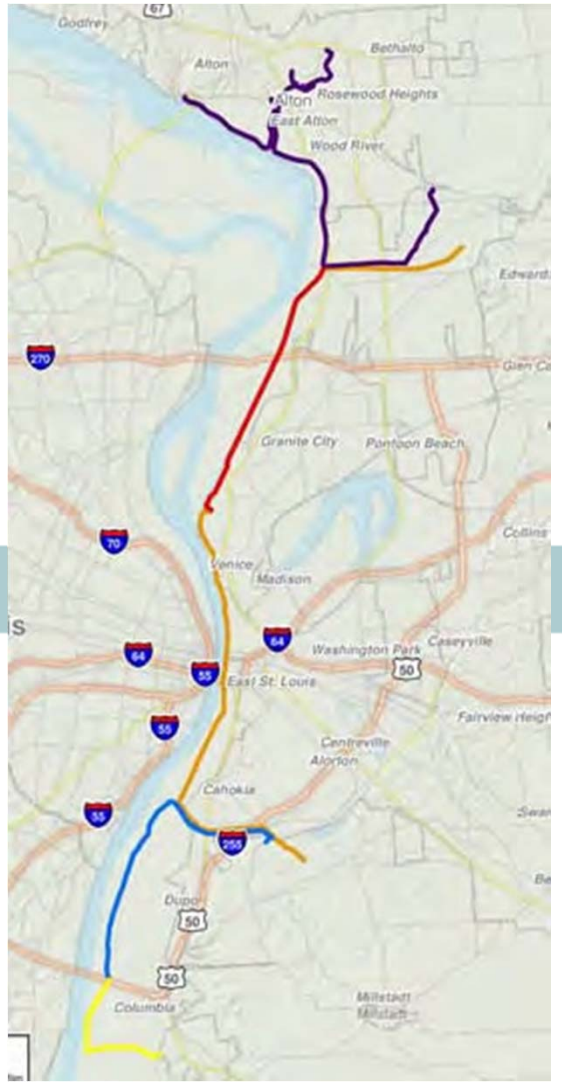
Progress Report
April 20, 2011
SW IL Levee System

By Jay Martin



Update on Activities

- Design Activities
- Field Activities
- Budget

Meetings

- USACE briefing March 10 (action items)
  - Three follow up meeting with each of the levee teams
    - WR March 24
    - MESD March 15
    - PdP/FL March 16
- Levee District briefing March 11
  - Three follow up meetings with each of the levee districts
    - WR March 24
    - MESD March 29
    - PdP/FL March 17
- Council briefing - March 16
- VE participation - Council commissioned - March 28 – 31
- 404 permitting meeting with USACE – March 31
- VE participation - Corps organized – April 12 – 15
- Two meetings with cut-off wall contractors

Evaluation and revisions

- Internal team meeting to prioritize short-term targets to further evaluate, March 3.
- Developed list of priority areas and schedule

- Complete analysis on selected reaches
- Update drawings to reflect results
- Develop cost estimate

Value Engineering Considerations

Wood River Value Engineering/Design Optimization Items

Item	Description	Potential Benefits
1	Reduce berm slopes form 2% to max 1.33& or to actual berm shape (levee-wide)	Reduce volume of berm material required
2	Examine feasibility of moving cutoff wall to riverside toe of the levee. Stations 21+00 to 32+00 and 54+55 to 118+00	Reduce square footage of cutoff reducing cost.
3	UWR - Use 2D finite element modeling to examine alternatives to reduce or eleminate berms and relief wells at stations 213+00 to 222+50.(South of water treatment plant).	Reduce berm, culvert and relief well abandonment costs. Reduce potential wetlands impacts.
4	LWR - Use 2D modeling and assume that planned USACE relief wells are installed to reduce/elimate berms. Sta. 195+00 to 207+00	Reduce berm sizes. Avoid abandoning wells. Avoid realigning and raising power lines.
5 5a 5b	LWR - Multi-phase approach to a high cost area. Deep Cutoff wall, Sta. 132+00 to 187+00. Use 2D modeling to reduce or eliminate wall. Examine possibility of moving cutoff wall to toe of levee.	Potential significant cost savings by reducing wall size.
6	LWR - Use 2D modeling to reduce/elimate berms and relief wells 548+00 to 569+00	Reduce berm sizes. Potentially avoid installing new relief wells.
7	LWR - Reexamine flooding elevations, hydrology and hydraulics, and potentially use 2D modeling to reduce or eliminate clay cap from about 565+00 to 630+00.	Reduce or eliminate clay cap. Avoid some wetlands impacts.
8	LWR - Use 2D modeling to reduce /eliminate berm and new relief wells, stations 569+00 to 577+00.	Reduce berm size. Avoid contruction limits/limits of disturbance impacting neighboring residences.
9	LWR - Use 2D modeling to eliminate/reduce large berm and 72" culvert. Sta. 595+00	Reduce berm and culvert cost Avoid or reduce wetlands impact.
10	LWR - Use 2D analysis to reduce/eliminate cost of ditch fill and new 72-inch culvert. Sta 594+00 to 608+00	Reduce cost of expensive culvert.

Value Engineering Considerations

MESD Value Engineer/Design Optimization Items

Item	Description	Potential Benefits
1	Revised unit cost for Deep Cutoff Walls may be set to $32/sf (Reference Line 6 of Cost Est.)	Reduce overall cost of cutoff walls in MESD by $1.8M
2	Reduce berm slopes from 2% to max. 1.33% or to actual berm shape	Reduce volume of berm material required
3	Deep cutoff wall 781-791; evaluate with SEEP/W to see if gradients necessitate cutoff wall	Reduction in quantity of cutoff wall by 100,000 SF
4	Replace Deep cutoff wall between Stations 1209-1219 with a Berm/RW hybrid solution	Reduction in quantity of cutoff wall by 140,000 SF
5	Use 2D modeling to reduce the berm widths/depths at Dead Creek; Sta. 1291+40, 1298+09, 1304+55	Reduce volume of berm material required Reduce acreage of wetland impacts Reduce acreage of land acquisition Reduce or eliminate cost for relocation of Dead Creek Maintain water storage areas
6	Use 2D modeling to reduce the berm widths/depths bwteen Sta. 1320 and 1349	Reduce volume of berm material required Reduce acreage of land acquisition Maintain water storage areas Eliminate/reduce need to put blue water ditch in a box culvert
7	Use 2D modeling to reduce the berm widths/depths bwteen Sta. 1219 and 1239	Reduce volume of berm material required Reduce acreage of land acquisition Maintain water storage areas Reduce need to route surface water and remove need to relocate Phillips Pump Station Possibly eliminate need to relocate power poles
8	Use 2D modeling to reduce the berm widths/depths bwteen Sta. 1268 and 1344	Reduce volume of berm material required Reduce acreage of wetland impacts Reduce acreage of land acquisition Maintain water storage areas
9	Use 2D modeling to reduce the berm widths/depths bwteen Sta.962 and 972	Reduce volume of berm material required Reduce acreage of wetland impacts Reduce acreage of land acquisition Maintain water storage areas
10	Re-evaluate using 2D finite element model the effectiveness of 40' cutoff between Stations 987 and 1013 in light of identified section of toe drain and new field data to confirm existence or absence of clay layer at 40'	Possible reduction in length of cutoff wall
11	Use 2D modeling to reduce the berm widths/depths at Sta. 1492	Eliminate need for berm to provide seepage control in this area
12	Use 2D or 3D modeling to reduce the number of relief wells at Sta. 1499+54	Reduce number of new relief wells required
13	Move cutoff wall from crest of levee to river side toe of levee between Sta. 1304 and 1319	Reduce quantity of deep cutoff wall quantity by approximately 37,500 SF

Value Engineering Considerations

PdP/FL Value Engineer/Design Optimization Items

Item	Description	Potential Benefits
1	Reduce berm slopes from 2% to max. 1.33% or to actual berm shape (levee-wide)	Reduce volume of berm material required
2	Use 2D finite element modeling to underseepage control in North/South Elbow and at Stations 467+95 - 471+25	Reduce volume of berm material required
		Reduce acreage of wetland impacts
		Reduce acreage of land acquisition
		Maintain water storage areas
3	Water berm solution from Station 560+00 to 620+00	Eliminate need for berm/well solution

Field Activities

- Well cleaning, testing and aquifer testing

Levee	Wells Tested / Remaining	Results vs. Assumptions	Aquifer Tests Preformed / Remaining
WR	0/18		0/3
MESD	29/120	18 – 4	3/1
PdP	6/42	3 - 2	2/0
FL	28/17	6 – 15	1/0

Schedule

- Working to deliver progress set and cost estimate week of May 9th.
- Begin activities associated with TO #4

Budget

- Fifth invoice prepared for the Council
- Budget status
  - Program Management $330,000 spent, 22% of budget
  - Preliminary Design $2,100,000 spent, 65% of budget
  - Preliminary Construction $2,500,000 spent, 44% of budget

QUESTIONS?