



# **Fuel, Steel, Class of Work and Scheduling Template**

**Version 19.3**

**2020**

**Fuel, Steel, Class of Work and Scheduling Template V19.3**

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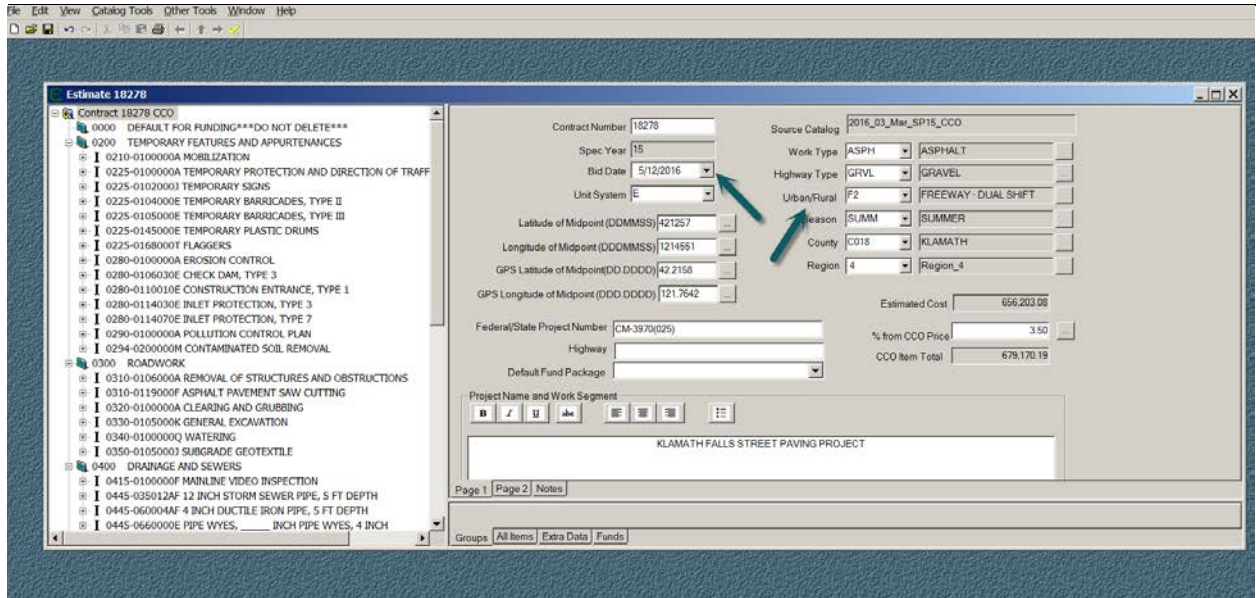
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## **Introduction**

The purpose of this document is to provide instructions for specification writers on how to use the Fuel Index and Scheduling Program to create timelines to complete construction activities on ODOT construction projects.

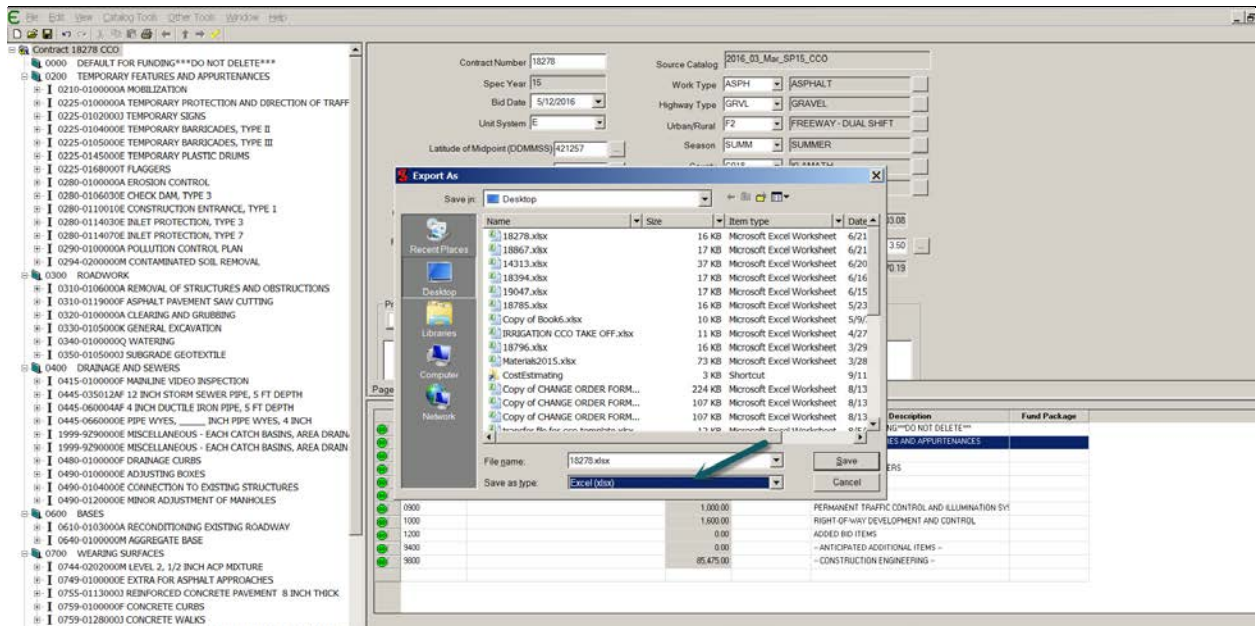
# PS&E Estimate

Figure 1: Screenshot of PS&E Estimate



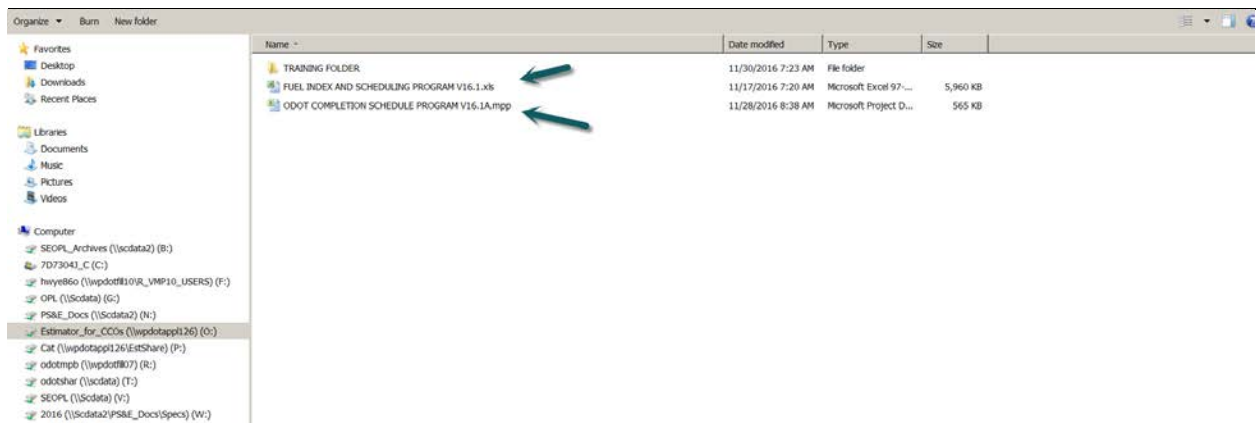
Complete the PS&E estimate in the normal fashion. Set the current bid date and setting form urban, rural, freeway, freeway, duel shift.

Figure 2: Screenshot of exporting the file in .xlsx format.



Save the file, then export the file in the .xlsx format. The system will automatically open the Excel file with the needed data.

Figure 3: Screenshot of .xls and .mpp master files.

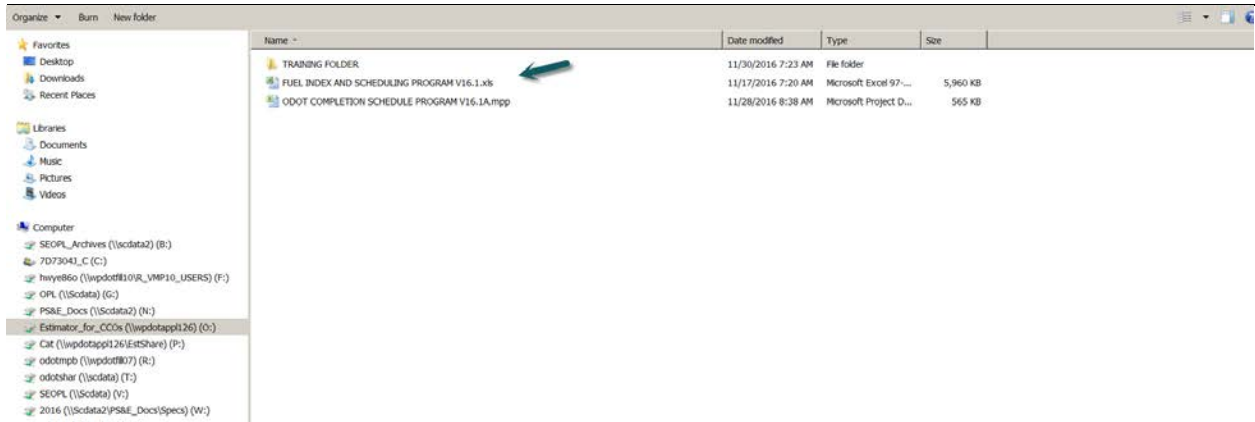


Highlight and copy the .xls and .mpp master files into a drive on your computer. These files will be updated often. It is recommended to copy them at least every other month to obtain updates.



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Figure 4: Screenshot of opening Fuel Index and Scheduling Program.



Open the “Fuel Index and Scheduling Program V16.1

Open the .xls folder that is the combined fuel and scheduling program.

Follow the standard process for importing the estimator file into the fuel program.

This is done by highlighting the entire page of the exported file from estimator and pasting this information into the estimator items tab.

Then copy the estimate data from the exported file into the estimate data tab in the fuel program. This process will set the production rates for many of the items within the schedule program. Save the exported .xls file for future reference.

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Figure 5: Screenshot of how to copy the estimate data from the exported file.

Group	Line Number	Item	Unit	Item Description	Supplemental Description	Quantity	Unit Price	Ext
0200	0010	0210-01000	LS	MOBILIZATION		1	41319.68	
0200	0020	0225-01000	LS	TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC		1	12912.4	
0200	0030	0225-01020	SQFT	TEMPORARY SIGNS		588	14	
0200	0040	0225-01040	EACH	TEMPORARY BARRICADES, TYPE II		15	39	
0200	0050	0225-01050	EACH	TEMPORARY BARRICADES, TYPE III		25	83	
0200	0060	0225-01450	EACH	TEMPORARY PLASTIC DRUMS		10	43	
0200	0070	0225-01680	HOUR	FLAGGERS		150	42	
0200	0080	0280-01000	LS	EROSION CONTROL		1	1000	
0200	0090	0280-01060	EACH	CHECK DAM, TYPE 3		20	100	
0200	0100	0280-01100	EACH	CONSTRUCTION ENTRANCE, TYPE 1		8	800	
0200	0110	0280-01140	EACH	INLET PROTECTION, TYPE 3		5	100	
0200	0120	0280-01140	EACH	INLET PROTECTION, TYPE 7		1	100	
0200	0130	0290-01000	LS	POLLUTION CONTROL PLAN		1	1000	
0200	0140	0294-02000	TON	CONTAMINATED SOIL REMOVAL		2370	85	
0300	0150	0310-01060	LS	REMOVAL OF STRUCTURES AND OBSTRUCTIONS		1	2000	
0300	0160	0310-01190	FOOT	ASPHALT PAVEMENT SAW CUTTING		990	2	
0300	0170	0320-01000	ACRE	CLEARING AND GRUBBING		1	3000	
0300	0180	0330-01050	CUYD	GENERAL EXCAVATION		75	30	
0300	0190	0340-01000	MGAL	WATERING		50	35	
0300	0200	0350-01050	SQYD	SUBGRADE GEOTEXTILE		1000	1	
0400	0210	0415-01000	FOOT	MAINLINE VIDEO INSPECTION		156	5.5	
0400	0220	0445-03501	FOOT	12 INCH STORM SEWER PIPE, 5 FT DEPTH		156	50	
0400	0230	0445-06000	FOOT	4 INCH DUCTILE IRON PIPE, 5 FT DEPTH		8	25	
0400	0240	0445-06600	EACH	PIPE WYES, _____ INCH	PIPE WYES, 4 INCH	1	500	
0400	0250	1999-92900	EACH	MISCELLANEOUS - EACH	CATCH BASINS, AREA DRAINAGE BASIN	1	1500	
0400	0260	1999-92900	EACH	MISCELLANEOUS - EACH	CATCH BASINS, AREA DRAIN	1	800	
0400	0270	0480-01000	FOOT	DRAINAGE CURBS		275	7	
0400	0280	0490-01000	EACH	ADJUSTING BOXES		2	300	
0400	0290	0490-01040	EACH	CONNECTION TO EXISTING STRUCTURES		2	500	
0400	0300	0490-01200	EACH	MINOR ADJUSTMENT OF MANHOLES		1	800	
0600	0310	0610-01030	LS	RECONDITIONING EXISTING ROADWAY		1	5000	
0600	0320	0640-01000	TON	AGGREGATE BASE		3000	25	
0700	0330	0744-02020	TON	LEVEL 2. 1/2 INCH ACP MIXTURE		1290	120	

In the exported file – highlight all items – click top left button to highlight page – copy (ctrl-c).

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Figure 6: Screenshot of how to paste highlighted data from the exported file.

	A	B	C	D	E	
1	Group	Line Number	Item	Unit	Item Description	Supplemental
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

The screenshot shows an Excel spreadsheet with a ribbon at the bottom containing tabs: INSTRUCTIONS, BID ITEM LIST, ESTIMATOR\_ITEMS (highlighted), ESTIMATOR\_DATA, and 929 ITEMS & ERRORS. The spreadsheet has columns labeled A through E and rows numbered 1 through 22. The header row (row 1) contains the following text: Group, Line Number, Item, Unit, Item Description, and Supplemental. The cell containing 'Group' in row 1, column A is highlighted with a green border.

Paste in cell 1 of the schedule/fuel sheet in the estimator items tab (ctrl-v).

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Figure 7: Screenshot of schedule/fuel sheet in the estimator items tab pasted into cell 1.

	A	B	C	D	E	F	G	H	I	J
1	Data Element	Value								
2	Estimate ID	18278								
3	Spec Year	15								
4	Base Date	05/12/2016								
5	Unit System	E								
6	Latitude of Midpoint	421257								
7	Longitude of Midpoint	1214551								
8	GPS Latitude of Midpoint		42.2158							
9	GPS Longitude of Midpoint		121.764167							
10	Federal/State Project Number	CM-3970(025)/								
11	Federal Project Number	CM-3970(025)								
12	State Project Number									
13	Default Fund Package									
14	Description	KLAMATH FALLS STREET PAVING PROJECT								
15	Source Catalog	2016_03_Mar_SP15_CCO.cat								
16	Work Type	ASPH								
17	Work Type Description	ASPHALT								
18	Highway Type	GRVL								
19	Highway Type Description	GRAVEL								
20	Urban/Rural Type	F2								
21	Urban/Rural Type Description	FREEWAY - DUAL SHIFT								
22	Season	SUMM								
23	Season Description	SUMMER								
24	County	C018								
25	County Description	KLAMATH								
26	District	4								
27	District Description	Region_4								
28	Estimate Cost		656203.08							
29	Contingency %		3.5							
30	Estimate Total		679170.19							
31	Estimated By	CALVIN LARWOOD, WHPACIFIC								
32	Preparation Date	12/01/2015								
33	Checked By	DAVE BERGMANN, WHPACIFIC								
34	Date Checked									

Figure 8: Screenshot of how to copy the estimator data from the exported data.

	A	B	C	D	E	F	G
1	Data Element	Value					
2	Estimate ID	18278					
3	Spec Year	15					
4	Base Date	05/12/2016					
5	Unit System	E					
6	Latitude of Midpoint	421257					
7	Longitude of Midpoint	1214551					
8	GPS Latitude of Midpoint		42.2158				
9	GPS Longitude of Midpoint		121.764167				
10	Federal/State Project Number	CM-3970(025)/					
11	Federal Project Number	CM-3970(025)					
12	State Project Number						
13	Default Fund Package						
14	Description	KLAMATH FALLS STREET PAVING PROJECT					
15	Source Catalog	2016_03_Mar_SP15_CCO.cat					
16	Work Type	ASPH					
17	Work Type Description	ASPHALT					
18	Highway Type	GRVL					
19	Highway Type Description	GRAVEL					
20	Urban/Rural Type	F2					
21	Urban/Rural Type Description	FREEWAY - DUAL SHIFT					
22	Season	SUMM					
23	Season Description	SUMMER					
24	County	C018					
25	County Description	KLAMATH					
26	District	4					
27	District Description	Region_4					
28	Estimate Cost		656203.08				
29	Contingency %		3.5				
30	Estimate Total		679170.19				
31	Estimated By	CALVIN LARWOOD, WHPACIFIC					

Paste this information in the fuel/schedule sheet in the estimate data tab using the same process (ctrl-v).

## Production rates for all bid items

### Review/Modify/Fill in (9Z9) Items

This system will automatically fill in production rates and calculate times for most of the standard bid items. Quite a number of bid items do not require a production rate (such as AC Binder) and will have a production rate of zero (0) or are incidental non-critical items such as many of the TPDT bid items. It is not necessary to fill in times for these items.

The system will identify the 'Wildcard' 9Z9 bid items and all 'operator revisions/additions' are made on the 9Z9 Items & Errors tab. The system will identify the 9Z9 items in column A. Next to the '9Z9 category' is a drop down tab in Column B. This column defines the class of work for this item.

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Figure 9: Screenshot of fuel/schedule sheet on 9z9 items.

	A	B	C	D	E
1	9Z9/OBS ITEM	9Z9 OR OBSOLETE -CLASS OF WORK	9Z9 OR OBSOLETE - FUEL WORK TYPE	9Z9 OR OBSOLETE - SCHEDULE WORK TYPE	RATE CALCULATION TYPE
2					QUANTITY
3					QUANTITY
4					QUANTITY
5					QUANTITY
6					QUANTITY
7					QUANTITY
8					QUANTITY
9	9Z9 ITEM	SELECT CLASS OF WORK	LECT FUEL WORK TYPE	Aggregate Base CY	QUANTITY
10					QUANTITY

Column C contains a drop down list of ‘Fuel Work Type’ which will be used for the fuel escalation calculations.

Column D contains a drop down list of ‘Schedule Work Type’. This selection will classify the production work type the item falls under.

‘Rate Calculation Type’ under column E represents the denominator or the production equation. If the item is a LS item you can insert a ‘Production Rate’ (PER DAY) in the form of dollars per day, or in a unit based item, units per day. Columns G and H can be manually overridden to fit the item to the project and work restraints.

The operator should scan all other items that are not ‘9Z9’ Wildcard items and all items necessary for Class of Work Calculation, Fuel Escalation, Steel Escalation and CTE will show up in red or orange which signifies operator input due to missing data fields.

The operator is allowed to change any production rate in Column G but is responsible for that rate for the project. Production rates that are too high and not attainable will result in claims for the project and the operator must consult with production rate experts prior to making significant rate adjustments. Also note that double shifting on projects generally does not result in doubling of production rates and must be supported within lane closures allowed within the project special provisions under section 00220.

Prior to saving this file you will need to open the Microsoft Project file standard template. The .mpp file will attempt to link to this file to auto-transfer the data from the excel file into Microsoft Project. If you change the name of the Fuel Program file – then the Project file cannot find the data to be transferred.

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Figure 10: Screenshot of fuel/schedule sheet on 9z9 items.

	A	B	C	D	E
22					QUANTITY
23					QUANTITY
24					QUANTITY
25					QUANTITY
26					QUANTITY
27					QUANTITY
28					QUANTITY
29					QUANTITY
30				ITEM NOT FOUND, SELECT SCHEDULE WORK TYPE	-
31					QUANTITY
32	9Z9 ITEM	SELECT CLASS OF WORK	SELECT FUEL WORK TYPE	SELECT SCHEDULE WORK TYPE	-
33	9Z9 ITEM	SELECT CLASS OF WORK	SELECT FUEL WORK TYPE	SELECT SCHEDULE WORK TYPE	-
34	9Z9 ITEM	SELECT CLASS OF WORK	SELECT FUEL WORK TYPE	SELECT SCHEDULE WORK TYPE	-
35	OBSOLETE ITEM	ITEM NOT FOUND, SELECT CLASS OF WORK	ITEM NOT FOUND, SELECT FUEL WORK TYPE		QUANTITY
36				ITEM NOT FOUND, SELECT SCHEDULE WORK TYPE	-
37					QUANTITY
38					QUANTITY
39					QUANTITY
40					QUANTITY

In the fuel/schedule sheet – go to the 9z9 ID sheet – Column A will show the 9z9 items – use the drop down menu in Column B – select the category this line item belongs in to complete the fuel index sheet.

Figure 11: Screenshot of fuel/schedule sheet on 9z9 items, Column C

	A	B	C	D	E	F	G	PROI
1	9Z9/OBS ITEM	9Z9 OR OBSOLETE -CLASS OF WORK	9Z9 OR OBSOLETE - FUEL WORK TYPE	9Z9 OR OBSOLETE - SCHEDULE WORK TYPE	RATE CALCULATION TYPE	SUBGROUP #	PRODUCTION RATE (PER DAY)	
2					QUANTITY	0210		0.0
3					QUANTITY	0225		0.0
4					QUANTITY	0225		0.0
5					QUANTITY	0225		0.0
6					QUANTITY	0225		0.0
7					QUANTITY	0240		10.0
8					QUANTITY	0250		30.0
9	9Z9 ITEM	SELECT CLASS OF WORK	STONE EMBANKMENT	Aggregate Base CY	QUANTITY	0641		2777.8
10			NOT APPLICABLE		QUANTITY	0280		0.0
11					QUANTITY	0280		0.0
12					QUANTITY	0280		0.0
13					QUANTITY	0280		0.0
14					QUANTITY	0280		0.0

Use the drop down menu in Column C – select the closest type of item this line item belongs in to complete the project schedule – the quantity, subgroup and total time will populate in Columns E, F and G.

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Figure 12: Screenshot of fuel/schedule sheet on 9z9 items, Columns E and G.

A	B	C	D	E	F	G	H	I	J	K	L	
	--		#N/A	#N/A	0	0.00	0400	0240	0445-0660000E	EACH	PIPE WYES, _____ INCH	PIPE WYE
9z9 category	NA	Inlets, New Ea	2	470	2	0.50	0400	0250	1999-9290000E	EACH	MISCELLANEOUS - EACH	CATCH B
9z9 category	--		#N/A	#N/A	0	0.00	0400	0260	1999-9290000E	EACH	MISCELLANEOUS - EACH	CATCH B
	--		#N/A	#N/A	1000	0.28	0400	0270	0480-0100000F	FOOT	DRAINAGE CURBS	
	--		#N/A	#N/A	2	1.00	0400	0280	0490-0100000E	EACH	ADJUSTING BOXES	
	--		#N/A	#N/A	2	1.00	0400	0290	0490-0104000E	EACH	CONNECTION TO EXISTING STI	
	--		#N/A	#N/A	2	0.50	0400	0300	0490-0120000E	EACH	MINOR ADJUSTMENT OF MAN	
	--		#N/A	#N/A	3000	0.00	0600	0310	0610-0103000A	LS	RECONDITIONING EXISTING RC	
	--		#N/A	#N/A	4167	0.72	0600	0320	0640-0100000M	TON	AGGREGATE BASE	
	--		#N/A	#N/A	1320	0.98	0700	0330	0744-0202000M	TON	LEVEL 2, 1/2 INCH ACP MIXTUF	
	--		#N/A	#N/A	4	0.50	0700	0340	0749-0100000E	EACH	EXTRA FOR ASPHALT APPROAC	
	--		#N/A	#N/A	3556	0.04	0700	0350	0755-0113000J	SQYD	REINFORCED CONCRETE PAVE	
	--		#N/A	#N/A	1000	0.04	0700	0360	0759-0100000F	FOOT	CONCRETE CURBS	
	--		#N/A	#N/A	1076	0.15	0700	0370	0759-0128000J	SQFT	CONCRETE WALKS	
	--		#N/A	#N/A	3	2.00	0700	0380	0759-0154000E	EACH	EXTRA FOR NEW SIDEWALK R/ EXTRA FC	
	--		#N/A	#N/A	10	0.10	0900	0390	0942-0100000E	EACH	PERMANENT TYPE III BARRICA	
	--		#N/A	#N/A	101	0.20	1000	0400	1040-0189000J	SQYD	SOD LAWN	

When an item cannot be found or is not similar to standard items, the subgroup number can be manually placed in Column E and the total time to complete the item can be manually placed in Column G.



# MS Project 10 to Identify the Project Completion Date

Figure 13: MS Project 10 to Identify the Project Completion Date.

	A	B	C	D
1	<b>MISSING PRODUCTION RATE(S), SEE "9Z9 ITEMS &amp; ERRORS" TAB</b>			
2	<b>GROUP NUMBER</b>	<b>SUBGROUP NUMBER</b>	<b>BID ITEM CATEGORY</b>	<b>LINK VALUE</b>
3	0100	0120	BID OPENING (KEY# 19936)	03/26/2020
4	0200		TEMPORARY FEATURES AND APPURTENANCES	
5	0200	0225	WORK ZONE TRAFFIC CONTROL	0.0
6	0200	0230	CONSTRUCT AND REMOVE DETOURS	0.0
7	0200	0240	TEMPORARY DRAINAGE FACILITIES	0.1
8	0200	0250	TEMP BRIDGE/PLATFORMS	0.0
9	0200	0270	TEMP FENCES	0.0
10	0200	0280	EROSION AND SEDIMENT CONTROL	0.0
11	0200	0290	ENVIRONMENTAL PROTECTION	0.0
12	0300		ROADWORK	
13	0300	0310	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	0.0
14	0300	0320	CLEARING AND GRUBBING	0.1
15	0300	0330	EARTHWORK	0.5
16	0300	0331	SUBGRADE STABILIZATION	0.0
17	0300	0335	BLASTING METHODS	0.0
18	0300	0340	WATERING	0.0
19	0300	0344	TREATED SUBGRADE	0.0
20	0300	0350	GEOSYNTHETIC INSTALLATION	0.0
21	0300	0360	DRAINAGE BLANKETS	0.0
22	0300	0370	FINISHING ROADBEDS	0.0
23	0300	0390	RIPRAP PROTECTION	6.0
24	0300	0396	SHOTCRETE SLOPE STABILIZATION	0.0
25	0300	0398	ROCK SLOPE STABILIZATION	0.0
26	0400		DRAINAGE AND SEWERS	

When you open the MS Project 10 template a menu will pop up asking if you wish to link this file. The operator should say yes to allow data to automatically transfer into MSP. It is recommended the operator complete the scheduling process prior to saving files with another name to preserve the linkages until the schedule is completed. However, once the data is linked, the operator can make and change data within MSP program at any time with the understanding that the Fuel program will no longer provide all production data to all items.

## Data Entry Operations for Scheduling

1. Highlight the task name in line 1 and enter the project contract number.
2. Highlight the 'Project' tab and then the 'Project Information' icon - enter the project bid date in the pop up 'start date' field.

3. Highlight the 'Task' tab, drag and highlight all milestone tasks in the 'Task Name' column, click the 'Auto Schedule' icon to schedule the milestone tasks.

## **Critical Path Contingency Days**

1. Manually enter rain days for months worked – site located at <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?or3995>.
  - a. Locate nearest station on state map
  - b. Highlight the station
  - c. Highlight the 'Period of Record' precipitation
  - d. Count rain days  $\geq 0.5$  inch
  - e. Count snow days  $+ 0.1$  inch
2. Refer to the specifications for local event non-work days.
3. Refer to the Bridge Section for special event and high winds for structures days.
4. Enter additional days needed to develop mid-month or end-month billing cycles.

Contract the fields to show only the milestone information.

## **Critical Path 'Open Worksite' Days**

The initial schedule takes a simplified approach to add each major set of milestones and identify the total open worksite time. The approach to time works on many simple projects and modifications to the timelines will be needed for slightly more complicated projects.

## **Modifying Start Times for Milestones**

This is a higher level change to start times – reset the predecessor line for milestones that start at the same time. (In this case bases and wearing surfaces are the same – 59.) Input additional milestones as needed such as intermediate completion dates, no work restrictions, and or in water work window constraints.

## **Sequencing Activities between Milestones**

The easiest way to stagger a task that is in one milestone to a task in a preceding milestone is to simply delay the start of the second activity. Delaying the start of paving behind grinding activities is one example. Highlight the paving item in task description.

## **Delays and Addendums – Split Activities**

After advertisement when a project is delayed by more than two (2) weeks the schedule must be revalidated. One example: the project is delayed by three months due to issues such as right of way hold outs. When this happens, the paving work may have to 'season over' due to seasonal paving restrictions. The first action is to revise the bid date by re-entering the revised bid date in the 'Project Information' tab. In this case the date is moved to 3-9-17. The paving and

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striping time is well beyond the seasonal restriction and the paving activity will need to be split (the project team may wish to hold all paving over to the next season – this example is for ‘split activities’). Highlight the ‘Task’ tab and highlight the activity to be split – in this case the paving structures activity. Then highlight the icon that looks like a ‘firecracker’ which is the ‘task split’ icon. Place the cursor on the graphic bar and dates will appear. The seasonal restriction starts on 10-1-17 – when that date appears press on the left mouse key and drag to the right until 3-15-18 appears on the cursor arrow. Release the mouse key at that point. Reset the project completion date to nearest mid-month or end-month date.

## Complex Schedule Task Item Start Delays

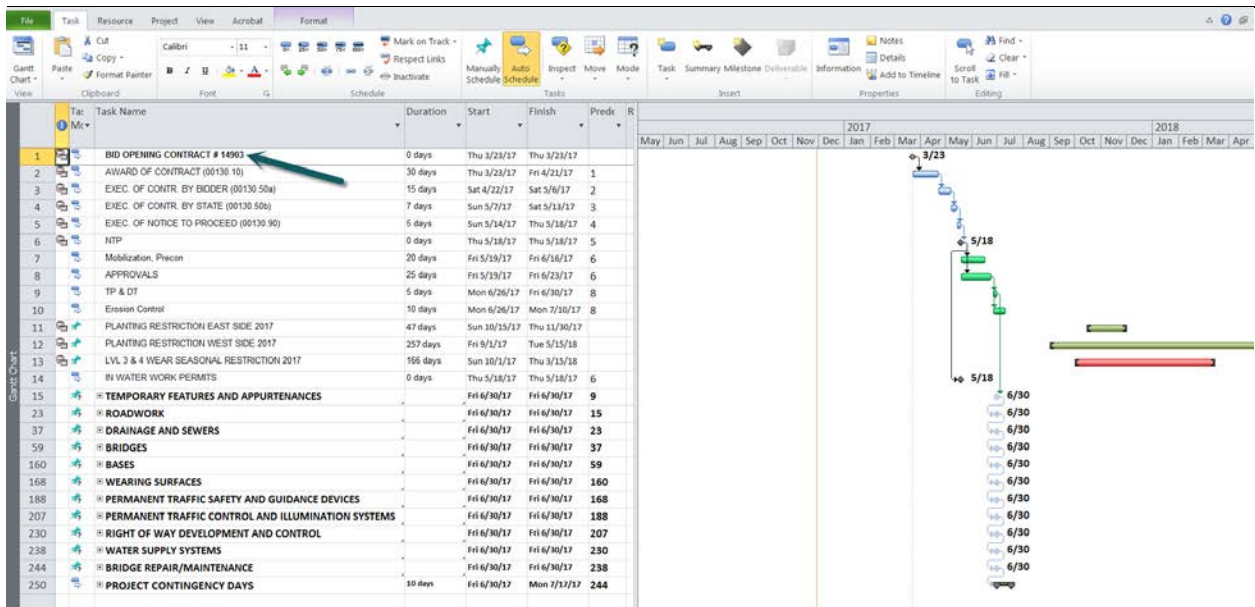
Complex schedules often have one milestone task start with a short delay of a task within another milestone. The delay can be by days or percentage and the code is placed in the predecessor field. See the example below for the various options and codes for ‘Lead or Lag time’ for tasks.

## Saving Files

After review with the advance plans team save the file using the project key number in two places. Keep the file with project documentation for PS&E submittal. Also place the file of the advertisement. When a project is delayed by more than two (2) weeks the schedule must be revalidated. One example: the project is delayed by three months due to issues such as right of way hold outs. When this happens the paving work may have to ‘season over’ due to season.

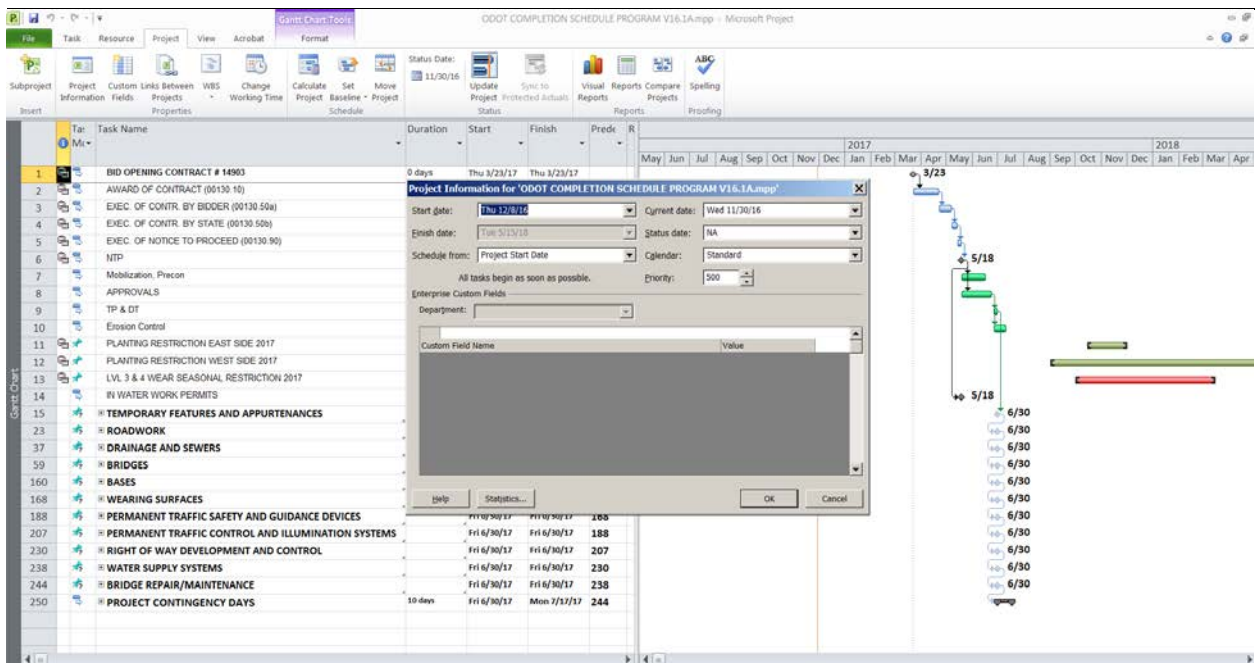
Fuel, Steel, Class of Work and Scheduling Template V19.3

Figure 14: Screenshot of where to type in the bid opening contract number.



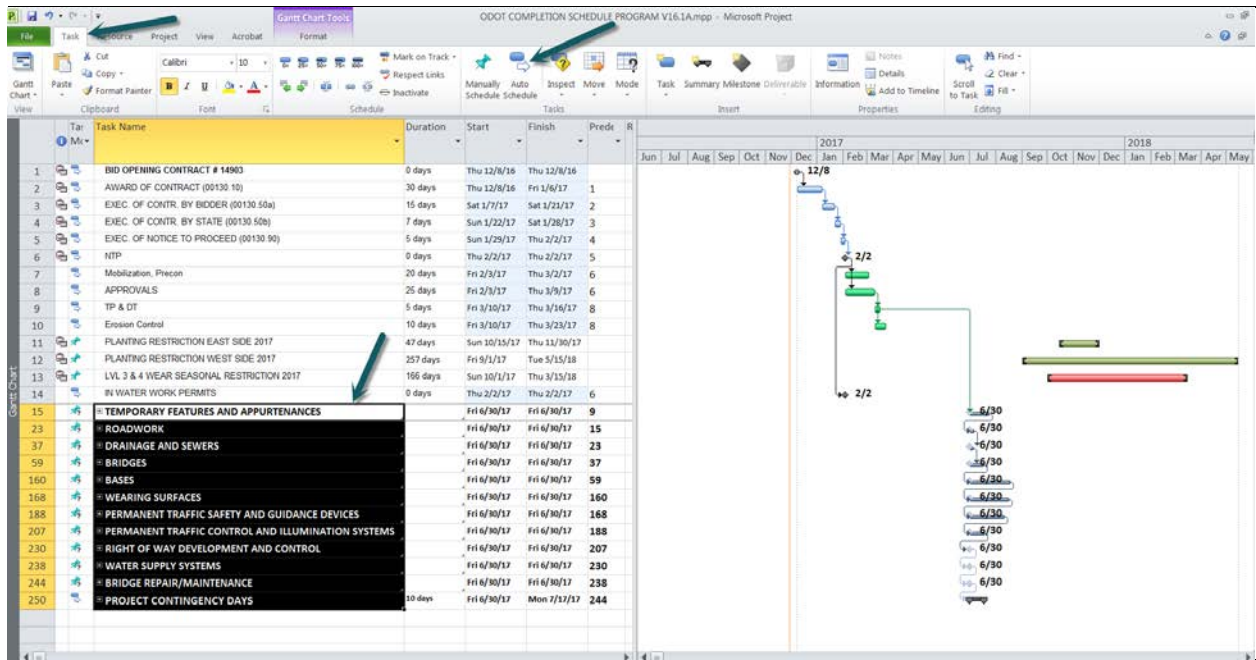
Type in the contract number in line 1.

Figure 15: Screenshot of project information icon.



Go to the project tab – project information icon - enter the bid date.

Figure 16: Screenshot of how to highlight task milestone items.



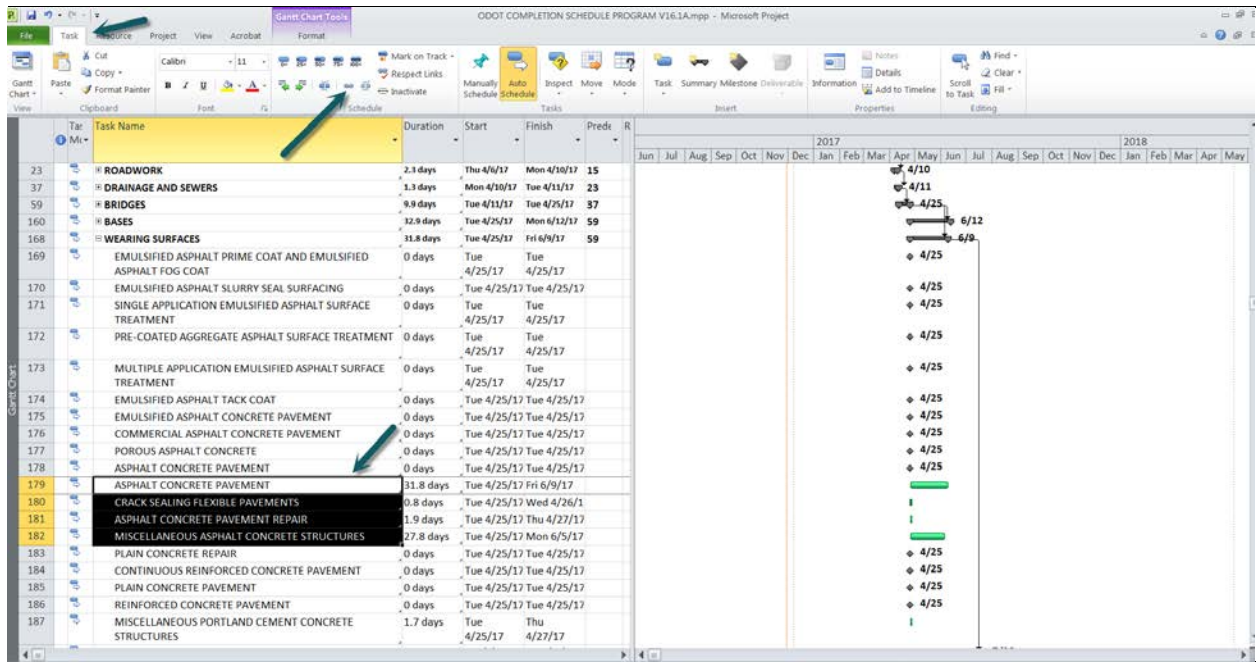
Go to the 'task' tab.

Highlight all task milestone items (to auto schedule these items).

Press the auto schedule icon to schedule the milestone items.

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Figure 17: Screenshot showing how to highlight task milestone items to auto schedule them.

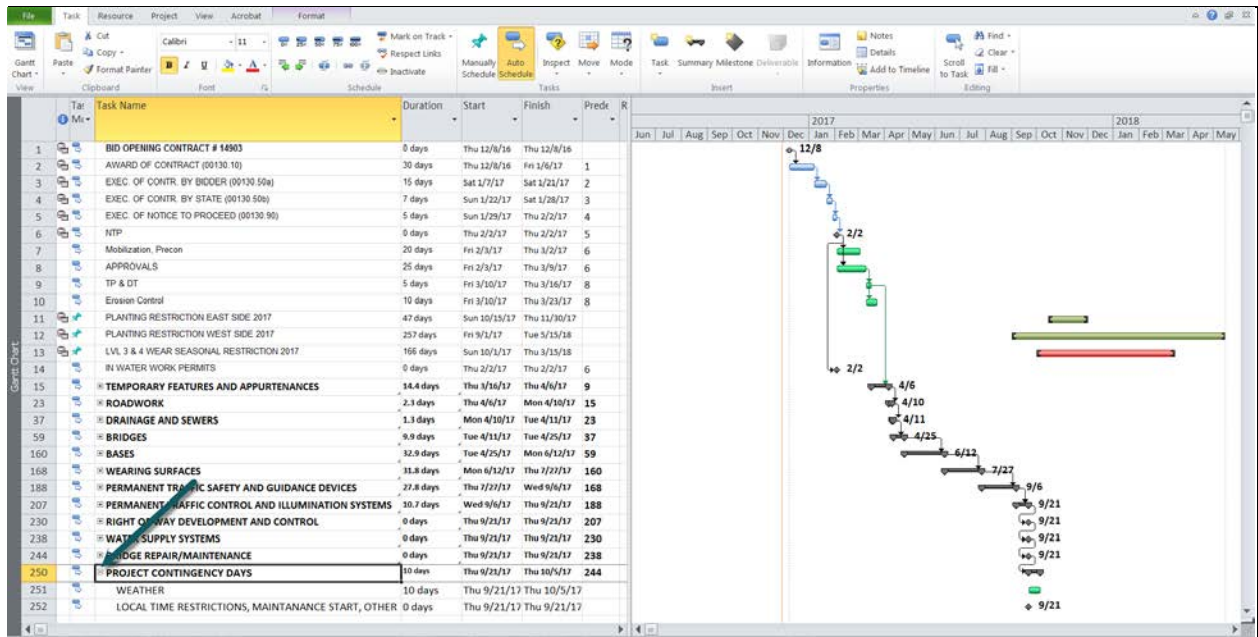


Go to the 'task' tab.

Highlight all task milestone items (to auto schedule these items).

Press the chain link icon to sequence the task items.

Figure 18: Screenshot on how to expand project contingency days tab.



Expand the 'Project Contingency Days' tab.

Refer to instructions to find rain/snow weather days.

Refer to special provisions for wind/hazard alert days if applicable.

Refer to the special provisions for all local or other non-work days.

Adjust days to nearest mid or end month billing cycle date.

Figure 19: Screenshot of how to highlight the state map tab to find station locations.

Back to: [State Map](#) [Western U.S. map](#) [Home Page](#)

NOTE:  
To print data frame (right frame), click on right frame before printing.

**1981 - 2010**

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(-23 KB\)](#)
- [Monthly Tabular data \(-1 KB\)](#)
- [NCDC 1981-2010 Normals \(-3 KB\)](#)

**1971 - 2000**

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(-23 KB\)](#)
- [Monthly Tabular data \(-1 KB\)](#)
- [NCDC 1971-2000 Normals \(-3 KB\)](#)

**1961 - 1990**

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(-23 KB\)](#)
- [Monthly Tabular data \(-1 KB\)](#)
- [NCDC 1961-1990 Normals \(-3 KB\)](#)

**Period of Record**

- [Station Metadata](#)
- [Station Metadata Graphics](#)

**General Climate Summary Tables**

[Temperature](#)

### HONEYMAN SP, OREGON (353995)

**Period of Record Monthly Climate Summary**

Period of Record : 05/21/1971 to 05/31/2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	50.4	53.2	55.0	58.5	62.4	65.6	68.5	68.7	68.6	62.5	53.9	49.8	59.7
Average Min. Temperature (F)	37.8	38.8	39.0	40.6	44.3	48.0	50.2	51.0	49.0	45.4	41.3	37.6	43.6
Average Total Precipitation (in.)	10.32	8.07	8.79	5.40	3.55	2.35	0.75	1.09	1.95	5.15	10.58	11.49	69.51
Average Total SnowFall (in.)	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.  
Max. Temp.: 95.5% Min. Temp.: 95% Precipitation: 95.9% Snowfall: 99.8% Snow Depth: 99.5%  
Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

Western Regional Climate Center, [wrcrc@drf.edu](mailto:wrcrc@drf.edu)

Highlight state map tab to find Oregon station locations.

Figure 20: Screenshot of how to highlight the red dot representing a project.

Coop sites

**California**

- [Alturas Ranger Station](#)
- [Cedarville](#)
- [Clear Creek](#)
- [Copeo No 1 Dam](#)
- [Crescent City 1 N](#)
- [Crescent City 7 Ene](#)
- [Davis Creek](#)
- [Elk Valley](#)
- [Fort Bidwell](#)
- [Fort Dick](#)
- [Fort Jones Ranger Stn](#)
- [Gasquet Ranger Stn](#)
- [Greenview](#)
- [Happy Camp Ranger Stn](#)
- [Hilts Slash Disposal](#)
- [Idlewild Hwy Mutnc Stn](#)
- [Klamath](#)
- [Lake City](#)
- [Lava Beds Nat Monument](#)
- [Mount Hebron 11 Ene](#)
- [Mount Hebron Rng Stn](#)
- [Oak Knoll Ranger Stn](#)
- [Oak Knoll Ranger Stn 2](#)
- [Tulelake](#)
- [Yreka](#)

**Idaho**

- [Arrowrock Dam](#)
- [Boise 7 N](#)
- [Boise Lucky Peak Dam](#)
- [Boise Wsfo Airport](#)
- [Brownlee Dam](#)
- [Caldwell](#)
- [Cambridge](#)
- [Cascade 1 Nw](#)
- [Centerville Arbatoh Ran](#)

Select a site by placing mouse cursor over a site. Site name will appear in location box below the map if browser supports javascript1.1. Click site to go to graphing options.  
Large boxes indicate stations that had reported during the month when these maps were last generated. Small boxes indicate inactive or removed stations.  
Map last generated on 04/11/06.  
If a location has multiple stations or more than one platform in the near vicinity, overlapping boxes may create difficulty when selecting from the map. Select from the list to the left in such cases.

Warren (COOP)

Western Regional Climate Center, [wrcrc@drf.edu](mailto:wrcrc@drf.edu)

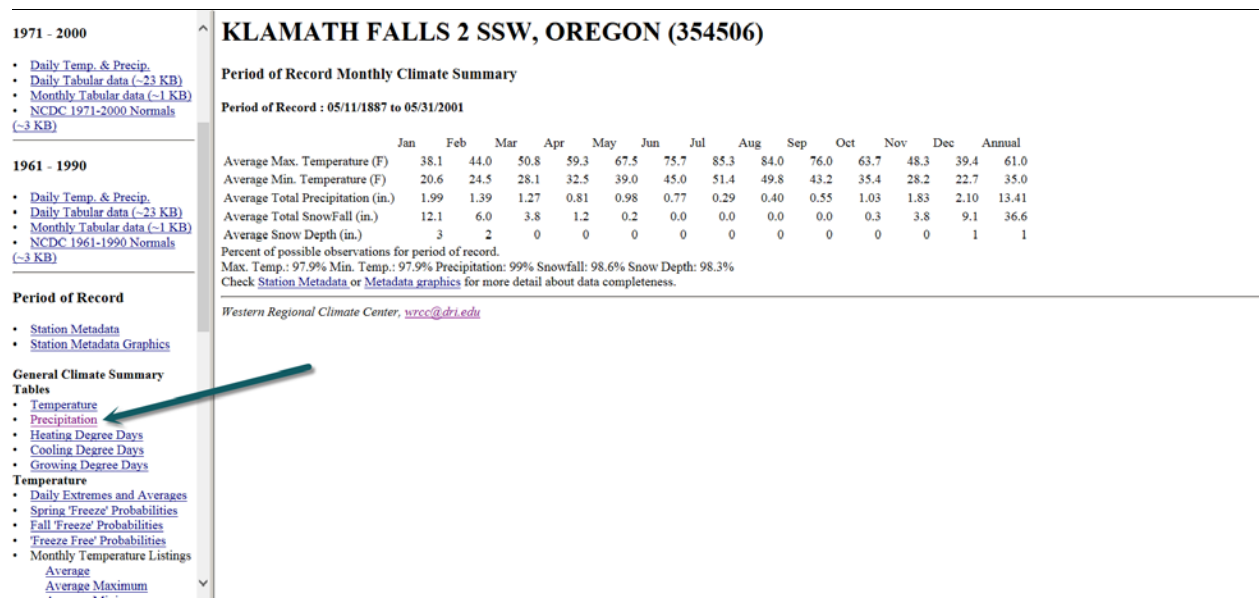
Location:

Select a site by placing mouse cursor over a site. Site name will appear in location box below the map if browser supports javascript1.1. Click site to go to available products list.

Find station near the project and highlight the red dot.

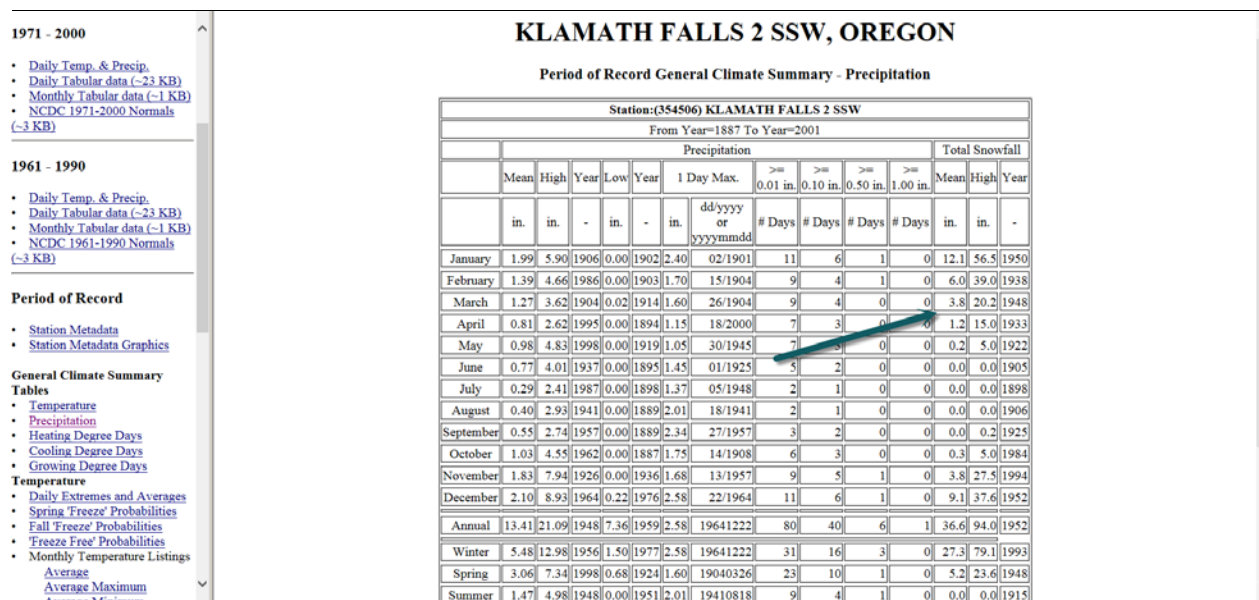


Figure 21: Screenshot showing where to highlight the period of record precipitation.



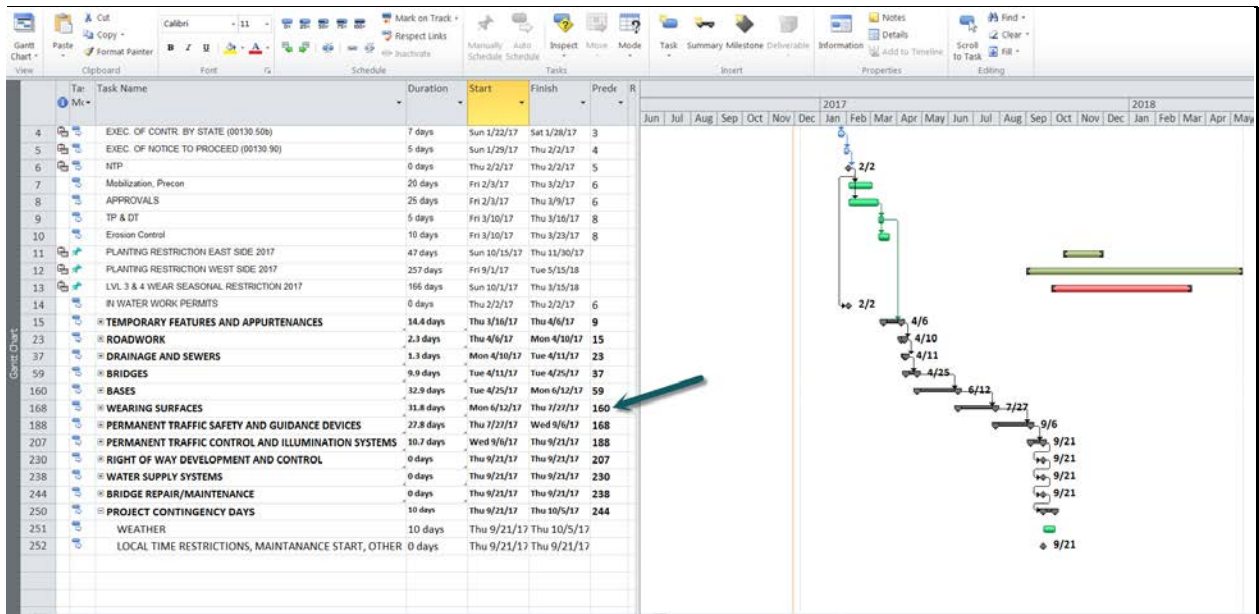
Highlight the 'Period of Record' Precipitation.

Figure 22: Screenshot showing period of record climate summary — precipitation.



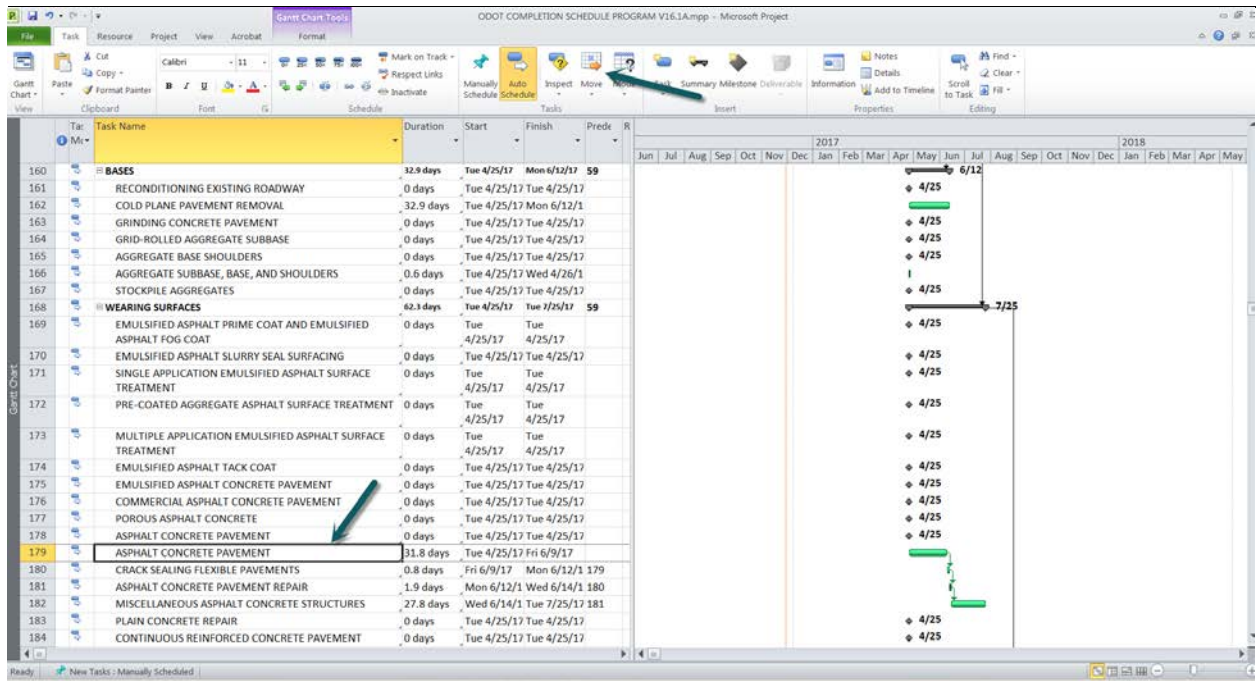
Select the number of days during the on-site work period for rain  $\geq 0.5$  or snowfall mean (rainfall days  $\geq 0.1$  inch) – enter the number of days (7 days in this case).

Figure 23: Screenshot showing how to start milestone activities at the same time.



Resetting the #160 predecessor to #59 starts wearing surfaces at the same time as bases – this can be done with any milestone activity.

Figure 24: Screenshot showing how to delay the start of a task.



To delay the start of AC paving, highlight the task tab, highlight the task description, highlight the 'Move' icon, in the drop box select 'Custom' and enter the number of days moving forward. Collapse the task views back to milestone view.

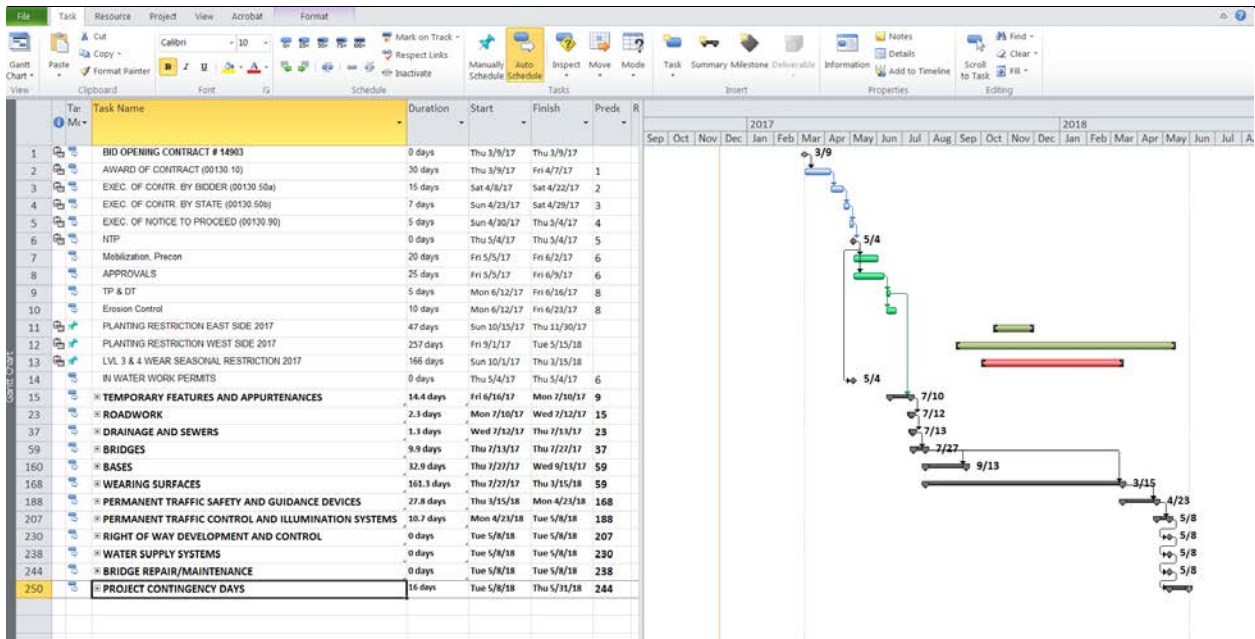
Fuel, Steel, Class of Work and Scheduling Template V19.3

Figure 25: Screenshot showing how to code a task to task lag start in the predecessor field.

Task Name	Duration	Start Date	End Date	Predecessor
RECONDITIONING EXISTING ROADWAY	0 days	Fri 6/30/17	Fri 6/30/17	59
COLD PLANE PAVEMENT REMOVAL	10 days	Mon 7/3/17	Mon 7/17/17	
GRINDING CONCRETE PAVEMENT	0 days	Fri 6/30/17	Fri 6/30/17	
GRID-ROLLED AGGREGATE SUBBASE	0 days	Fri 6/30/17	Fri 6/30/17	
AGGREGATE BASE SHOULDERS	0 days	Fri 6/30/17	Fri 6/30/17	
AGGREGATE SUBBASE, BASE, AND SHOULDERS	0 days	Fri 6/30/17	Fri 6/30/17	
STOCKPILE AGGREGATES	0 days	Fri 6/30/17	Fri 6/30/17	
WEARING SURFACES		Fri 6/30/17	Fri 6/30/17	160
EMULSIFIED ASPHALT PRIME COAT AND EMULSIFIED ASPHALT FOG COAT	0 days	Fri 6/30/17	Fri 6/30/17	
EMULSIFIED ASPHALT SLURRY SEAL SURFACING	0 days	Fri 6/30/17	Fri 6/30/17	
SINGLE APPLICATION EMULSIFIED ASPHALT SURFACE TREATMENT	0 days	Fri 6/30/17	Fri 6/30/17	
PRE-COATED AGGREGATE ASPHALT SURFACE TREATMENT	0 days	Fri 6/30/17	Fri 6/30/17	
MULTIPLE APPLICATION EMULSIFIED ASPHALT SURFACE TREATMENT	0 days	Fri 6/30/17	Fri 6/30/17	
EMULSIFIED ASPHALT TACK COAT	0 days	Fri 6/30/17	Fri 6/30/17	
EMULSIFIED ASPHALT CONCRETE PAVEMENT	0 days	Fri 6/30/17	Fri 6/30/17	
COMMERCIAL ASPHALT CONCRETE PAVEMENT	0 days	Fri 6/30/17	Fri 6/30/17	162SS+2 days
POROUS ASPHALT CONCRETE	0 days	Fri 6/30/17	Fri 6/30/17	
ASPHALT CONCRETE PAVEMENT	20 days	Thu 7/6/17	Wed 8/2/17	162SS+2 days
ASPHALT CONCRETE PAVEMENT	0 days	Fri 6/30/17	Fri 6/30/17	
CRACK SEALING FLEXIBLE PAVEMENTS	0 days	Fri 6/30/17	Fri 6/30/17	
ASPHALT CONCRETE PAVEMENT REPAIR	0 days	Fri 6/30/17	Fri 6/30/17	

A 'task to task' lag start is coded in the predecessor field. A code of 162ss+2 days say 'use line 162 as a predecessor and from the start to start dependency add 2 days to this line activity'. An FS code is finish to start, a SF code is start to finish and an FF code is finish to finish. Percentages can be used instead of days and negative days will cause the predecessor to delay instead of the following activity.

Figure 26: Screenshot of project schedule contingency days.



Store file with PS&E documents and in the estimator for CCO's – PS&E project schedules folder. The Fuel/Schedule program is also saved for record keeping on production rates and fuel item identification.