

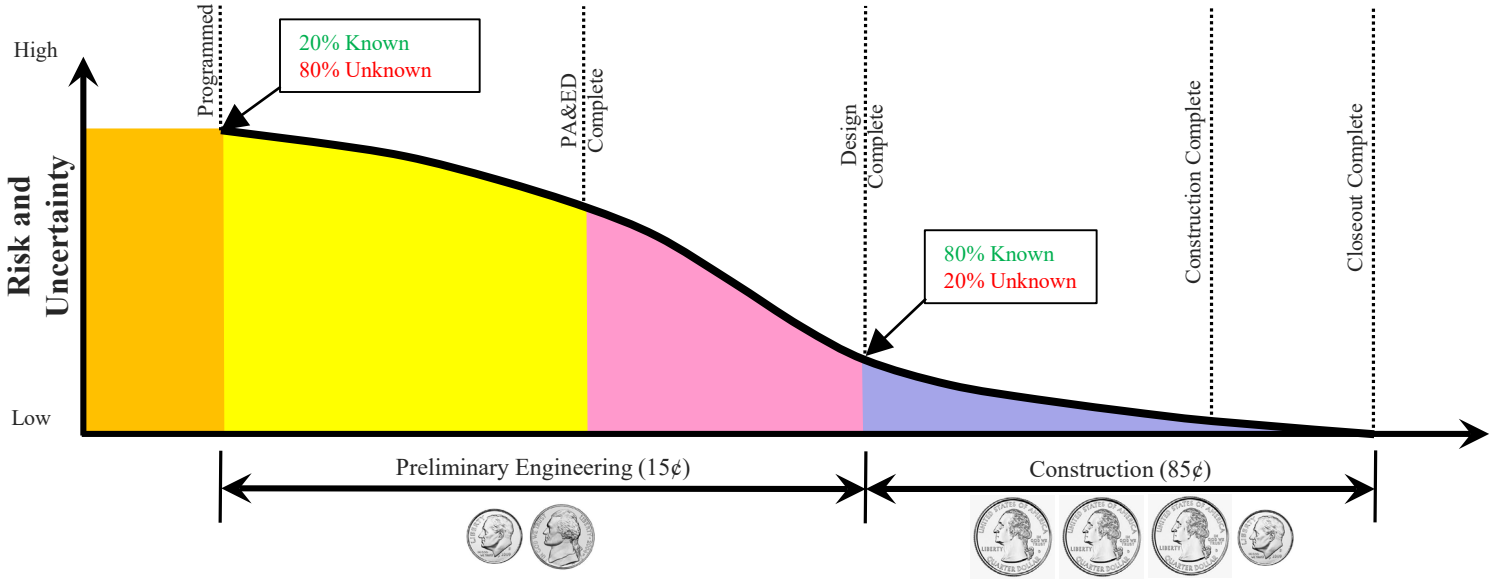
by Mike Keever
Division Chief – Caltrans Project Management

Project Development



Phases of Project Development





Revised Caltrans SHOPP PIR Guidance

Caltrans SHOPP PIR guidance has been revised to reflect minimum PID requirements based on **May 2017 CTC SHOPP Guidelines**

- Estimates
  - **Accurate** support cost estimate for Project Approval and Environmental Document (PA&ED)
  - A **reliable range** for support and capital costs of future phases Plans, Specifications, and Estimates (PS&E), Right of Way (R/W) and Construction

- Risk Register that identifies all known risks to future cost, scope, schedule or changes in performance

Project Initiation Report- PIR

Section 23 Attachments

- A risk register is a <u>required</u> attachment

Risk Register for Enter EA, Enter Nickname

Risk Checkpoint:	PID
Date:	6/12/2017
Project Nickname:	Enter Nickname
EA:	Enter EA
Co-Rt, Post Miles:	Trinity-64.7-71.7
Project Manager:	Enter PM
FY & Program (SHOPP or STIP):	2018 (SHOPP)
Total Costs (Capital & Support):	$8,000k
RTL Target:	8/1/2020

Risk Register Toolkit

User input/selection into yellow cells/columns only

Risk Identification								Risk Assessment		
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (PxI)
Active	1	Threat								

Project Initiation Report- PIR

Section 18 Estimate, Funding and Programming

Estimated Capital & Support Cost ($1,000s)- Programmable Alternative									
Component	(A)[1] Total Optimistic	(B)[1] Total Pessimistic	(C) Total Most Likely	(D) Risk Amount	(E) Total including Risk (C+D)	(F) # Years to Mid Yr of Component	(G) Escalation Rate	(H) Escalation Amount	(I) Total Escalated Cost (E + H)
Support									
PA&ED[2]									
PS&E									
Right of Way									
Constructio n									
Capital									
Right of Way[1]									
Constructio n									
Totals									

- PA&ED bottom–up estimate is developed as accurately as possible for allocation by the CTC
- Cost estimate ranges are developed for future phases, with the most likely cost estimate used for programming
- The risk amounts generated by the **Risk Register Tool** are applied appropriately to all capital and support amounts

Field Review Sections for PIR and PR

Project Initiation Report Section

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
PROJECT INITIATION REPORT
DOTP-0002 (NEW 12/2019)

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21. PROJECT REVIEWS

Online Guidelines

Scoping team field review Date

Scoping Field Review Participants

+ / -	Name	Title	Area of Expertise

Safety field revie

Safety Field Review Participants

+ / -	Name

Project Report Section

12. PROJECT REVIEWS

Scoping team field review _____ Date _____
Scoping team field review attendance roster attached.
District Program Advisor _____ *Enter Name* _____ Date _____
Headquarters SHOPP Program Advisor _____ *Enter Name* _____ Date _____
District Maintenance _____ *Enter Name* _____ Date _____
Headquarters Project Delivery Coordinator _____ *Enter Name* _____ Date _____
Project Manager _____ *Enter Name* _____ Date _____
FHWA _____ *Enter Name* _____ Date _____
District Safety Review _____ Date _____
Constructability Review _____ Date _____
Other _____ Date _____

Project Initiation Report- PIR

Section 21 Project Reviews- Site Visit

- Project Development Team (PDT)
  - Ultimate Decision Makers but with a documented rationale/justification/risk
- Date & Attendance Roster of Participants properly documented
- Limited Resources- Challenge
  - Incorporate Advanced Technologies-Virtual Visits,
  - Employ Local Caltrans Maintenance Crew- Remote Locations

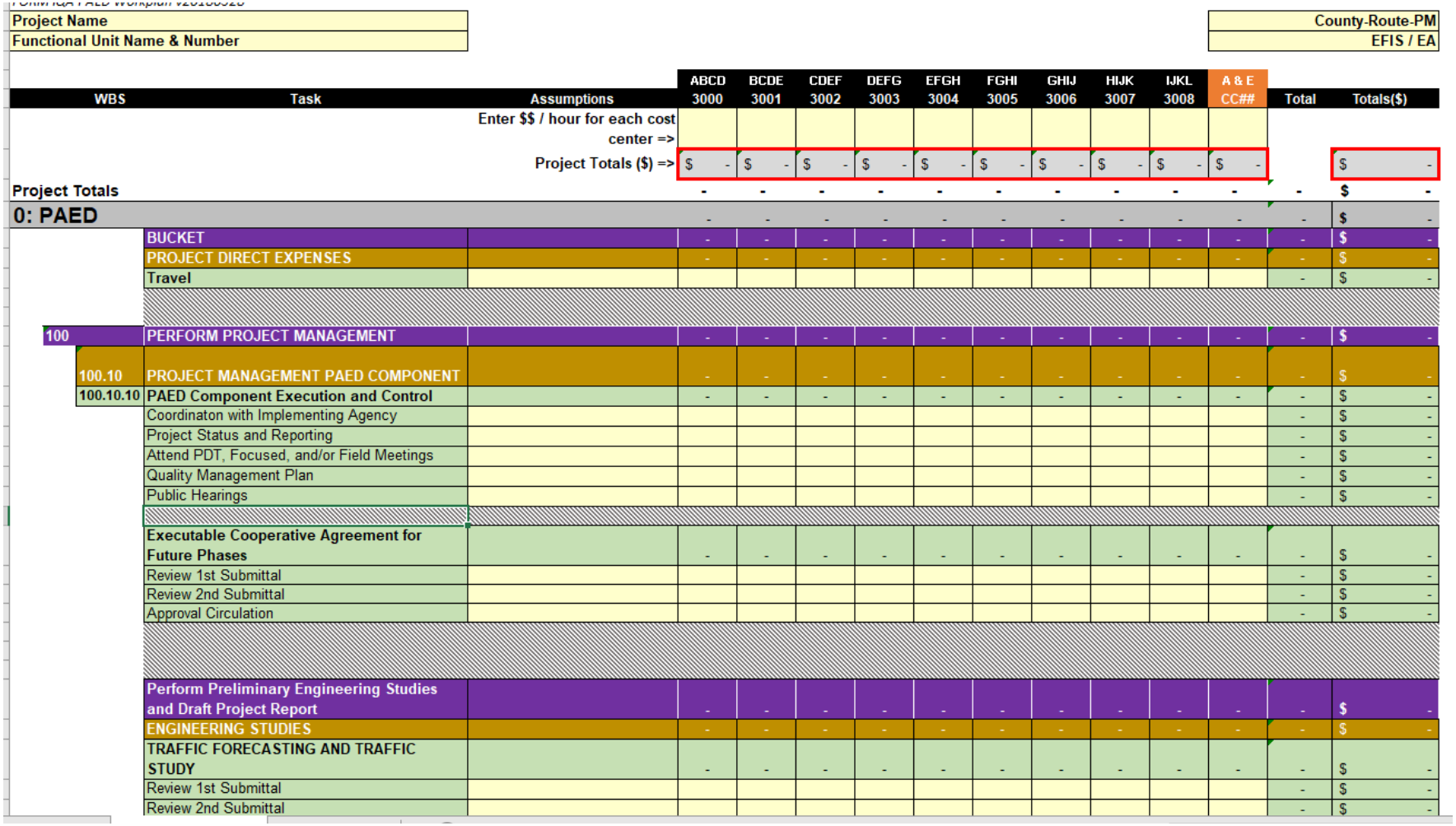
Project Initiation Report- PIR

Current Efforts

Planning is an **active** participant at the monthly PCR Review Committee Meetings.

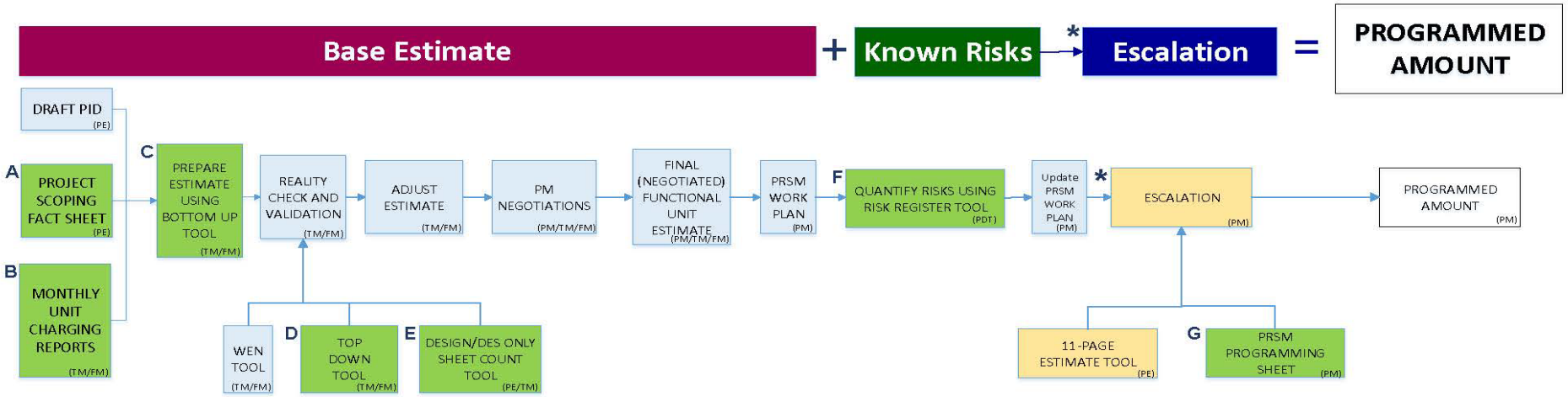
- Lessons Learned are continuously transmitted and looped back to the PID authors
- Developing trends are captured and mitigated
- Past issues are discussed as potential risks in discussions when developing future PID Risk Registers.

Bottom Up Tool Template



Project Name													County-Route-PM
Functional Unit Name & Number													EFIS / EA
			ABCD	BCDE	CDEF	DEFG	EFGH	FGHI	GHIJ	HIJK	IJKL	A & E		
WBS	Task	Assumptions	3000	3001	3002	3003	3004	3005	3006	3007	3008	CC##	Total	Totals($)
		Enter $$ / hour for each cost center =>												
		Project Totals ($) =>	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -
Project Totals			-	-	-	-	-	-	-	-	-	-	-	$ -
0: PAED			-	-	-	-	-	-	-	-	-	-	-	$ -
	BUCKET		-	-	-	-	-	-	-	-	-	-	-	$ -
	PROJECT DIRECT EXPENSES		-	-	-	-	-	-	-	-	-	-	-	$ -
	Travel												-	$ -
100	PERFORM PROJECT MANAGEMENT		-	-	-	-	-	-	-	-	-	-	-	$ -
100.10	PROJECT MANAGEMENT PAED COMPONENT		-	-	-	-	-	-	-	-	-	-	-	$ -
100.10.10	PAED Component Execution and Control		-	-	-	-	-	-	-	-	-	-	-	$ -
	Coordinaton with Implementing Agency												-	$ -
	Project Status and Reporting												-	$ -
	Attend PDT, Focused, and/or Field Meetings												-	$ -
	Quality Management Plan												-	$ -
	Public Hearings												-	$ -
	Executable Cooperative Agreement for Future Phases		-	-	-	-	-	-	-	-	-	-	-	$ -
	Review 1st Submittal												-	$ -
	Review 2nd Submittal												-	$ -
	Approval Circulation												-	$ -
	Perform Preliminary Engineering Studies and Draft Project Report		-	-	-	-	-	-	-	-	-	-	-	$ -
	ENGINEERING STUDIES		-	-	-	-	-	-	-	-	-	-	-	$ -
	TRAFFIC FORECASTING AND TRAFFIC STUDY		-	-	-	-	-	-	-	-	-	-	-	$ -
	Review 1st Submittal												-	$ -
	Review 2nd Submittal												-	$ -

Support Cost Estimating Process



Legend

- New Tool
- New Process
- Revised Process

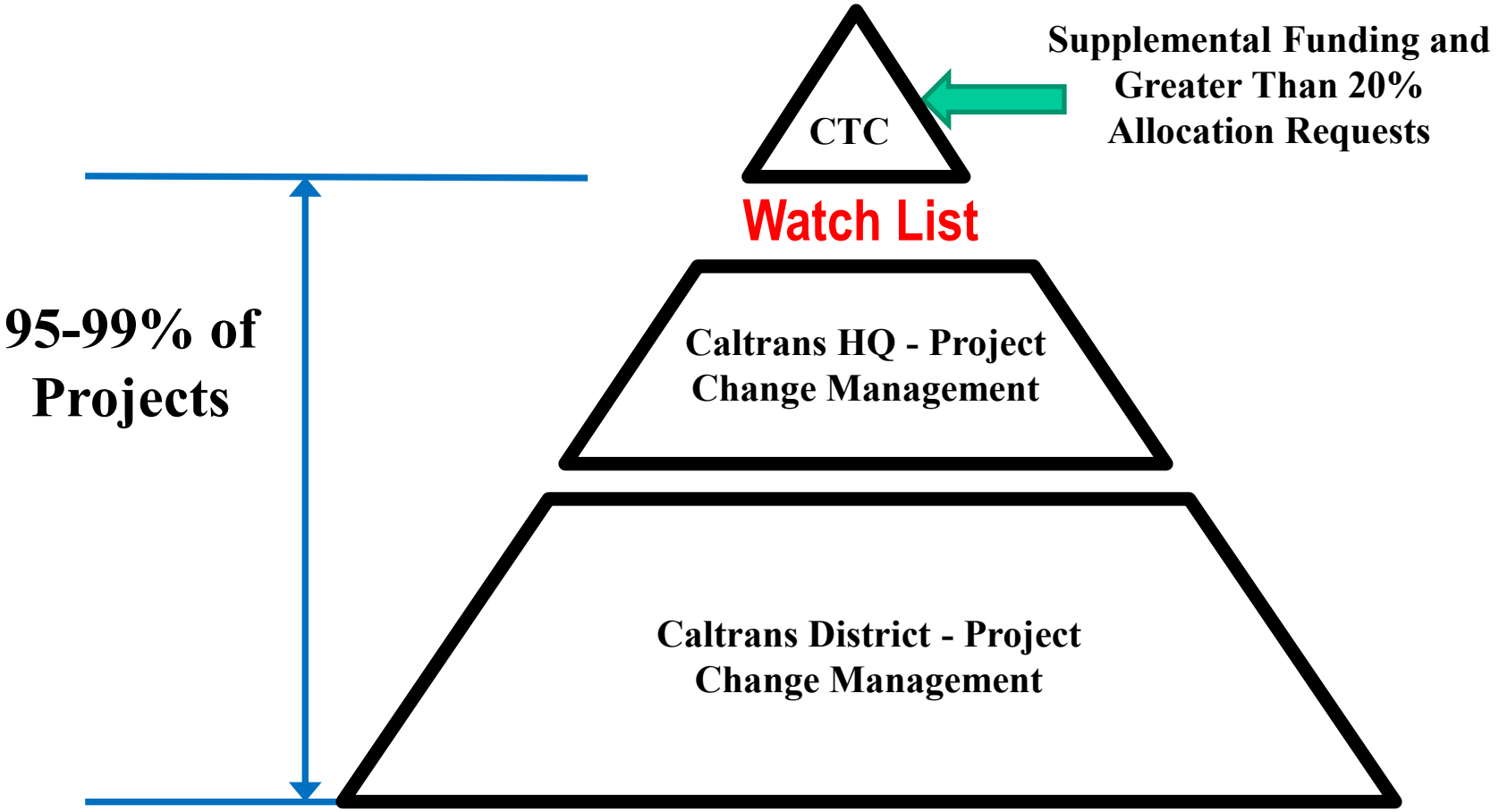
(PM) Project Manager
(TM) Task Manager
(FM) Functional Manager
(PE) Project Engineer
(PDT) Project Development Team

A. Functional Unit Project Scoping Fact Sheet data supplement to assist functional units with resource estimates.
B. Project unit charging summaries for completed projects pulled from PRSM.
C. Spreadsheets tailored to each functional unit for ease of entering and calculating hours/cost estimates specific to each project with outputs easily interpreted by PMs.
D. Top Down Estimate Check Tools: Historical data base tools able to compare capital and support hours/costs for similar projects. Can pull data for various combinations of support and Capital Costs from historical data.
E. Comparative data based on Sheet Count for Design and DES resource estimates.
F. Quantified risk register tool. Monte Carlo Analysis available for more complex project from the District Risk Coordinator.
G. PRSM Programming Sheet provides an automated distribution of program funding by phase and FY.

*Updated policy for escalation

VERSION 1.0 2019.04.10

Project Cost Risk Management



Change Management Process

Project Level

- PDT develops change request
- Discusses with District Management

District Level

- District determines alternatives
- District implements corrective action
  - No impact change
  - Amendment
  - G-12
  - Greater than 120% or Supplemental

HQ Level

- Reviews requested change (Cost, Scope, Schedule)
- Approves, Denies, or recommends a different solution
- Requests appropriate change from CTC

CTC Actions

- Review departmental request
- Recommends approval or Denial
- Commission acts

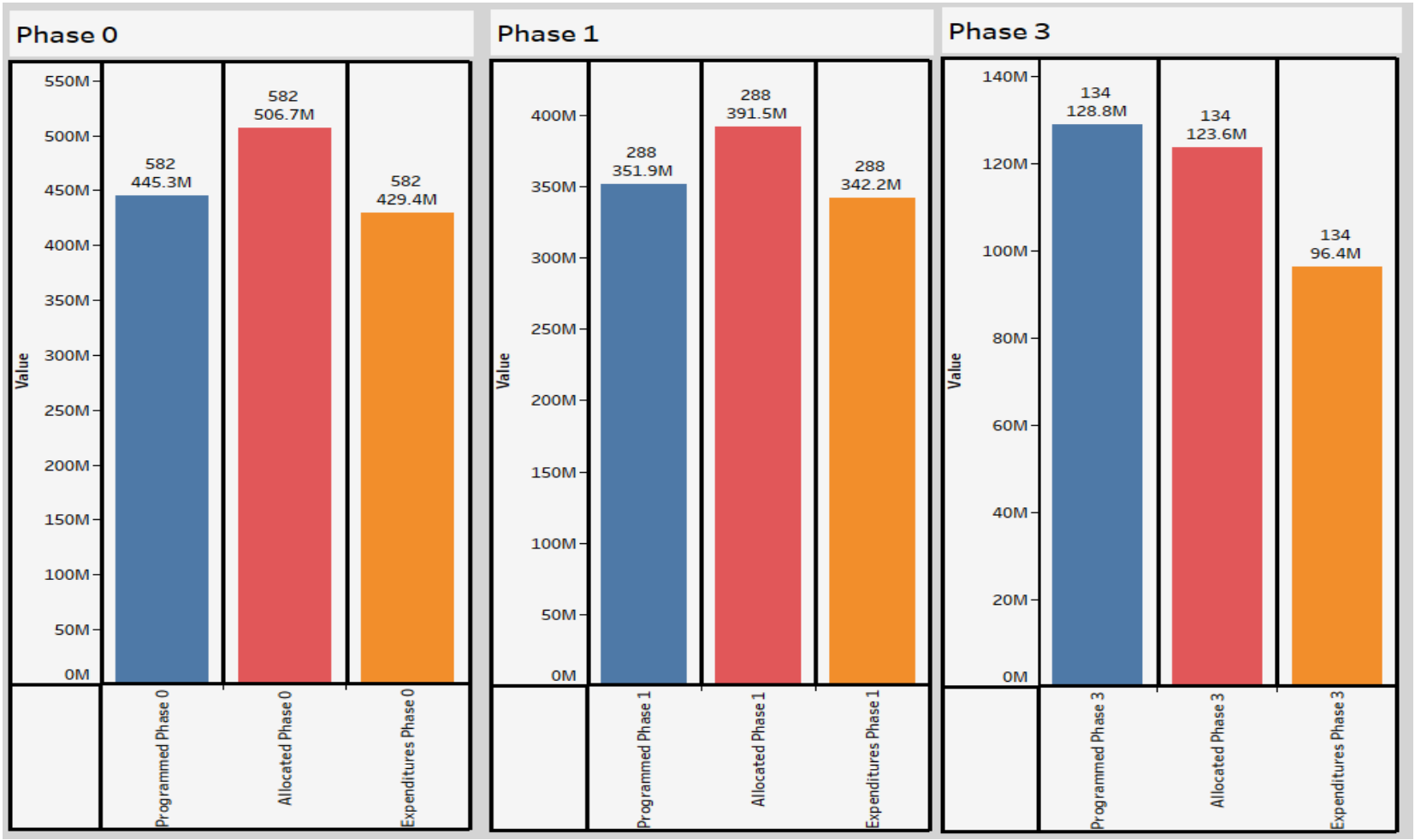
CY 2018 Support Cost Review

Support Costs for projects completing CCA between Jan 1 and Dec 31 2018 compared to their Approved Budget

Percentage of Budget Expended	Number of Projects	Percentage of Projects	Approved Support Budget ($1,000's)	Actual Support Cost ($1,000's)	Over (Under) Budget ($1,000's)	% Over (Under) Budget
< 80%	113	39%	$ 297,496	$ 175,830	$ (121,666)	(41%)
80% to 120%	111	38%	$ 290,790	$ 288,150	$ (2,640)	(1%)
> 120%	66	23%	$ 130,806	$ 218,900	$ 88,094	67%
Total	**290**	**100%**	**$ 719,092**	**$ 682,880**	**$ (36,212)**	**(5%)**

Source: Fourth Quarter Fiscal Year 2018-19 Project Delivery Report.

Programmed vs Expended Support Costs



Phases completed in FY 17/18 and 18/19 with voted allocations

Phase Level Support Cost Strike Zone

Caltrans

Phase 0

Percentage of Budget Expended Phase 0	Number of Projects	Percentage of Projects - Phase 0	Approved Support Budget ($1,000's) - Phase 0	Actual Support Cost ($1,000's) - Phase 0	Over (Under) Budget ($1,000's) - Phase 0	% Over (Under) Budget - Phase 0
<80%	173	29.73%	162,034	87,134	(74,900)	(46%)
80% to 120%	246	42.27%	194,325	200,993	6,668	3%
>120%	163	28.01%	88,920	141,283	52,363	59%
Grand Total	**582**	**100.00%**	**445,279**	**429,410**	**(15,869)**	**(4%)**

Phase 1

Percentage of Budget Expended Phase 1	Number of Projects	Percentage of Projects - Phase 1	Approved Support Budget ($1,000's) - Phase 1	Actual Support Cost ($1,000's)	Over (Under) Budget ($1,000's) - Phase 1	% Over (Under) Budget - Phase 1
<80%	88	30.56%	136,341	81,765	(54,576)	(40%)
80% to 120%	116	40.28%	145,814	159,922	14,108	10%
>120%	84	29.17%	69,727	100,475	30,748	44%
Grand Total	**288**	**100.00%**	**351,882**	**342,161**	**(9,721)**	**(3%)**

Phase 3

Percentage of Budget Expended Phase 3	Number of Projects	Percentage of Projects - Phase 3	Approved Support Budget ($1,000's) - Phase 3	Actual Support Cost ($1,000's) - Phase 3	Over (Under) Budget - Phase 3	% Over (Under) Budget - Phase 3
<80%	79	58.96%	83,765	43,167	(40,598)	(48.5%)
80% to 120%	38	28.36%	35,211	34,546	(665)	(1.9%)
>120%	17	12.69%	9,870	18,729	8,859	89.8%
Grand Total	**134**	**100.00%**	**128,846**	**96,442**	**(32,404)**	**(25.1%)**

Phases completed in FY 17/18 and 18/19 with voted allocations

Annual Budget Development

- Zero-based each year for project direct
  - Fiscal year “slice” of multi-year project workload hours
  - Based on project work plans
    - Approximately 3,000 projects ongoing
  - Aligned with programmed funding
    - E.g. STIP, SHOPP, SB 1, Partnership, Prop 1B, Toll Program

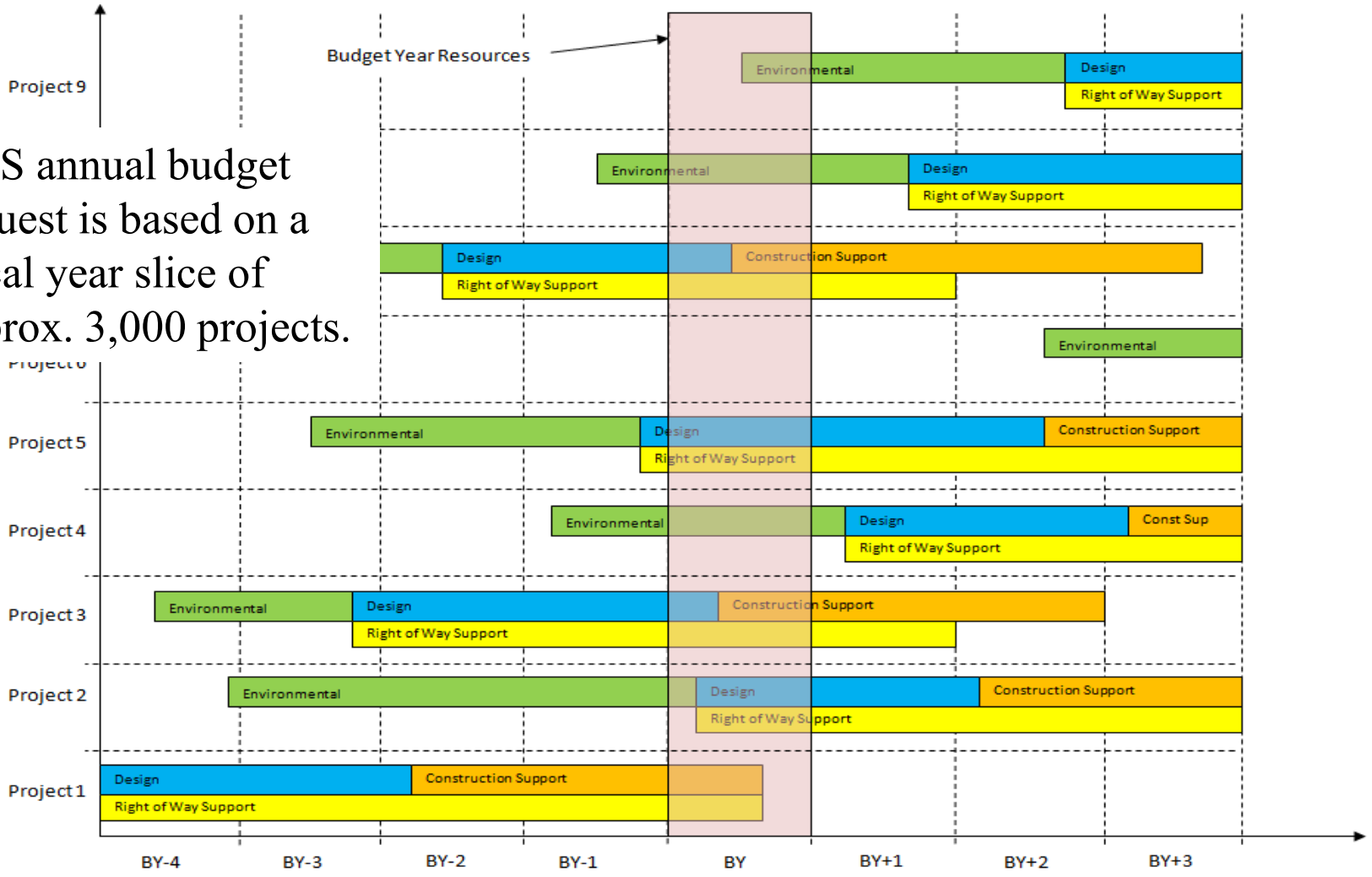
- FTE hours are converted to dollars using average rates for regular personal services, cash overtime, and A&E

- Indirect is based on 17% of direct

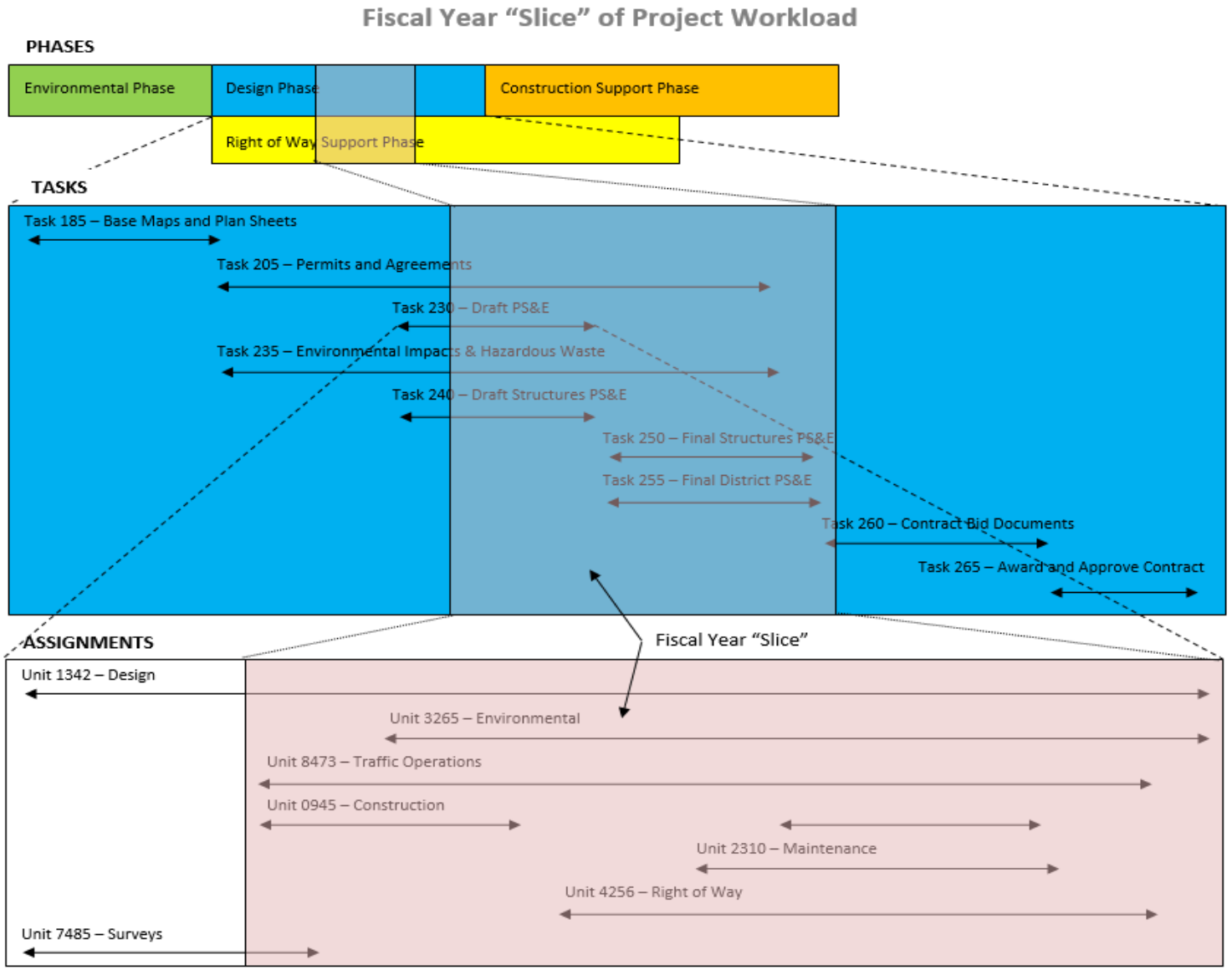
- Corporate (HQ) Base

Fiscal Year Portfolio Resource Slice

COS annual budget request is based on a fiscal year slice of approx. 3,000 projects.



Fiscal Year Project Resource Slice



Conclusion

- Overall Caltrans delivers a large complex program, with most projects delivered within our budgetary authority.
- We need to do more.
- We are creating new tools, rolling out training, and measuring our performance to make improvements to our work plan support cost estimates.
- We need to take more risk when developing our work plans, use our risk and change management processes to work to stay within budget, but it may mean more project adjustments will be needed including possible CTC action.
- We need to use our site visits as a tool to manage project change risks.
- With these changes we intend to put more of our money to work, increase efficiency, and encourage innovation.

Questions?