

Real-Time DSM2 Simulation

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Project Operations Planning Branch
Department of Water Resources

February 27, 2008



Real-time DSM2 Simulation

What is it?

Real-time DSM2 Simulation

Why is it done ?

Bay-Delta Standards

Contained in D-1641

DRAFT

CRITERIA	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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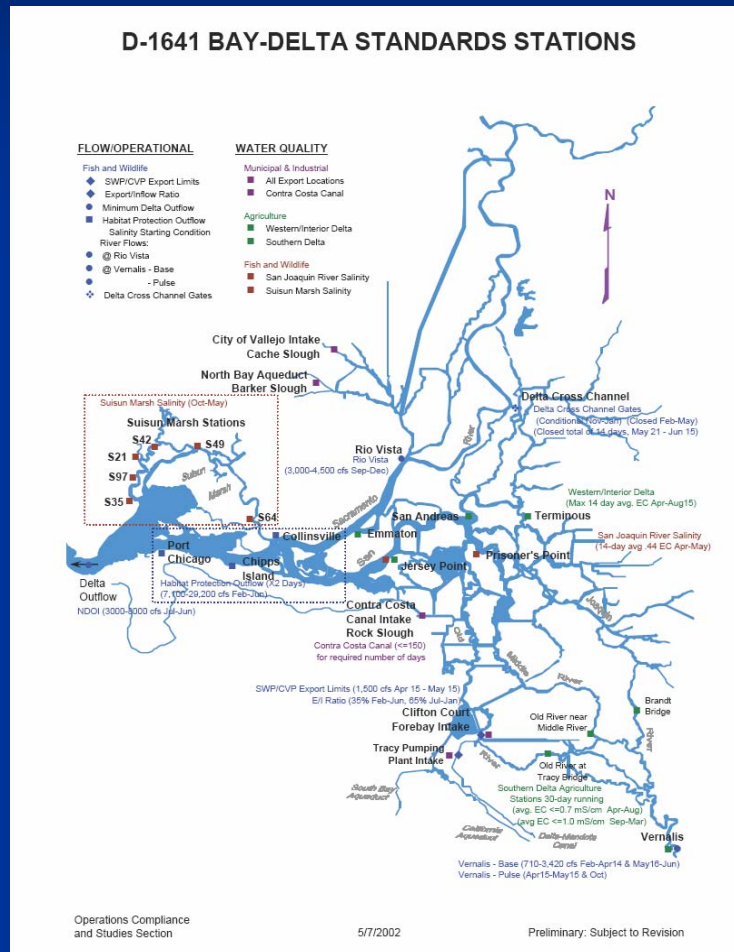
FLOW/OPERATIONAL

<ul style="list-style-type: none"> Fish and Wildlife 												
SWP/CVP Export Limits				1,500cfs ^[1]								
Export/Inflow Ratio ^[2]	65%		35% of Delta Inflow ^[3]					65% of Delta Inflow				
Minimum Delta Outflow	[4]							3,000 - 8,000 cfs ^[4]				
Habitat Protection Outflow			7,100 - 29,200 cfs ^[5]									
Salinity Starting Condition ^[6]		[6]										
River Flows:												
@ Rio Vista									3,000 - 4,500 cfs ^[7]			
@ Vernalis - Base			710 - 3,420 cfs ^[8]			[8]						
- Pulse				[9]					+28TAF			
Delta Cross Channel Gates	[10]		Closed		[11]						Conditional ^[10]	

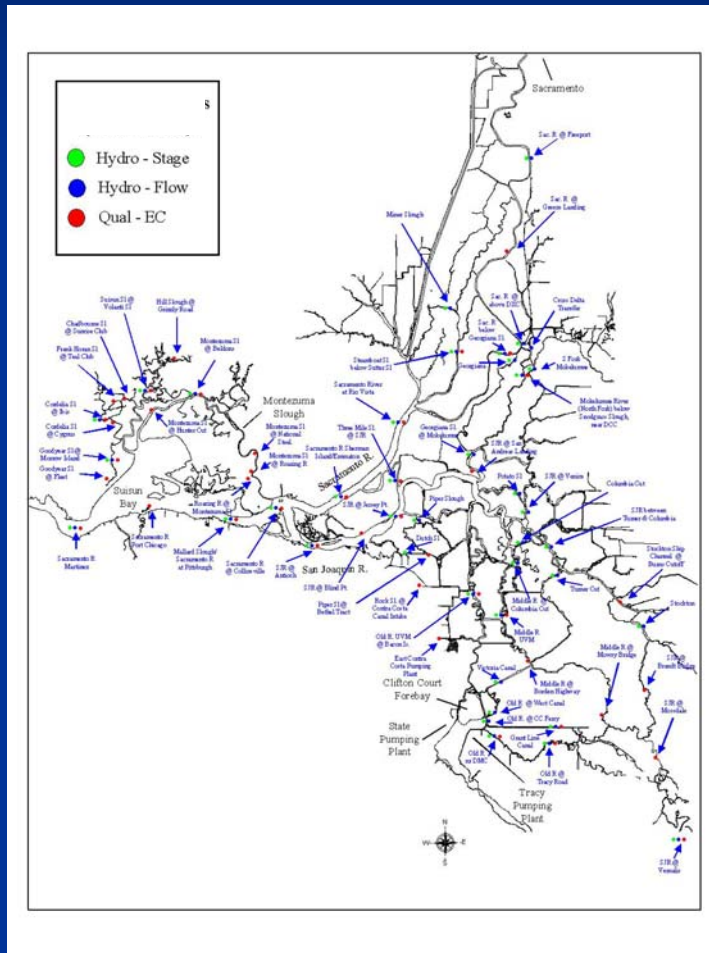
WATER QUALITY STANDARDS

<ul style="list-style-type: none"> Municipal and Industrial 												
All Export Locations									≤ 250 mg/l Cl			
Contra Costa Canal									150 mg/l Cl for the required number of days ^[12]			
<ul style="list-style-type: none"> Agriculture 												
Western/Interior Delta									Max 14-day average EC mmhos/cm ^[13]			
Southern Delta ^[14]		1.0 mS			30 day running avg EC 0.7 mS					1.0 mS		
<ul style="list-style-type: none"> Fish and Wildlife 												
San Joaquin River Salinity ^[15]					14-day avg: 0.44 EC							
Suisun Marsh Salinity ^[16]	12.5 EC	8.0 EC		11.0 EC					19.0 EC	[17]	15.5 EC	

Bay-Delta Standards Stations



DSM2 Locations for Stage, Flow, and EC



Real-time DSM2 Simulation Components

- HYDRO
- QUAL
- PTM

Real-time DSM2 Simulation

Steps (HYDRO)

1. Prepare weekly run data sheet.
2. Prepare gates.dss file.
3. Prepare hydro.dss file.
4. Prepare forecast.dss file.
5. Prepare input data for running HYDRO.
6. Run HYDRO.
7. Process and review water level results.
8. Prepare PDFs for water levels.

Step 1: Prepare Weekly Run Data Sheet

Weekly Run Data Sheet: 02/19/08

Historical Period:

FEB 12 2008 – FEB 18 2008

Forecast Period:

FEB 19 2008 – MAR 22 2008

Run ID:

20080219-33A

Run Period:

12FEB2008 22MAR2008 A

Water Level Graphs for pdf outputs:

1. Wes of Union Island
2. Middle River @ Howard
3. Old River @ Tracy Blvd.
4. Doughty Cut
5. East end of GLC

Water Quality (EC) Graphs for pdf outputs:

1. Holland
2. Old River East of Union Island
3. San Joaquin River @ Brandt
4. Old River @ Tracy Blvd.
5. Jersey Point
6. Bethel

Assumptions

- 1.
- 2.
- 3.

Baseline

Alternative

Real-time DSM2 Simulation

HYDRO

Step 2: Prepare gates.dss file.

Real-time DSM2 Simulation

HYDRO

Step 3: Prepare hydro.dss file:

- Historical Delta Cross Channel gate and Clifton Court Forebay operations data.
- Historical stage, flow, and export data.

Retrieve Historical Data

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

Update Data

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Start Date	2/12/2008	2	12	2008												
2	End Date	2/18/2008 0:00	2	18	2008												

Update Data

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http://h0de04govfegi-progsfqueryCSV?station_id=MSD&sensor_num=100&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=MAL&sensor_num=1&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=MRZ&sensor_num=1&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

update RAWDATA-CDEC QUALITYRAW.DSS HYDRORAW.DSS HYDRORAW.DSS_Flow_H HYDRORAW.DSS_Flow_I

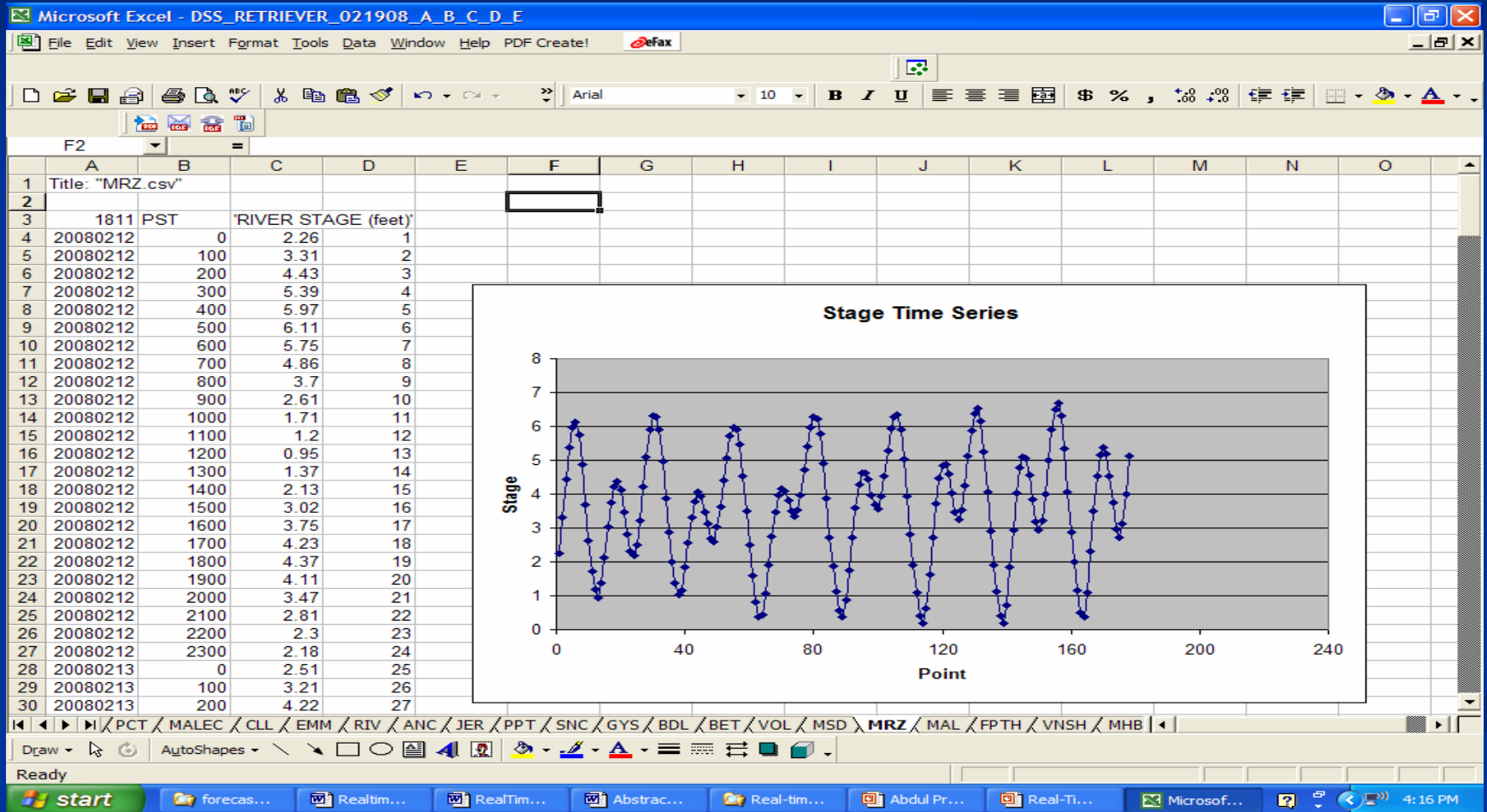
Draw AutoShapes

Ready

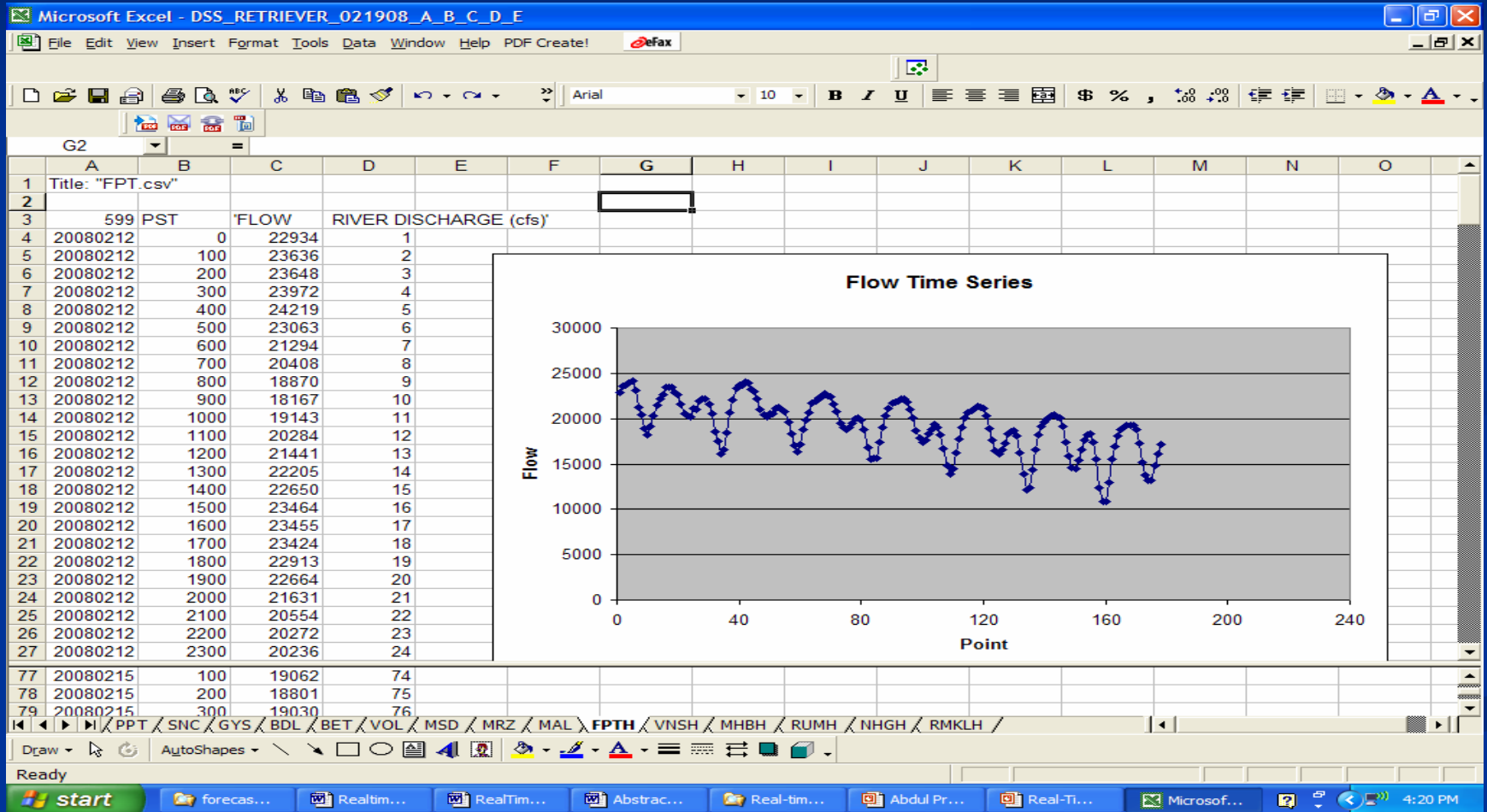
start forecast... RealTim... RealTim... Abstrac... Real-tim... Abdul Pr... Real-Ti... Microsof...

4:15 PM

Retrieve Historical Stage Data



Retrieve Historical Flow Data



Write Stage Data to hydroraw.dss

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

File Retrieve Store Tools Help C:\real-time\prepro\rawdata\hydroraw.dss

A2 Part A:

	A	B	C	D	E
1			MARTINEZ	MALLARD	MALLARD
2	Part A:		RLTM-CHAN	RLTM-CHAN	HIST-CHAN
3	Part B:		RSAC054	RSAC075	RSAC075
4	Part C:		STAGE	STAGE	STAGE
5	Part D:				
6	Part E:		1-HOUR	1-HOUR	1-HOUR
7	Part F:		CDEC	CDEC	DWR-ESD-D185C
8	Beg. Date:		11-Feb-08	11-Feb-08	
9	Beg. Time:		2400	2400	
10	End Date:		18-Feb-08	18-Feb-08	
11	End time:		2400	2400	
12	units:		FEET	FEET	FEET
13	Data Type: Index		INST-VAL	INST-VAL	INST-VAL
162		2/18/08 4:00	0.52	1.15	
163		2/18/08 5:00	0.26	0.63	
164		2/18/08 6:00	0.54	0.44	
165		2/18/08 7:00	1.33	0.73	
166		2/18/08 8:00	2.32	1.51	
167		2/18/08 9:00	3.23	2.38	
168		2/18/08 10:00	3.83	3.02	
169		2/18/08 11:00	4	3.43	
170		2/18/08 12:00	3.63	3.59	
171		2/18/08 13:00	2.65	3.35	
172		2/18/08 14:00	1.38	2.54	
173		2/18/08 15:00	0.18	1.5	
174		2/18/08 16:00	-0.67	0.62	
175		2/18/08 17:00	-1.52	0.02	
176		2/18/08 18:00	-2.17	-0.57	
177		2/18/08 19:00	-2.32	-1.06	
178		2/18/08 20:00	-1.59	-1.35	
179		2/18/08 21:00	-0.36	-1.11	
180		2/18/08 22:00	0.81	-0.06	
181		2/18/08 23:00	1.85	1.02	
182		2/19/08 0:00	2.49	1.77	

Store Regular Interval Time Series Data

If the selected cells do not contain the regular time series data you wish to store, select a new range now.

The top row of the selection should contain Part A for the first pathname being stored. (Discontinuous ranges are allowed.)

OK Cancel Options Help

RTS Data Range: \$A\$2:\$E\$182

RAWDATA-CDEC / QUALITYRAW.DSS / **HYDRORAW.DSS** / HYDRORAW.DSS_Flow_H / HYDRORAW.DSS_Flow_D / MTB

Draw AutoShapes

Point Sum=6926254.88

start HEC RealTim... RealTim... Abstrac... Abdul Pr... Real-Ti... HEC-DS... Microsof... 4:57 PM

Write Flow/Export Data to hydroraw.dss

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

File Retrieve Store Tools Help C:\real-time\prepro\rawdata\hydroraw.dss

A2 Part A:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		FREEPORT H	FREEPORT H	SAN JOAQUIN H	SAN JOAQUIN H	CONSUMNES H	CONSUMNES H	RUMSEY H	CALAVERAS H	MOKELUMNE				
2	Part A:	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN			
3	Part B:	RSAC155	RSAC155	RSAN112	RSAN112	RCSM075	RCSM075	BYOLO040	RCAL009	RMKL070				
4	Part C:	FLOW	FLOW	FLOW	FLOW	FLOW	FLOW	FLOW	FLOW	FLOW				
5	Part D:													
6	Part E:													
7	Part F:	DWR-OM-JOC-DSM2	CDEC -OM-JOC-DSM2	CDEC -OM-JOC-DSM2	CDEC -OM-JOC-DSM2	CDEC -OM-JOC-DSM2	CDEC -OM-JOC-DSM2	DWR-OM-JOC-DSM2	DWR-OM-JOC-DSM2	DWR-OM-JOC-DSM2				
8	Beg. Date:	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08				
9	Beg. Time:	2400	2400	2400	2400	2400	2400	2400	2400	2400				
10	End Date:	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08				
11	End time:	2400	2400	2400	2400	2400	2400	2400	2400	2400				
12	units:	CFS	CFS	CFS	CFS	CFS	CFS	CFS	CFS	CFS				
13	Data Type: Index	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL				
171		2/18/08 13:00	12358	12358	12358	12358	12358	12358	12358	12358				
172		2/18/08 14:00	10847	10847	10847	10847	10847	10847	10847	10847				
173		2/18/08 15:00	10891	10891	10891	10891	10891	10891	10891	10891				
174		2/18/08 16:00	12935	12935	12935	12935	12935	12935	12935	12935				
175		2/18/08 17:00	15477	15477	15477	15477	15477	15477	15477	15477				
176		2/18/08 18:00	16952	16952	16952	16952	16952	16952	16952	16952				
177		2/18/08 19:00	18104	18104	18104	18104	18104	18104	18104	18104				
178		2/18/08 20:00	18765	18765	18765	18765	18765	18765	18765	18765				
179		2/18/08 21:00	19018	19018	19018	19018	19018	19018	19018	19018				
180		2/18/08 22:00	19250	19250	19250	19250	19250	19250	19250	19250				
181		2/18/08 23:00	19294	19294	19294	19294	19294	19294	19294	19294				
182		2/18/08 0:00	19272	19272	19272	19272	19272	19272	19272	19272				

Store Regular Interval Time Series Data

If the selected cells do not contain the regular time series data you wish to store, select a new range now.

The top row of the selection should contain Part A for the first pathname being stored. (Discontinuous ranges are allowed.)

OK Cancel Options Help

RTS Data Range \$A\$2:\$K\$182

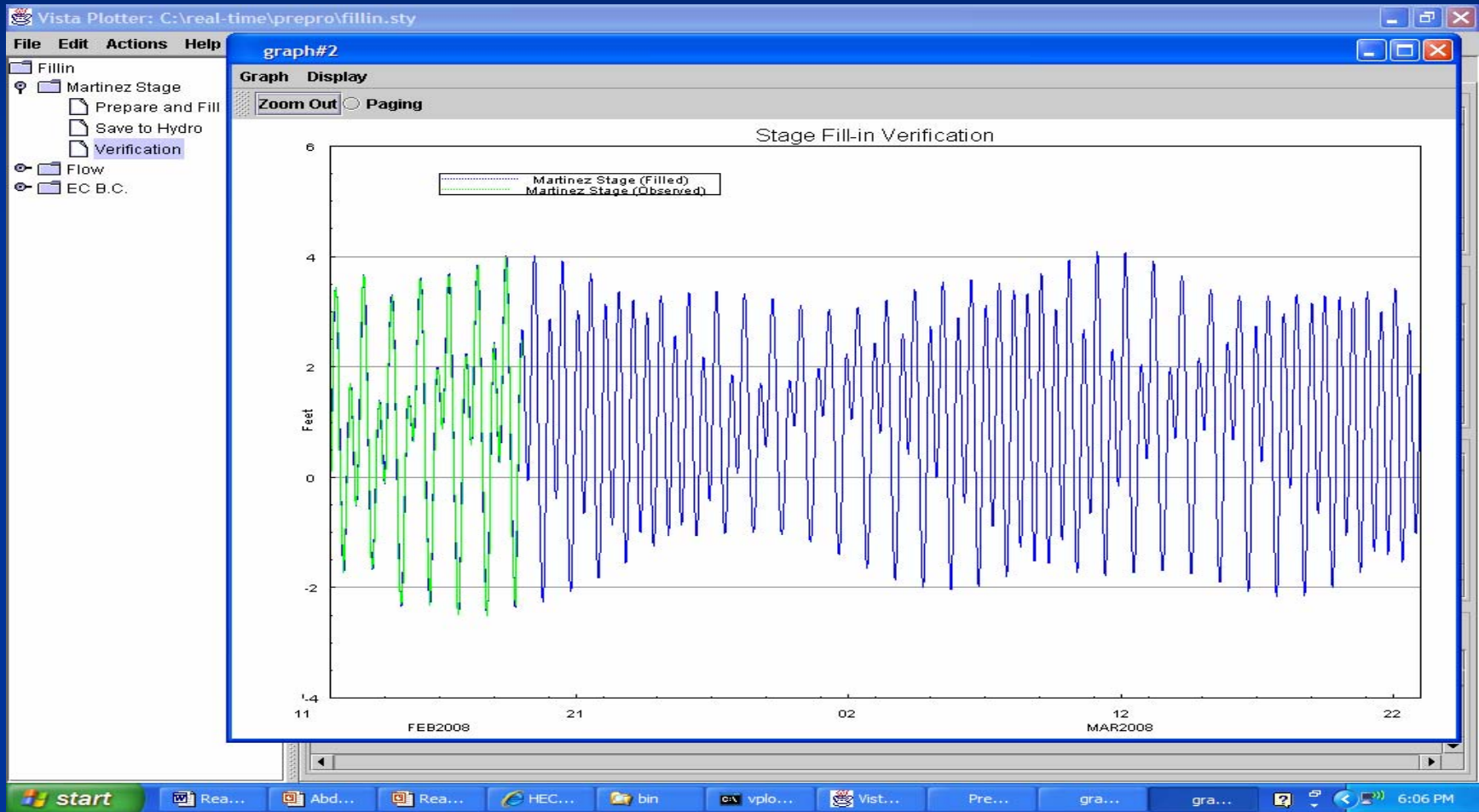
RAWDATA-CDEC / QUALITYRAW.DSS / HYDRORAW.DSS / HYDRORAW.DSS_Flow_H / HYDRORAW.DSS_Flow_D / MTB

Draw AutoShapes

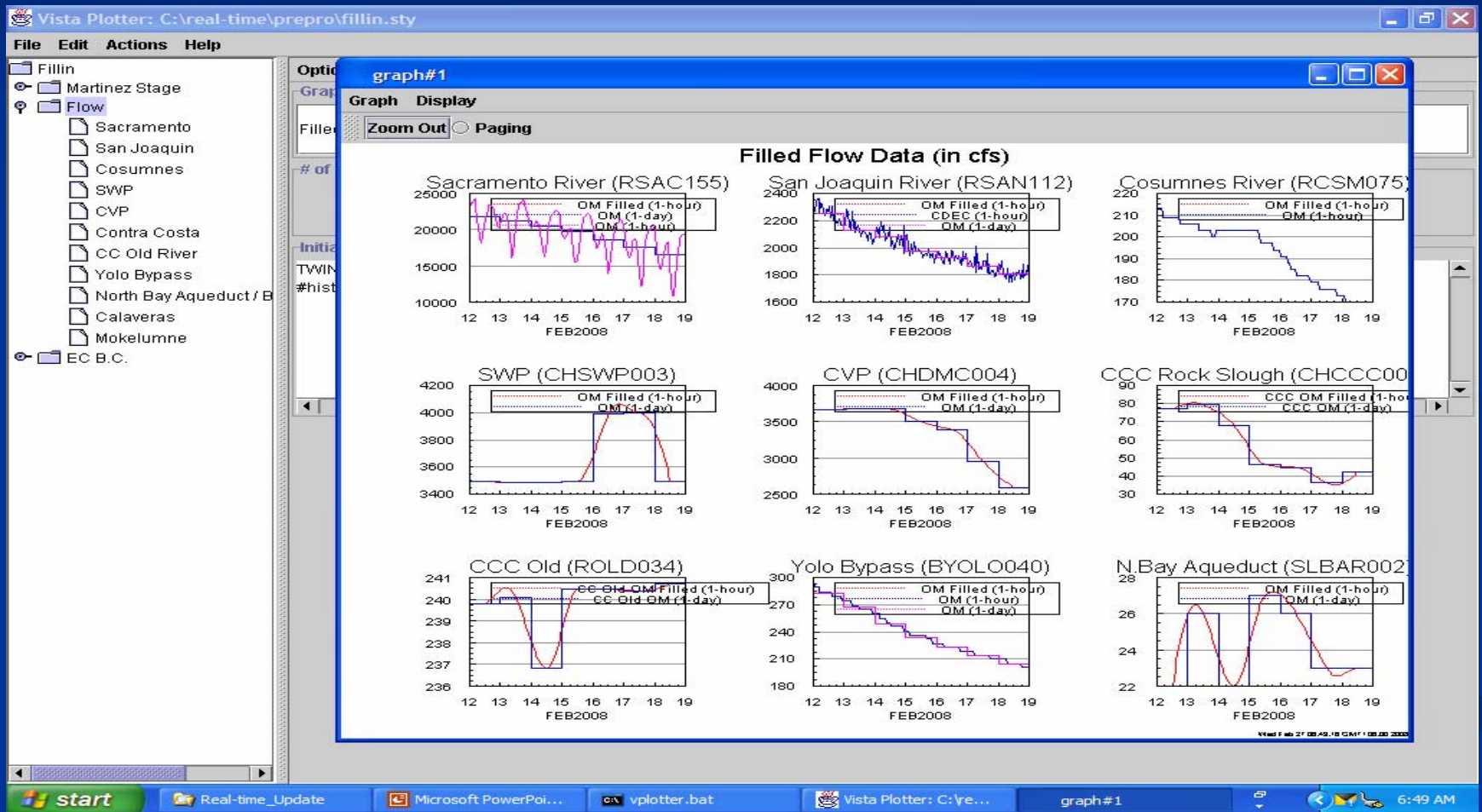
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start HEC RealTim... RealTim... Abstrac... Abdul Pr... Real-Ti... HEC-DS... Microsof... 5:00 PM

Fill-in Stage Data and Write Data to hydro.dss



Fill-in Flow/Export Data and Write Data to hydro.dss



Real-time DSM2 Simulation

HYDRO

Step 4: Prepare forecast.dss file:






- Forecasted Delta Cross Channel gate and Clifton Court Forebay operations data.
- Forecasted flow and export data.


Forecast Data

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

File Retrieve Store Tools Help No DSS file open


 Arial 8 B I U  \$ % , +.0 -.0   




F6 Vernalis prior day VNS

2007 Delta Hydrologic Conditions Forecast																	Forecast date: 10/18/2007 10:31			
Please flow in [cfs] for several day outflow table. Delta flow above line, projected flow below line. Forecast is subject to change.																	Approved by:			
Date	Sacram. River	Yolo bypass	Sacto Treat. rel.	Delta Inflows [cfs]		Cosum. River	Mokel. River	Calaver River	Clifton Court intake	Tracy pump	Delta Exports [cfs]		Banks total pump	Barker SL pump	Delta precip. [in]	NDOI	Flow Req'mts		Precip. Runoff Calcul.	
	Freeport prev.day FET	Catch & weirs pr.day	estim. week avg pr.day	% of day open	Vernalis prior day VNS	Mich Bar pr.day	Wood-bridge pr.day	New Hogan pr.day							prev day, inches	Daily	3 Day avg	14 Day avg	5 Day avg cfs	
8	12-Feb-08	21,827	282	240	0	2,250	209	172	45	3,492	3,664	317	7	3,561	22	0.00	18,612	23.8	17.7	0
9	13-Feb-08	21,186	267	240	0	2,132	203	172	30	3,487	3,680	319	3	3,647	26	0.00	16,666	26.4	18.9	0
10	14-Feb-08	20,436	249	240	0	2,078	203	176	31	3,488	3,673	305	2	3,616	22	0.00	15,894	28.2	19.7	0
11	15-Feb-08	19,720	234	240	0	1,970	198	176	27	3,496	3,498	287	0	3,439	27	0.00	15,255	29.3	20.4	0
12	16-Feb-08	18,610	223	240	0	1,928	185	176	23	3,989	3,390	285	0	4,011	26	0.00	14,025	30.7	21.5	0
13	17-Feb-08	17,613	214	240	0	1,867	176	176	24	3,997	2,950	277	0	4,019	23	0.00	13,288	31.6	22.2	0
14	18-Feb-08	16,554	205	240	0	1,808	170	176	24	3,496	2,593	283	13	3,429	23	0.00	13,078	31.7	22.4	0
15	19-Feb-08	16,317	127	240	0	2,280	150	140	32	1,650	1,650	300	10	1,640	30	0.00	14,707	26.8	19.0	0
16	20-Feb-08	16,215	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	14,616	21.9	15.9	0
17	21-Feb-08	16,710	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	14,464	17.8	13.5	0
18	22-Feb-08	16,802	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	14,959	18.0	14.5	0
19	23-Feb-08	16,900	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	15,051	17.9	15.2	0
20	24-Feb-08	17,000	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	15,149	17.7	15.8	0
21	25-Feb-08	17,100	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	15,249	17.6	16.2	0
22	26-Feb-08	16,500	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	15,349	17.5	16.6	0
23	27-Feb-08	15,800	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	14,749	17.6	16.9	0
24	28-Feb-08	15,100	127	240	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	14,049	18.0	17.3	0
25	29-Feb-08	14,400	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	13,349	18.6	17.6	0
26	01-Mar-08	13,700	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	12,569	19.3	17.9	0
27	02-Mar-08	13,000	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	11,819	20.1	18.3	0
28	03-Mar-08	12,300	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	11,119	21.0	18.6	0
29	04-Mar-08	11,600	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	10,419	21.9	18.8	0
30	05-Mar-08	10,900	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	9,669	22.9	19.2	0
31	06-Mar-08	10,200	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	8,969	24.0	19.6	0
32	07-Mar-08	9,500	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	8,269	25.2	20.1	0
33	08-Mar-08	9,500	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	7,519	26.6	20.8	0
34	09-Mar-08	9,500	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0.00	7,519	27.5	21.4	0
35	10-Mar-08	9,500	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0	7,519	28.1	22.2	0
36	11-Mar-08	9,500	127	210	0	2,280	150	140	32	1,750	1,750	300	10	1,740	30	0	7,469	28.1	23.0	0

DSM2INPUTFILE_A / DSM2INPUTFILE_B / DSM2INPUTFILE_C / DSM2INPUTFILE_D / DSM2INPUTFILE_E / CCWD / F PAR

Draw 

Ready

 5:05 PM

Write Forecast Data to forecast.dss

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

File Retrieve Store Tools Help C:\real-time\data\forecast.dss

Arial 11 B I U

Part A:

Part A:	FORE-CHAN	FORE-CHAN	FORE-CHAN	FORE-CHAN	FORE-CHAN	FORE-CHAN	FORE-CHAN	FORE-CHAN	FORE-CHAN
Part B:	BYOLO040	CHCCC006	CHDMC004	CHSWP003	RCAL009	RCSM075	RMKL070	ROLD034	RSA
Part C:	FLOW	FLOW-DIVERSION	FLOW-EXPORT	FLOW-EXPORT	FLOW	FLOW	FLOW	FLOW-EXPORT	FLO
Part D:									
Part E:	1DAY	1DAY	1DAY	1DAY	1DAY	1DAY	1DAY	1DAY	1DAY
Part F:	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A	DSM2-20080219-33A
Beg. Date:	12-Feb-08	12-Feb-08	12-Feb-08	12-Feb-08	12-Feb-08	12-Feb-08	12-Feb-08	12-Feb-08	12-Feb-08
Beg. Time:	2400	2400	2400	2400	2400	2400	2400	2400	2400
End Date:	22-Mar-08	22-Mar-08	22-Mar-08	22-Mar-08	22-Mar-08	22-Mar-08	22-Mar-08	22-Mar-08	22-Mar-08
End time:	2400	2400	2400	2400	2400	2400	2400	2400	2400
units:	CFS	CFS	CFS	CFS	CFS	CFS	CFS	CFS	CFS
Data Type:	PER-AVER	PER-AVER	PER-AVER	PER-AVER	PER-AVER	PER-AVER	PER-AVER	PER-AVER	PER-AVER
Index	282	267	249	234	223	214	205	127	127
02/12/08	127	127	127	127	127	127	127	127	127
02/13/08	127	127	127	127	127	127	127	127	127
02/14/08	127	127	127	127	127	127	127	127	127
02/15/08	127	127	127	127	127	127	127	127	127
02/16/08	127	127	127	127	127	127	127	127	127
02/17/08	127	127	127	127	127	127	127	127	127
02/18/08	127	127	127	127	127	127	127	127	127
02/19/08	127	127	127	127	127	127	127	127	127
02/20/08	127	127	127	127	127	127	127	127	127
02/21/08	127	127	127	127	127	127	127	127	127
02/22/08	127	127	127	127	127	127	127	127	127
02/23/08	127	127	127	127	127	127	127	127	127
02/24/08	127	127	127	127	127	127	127	127	127
02/25/08	127	127	127	127	127	127	127	127	127
02/26/08	127	127	127	127	127	127	127	127	127
02/27/08	127	127	127	127	127	127	127	127	127
02/28/08	127	127	127	127	127	127	127	127	127
02/29/08	127	127	127	127	127	127	127	127	127
03/01/08	127	127	127	127	127	127	127	127	127
03/02/08	127	127	127	127	127	127	127	127	127
03/03/08	127	127	127	127	127	127	127	127	127
03/04/08	127	127	127	127	127	127	127	127	127
03/05/08	127	127	127	127	127	127	127	127	127
03/06/08	127	127	127	127	127	127	127	127	127
03/07/08	127	127	127	127	127	127	127	127	127
03/08/08	127	127	127	127	127	127	127	127	127
03/09/08	127	127	127	127	127	127	127	127	127
03/10/08	127	127	127	127	127	127	127	127	127

Store Regular Interval Time Series Data

If the selected cells do not contain the regular time series data you wish to store, select a new range now.

The top row of the selection should contain Part A for the first pathname being stored. (Discontinuous ranges are allowed.)

OK Cancel Options Help

RTS Data Range \$A\$1:\$M\$52

Sum=3325639.423

start HEC RealTim... RealTim... Abstrac... Abdul Pr... Real-Ti... HEC-DS... Microsof... 5:03 PM

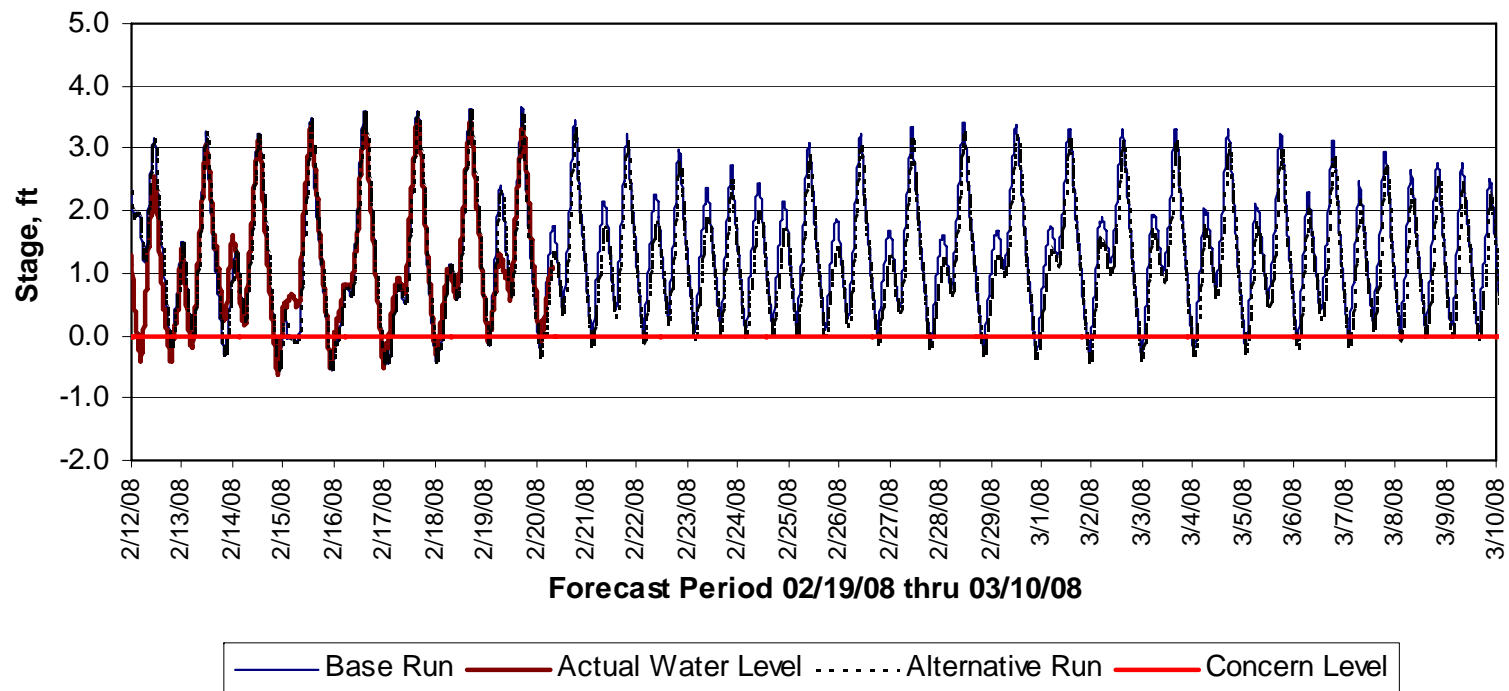
Real-time DSM2 Simulation

HYDRO

5. Prepare input data for running HYDRO.
6. Run HYDRO.
7. Process and review water level results.
8. Prepare PDFs for water levels.

Water Level Simulation

Forecasted Stage @ Doughty Ct/Channel 205



Real-time DSM2 Simulation

Steps (QUAL)

1. Prepare qualityraw.dss file.
2. Prepare quality.dss file.
3. Update optstart.py and createrestart.py files.
4. Run QUAL warm-start and build initial EC condition.
5. Prepare input data for running QUAL.
6. Run QUAL.
7. Process and review EC results.
8. Prepare PDFs for ECs.

Retrieve Historical Data

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

Update Data

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Start Date	2/12/2008	2	12	2008												
2	End Date	2/18/2008 0:00	2	18	2008												

http://h0de04govfegi-progsfqueryCSV?station_id=VIC&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

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http://h0de04govfegi-progsfqueryCSV?station_id=SRH&sensor_num=100&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=VER&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=SAL&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=STI&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=CCS&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=FRP&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=DMC&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=MTB&sensor_num=100&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

http://h0de04govfegi-progsfqueryCSV?station_id=HLL&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

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http://h0de04govfegi-progsfqueryCSV?station_id=PCT&sensor_num=5&dur_code=H&start_date=02%2F12%2F2008&end_date=now&data_wish=Download-CSV-Data-Now

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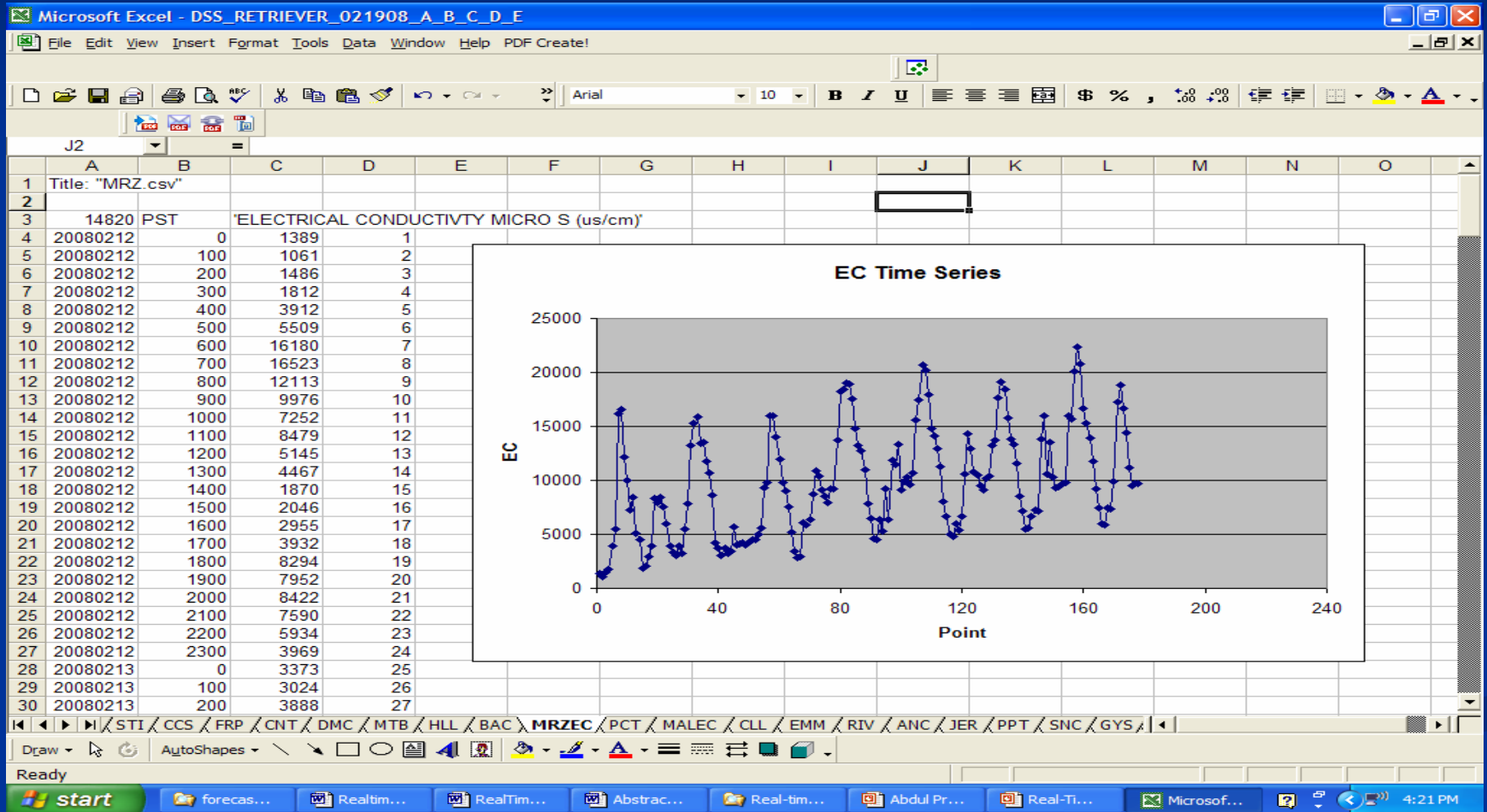
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update RAWDATA-CDEC QUALITYRAW.DSS HYDRORAW.DSS HYDRORAW.DSS_Flow_H HYDRORAW.DSS_Flow_I

Ready

start forecast... RealTim... RealTim... Abstrac... Real-tim... Abdul Pr... Real-Ti... Microsof... 4:15 PM

Retrieve Historical EC Data



Write EC Data to qualityraw.dss

Microsoft Excel - DSS_RETRIEVER_021908_A_B_C_D_E

File Edit View Insert Format Tools Data Window Help PDF Create! eFax

File Retrieve Store Tools Help C:\real-time\prepro\rawdata\qualityraw.dss

A1 Part A:

U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	RLTM-CHAN	
2	RSAC064	RSAC075	RSAC081	RSAC092	RSAC101	RSAN007	RSAN018	SLCBN002	SLGYR003	SLMZU011	SLPPR003	SLSUS012	
3	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	
4													
5	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	1HOUR	
6	DWR-OM-JOC-D	DWR-OM-JOC	DWR-OM-JOC-I	DWR-OM-JOC-D	CDEC	CDEC	DWR-OM-JOC-DSM	CDEC	DWR-OM-JOC	DWR-OM-JOC	DWR-OM-JOC	DWR-OM-JOC	DSM2
7	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	11-Feb-08	
8	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	
9	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	18-Feb-08	
10	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	
11	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	UMHOS/CM	
12	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	INST-VAL	
13	627	310	292	261	251	240	331	267	273	4103	9700	3982.202445	293
156	1074	315	291	261	251	240	331	267	273	4103	8500	3982.202445	295
157	1675	358	287	251	240	249	332	269	277	3463	5630	3821.928043	302
158	2864	465	288	251	240	251	336	270	280	2943	4990	3747.955242	296
159	4371	487	291	251	240	250	337	270	277	2679	4350	3673.982441	305
160	3965	524	294	261	251	243	367	277	276	2699	5415	3797.270443	293
161	4244	652	347	261	251	241	362	276	276	3108	6480	4100	305
162	4125	601	316	251	240	242	366	276	275	3813	7855	3951.380444	299
163	3462	477	296	251	240	252	362	275	267	4462	9230	3982.202445	302
164	3567	468	292	251	240	246	343	274	265	4033	8200	4043.846446	287
165	3214	404	289	251	240	243	334	269	265	2689	6930	3920.558444	294
166	3169	449	285	259	240	251	336	270	280	2943	4150	3735.626442	297
167	3804	529	288	260	249	249	332	269	277	3463	3230	3267.132037	298
168	6270	997	315	260	251	250	337	270	277	2679	2680	2650.69203	295
169	7915	2456	330	262	250	243	367	277	276	2699	2530	2502.746428	324
170	9392	1931	390	264	243	241	362	276	276	3108	2780	2749.322431	318
171	8550	1825	458	266	242	252	362	275	267	4462	2930	3452.064039	311
172	7024	2178	423	269	246	243	343	274	265	4033	5200	3950	322
173	6650	1352	377.5	265	243	243	334	269	265	2689	6630	3821.928043	321
174	5281	781	332	262	240	251	329	268	270	1394	8180	3800	298
175	5053	459	319	260	261	258	331	268	270	960	9730	3900	310
176	3825	401	301	262	263	274	329	270	276	4737	11230	3828.092443	298
177	2055	360	304	262	279	331	326	270	277	5167	12130	3797.270443	295
178	1197	337	290	263	279	331	326	270	277	5167	10030	3982.202445	314
179	932	331	289	262	279	331	326	270	277	5167	8030	4043.846446	322
180	832	345	290	263	279	331	326	270	277	5167	6750	3797.270443	309
181	1722	355	290	263	279	331	326	270	277	5167			

Store Regular Interval Time Series Data

If the selected cells do not contain the regular time series data you wish to store, select a new range now.

The top row of the selection should contain Part A for the first pathname being stored. (Discontinuous ranges are allowed.)

OK Cancel Options Help

RTS Data Range \$A\$1:\$AG\$181

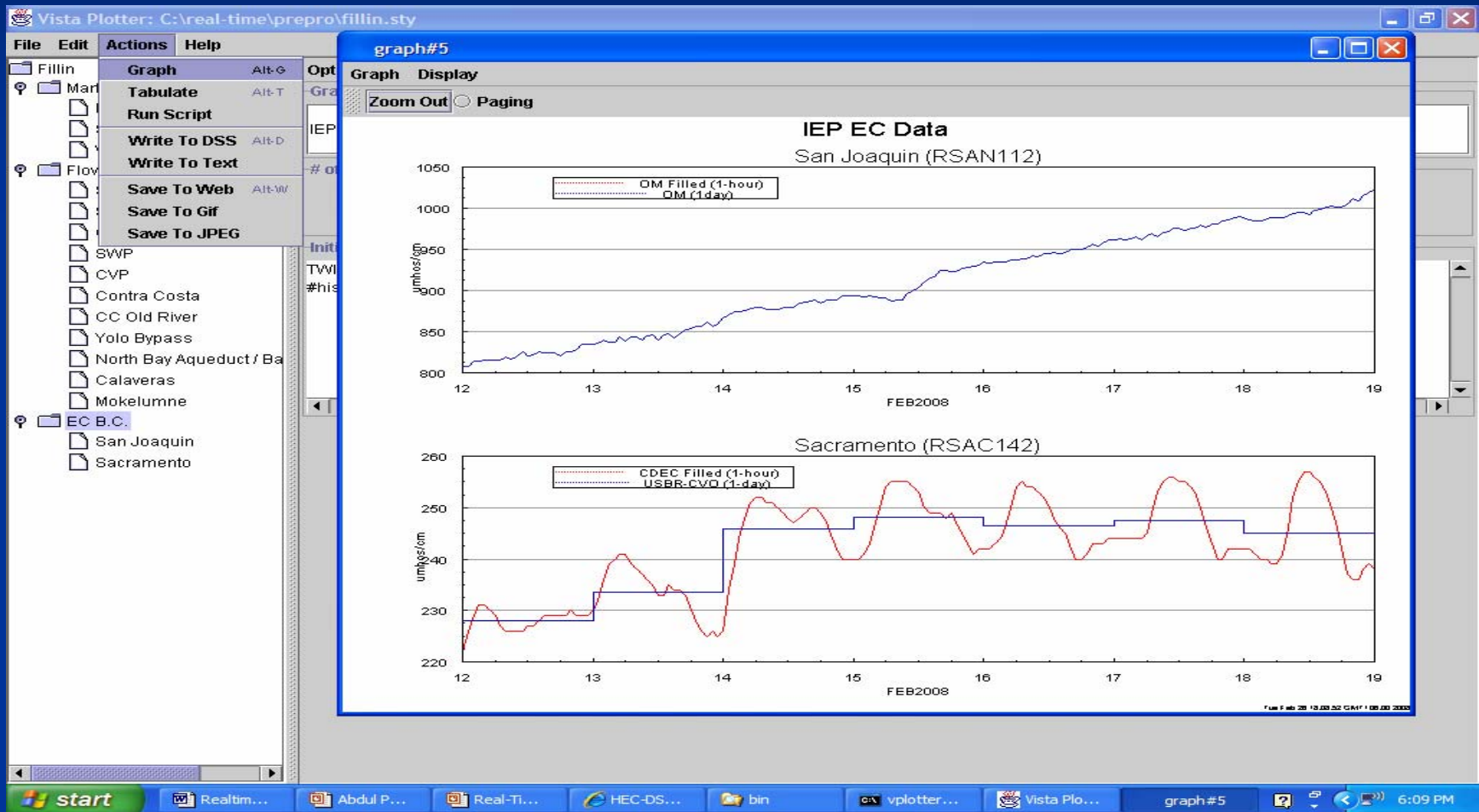
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Draw AutoShapes

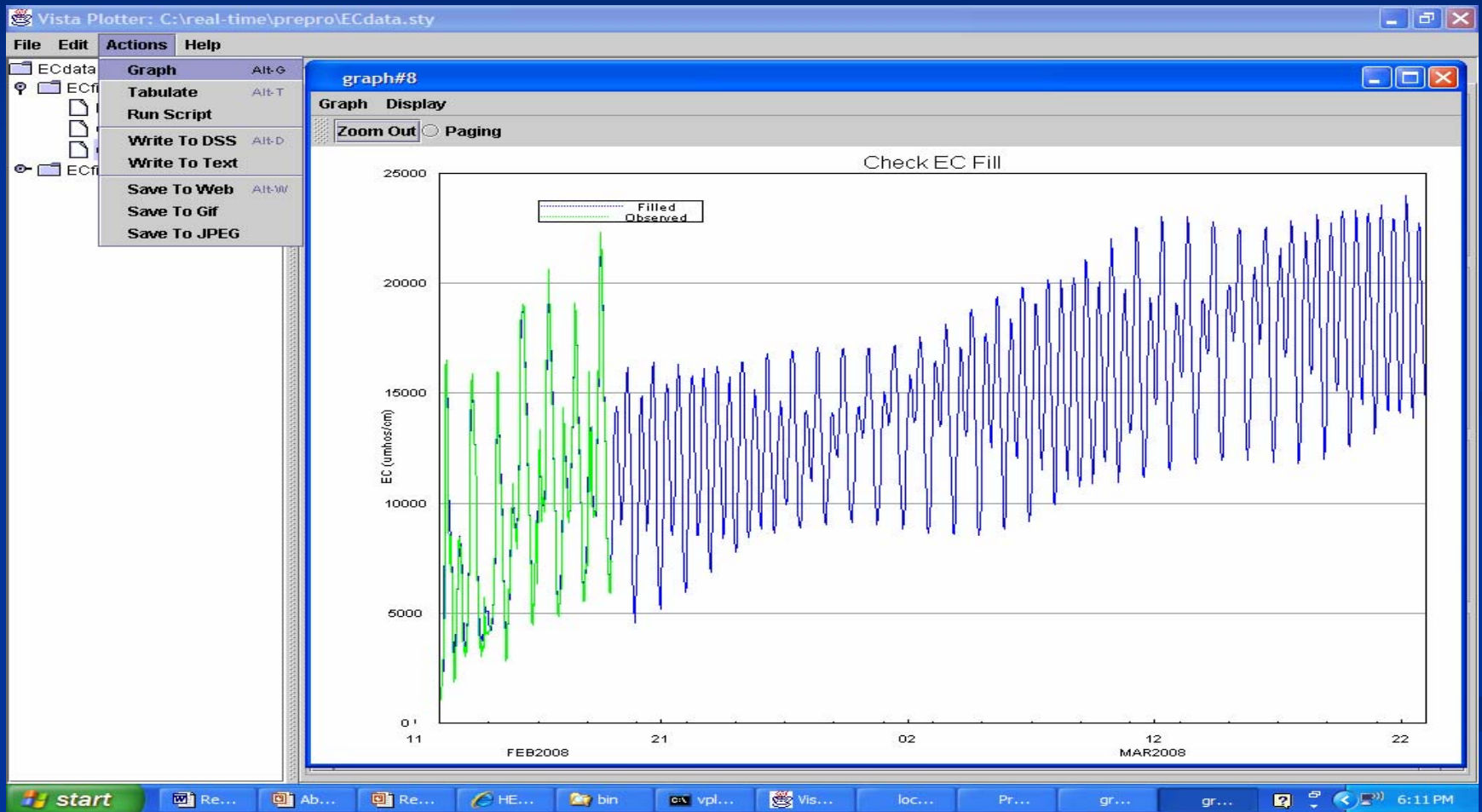
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start HEC RealTim... RealTim... Abstrac... Abdul P... Real-Ti... HEC-DS... Microsof... 5:02 PM

Fill-in Sac R. and SJR EC Data and Write Data to quality.dss file



Fill-in Martinez EC Data and Write Data to quality.dss



Real-time DSM2 Simulation

Steps (QUAL)

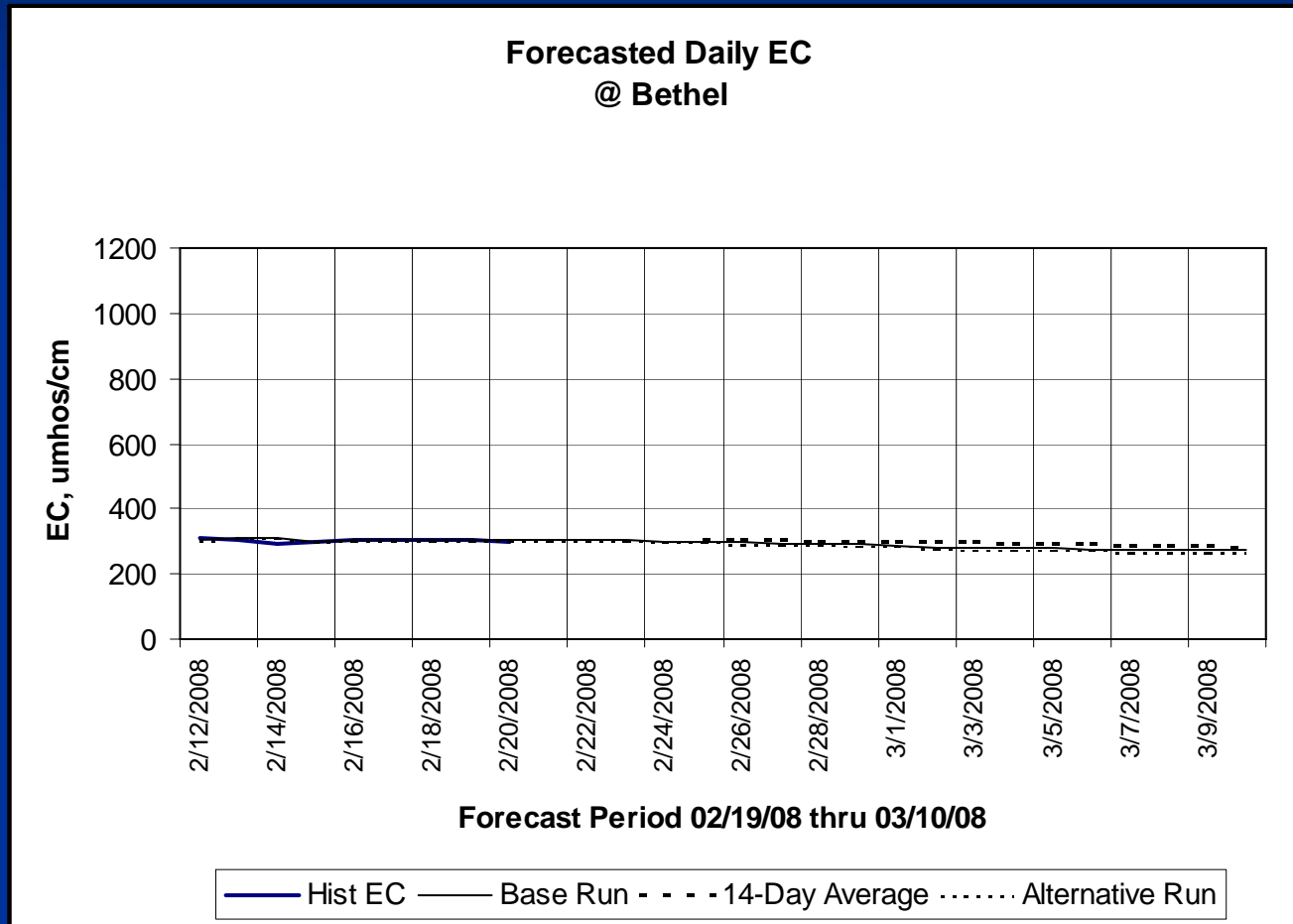
3. Update optstart.py and createrestart.py files.
4. Run QUAL warm-start and build initial EC condition.

Real-time DSM2 Simulation

Steps (QUAL)

5. Prepare input data for running QUAL.
6. Run QUAL.
7. Process and review EC results.
8. Prepare PDFs for ECs.

EC Simulation



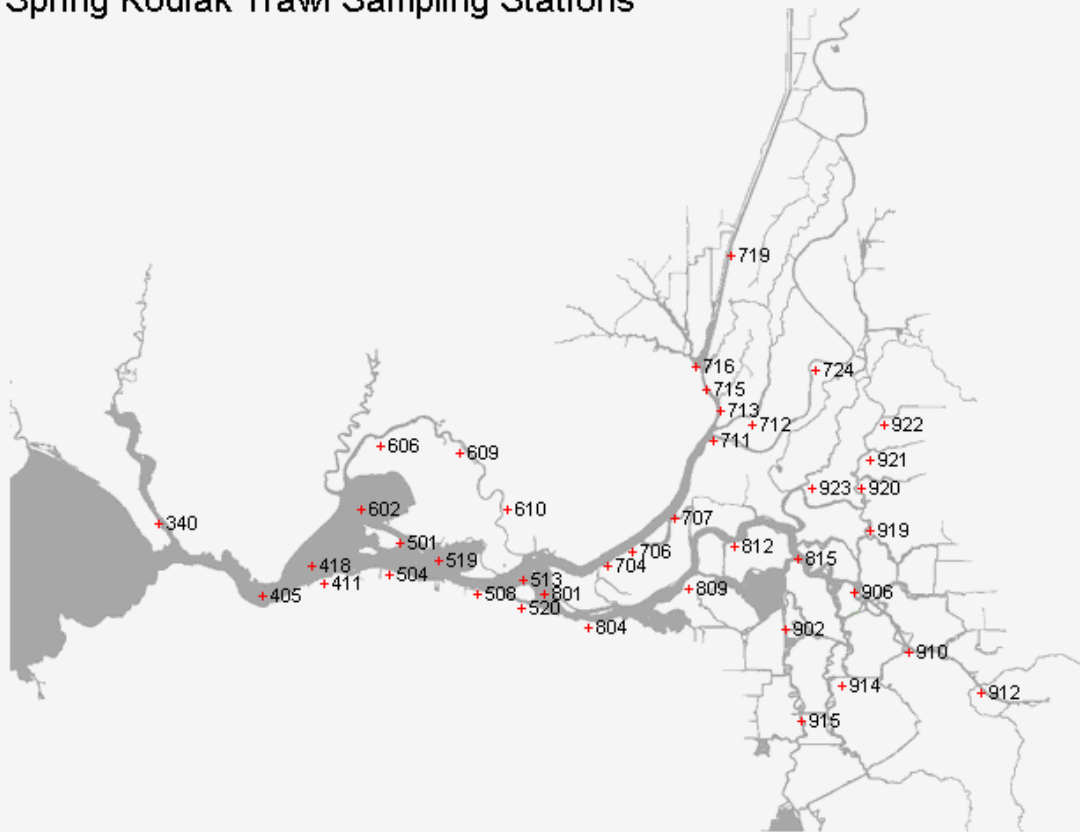
Real-time DSM2 Simulation

Steps (PTM)

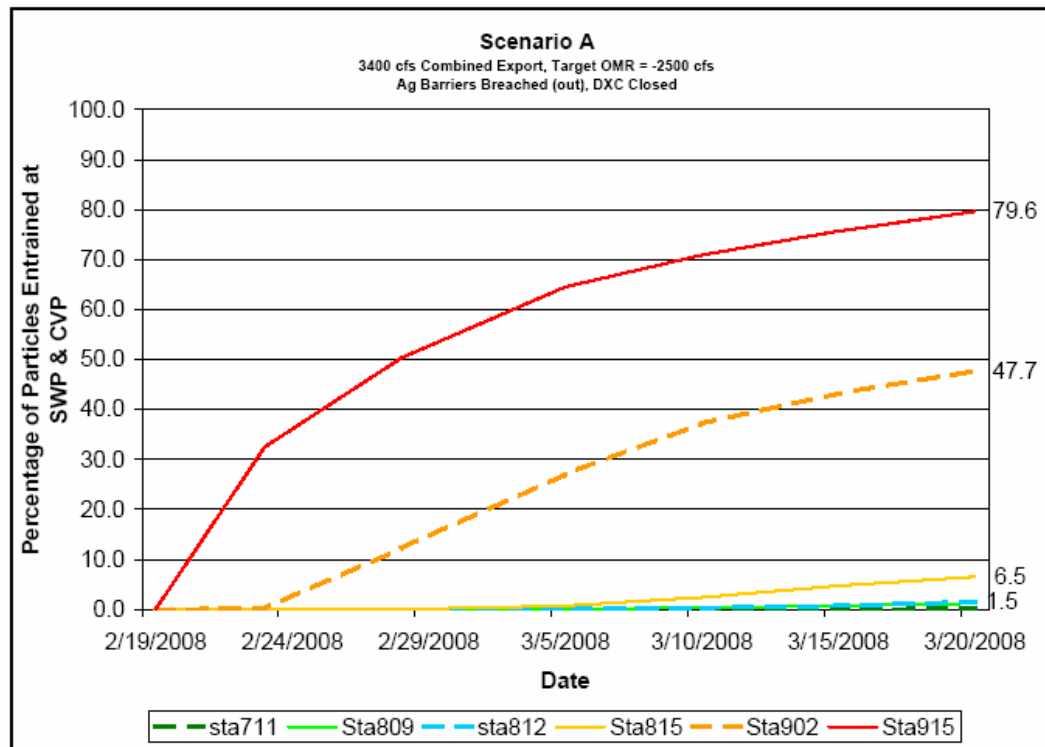
1. Prepare input data for running PTM.
2. Run PTM.
3. Process and review PTM results.
4. Prepare PDFs for PTM results.

PTM Simulation Locations

Spring Kodiak Trawl Sampling Stations



PTM Simulation



Documentation

- Real-time DSM2 simulation steps.
- Detailed real-time DSM2 guide.

Real-time DSM2 Simulation Steps

RealTimeDSM2_Steps_Nov27_07 - Microsoft Word

File Edit View Insert Format Tools Table Window Help PDF Create! defax

Normal Times New Roman 14 B I U

1 2 3 4 5 6 7

Weekly DSM2 Real-time Forecasting Simulation Steps

Generally:

- Historical Period, say: Sep 12 – Sep 18 (Wed-Tue) = 7 days
- Forecast Period, say: Sep 19 – Oct 09 (Wed-Tue) = 21 days
- Start building data files from Wednesday morning, say: = Sep 19.

1. Delete the following files:

- a) All files including "weeklyrec.dss", "weeklyusage.dss", "aqueduct.dss", "SouthDelta.dss", "E-2007.bat", "A-2007.bat", "2007-A.dss", and "2007-B" files in "C:\real-time\output" directory.
- b) "hydro.dss" and "quality.dss", and "forecast.dss" files in "C:\real-time\data" directory.
- c) "hydrorem.dss", "qualityrem.dss", "hydrocam1.dss", "qualityrem1.dss", and "indo.dss" files in "C:\real-time\prepro\remdata" directory.

2. Update Gates.dss (barrier characteristics):

- a) Update "gates-eso.bat" file in "C:\real-time\prepro" folder based on projected barrier operations and associated barrier characteristics for the forecast period. The associated information is usually provided by Mike Burns of South Delta Improvement Project, Bay-Delta Office, DWR.
- b) Go to Command Prompt while in "C:\real-time\prepro" folder and type in and run:
 - o C:\real-time\prepro\script.bat
 - o set execfile ("gates-eso.py")
- c) Check output at Command Prompt screen or using HECODSSVUE_review "gates1.dss" file to make sure changes incorporated in "gates-eso.bat" are properly reflected in "gates1.dss" file.
- d) Rename "gates1.dss" to "gates.dss"
- e) Copy or move "gates.dss" to "C:\real-time\data" folder

3. Build Delta cross channel gates and Clifton Court Forebay gates data in "C:\real-time\prepro\forecastprep" folder:

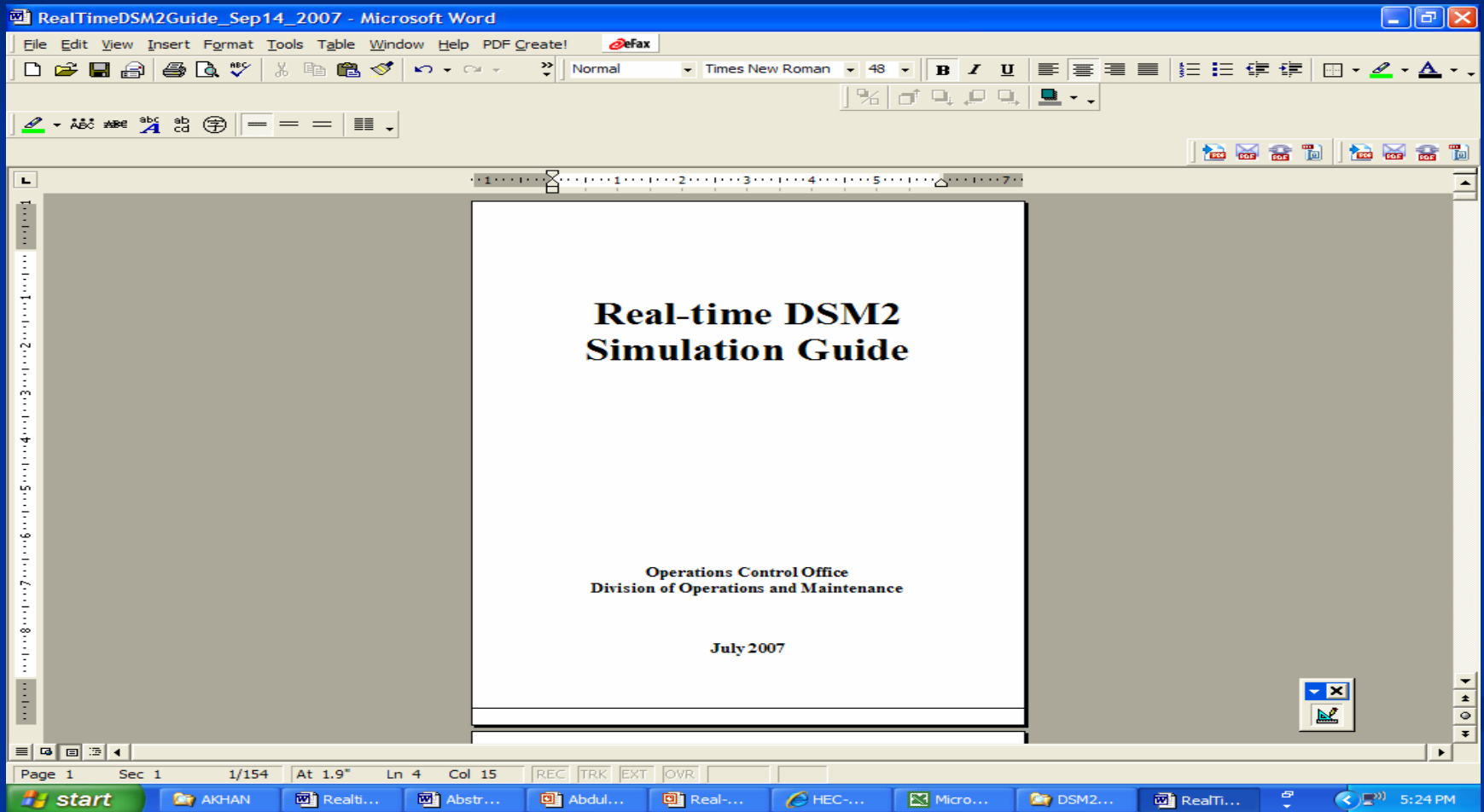
- a) Build DXDC-best (Excel-CSV) - from USER-CVD website
- b) Build DXDC-forecast (Excel-CSV) - based on USER emails etc.
- c) Build CCFE-best (Excel-CSV) - from CCM-CCO Access Database
- d) Build CCFE-forecast (excel-CSV) - from projected CCFE schedule, based on tides data available in "CliftonCourtForecast" file in "N:\Tides\CCF\yyyy" folder. Add only the last seven days of data in the forecasting period rather than the entire 31 days of data in the forecasting period, as we already have the first 34 days data in the forecasting period from the previous run.
- e) Go to Command Prompt while in "C:\real-time\prepro\forecastprep" folder and type in and run:
C:\real-time\prepro\forecastprep> Batch_DXDC_CCFE.bat 20070919-01A

RealTimeDSM2_Steps_Nov27_07

Page 1 Sec 1 1/5 At 1" Ln 1 Col 1 REC TRK EXT OVR

start AKH... Rea... Rea... Abs... Abd... Real... HEC... Micr... DSM... Real... 5:20 PM

Real-time DSM2 Guide



Future Plans

- Migrate fill-in procedure in Excel Retriever.
- Complete detailed real-time DSM2 guide.
- Finish organizing real-time DSM2 steps.
- Improve currently automated steps.
- Automate all remaining steps for pre- and post-processing.

Questions ?