



55th Annual

WESTERN WINTER WORKSHOP



Program Scheduling- Consolidation of data from other Systems to P6

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Ron Schultz

- 30 years experience, focus on major programs as a consultant
- Programs for Dept. of Energy, OC Transportation Authority, Alameda Corridor, LA Sanitation District, So Cal Edison, PG&E
- D.R. McNatty, Fluor, AECOM
- Using Primavera since initial release
- First AACE presentation 1986
- BS Civil Engineering, The Ohio State University, played Lacrosse
- 20+ Triathlons. 2015: 6000 miles bike, 600 running, 80 swimming
- 2 daughters ages 26, 27.

2015 California Triathlon,
Pleasanton, CA



2009 Game winning HR to beat
TSUN



Program Overview

- Annual Capital Improvements Programs \$400+ million
- 700 Annual Projects \$100K to \$3 million
- Area of construction: all of northern California
- Average Construction 6-9 weeks
- P6 logic driven schedules, all projects with full life cycle
- Schedules updated weekly
- SAP accounting system of record, meta data
- Planning database maintained by Program Managers
- Construction crew scheduling managed separately by construction group

Program Reporting and Analysis

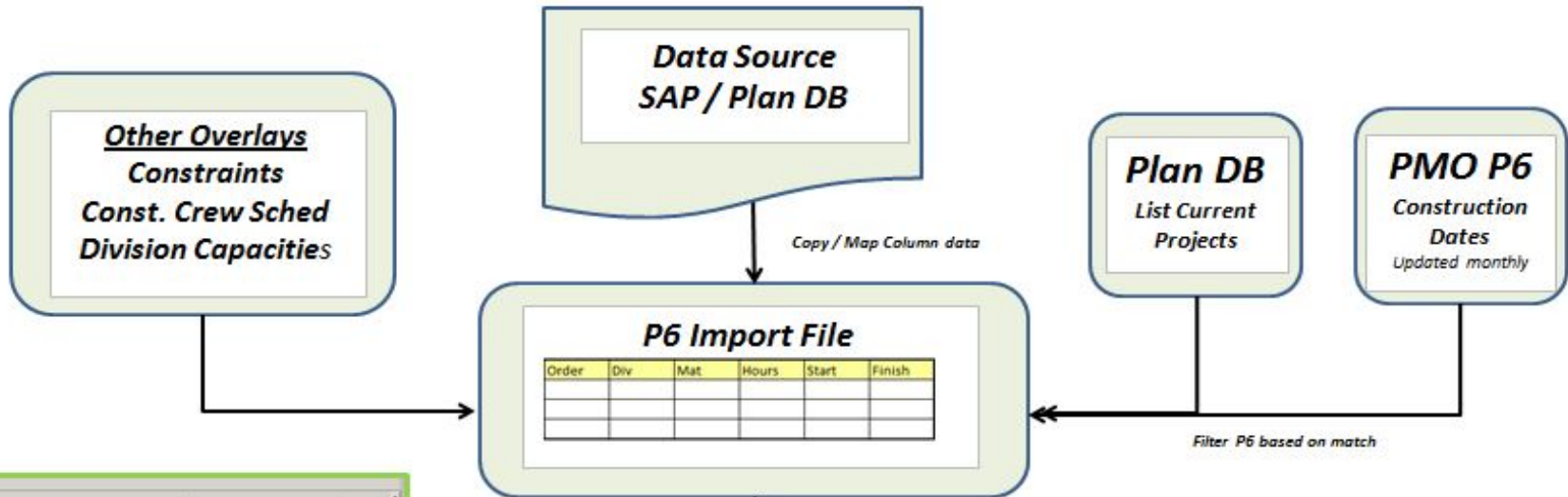
Leverage the Strengths of P6 without the maintenance for :

1. Summary program schedules
2. Unit Metrics – spread of length of pipe or services over planned construction
3. Construction crew planning and leveling

Solution- Consolidate data to ONE P6 schedule from using existing data sources:

- Current schedule milestones from 500 P6 schedules
- SAP meta data (some smaller non P6 projects)
- Planning database-construction hours planned units
- Construction group-crew schedule dates

Consolidated Flow

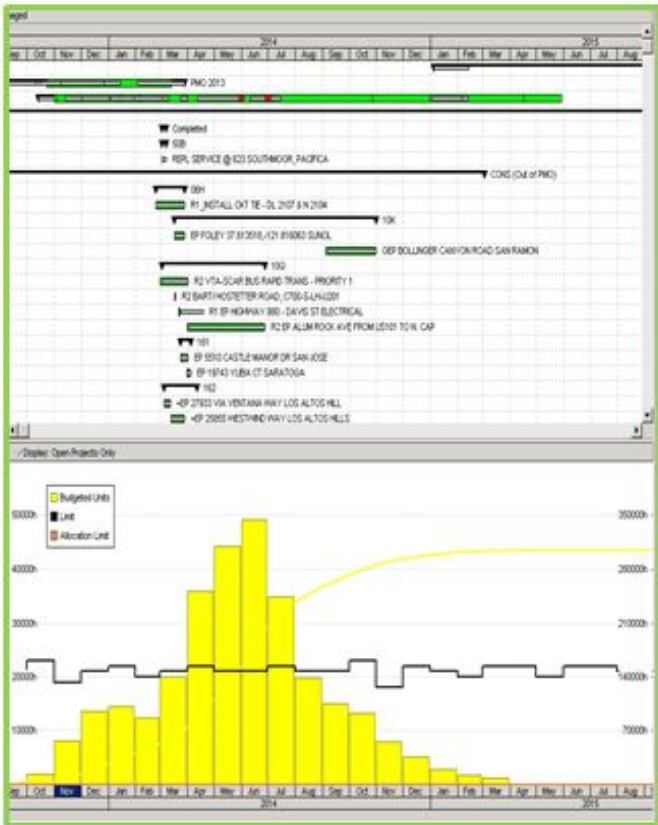


P6 Import File

Order	Div	Mat	Hours	Start	Finish

One P6 Project File
no logic- not
maintained
refreshed weekly

P6 Graphics
Bar Charts and
Resource Profiles



- **Portfolio Analysis and Planning.** Combines projects not in P6.
- **Unit Metrics-** Tracks Portfolio progress for Sr Management
- **Reports by Division Resource Loading (Over/Under allocation)**
- **P6 Resource Leveling functionality/Real time leveling**
- **Data Quality Review and Revisions**

P6 Import Process

- Map flat file source file to a P6 input form

Order	OrderName	MAT	Div	JobOwner	JobOwnerG	JobOwnerSup	RiskScore	SAPStatus
30715548	BR GP EAST 10TH STREET BRIDGE OAKLAND	51I	EB	Tania Sanchez	PM	Michael Coakley		ESTS
30760384	GP GD RELO-MS NARROWS B3/HWY 101, MARIN	51L	NB	Josh Eagar	PM	Justin Stabe		UNSC
30803611	RCB-96 FERNSD & VERSAILLE, ALAMEDA	50C	EB	Tania Sanchez	PM	Michael Coakley	417	ESTS

task_code	status_code	wbs_id	task_name	user_field_10
Activity ID	Activity Stat	WBS Code	Activity Name	SAP Status
30715548	Not Started	CCS 02Nov15	BR GP EAST 10TH STREET BRIDGE OAKLAND	ESTS
30760384	Not Started	CCS 02Nov15	GP GD RELO-MS NARROWS B3/HWY 101, MARIN	UNSC
30803611	Not Started	CCS 02Nov15	RCB-96 FERNSD & VERSAILLE, ALAMEDA	ESTS
30849078	Not Started	CCS 02Nov15	REPLACE HPR D-324 GUN CLUB RD, WASCO	PEND
30854406	Not Started	CCS 02Nov15	R2Z E INST MN 1601 COFFEE RD MODSTO 1HPR	PEND
30880923	Not Started	CCS 02Nov15	R4 GD REPL REG STA 50 FAIRGROUNDS&SEREN	UNSE
30881081	Not Started	CCS 02Nov15	R4 HPR RBLD 7506 RD 46 WILLOWS	PEND
30881134	Not Started	CCS 02Nov15	HPR RBLD DR R056 RD 29 ORD BEND	PEND
30881228	Not Started	CCS 02Nov15	GD REPL REG STA 40 LOMITA-<(>&<)-ASHFO	ESTS
30881614	Not Started	CCS 02Nov15	SGO R4 CONV HPR PEABODY & KEYSTONE FF	PEND
30882899	Not Started	CCS 02Nov15	BR GR REG REBUILD R-EO6 7TH & GILMN, BERK	ESTS
30884126	Not Started	CCS 02Nov15	GP RCB-07 REGSTAT RBLD 75TH & HAWLEY,OAK	PEND
30889977	Not Started	CCS 02Nov15	HPR G-068, RBL, RD 29/ RD V ORLAND	UNSC
30890124	Not Started	CCS 02Nov15	R4 EXT 4" PL, MITCHEL AVE, OROVILLE	PEND
30890138	Not Started	CCS 02Nov15	R4 HPR RBL/MAIN 3365 AFTON RD, BUTE CTY	PEND
30897939	Not Started	CCS 02Nov15	CUST HPR CONV MAIN, SOSCOL AVE, NAPA	PEND

- Input forms for activity and resource data
- Multiple overlays of source data files
- Refresh source file to update and generate a P6 input form

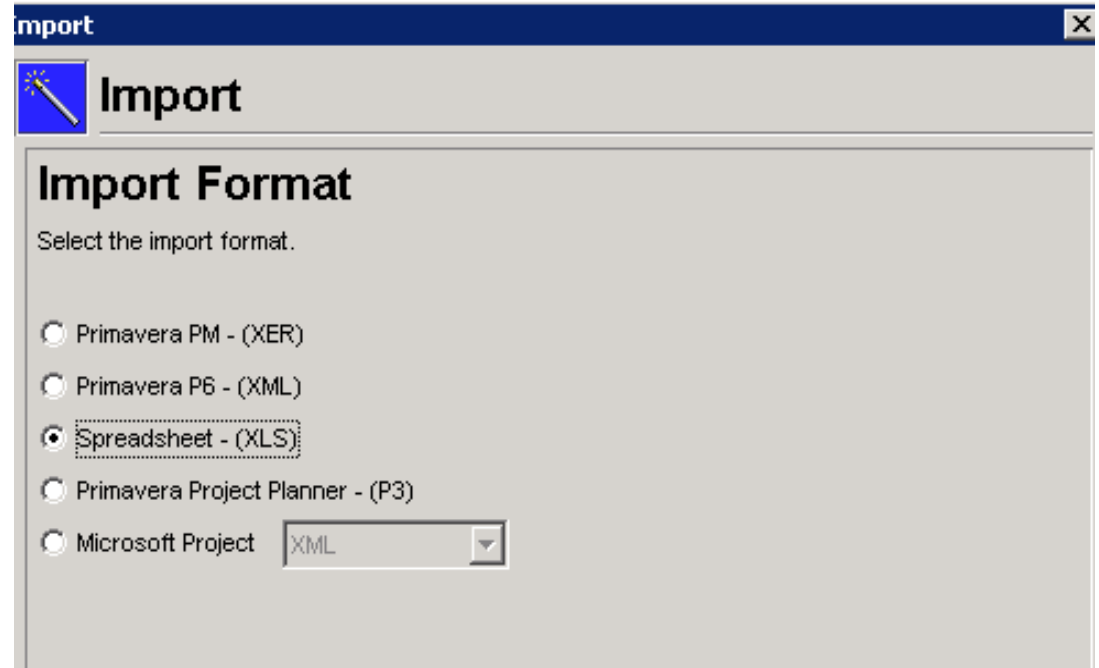
P6 Import Process

- Import dates as constraints

ctr_type	ctr_date	ctr_date2	ctr_type2
Primary Constra	Primary Cons	Secondary	Secondary Con
Start On or Before	04/18/16	05/27/16	Finish on or After
Start On or Before	10/03/16	12/20/16	Finish on or After
Start On or Before	05/31/16	08/08/16	Finish on or After

- Logic is maintained in Project P6 schedule
- This schedule is for summary and reporting

- Use the P6 import to update schedule and data



Consolidated Schedule

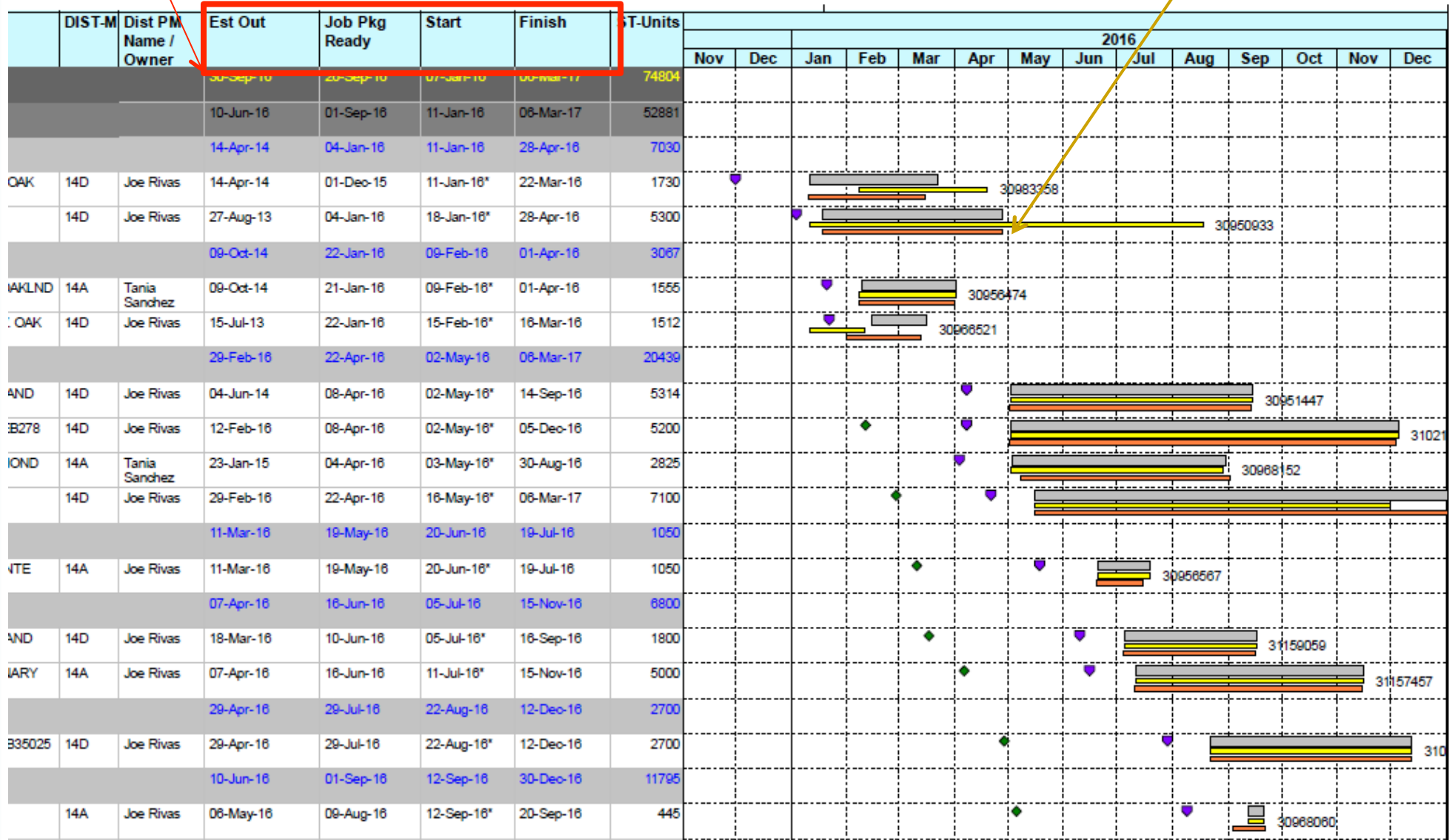
- Uses the P6 import process to bring data from various systems
- Shows Project major milestones and construction dates on one line

Est Out	Job Pkg Ready	Start	Finish	ST-Units	Original Duration	2016											
						Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
07-Dec-16	01-Dec-16	18-Nov-15	10-Feb-17	102104	313												
27-Jun-16	08-Oct-16	16-Nov-15	10-Jan-17	48249	290												
09-Nov-15	12-Nov-15	16-Nov-15*	18-Mar-16	1626	85												
05-Oct-13	24-Dec-15	08-Jan-16*	19-Feb-16	671	31												
17-Nov-15	10-Dec-15	11-Jan-16*	27-May-16	0	100												

- Overlay three comparison schedules –
- Some smaller Project do not have a full P6 schedule- dates from SAP
- One schedule file is refreshed weekly-not updated (no data date required-optional)
- Refresh completed in 2 hours

1. Summary Schedule

- one project- multiple milestone per row
- some projects not from full P6 schedules (SAP dates)
- target bar showing dates from construction (non P6) schedule



2. Unit Metrics

- Miles of pipe spread forecast over construction dates per program.
- Actuals compared to forecast for tracking and reporting
- Construction dates are dynamic with current schedule

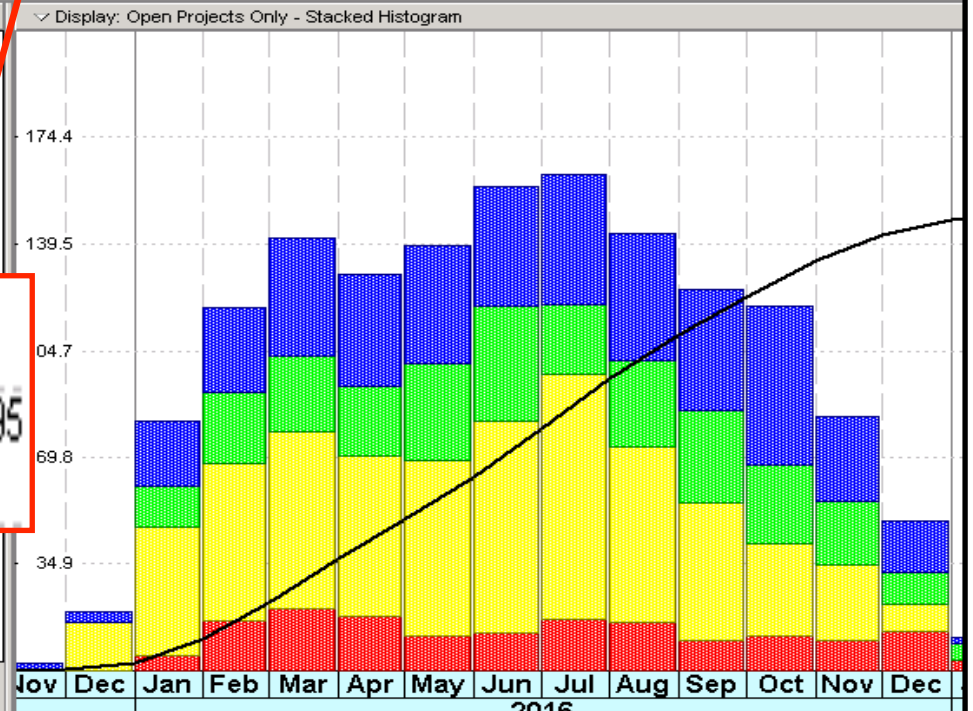
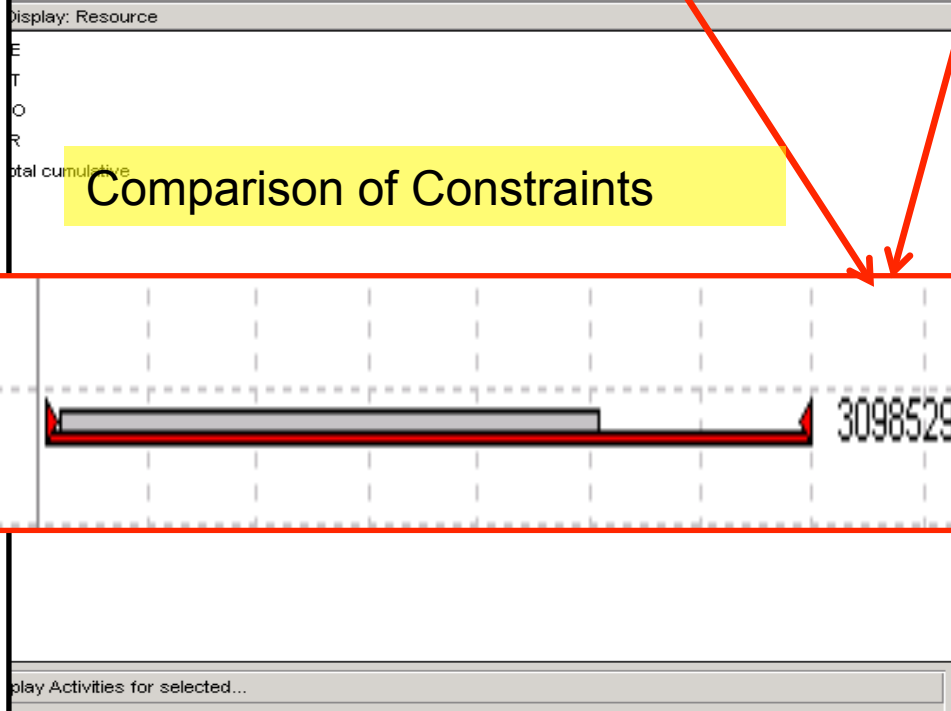
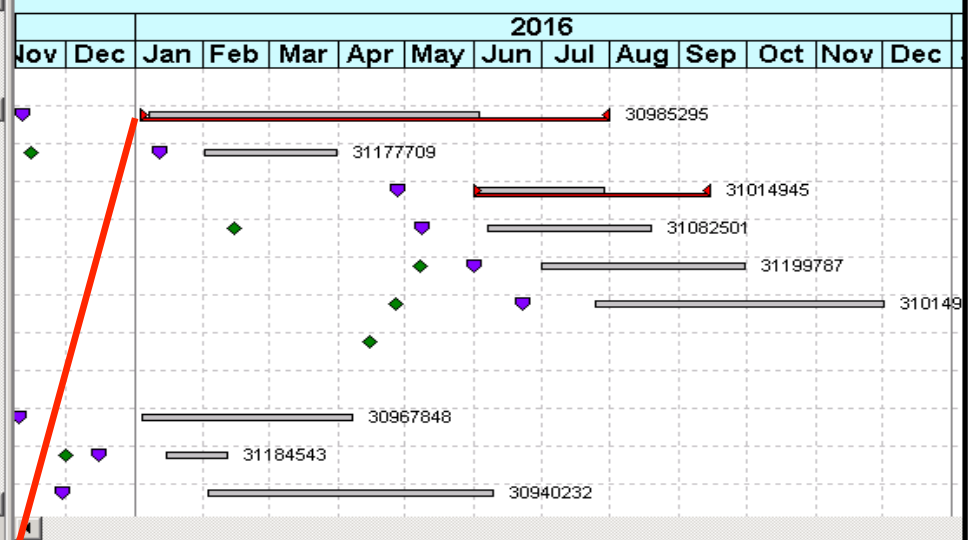
#	Div	Est Out	Job Pkg Ready	Start	Finish	Original	Units
33	14A	10-Apr-15	03-Feb-16	07-Mar-16*	27-May-16	60	3157
34	14A	03-Mar-14	21-Aug-15	14-Mar-16*	25-May-16	50	1965
35	14A	21-Jun-14	12-Feb-16	16-Mar-16*	03-Jun-16	50	2290
36	14A	09-Dec-15	18-Mar-16	04-Apr-16*	30-Sep-16	120	3219
37	14A	20-Jan-16	09-Mar-16	11-Apr-16*	27-May-16	30	1700
38	14A	13-Jun-14	09-Mar-16	11-Apr-16*	18-May-16	20	1259
39	14A	10-Jun-13	17-Dec-15	18-Apr-16*	07-Jul-16	50	1390
40	14A	30-Dec-15	29-Mar-16	28-Apr-16*	08-Jul-16	50	1330
41	14A	12-Feb-16	01-Apr-16	02-May-16*	17-Jun-16	30	740
42	14A	31-Mar-14	16-Dec-15	02-May-16*	02-Dec-16	150	7810

Resource ID	Resource Name	Resource Type	Unit of Measure	Primary Role
BA_DI	Diablo Division	Labor		
BA_EB	East Bay Division	Labor		
BA_NB	North Bay Division	Labor		
BA_SF	San Francisco Division	Labor		
CC_CC	Central Coast Div	Labor		
CC_DA	De Anza Division	Labor		
CC_MI	Mission Division	Labor		
CC_PN	Peninsula Division	Labor		
CC_SJ	San Jose Division	Labor		
CV_FR	Fresno Division	Labor		
CV_KE	Kern Division	Labor		
CV_ST	Stockton Division	Labor		
CV_YO	Yosemite Division	Labor		
GDAldyl-A	Aldyl-A pipe	Nonlabor		
GD Cap	Mat 47B Capacity	Nonlabor		
GDCap2	Mat 47C D E F Capacity	Nonlabor		
GDGPRP	GPRP pipe	Nonlabor		
GDHPR	HPR Units	Nonlabor		
GD other	GD other	Nonlabor		
GDRel	MAT 50A Reliability	Nonlabor		
GDSP	MAT 50C Pipe Station	Nonlabor		

3. Construction Planning / Leveling

- Construction Hours forecast by Division (FTE on chart)

Risk Score	SAP Est Out	Job Pkg Ready	Units (2015)	Constraint Type	DIST-Targ Start	DIST-Target Finish
2835	08-May-16	03-Mar-17	7930		05-Jan-16	16-Dec-16
450	18-Mar-15	12-Nov-15	27	Encroachment Permit - ren. No.	05-Jan-16	29-Jul-16
0	16-Nov-15	12-Jan-16	2140	0	25-Jan-16	31-Mar-16
571	07-Aug-15	28-Apr-16	2400	High Elevation Project	01-Jun-16	29-Jul-16
1043	15-Feb-16	09-May-16	1	0	01-Aug-16	30-Sep-16
450	08-May-16	01-Jun-16	12	0	01-Jul-16	30-Sep-16
321	27-Apr-16	23-Jun-16	2950	0	01-Aug-16	16-Dec-16
0	15-Apr-16	03-Mar-17	400	0	01-Apr-16	29-Apr-16
6301	17-Jun-16	11-Nov-16	38361		04-Jan-16	27-Dec-16
320	17-Apr-14	10-Nov-15	2338	No Constraints	04-Jan-16	15-Apr-16
0	01-Dec-15	16-Dec-15	380	WRO City Driven	04-Jan-16	29-Jan-16
187	06-Nov-13	30-Nov-15	4070	No Constraints	05-Jan-16	18-May-16



Question and Answers

