



**OFFICE of the ZONING ADMINISTRATOR
CITY OF HUNTINGTON BEACH • CALIFORNIA**

P.O. BOX 190

CALIFORNIA 92648

NOTICE OF ACTION

October 2, 2008

(714) 536-5271

City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

**SUBJECT: MITIGATED NEGATIVE DECLARATION NO. 2008-003
(TALBERT LAKE DIVERSION PROJECT):**

APPLICANT: City of Huntington Beach

REQUEST: To analyze the potential environmental impacts associated with the Talbert Lake Diversion Project, a Santa Ana Regional Water Quality Control Board-approved Supplemental Environmental Project (SEP) involving the construction of a natural treatment system in the northeastern corner of Central Park in Huntington Beach, on the eastern side of Goldenwest Street. The proposed project would divert up to 3 million gallons per day (mgd) of dry weather flows from the East Garden Grove Wintersburg Channel (EGGWC) into a newly constructed treatment wetlands system for water quality improvement purposes. Project components include the construction of a diversion structure such as a rubber dam within the EGGWC to divert dry weather flows into an existing water line in Goldenwest Street, or the existing storm drain system within Gothard Street, for transport to the proposed treatment wetlands within Central Park. These treatment wetlands would consist of three linear wetland features encompassing open water and channel areas and channels through which diverted channel flows would move and be subjected to a series of natural treatment processes improving overall water quality. Project objectives include the improvement of water quality and the potential beneficial reuse of treated water on site for park irrigation purposes if sufficient water is available.

PROPERTY OWNER: City of Huntington Beach, 2000 Main Street, Huntington Beach, CA 92648

LOCATION: 7111 Talbert (between Slater Avenue and Talbert Avenue to the north and south, and Goldenwest Street and Gothard Street to the west and east- approximately 75 acres in the northeast corner of Huntington Central Park)

PROJECT PLANNER: Jennifer Villasenor

DATE OF ACTION: October 1, 2008

On Wednesday, October 1, 2008, the Huntington Beach Zoning Administrator took action on your application, and your application was **approved**. Attached to this letter are the findings and mitigation measures.

Please be advised that the Zoning Administrator reviews the conceptual plan as a basic request for entitlement of the use applied for and there may be additional requirements prior to commencement of the project. It is recommended that you immediately pursue completion of the mitigation measures and address all requirements of the Huntington Beach Zoning and Subdivision Ordinance in order to expedite the processing/completion of your total application. The conceptual plan should not be construed as a precise plan, reflecting conformance to all Zoning and Subdivision Ordinance requirements.

Under the provisions of the Huntington Beach Zoning and Subdivision Ordinance, the action taken by the Zoning Administrator becomes final at the expiration of the appeal period. A person desiring to appeal the decision shall file a written notice of appeal to the Secretary of the Planning Commission within ten (10) calendar days of the date of the Zoning Administrator's action. The notice of appeal shall include the name and address of the appellant, the decision being appealed, and the grounds for the appeal. Said appeal must be accompanied by a filing fee of One Thousand Two Hundred Eighty-Seven Dollars (\$1287.00) if the appeal is filed by a single family dwelling property owner appealing the decision on his own property and One Thousand Five Hundred Sixty-Nine Dollars (\$1569.00) if the appeal is filed by any other party. In your case, the last day for filing an appeal and paying the filing fee is October 13, 2008, at 5:00 PM.

Excepting those actions commenced pursuant the California Environmental Quality Act, you are hereby notified that you have 90 days to protest the imposition of the fees described in this Notice of Action. If you fail to file a written protest regarding any of the fees contained in this Notice, you will be legally barred from later challenging such action pursuant to Government Code §66020.

If you have any questions regarding this Notice of Action letter or the processing of your application, please contact Jennifer Villasenor, the project planner, at (714) 374-1661/ JVillasenor@surfcity-hb.org or the Planning Department Zoning Counter at (714) 536-5271.

Sincerely,



Ricky Ramos
Zoning Administrator

RR:JV:kdc
Attachment

- c: Honorable Mayor and City Council
Chair and Planning Commission
Fred Wilson, City Administrator
Scott Hess, Director of Planning
Herb Fauland, Planning Manager
William H. Reardon, Division Chief/Fire Marshal
Terri Elliott, Principal Civil Engineer
Gerald Caraig, Permit-Plan Check Manager
Geraldine Lucas, Principal Civil Engineer (Applicant)
Project File

ATTACHMENT NO. 1

FINDINGS AND MITIGATION MEASURES

MITIGATED NEGATIVE DECLARATION NO. 2008-003

FINDINGS FOR APPROVAL – MITIGATED NEGATIVE DECLARATION NO. 2008-003

1. Mitigated Negative Declaration No. 2008-003 has been prepared in compliance with Article 6 of the California Environmental Quality Act (CEQA) Guidelines. It was advertised and available for a public comment period of 30 days. Comments received during the comment period were considered by the Zoning Administrator prior to action on the Mitigated Negative Declaration.
2. Mitigation measures avoid or reduce the project's effects to a point where clearly no significant effect on the environment will occur. Mitigation measures address odor control, construction noise and potential impacts to cultural resources, hazards, geology and soils, traffic and transportation and biological resources. Mitigation measures were generally designed to minimize construction related impacts within and surrounding the project area as well as control odors in the East Garden Grove Wintersburg Channel (EGGWC) that may result from the proposed diversion structure.
3. There is no substantial evidence in light of the whole record before the Zoning Administrator that the project, as mitigated through the attached mitigation measures, will have a significant effect on the environment. The proposed project will create a natural treatment system in Central Park by diverting up to 3 million gallons per day (mgd) of dry weather flows (urban runoff) from the EGGWC with the objective of improving water quality within the downstream receiving waters, including Huntington Harbour and Anaheim Bay. Additional project benefits include enhanced riparian habitat in Central Park, a restored Talbert Lake and potential reuse of treated water on site for park irrigation purposes. Finally, all potential impacts resulting from construction of the project can be adequately mitigated.

MITIGATION MEASURES FOR ENVIRONMENTAL CONCERNS:

1. Prior to initiation of construction, the Project Applicant shall hire a qualified Geotechnical Engineer and/or Engineering Geologist to complete a geotechnical investigation of areas to be excavated by the project and to ensure that all recommendations of the geotechnical investigation are incorporated into the final plans and specifications for the project.
2. Epoleon ® (or similar odor-control measure) shall be applied, as needed, by the City of Huntington Beach Park, Tree and Landscape Division to ponded water behind the diversion structure.
3. Prior to construction, a Traffic Control Plan will be developed for all construction activities proposed within and adjacent to public road rights-of-way that would delay or disrupt local roadway traffic. The Traffic Control Plan shall include, but not be limited to:
 - Limiting road closures to identified portions of Goldenwest Street directly west of the project site to only two lanes in each direction at any given time;

- Limiting road closures to portions of Gothard Street and Warner Avenue as described in Exhibits 12.6-3 through 12.6-6 for a total of no more than 10 days (only applicable if Diversion Concept 4, 5 or 6 is chosen);
 - Limiting lane closures to between 9:00 AM and 3:00 PM on weekdays and Saturday, with no closures on Sunday;
 - Installing traffic-control devices as specified in the California Department of Transportation's Manual of Traffic Control for Construction and Maintenance Work Zones;
 - Providing alternate routes (detours) as necessary, to route local traffic around roadway construction;
 - Providing notification of road closures to residents in the vicinity of construction; and
 - Consulting with emergency service providers and developing an Emergency Access Plan for emergency vehicle access in and adjacent to the construction zone.
4. A permitted Biological Monitor shall be on site for all construction activities occurring during the least Bell's vireo nesting season (March 15 to September 15). If the Biologist determines that the least Bell's vireo is present on or within 500 feet of the project site, construction operations shall cease. To resume construction operations, the appropriate permits must be obtained from the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS).
 5. Post-construction maintenance operations shall occur outside the least Bell's vireo breeding and nesting season (March 15 to September 15) and shall be confined to vector-control activities and manual removal of vegetal debris in open water areas.
 6. Nesting Migratory Birds: If construction commences during the migratory bird nesting season (March 1 to August 31), a qualified Biologist will survey the project impact area for the presence of any active bird nest (common or special status) within 72 hours prior to the onset of construction activities. Any nest found during the survey efforts will be mapped on the construction plans. If no active nests are found, no further mitigation is required. Results of the surveys will be provided to the CDFG and the City of Huntington Beach.

If any active migratory bird nest is present, the nest will be protected until nesting activity has ended to ensure compliance with Section 3503 of the California *Fish and Game Code*. To protect any active nest, the following restrictions on construction are required until the nests are no longer active, as determined by a qualified biologist: (1) clearing limits will be established with a 300-foot buffer around any occupied nest, or as otherwise determined by a qualified Biologist. Any encroachment into the buffer area around the known nest will only be allowed if the qualified Biologist determines that the proposed construction activities would not disturb the nest occupants. Construction during the nesting season can occur only at the sites if a qualified Biologist has determined that the construction activities are not a disruption to the breeding activities or if the fledglings have left the nest.

Nesting Raptors: If construction commences during the raptor nesting season (February 1 to June 30), a qualified Biologist shall survey within 500 feet of the project impact area for the presence of any active raptor nests (common or special status) at least seven days prior to the onset of construction activities. Any nest found during survey efforts shall be mapped on the construction plans. If no active nests are found, no further mitigation is required. Results of the surveys shall be provided to the CDFG and the City of Huntington Beach.

If nesting activity is present at any raptor nest site, the active nest site will be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California *Fish and Game Code*. To protect any nest site, the following restrictions on construction are required until nests are no longer active, as determined by a qualified Biologist: (1) clearing limits shall be established with a 500 foot buffer, or as otherwise determined by a qualified Biologist, around any occupied nest. Any encroachment into the buffer area around the known nest shall only be allowed if the qualified Biologist determines that the proposed construction activities would not disturb the nest occupants. Construction during the nesting season can occur only at the sites if a qualified Biologist has determined that the construction activities are not a disruption to the breeding activities or if the fledglings have left the nest.

If an inactive nest is observed within the area to be directly impacted during the non-nesting season, the nest site shall be monitored by a qualified Biologist, and when the raptor is away from the nest, the nest will be removed so raptors cannot return to it. The qualified Biologist will supervise the removal of the nest.

7. The existing and abandoned oil pipelines shall be potholed prior to initiation of construction activities to determine the exact locations of the pipelines and to allow for implementation of any additional measures necessary to avoid impact.
8. Prior to preparation of final plans and specifications, the Project Applicant shall have prepared a Phase I Environmental Site Assessment (ESA) for the entirety of the project to determine the potential to encounter hazardous materials during project implementation. This documentation shall be prepared by a Registered Environmental Assessor (REA) or other qualified personnel, as determined by the State of California.
9. Prior to preparation of final plans and specifications, the Project Applicant shall have the soils displaced during all potholing operations and all excavation activities on the remainder of the project site tested for the presence of petroleum hydrocarbons and other potential hazardous materials. The soil testing shall be overseen by an REA or other qualified personnel, as determined by the State of California. The results of the tests on the soils collected during potholing operations shall be finalized before initiating further construction activities. If soil testing during site excavations positively identifies the presence of hazardous materials, the City of Huntington Beach shall coordinate with the appropriate regulatory agency(s) to determine the oversight and remediation method to be implemented.
10. During construction, if any hydrocarbon-contaminated soils or other hazardous materials on proposed project construction sites are to be transported off site, the transport shall be conducted by a properly licensed Hazardous Waste Hauler, who will be in compliance with all applicable State and federal requirements, including the federal Department of Transportation regulations under Title 49 of the *Code of Federal Regulations* (CFR); the California Department of Transportation (Caltrans); the federal Occupational Safety and Health Administration (OSHA) standards and under 40 CFR 263 (Subtitle C of Resource Conservation and Recovery Act).
11. During construction, the project applicant shall ensure that all noise-generating activities be limited to the hours between 7:00 AM and 8:00 PM on weekdays. No noise-generating activities shall occur on Saturdays, Sundays or holidays. Noise-generating activities are also prohibited within 100 feet of the Park Bench Café on weekdays between the hours of 11:00 AM and 1:00 PM.

12. Prior to the issuance of any grading permits, the Construction Contractor shall produce evidence acceptable to the City of Huntington Beach, Public Works Department, that:

- All construction vehicles or equipment (fixed or mobile) operated within 1000' of a residential dwelling shall be equipped with properly operating and maintained mufflers.
- Stockpiling and/or vehicle staging areas shall be located as far as practicable from residential dwellings.

13. Prior to approval of any rough, precise or stockpiling grading plans, the City shall hire a certified Archaeologist to ensure that the following actions are implemented:

- The Archaeologist must be present at the pre-grading conference in order to establish procedures for temporarily halting or redirecting work to permit the sampling, identification and evaluation of artifacts if potentially significant artifacts are uncovered. If artifacts are uncovered and determined to be significant, the Archaeological Observer shall determine appropriate actions in cooperation with the City for exploration and/or salvage.
- Specimens that are collected prior to or during the grading process shall be donated to an appropriate educational or research institution.
- Any archaeological work at the site shall be conducted under the direction of the certified Archaeologist. If any artifacts are discovered during grading operations when the Archaeological Monitor is not present, grading shall be diverted around the area until the Monitor can survey it.
- A final report detailing the findings and disposition of the specimens shall be submitted to the City. Upon completion of the grading, the Archaeologist shall notify the City as to when the final report will be submitted.

14. Prior to approval of any rough, precise or stockpiling grading plans, the City shall hire a certified Paleontologist to ensure that the following actions are implemented:

- The Paleontologist must be present at the pre-grading conference in order to establish procedures to temporarily halt or redirect work to permit the sampling, identification and evaluation of fossils if potentially significant paleontological resources are uncovered. If artifacts are uncovered and found to be significant, the Paleontological Observer shall determine appropriate actions in cooperation with the City for exploration and/or salvage.
- Specimens that are collected prior to or during the grading process will be donated to an appropriate educational or research institution.
- Any paleontological work at the site shall be conducted under the direction of the certified Paleontologist. If any fossils are discovered during grading operations when the Paleontological Monitor is not present, grading shall be diverted around the area until the Monitor can survey the work.
- A final report detailing the findings and disposition of the specimens shall be submitted. Upon completion of the grading, the Paleontologist shall notify the City as to when the final report will be submitted.

INDEMNIFICATION AND HOLD HARMLESS CONDITION:

The owner of the property which is the subject of this project and the project applicant if different from the property owner, and each of their heirs, successors and assigns, shall defend, indemnify and hold harmless the City of Huntington Beach and its agents, officers, and employees from any claim, action or proceedings, liability cost, including attorney's fees and costs against the City or its agents, officers or employees, to attack, set aside, void or annul any approval of the City, including but not limited to any approval granted by the City Council, Planning Commission, or Design Review Board concerning this project. The City shall promptly notify the applicant of any claim, action or proceeding and should cooperate fully in the defense thereof.

EAST GARDEN GROVE WINTERSBURG CHANNEL URBAN RUNOFF DIVERSION PHASE I PROJECT
PROPOSITION 13 GRANT 04-194-558-2
PACE Project # 8391E

COST ESTIMATE SUMMARY
Based on 75% Plan Submittal

EGGWC Diversion Facility	\$1,525,950
Includes rubber dam, silt basin, pump station, forcemain	
Wetland Distribution Infrastructure	\$889,530
Includes pump station, distribution forcemains, aeration blower, aeration piping	
Wetland Treatment System	\$1,695,175
Includes forebays, wetlands, ponds, UV treatment cell, earthwork, planting	
Total Cost Estimate at 75% Plan Submittal:	\$4,110,655
Cosntruction Administration 15%	\$616,598
Contingencies 10%	\$472,725
Grand Total	\$5,199,978

9/3/2010

8391E - EGGWC Diversion Cost Estimate
Based on 75% Construction Plans

ITEM	UNITS	QTY	UNIT PRICE (\$)	COST (\$)
Power Source				
3" Electrical Conduit (3 @ 1200 LF)	LF	1200	\$20	\$24,000
			<i>Power Source Subtotal:</i>	<i>\$24,000</i>
Channel Demolition & Replacement				
Concrete Invert Demo	CY	120	\$150	\$18,000
Concrete Wall Demo	LF	17	\$300	\$5,100
Access Road excavation	CY	1360	\$8	\$10,880
Below channel excavation	CY	40	\$8	\$320
Hauling	CY	1500	\$10	\$15,000
Channel Invert Replacement - structural concrete	CY	115	\$675	\$77,625
Aggregate Base	CY	77	\$30	\$2,310
Non-woven Geotextile (AMOCO 2016)	SY	233	\$2	\$350
Channel Wall Replacement - structural concrete	CY	17	\$675	\$11,475
Steel Railing - Remove & Replace	LF	25	\$16	\$400
CMB Access Road Replacement	SY	150	\$10	\$1,500
			<i>Channel Demo & Replacement Subtotal:</i>	<i>\$142,960</i>
Rubber Dam*				
Rubber Dam - 3/8" Thick (about 1125 SF)	LS	1	\$600,000	\$600,000
Rubber Dam - storage & installation	LS	1	\$45,000	\$45,000
3" diameter S.S. inlet/outlet air Pipe	LF	54	\$40	\$2,160
Anchor Clamping Plate (3.5" (W) 316 S.S.)	LF	95	N/A	N/A
Anchor Embedded Plate (3/8" (W) 304 S.S.)	LF	95	N/A	N/A
Anchor Bolt - 8" depth (3/4" 316 S.S.) w/ hardware	EA	190	\$20	\$3,800
			<i>Rubber Dam Subtotal:</i>	<i>\$650,960</i>
Inlet Structure				
11'x8'x4' Precast Concrete Inlet Box	LS	1	\$25,000	\$25,000
Steel Grates & Frame (HDG 12 sections: 1'-5 3/8" x 3'-4")	SF	63	\$500	\$31,500
24" Diameter C905 PVC Inlet Pipe	LF	35	\$200	\$7,000
			<i>Inlet Structure Subtotal:</i>	<i>\$63,500</i>
Stilling Well				
Bubbler System Panel	EA	2	\$5,000	\$10,000
30" PVC Schedule 80 (2 @ 15 LF)	LF	30	\$90	\$2,700
8" PVC Schedule 80 (2 @ 35 LF)	LF	70	\$32	\$2,240
2" PVC Schedule 80 (2 @ 33 LF)	LF	66	\$20	\$1,320
3/4" PVC Schedule 80 (2 @ 20 LF)	LF	40	\$8	\$320
Reinforced Concrete Collar/Slab	CY	4	\$500	\$2,000
30" Manhole & Frame	EA	2	\$500	\$1,000
			<i>Stilling Well Subtotal:</i>	<i>\$19,580</i>
Silt Basin				
16'x10.5'x24' Precast reinforced concrete vault	LS	1	\$59,000	\$59,000
Reinforced Concrete Baffle Walls	CY	3	\$500	\$1,500
24" Manhole & Frame	EA	2	\$500	\$1,000
Access Hatch (3'x3' single leaf, H-20 rated)	EA	1	\$1,000	\$1,000
Aluminum Ladder	VLF	24	\$100	\$2,400

8391E - EGGWC Diversion Cost Estimate

Based on 75% Construction Plans

ITEM	UNITS	QTY	UNIT PRICE (\$)	COST (\$)
			<i>Silt Basin Subtotal:</i>	<i>\$64,900</i>
Pump Station				
16'x10.5'x24' Precast reinforced concrete vault	LS	1	\$59,000	\$59,000
Submersible Pump (20 HP, VFD)	EA	2	\$29,000	\$58,000
Valves, fittings, sensors, misc equipment	LS	1	\$34,000	\$34,000
Sump pump (1/3 HP)	EA	1	\$10,000	\$10,000
Air Compressor	EA	1	\$3,000	\$3,000
Air Compressor valves, sensors, equipment	LS	1	\$2,000	\$2,000
Exhaust Fan, intake vent, exhaust vent	LS	1	\$5,000	\$5,000
Access Hatch (3'x3' single leaf, H-20 rated)	EA	2	\$1,000	\$2,000
Metal Ship Ladder with Platform	LS	1	\$5,000	\$5,000
			<i>Pump Station Subtotal:</i>	<i>\$178,000</i>
Electrical**				
Control Panel & Programming	LS	1	\$35,000	\$35,000
SES/MCC	LS	1	\$50,000	\$50,000
Level Instruments	LS	1	\$8,000	\$8,000
Service Electrical Wire	LS	1	\$40,000	\$40,000
Control, Lighting, and Recep. Wire	LS	1	\$15,000	\$15,000
			<i>Electrical Subtotal:</i>	<i>\$148,000</i>
Force Main				
12" DIP Forcemain	LF	35	\$130	\$4,550
12" C900 PVC Forcemain	LF	1550	\$140	\$217,000
11.25 degree bend	EA	2	\$500	\$1,000
22.5 degree bend	EA	2	\$500	\$1,000
45 degree bend	EA	6	\$500	\$3,000
90 degree bend	EA	5	\$500	\$2,500
Concrete Pipe Penetration	LS	1	\$5,000	\$5,000
			<i>Force Main Subtotal:</i>	<i>\$234,050</i>
EGGWC Diversion Total Cost Estimate:				\$1,525,950

* Cost based on OCFCD Rubber Dam installations adjusted to 2009 (ENR cost index)

** Estimates based on preliminary cost estimate 01-06-09

8391E - Wetland Distribution Infrastructure Cost Estimate
Based on 75% Construction Plans

ITEM	UNITS	QTY	UNIT PRICE (\$)	COST (\$)
Power Souce				
3" Electrical Conduit	LF	300	\$20	\$6,000
			<i>Power Source Subtotal:</i>	<i>\$6,000</i>
Pump Station				
8'x10'x22' Precast concrete wetwell	LS	1	\$60,000	\$60,000
8' diameter x 19' Precast concrete wetwell	LS	1	\$50,000	\$50,000
Pre-fab Pump Room (Rockway Easi-set model 1012)	SF	265	\$400	\$106,000
Submersible Pump (15 HP, VFD)	EA	2	\$24,500	\$49,000
Valves, fittings, gauges, misc equipment	LS	1	\$28,000	\$28,000
Forcemain Flow Meters - 6"	EA	3	\$8,000	\$24,000
Aeration Air Blower (Gast model #R4H3060A)	EA	1	\$10,000	\$10,000
Air Blower valves, gauges, filters, equipment	LS	1	\$5,000	\$5,000
Exhaust Fan, intake vent, exhaust vent	LS	1	\$5,000	\$5,000
Access Hatch (3'x3' single leaf, H-20 rated)	EA	2	\$1,000	\$2,000
Access Hatch (3'x5' double leaf, H-20 rated)	EA	1	\$1,700	\$1,700
Aluminum Ladder (2 @ 20 vertical feet)	VLF	40	\$100	\$4,000
Ashphalt Pavement (4"asph over 8" base)	SF	1300	\$2	\$2,600
			<i>Pump Station Subtotal:</i>	<i>\$347,300</i>
Electrical*				
Control Panel & Programming	LS	1	\$35,000	\$35,000
SES/MCC	LS	1	\$50,000	\$50,000
Level Instruments	LS	1	\$7,500	\$7,500
Service Electrical Wire	LS	1	\$35,000	\$35,000
Control, Lighting, and Recep. Wire	LS	1	\$12,500	\$12,500
			<i>Electrical Subtotal:</i>	<i>\$140,000</i>
Force Main & Aeration Piping				
Aeration Lines (2" PVC)	LF	7900	\$10	\$79,000
Aeration Lines (0.5" Perforated HDPE)	LF	1120	\$4	\$4,480
Aeration Valve Boxes	EA	13	\$150	\$1,950
Aeration Pipe Fittings	LS	1	\$3,000	\$3,000
6" PVC C900 Force Main	LF	960	\$100	\$96,000
8" PVC C900 Force Main	LF	1740	\$120	\$208,800
6" PVC fittings	LS	1	\$1,500	\$1,500
8" PVC fittings	LS	1	\$1,500	\$1,500
			<i>Force Main & Aeration Piping Subtotal:</i>	<i>\$396,230</i>

Wetland Distribution Infrastructure Total Cost Estimate: \$889,530

* Estimates based on preliminary cost estimate 01-06-09

8391E - Wetland Treatment System Cost Estimate
Based on 75% Construction Plans

ITEM	UNITS	QTY	UNIT PRICE (\$)	COST (\$)
Earthwork, De-watering, Site preparation				
Clearing & Grubbing	AC	12.5	\$3,000	\$37,500
Excavation	CY	34000	\$3	\$102,000
Fill	CY	28000	\$5	\$140,000
Export	CY	6000	\$5	\$30,000
Dewatering	LS	1	\$100,000	\$100,000
Diversion, control, removal of water	LS	1	\$20,000	\$20,000
<i>Earthwork, De-watering, Site prep Subtotal:</i>				<i>\$429,500</i>
Utility Demolition & Replacement				
Electrical Conduit to be removed & replaced	LF	125	\$25	\$3,125
Irrigation Piping to be Removed	LF	4250	\$3	\$12,750
Irrigation piping to be replaced	LF	3100	\$8	\$24,800
Cut and cap irrigation piping	EA	60	\$20	\$1,200
<i>Utility Demolition & Replacement Subtotal:</i>				<i>\$41,875</i>
Forebays, Shallow Wetlands, Ponds				
Eroded Concrete Shoreline	LF	4100	\$30	\$123,000
Natural Shoreline	LF	16000	\$5	\$80,000
Rock Gabion Wall - Forebay (213 LF of 10' wall @ 2.4 CY/LF)	CY	510	\$200	\$102,000
Rock Gabion Wall - Pond (568 LF of 7' wall @ 1 CY/LF)	CY	568	\$200	\$113,600
Forebay Fine Bubble Diffuser - Aeration Manifold	EA	3	\$3,000	\$9,000
Soil Cement - Forebay lining (12" thick)	CY	930	\$40	\$37,200
Soil Cement - cement content at 10%	TON	146	\$150	\$21,900
Stop Logs	EA	6	\$3,600	\$21,600
Stream Rock & Cobble (2 streams @ 400 SF each)	SF	800	\$10	\$8,000
Pedestrian Footbridge / Cart path crossing	SF	1300	\$65	\$84,500
Topsoil Placement & Grading	SY	42,000	\$5	\$210,000
Landscaping and Planting (bare root seedlings 1.5' - 2' ht.)	SF	380,000	\$1	\$285,000
<i>Forebays, Shallow Wetlands, Ponds Subtotal:</i>				<i>\$1,095,800</i>
Natural UV Treatment Cell				
UV Stream (Cobble over 2" concrete veneer)	SF	7600	\$15	\$114,000
Lower Pond Spillway	SF	1400	\$10	\$14,000
<i>Natural UV Treatment Cell Subtotal:</i>				<i>\$128,000</i>
Wetland Treatment System Total Cost Estimate:				\$1,695,175