

PLAN OF WORK (POW) - BWC: Lower Vermilion River Watershed Project

	Project Manager	Project Assistant	Biologist	Environmental Scientist	Wetlands specialist	Archeologist	Event Coordinator	OUTCOMES-PRODUCTS	RELATED PLAN SECTION
<b>Planning Steps and Actions</b>									
<b>INITIATE PLANNING</b>									
<b>A. Written request for assistance (SF-424)</b>									
<b>B. Discuss purpose and need for project with sponsors</b>									
2. Define study area								Prioritized list of concerns	Purpose and Need
3. Develop project map								Boundary map	Appendix B – Project Map
<b>C. Initial site visit</b>									
<b>D. Establish reviewable record</b>									
<b>Subtotal—Initial Planning</b>									
<b>Step 1 - IDENTIFY PROBLEMS, OPPORTUNITIES &amp; CONCERNS &amp; CONCERNS</b>									
<b>A. Publicize planning start locally</b>									
								List of project needs	Purpose and Need
<b>B. Identify the need for the proposed action (quantify, extent, magnitude, timing, frequency etc.)</b>									
								Selected planning Methodologies	Appendix C – Investigation and Analysis
<b>C. Identify planning intensity</b>									
								List of individuals that will	List of Preparers
<b>D. Assemble interdisciplinary planning team</b>									
<b>E. Conduct interdisciplinary planning team meeting</b>									
								Plan of Work	
<b>F. Develop project plan of work (POW)</b>									
								Public Participation Plan	Consultation and Public
<b>G. Develop public participation plan</b>									
								List of references related to	References & Appendix D
<b>H. Gather and review existing data</b>									
1. Conduct literature review									
2. Determine additional data and studies needed								Identify resource concerns	Scope of the EA/EIS & Affective Environment
<b>I. Field review/reconnaissance of watershed</b>									
<b>K. Obtain local input</b>									
1. Discuss with sponsors									
2. Discuss with local NRCS									
4. Solicit input from Federal/State agencies, Tribes, special groups									
5. Publicize and conduct public meetings									
<b>Subtotal Step 1 - Identify Problems, Opportunities &amp; Concerns</b>									
<b>Step 2 - DETERMINE OBJECTIVES</b>									
<b>A. Document sponsor objectives</b>									
1. Prioritize objectives/resource issues								List of resource desired future conditions	Affected Environment
2. Determine purposes associated with objectives (desired future conditions)								Prioritized list of resource purposes	Purpose and Need
<b>B. Write purpose and need statement (40 CFR Section 1508.9b)</b>									
								Statement/Paragraph	Purpose and Need

C. Write scope of plan-EA/EIS							List of resource issues or concerns	Scope of the EA/EIS & Affected Environment
<b>Subtotal Step 2 - Determine Objectives</b>								
<b>Step 3 - INVENTORY RESOURCES</b>								
<b>A. Conduct resource inventories and watershed assessment</b>								
1. Identify resource attributes/indicators						List of resource attributes and indicators	Affected Environment	
2. Identify evaluation procedures/methods						Selected set of procedures and methods	Appendix C	
3. Identify a forecasting approach (P&G Section 3.4.7)						Selected approach	Appendix C	
4. Determine context for each resource issue						Description of resource context	Affected Environment	
5. Collect air quality data						Location of non-attainment areas	Affected Environment	
6. Identify coastal zone management areas						Location of coastal zone management areas	Affected Environment	
8. Identify ecological critical area						Location and size of ecological critical area (acres)	Affected Environment	
9. Identify essential fish habitat						Location of essential fish habitat	Appendix C	
10. Identify fish species						Species list and habitat requirements	Affected Environment	
11. Identify floodplains						Location and size of floodplain (acres)	Affected Environment	
13. Inventory highly erodible cropland						Location and size of highly erodible cropland (acres)	Affected Environment	
14. Identify invasive species						Species list	Affected Environment	
15. Collect landuse and crop inventory data						Land use and crop distribution information	Affected Environment	
16. Identify migratory birds						Species list	Affected Environment	
17. Identify natural areas						Location of natural areas	Affected Environment	
18. Identify parklands						Location of parklands	Affected Environment	
19. Inventory prime and unique farmland						Location and size of prime and unique farmland (acres)	Affected Environment	
20. Collect range health data						Analysis data	Appendix C	
21. Identify riparian areas						Location and size of riparian areas (acres)	Affected Environment	
22. Identify scenic areas						Location of scenic areas	Affected Environment	
23. Identify significant scientific features						Location of significant scientific features	Affected Environment	
24. Collect soil health data						Analysis data	Appendix C	
25. Soils inventory data						Distribution of soils by land use	Affected Environment	
26. Identify threatened and endangered species						List of those present and requirements	Affected Environment	
27. Identify upland wildlife species						List of species present and HEP data	Affected Environment	
28. Identify water bodies (streams, lakes, ponds, etc.)						Characterization of surface water bodies	Affected Environment	
29. Collect water quality data						Documented surface and groundwater quality	Affected Environment	
30. Collect water quantity data						Quantities available by use	Affected Environment	
31. Identify wild and scenic rivers						Measured extents and locations	Affected Environment	
32. Locate and identify wetlands						Type, size (acres), composition	Affected Environment	
33. Identify wetland wildlife species						List of species present and HEP data	Affected Environment	
34. Collect HGM data Hydrogeomorphic (HGM) • wetland classification fact sheet						Analysis data	Appendix C	
35. Collect WHEG or other methodology data						Analysis data	Appendix C	
<b>B. Economics and social effects</b>								
1. Collect population demographics								
a. Identify low-income population, minorities, Native Americans, etc						People impacted	Affected Environment	
b. Income						Mean Income and State Mean	Affected Environment	
c. Districts						Jurisdictional boundaries	Affected Environment	

2. Identify effects to public health and safety								Health and Safety issues impacted by project	Affected Environment
a. Public water supply									
b. Emergency vehicle and school bus transportation routes									
c. Access to medical facilities, shopping and markets							Travel distances and road conditions	Affected Environment	
d. Road and bridge infrastructure							Bridge and road conditions	Affected Environment	
3. Identify effects to homes, businesses & agricultural operations									
a. Determine effects of drawdown time of detention pool							Flooding regime/frequency	Affected Environment	
b. Current productivity							Agricultural contribution to the economy	Affected Environment	
c. Enterprise input costs							Labor costs, fuel costs etc.	Affected Environment	
d. Damage costs							Losses of property or crop production	Affected Environment	
e. Operation and maintenance costs							Costs of various farming operations	Affected Environment	
4. Identify visual concerns									
a. Map visual resources, landscape uses, and visibility							Location of Vistas impacted by the project	Affected Environment	
b. Determine viewsheds and scenic or unique landscape elements							Location of Points of Interest impacted by the project	Affected Environment	
5. Collect economic data									
a. Land cost							Land values by use	Affected Environment	
b. Rental rates							Rates by land use	Affected Environment	
6. Identify non-NEPA laws related to project area							List of Laws/ Ordinances	Affected Environment	
7. Identify approved regional water resource plans in project area							List of Plan Components that the project could impact	Affected Environment	
<b>C. Archeological and historic resource</b>									
1. Determine undertakings and APE							APE	Affected Environment	
2. Consultation with SHPO, State archaeologist, THPO, federally recognized Tribes							APE	Affected Environment	
3. Phase 1 Cultural Resources Survey (as Determined by agency)							Cultural Resources Report	Affected Environment	
4. If Cultural resources identified, apply criteria of adverse effect and evaluate for NRHP							Cultural Resources Report	Affected Environment	
5. Testing, (if necessary to determine eligibility for NRHP)							Testing Report	Affected Environment	
6. If NRHP eligibility, develop MOA, including plan for mitigation or avoidance							Cultural Resources Report, Determination and Effect,	Affected / Installation	
7. Execution of MOA							MOA/Data Recovery	Affected / Installation	
<b>D. Engineering</b>									
1. Surveys									
a. Topographic survey with elevation-storage-area curves							Analysis data	Appendix C	
c. Locate needed cross sections							Analysis data	Appendix C	
2. Evaluate condition of structure									
a. Structures							Location and condition of structures	Affected Environment	
e. Appurtenances (rehabilitation projects)							Condition of appurtenances	Affected Environment	
<b>E. Geology</b>									
a. Review existing geologic information							Geologic formations, site suitability, etc.	Affected Environment	
b. Perform preliminary geologic investigation								Affected Environment	
<b>F. Support maps</b>									
a. Digitize watershed boundary							Support maps	Appendix C – Support Maps	
b. Digitize wetlands by type									
c. Digitize water bodies									
d. Digitize land use									
e. Digitize soils									
<b>Subtotal Step 3 - Inventory Resources</b>									
<b>Step 4 - ANALYZE RESOURCE DATA</b>									

<b>A. Analyze existing data</b>											
1. Generate resource statistics										Trends	Affected Environment
2. Develop support maps										Support maps	Appendix C
4. Classify fishery										Resource condition or health index	Affected Environment & Appendix C
5. Determine forest health										Resource condition or health index	Affected Environment & Appendix C
6. Determine range health(contact Abbeville Field Office land use in project area classified as range)										Resource condition or health index	Affected Environment & Appendix C
7. Determine riparian proper functioning condition (PFC)										Resource condition or health index	Affected Environment & Appendix C
8. Determine soil health										Resource condition or health index	Affected Environment & Appendix C
9. Evaluate water quality data										Negative trends or standards exceeded	Affected Environment & Appendix C
10. Evaluate water quantity data										Negative trends or standards exceeded	Affected Environment & Appendix C
11. Classify wetlands										Type, size (acres), composition	Affected Environment & Appendix C
12. Use HGM										Analysis Tools/Methods	Affected Environment & Appendix C
13. Use WHEG or other methodology Wildlife Habitat Evaluation Guide										Analysis Tools/Methods	Affected Environment & Appendix C
20. Quantify onsite/offsite damages										Property damage or resource impairments	Affected Environment & Appendix C
21. Develop resource existing conditions										Resource condition or health index	Affected Environment & Appendix C
<b>B. Geology</b>											
1. Geological formation of southwest LA coastal marshes document										Documentation	Affected Environment & Appendix C
<b>C. Hydrology and hydraulics</b>											
1. Determine impact area										Analysis Tools/Methods	Affected Environment & Appendix C
2. Research and review existing hydrology/hydraulic models										Analysis Tools/Methods	Affected Environment & Appendix C
3. Develop watershed schematic										Analysis Tools/Methods	Affected Environment & Appendix C
4. Determine watershed conditions (CN, Tc, rainfall, etc.)										Analysis Tools/Methods	Affected Environment & Appendix C
5. Run preliminary hydraulics										Analysis Tools/Methods	Affected Environment & Appendix C
6. Develop hydrologic model for watershed										Analysis Tools/Methods	Affected Environment & Appendix C
7. Run hydrologic models										Analysis Tools/Methods	Affected Environment & Appendix C
a. Existing conditions											
b. Future-without-project condition											
8. Review municipal & industrial or rural water supply studies										Analysis Tools/Methods	Affected Environment & Appendix C
<b>D. Review cultural resource data</b>											
										NRHP eligibility	Affected Environment
<b>E. Economics and social effects (future-without-project condition)</b>											
1. Urban or developed area damages										Net Returns, cost of damages	Affected Environment & Appendix C
a. Denote on aerial photo affected properties Appendix C upstream and downstream											
f. Determine infrastructure damage (roads, bridges, utilities)											
g. Determine costs of utility outage, re-routing traffic											
2. Agricultural area damages										Net Returns, cost of damages	Affected Environment & Appendix C
3. Nonagricultural area damages (roads, bridges, oil Appendix C wells, etc.)										Net Returns, cost of damages	Affected Environment & Appendix C
4. Review social resource data										Net Returns, cost of damages	Affected Environment & Appendix C
5. Review and interpret visual resource data										Report of condition andprobable impact	Affected Environment & Appendix C
<b>Subtotal Step 4 - Analyze Resource Data</b>											
<b>Step 5 - FORMULATE ALTERNATIVES</b>											
<b>Step 5 - FORMULATE ALTERNATIVES</b>											
A. Identify quality criteria										List of criteria associated with needs	Formulation process
B. Develop practice/measure list										List of project practices or measures	Alternatives
C. Determine reasonable alternatives considering										Criteria associated with needs	Alternatives

completeness, effectiveness, efficiency and								Table of practice extents for each alternative	Alternatives
D. Determine practice/measure extents								List of alternative components	Alternatives
E. Determine treatment increments								Participation rate	Alternatives
F. Determine practice/measure adoption rates								List of required documents	Permits and compliance
G. Identify permits, licenses, and other entitlements require for action								List of mitigation methods to be used	Alternatives & Mitigation
H. Define mitigation strategies								Alternative cost estimate	Alternatives
I. Determine project costs for each alternative									
<b>Subtotal Step 5 - Formulate Alternatives</b>									
<b>Step 6 - EVALUTATE ALTERNATIVES</b>									
A. Environmental evaluation									
1. Complete EE and document findings								Analysis Tools/Methods	
B. Evaluate resource data									
1. Review HGM								Document predicted changes in indicator	Environmental Consequences
2. Review WHEG or other methodology								Document predicted changes in indicator	Environmental Consequences
9. Review range health determinations								Document predicted changes in indicator	Environmental Consequences
10. Review forest health determinations								Document predicted changes in indicator	Environmental Consequences
11. Review fishery classifications								Document predicted changes in indicator	Environmental Consequences
12. Review soil health determinations								Document predicted changes in indicator	Environmental Consequences
13. Review riparian PFC impacts								Document predicted changes in indicator	Environmental Consequences
14. Conduct trend analysis								Document predicted changes in indicator	Environmental Consequences
15. Extrapolate model results								Document predicted changes in indicator	Environmental Consequences
16. Review landscape and visual resource impacts									
C. Geology									
1. Foundation and slope stability								Document predicted changes in indicator	Environmental Consequences
a. Analyze foundation and slope stability									
c. Seepage analysis									
D. Hydrology and hydraulics									
1. Run hydrologic models								Document predicted changes in indicator	Environmental Consequences
a. Evaluate future with project condition (varies Consequences with alternatives)									
b. Determine effects structures have on watershed (release flows, discharges, downstream water surface elevations)									
4. Develop floodplain maps (breach, 100-yr & 500-yr with and without project)								Document predicted changes in indicator	Environmental Consequences
5. Determine watershed safe yield for water supply								Document predicted changes in indicator	Environmental Consequences
E. Economics (all alternatives)									
1. Determine economic benefits for each alternative								NED Account Values Displayed in Alternative Comparison Table (see P&G Chapter 2)	Alternative Comparison Table & Economic Tables
								Effects of Alternatives (P&G Forecasting 3.4.7&8)	
3. Recreation area (Palmetto island state park)								Alternative Comparison Table	Alternative Comparison
a. Determine number of visitor-days per year									Table & Environmental Consequences
4. Calculate average annual damages								NED Account Values Displayed in Alternative Comparison Table (see P&G Chapter 2)	Alternative Comparison Table & Economic Tables
a. Urban, agricultural, and recreation areas								NED Account Values Displayed in Alternative Comparison Table (see P&G Chapter 2)	Alternative Comparison Table & Economic Tables
5. Calculate benefit-cost ratio								NED Account Values Displayed in Alternative Comparison Table (see P&G Chapter 2)	Alternative Comparison Table & Economic Tables
6. Determine NED plan for water resource projects								NED Account Values Displayed in Alternative Comparison Table (see P&G Chapter 2)	

F. Identify direct and indirect effects (40 CFR Section 1502.16)									List of effects		Environmental Consequences	
G. Determine significance of effects (context & intensity)												
1. Air quality (SWAPA+H) Airborn dust should be mentioned (short term- construction)									Document predicted changes in indicators		Environmental Consequences	
2. Archeological and historic properties									Document predicted changes in indicators		Environmental Consequences	
3. Coastal zone management areas									Document predicted changes in indicators		Environmental Consequences	
4. Coral reefs									Document predicted changes in indicators		Environmental Consequences	
5. Ecological critical areas									Document predicted changes in indicators		Environmental Consequences	
6. Economic and social									Document predicted changes in indicators		Environmental Consequences	
a. Current productivity									Document predicted changes in indicators		Environmental Consequences	
b. Damage costs											Environmental Consequences	
c. Enterprise input costs									Document predicted changes in indicators		Environmental Consequences	
d. Income									Document predicted changes in indicators		Environmental Consequences	
e. Land cost											Environmental Consequences	
f. O&M costs									Document predicted changes in indicators		Environmental Consequences	
g. Population demographics									Document predicted changes in indicators		Environmental Consequences	
h. Rental rates									Document predicted changes in indicators		Environmental Consequences	
7. Environmental justice									Document predicted changes in indicators		Environmental Consequences	
8. Erosion and sedimentation									Document predicted changes in indicators		Environmental Consequences	
9. Essential fish habitat									Document predicted changes in indicators		Environmental Consequences	
10. Fish resources									Document predicted changes in indicators		Environmental Consequences	
11. Floodplains									Document predicted changes in indicators		Environmental Consequences	
12. Floodwater damage									Document predicted changes in indicators		Environmental Consequences	
13. Forest health									Document predicted changes in indicators		Environmental Consequences	
14. Highly erodible cropland									Document predicted changes in indicators		Environmental Consequences	
15. Human health and safety									Document predicted changes in indicators		Environmental Consequences	
16. Invasive species									Document predicted changes in indicators		Environmental Consequences	
17. Land use and management									Document predicted changes in indicators		Environmental Consequences	
18. Migratory birds									Document predicted changes in indicators		Environmental Consequences	
19. Natural areas									Document predicted changes in indicators		Environmental Consequences	
20. Parklands									Document predicted changes in indicators		Environmental Consequences	
21. Prime and unique farmland									Document predicted changes in indicators		Environmental Consequences	
22. Range health									Document predicted changes in indicators		Environmental Consequences	
23. Riparian corridor PFC impacts									Document predicted changes in indicators		Environmental Consequences	
24. Scenic areas									Document predicted changes in indicators		Environmental Consequences	
25. Significant scientific features									Document predicted changes in indicators		Environmental Consequences	
26. Soil health									Document predicted changes in indicators		Environmental Consequences	
27. Threatened and endangered species									Document predicted changes in indicators		Environmental Consequences	
28. Transportation and infrastructure									Document predicted changes in indicators		Environmental Consequences	
29. Visual resources (Aesthetics high/med/low concern - simple to address)									Document predicted changes in indicators		Environmental Consequences	
30. Water bodies (streams, lakes, ponds, etc.)									Document predicted changes in indicators		Environmental Consequences	
31. Water quality									Document predicted changes in indicators		Environmental Consequences	
32. Water quantity									Document predicted changes in indicators		Environmental Consequences	
33. Wetlands									Document predicted changes in indicators		Environmental Consequences	
35. Wildlife resources									Document predicted changes in indicators		Environmental Consequences	
36. Other resource concerns									Document predicted changes in indicators		Environmental Consequences	
H. Develop mitigation or reformulate to avoid adverse environmental effects												
1. Environmental									Mitigation		Environmental Consequences & Mitigation	
2. Downstream erosion									Mitigation		Environmental Consequences & Mitigation	
3. Landscape and visual resources												
I. Determine potential for effect controversy									Controversy Analysis			
J. Identify possible conflicts between Federal, State,									List of Conflicts			







4. Follow up with SLO regarding O&M inspections											
<b>Total Step 9 – Evaluate the Plan</b>											

