Agenda Item 8

Memorandum

To Programs, Projects and Operations Subcommittee

Subject: Zorinsky Water Quality Basins 1 and 2 – Professional Services Contract Amendment with Olsson & Associates

Date: August 5, 2009

From: Gerry Bowen

In 2007, the District selected Olsson Associates (OA) to provide professional engineering services for the study, design and construction of Zorinsky Basins 1 and 2, proposed water quality basins in the Zorinsky Lake Watershed. Phase 1 of the contract was for $73,705 and called for planning studies and development of alternatives for the two basins (ZB 1 and ZB 2) to best meet landowner needs, regulatory requirements, and the water quality objectives of the "Community Based Watershed Management Plan for Zorinsky Lake".

A draft alternatives analysis report was presented to the landowners at a meeting on November 29, 2007. It was also submitted to the Corps of Engineers Regulatory Office for review and comment regarding the necessary 404 permits. Their comments have been incorporated into the report and resulted in changes to the alternatives analysis.

The alternatives analysis report was recently completed by OA (July, 2009). The selected alternatives for both ZB 1 and ZB 2 minimized the environmental impacts such that both structures can qualify for nationwide permits from the Corps, rather than individual permits. The time to acquire a nationwide permit is considerably less than an individual permit.

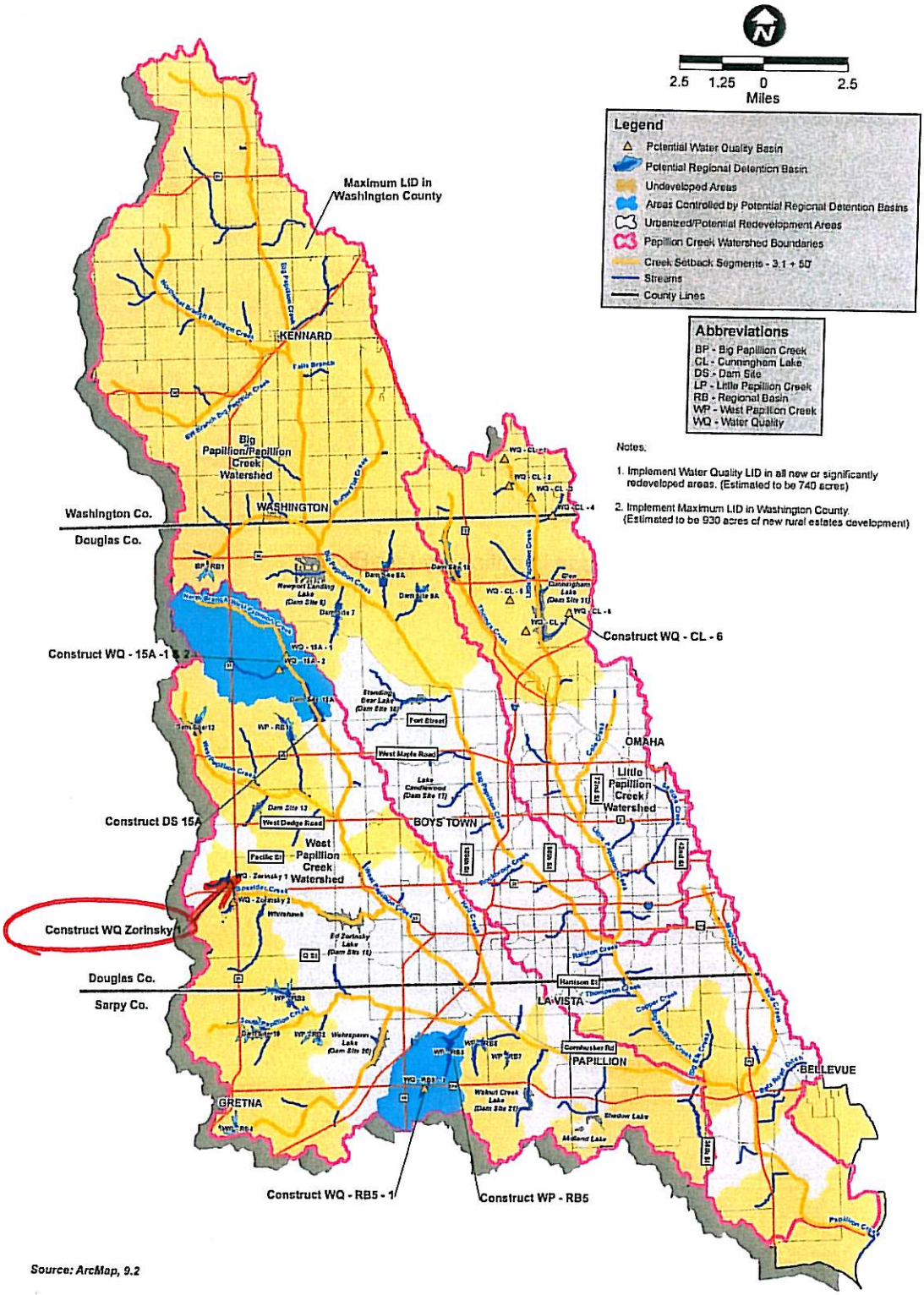
The Papillion Creek Watershed Partnership (PCWP) three-year Watershed Management Implementation Plan includes the construction of ZB 1. Therefore, staff requested OA to propose a contract amendment to provide professional services for the design and construction of ZB 1 as the next phase of work. It is anticipated that a second amendment to this agreement for professional engineering services for the ZB 2 will be prepared at some future date.

The preferred alternative for ZB 1 is a weir-type structure approximately seven feet in height (see attached drawings labeled "Alternative 4). The sediment storage is provided through excavation of the area upstream of the structure. In addition, the ZB 1 project will involve only one landowner, simplifying the project right-of-way requirements. The estimated construction cost is $2.34 million. Right-of-way costs are not included in the estimate.

The attached letter from Mr. Paul Woodward, OA Project Engineer, presents the Phase 2 scope of services narrative and cost estimate. The scope includes survey and geotechnical testing, final design and specifications, land rights requirements, environmental permitting, technical reviews and approvals, and construction observation services for ZB 1. The total estimated cost of these Phase 2 services is $228,782, bringing the total contract amount to $302,487.

- **Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the proposed contract amendment with Olsson Associates for professional engineering services for the Zorinsky Basin 1 and 2 Project, and that the "not-to-exceed" amount be increased from $73,705 to $302,487, subject to changes deemed necessary by the General Manager and accepted as to form by District Legal Counsel.**

Figure E-11 Implementation Plan – Structural Element (Years 2011-2013)



Source: ArcMap, 9.2

E.6.2 Structural Components - Program Projects

Table E-5 lists the Program Projects and Figure E-11 shows the corresponding generalized regional detention and water quality basin locations and estimated acres of WQ LID within Douglas and Sarpy Counties and Max LID in Washington County within the Upper Big Papillion Creek Watershed for the first 3 years. The regional detention basins listed are considered high priority for implementing significant peak flow reduction as soon as possible to mitigate the existing flooding threats.

Table E-5 Watershed Management Plan Program Projects for Years 2011-2013

Structure[1]	Approx. Location & Planning Jurisdiction	Drainage Area (acres)	2010 Estimated Capital Cost ($ Millions)
WP- RB5	126th & Cornhusker Road; Papillion	3,310	$ 24.6
WQ-RB5-1	Upstream of WP-RB5; Papillion and Sarpy County	770	$ 11.9
DS-15A	168th & Fort Streets, Omaha	7,100	$ 47.9
WQ-15A-1	Upstream of DS 15A; Omaha	2,500	$ 15.8
WQ-15A-2	Upstream of DS 15A; Omaha	3,000	$ 15.8
WQ-Zorinsky 1	Upstream of Zorinsky Lake; Omaha	1,660	$ 9.5
WQ-CL-6	Upstream of Cunningham Lake; Omaha	510	$ 8.5
	Regional Detention and Water Quality Basins Subtotal Cost		**$ 134.0**
	Max LID in Washington County (930 acres)[2]		**$ 1.4**
	Total Estimated Cost for Implementation Plan		**$ 135.4**

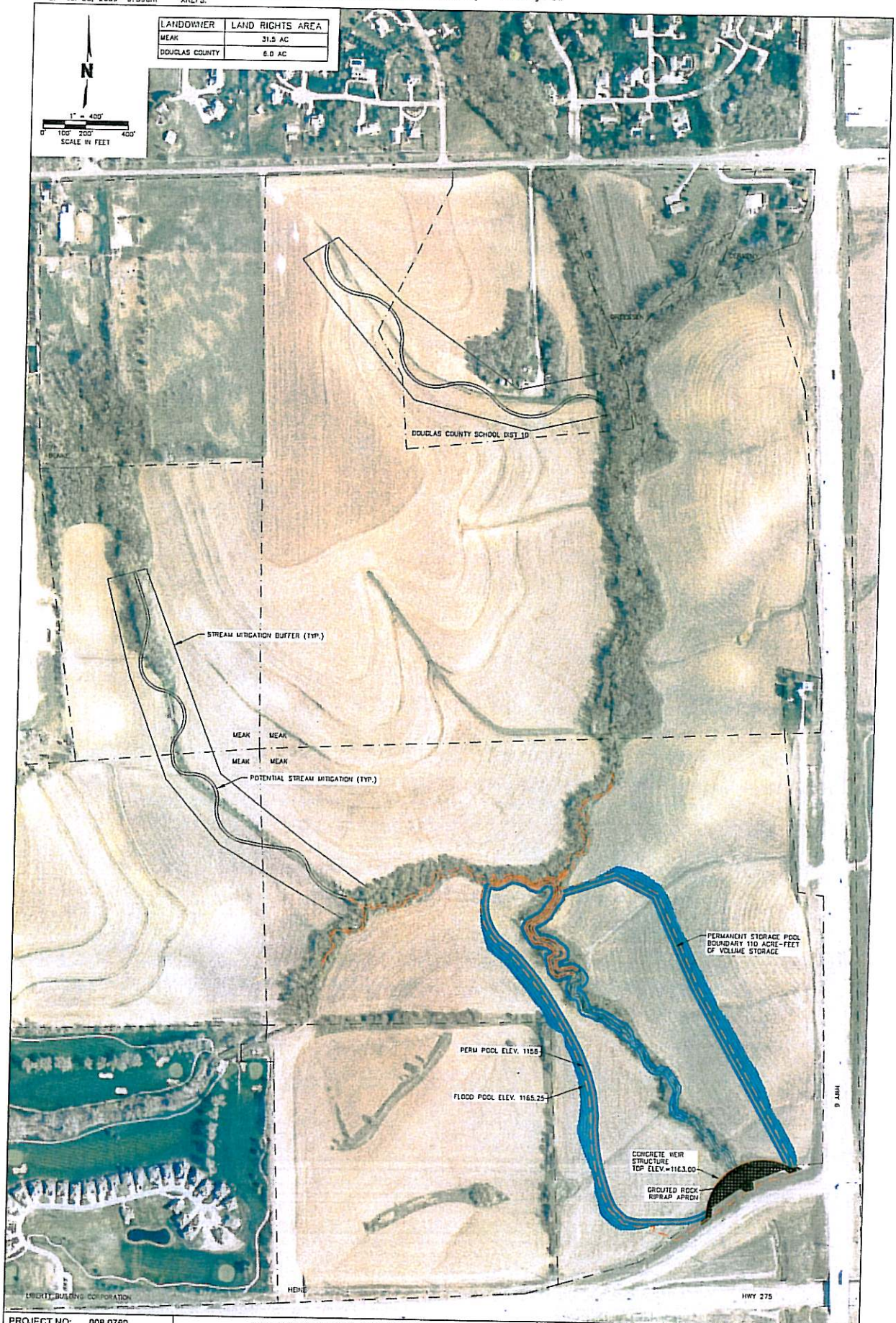
Notes:
1 Abbreviations: WP= West Papillion Creek Watershed; RB= regional detention basin; WQ= water quality basin; DS= dam site; and CL= Cunningham Lake
2 Max LID in Washington County does not include land costs

DWG: F:\Projects\008-0769\007-0823\WTRRES\Exhibits\DWG Exhibits\Sheets\ZB1details_2009-07-28.dwg USER: kgraham
DATE: Jul 28, 2009 9:59am XREFS:

LANDOWNER	LAND RIGHTS AREA
MEAK	31.5 AC
DOUGLAS COUNTY	6.0 AC

N

1" = 400'
0 100' 200' 400'
SCALE IN FEET



PROJECT NO: 008-0769	ZORINSKY BASIN 1 ALTERNATIVE 4 ZORINSKY WATER QUALITY BASIN PAPIO-MISSOURI RIVER NRD	OLSSON ASSOCIATES	FIGURE
DRAWN BY: KGG		2111 South 67th Street Omaha, NE 68106 TEL 402.341.1116 FAX 402.341.5895	A-7
DATE: 7/28/09			

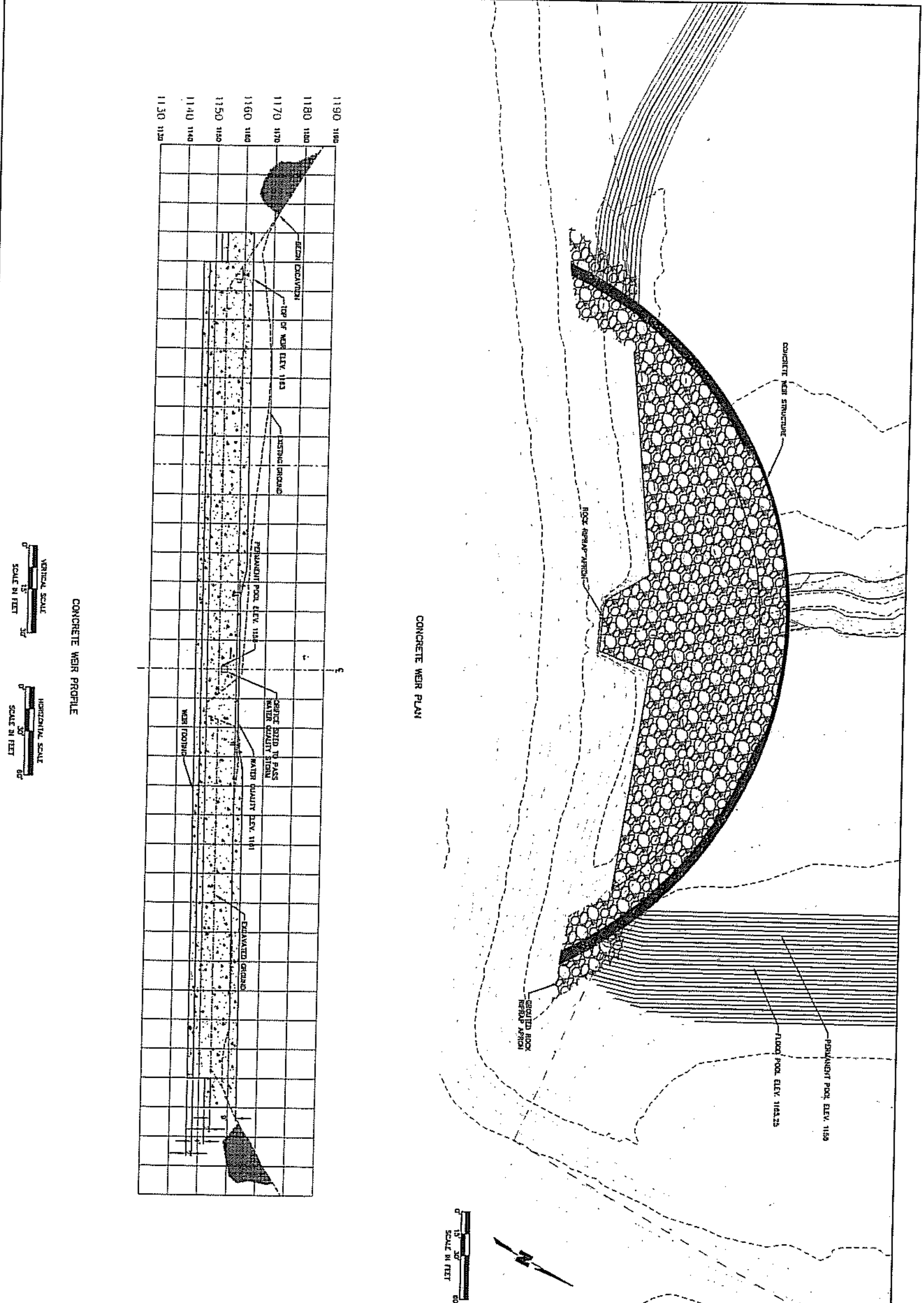


FIGURE	PROJECT NO: 008-0769	ZORINSKY BASIN 1 ALTERNATIVE 4	OLSSON ASSOCIATES	2111 South 67th Street
A-8	DRAWN BY: KGG	ZORINSKY WATER QUALITY BASIN		Suite 200, Omaha, NE 68106
	DATE: 7/28/09	PAPIO-MISSOURI RIVER NRD		TEL 402.341.1116 FAX 402.341.5895

ALTERNATIVE 4

Construction Item	Unit	Quantity	Unit Price	Extension
Mobilization	L.S.	1	$50,000.00	$50,000.00
Sediment Control	L.S.	1	$10,000.00	$10,000.00
Clearing and Grubbing	Acres	1.5	$1,500.00	$2,250.00
Common Excavation	C.Y.	570000	$2.00	$1,140,000.00
Salvage and Spread Topsoil	S.Y.	12000	$0.50	$6,000.00
Embankment Class A Fill	C.Y.	0	$2.50	$0.00
Concrete, Class 4000, Formed	C.Y.	890	$494.94	$440,496.60
Concrete, Class 4000, Unformed	C.Y.	15	$341.87	$5,128.10
Steel Reinforcement	Lbs.	81500	$1.25	$101,875.00
Rock Riprap	Tons	600	$30.00	$18,000.00
Grouted Rock Riprap	C.Y.	600	$81.27	$48,762.00
Geotextile Filter Fabric	S.Y.	1000	$2.47	$2,470.00
Seeding and Mulching, Type I	Acres	20	$690.89	$13,817.80
Seeding and Mulching, Type II	Acres	25	$587.43	$14,685.75
Sanitary Sewer Relocation	L.S.	1	$485,000.00	$485,000.00

Alternative Subtotal:	**$2,338,485.25**

OLSSON ASSOCIATES

July 31, 2009

Mr. Gerry Bowen
Papio-Missouri River NRD
8901 S. 154th Street
Omaha, NE 68138-3621

Re: Amendment to Zorinsky Sediment Retention Basin 1 and 2 Professional Services Agreement for Phase II – Basin 1 Final Design
OA Project No. 007-0823

Dear Mr. Bowen:

The purpose of this letter is to update you on the status of the Zorinsky Sediment Retention Basin 1 and 2 Project and to request an amendment for Phase II services to perform the final design of Zorinsky Basin 1. Completion of the original scope has resulted in a final Alternatives Analysis Report which recommends preferred alternatives to be carried forward for final design. The preferred alternative for Zorinsky Basin 1, located just northwest of 204th and West Center Road, consists of a concrete weir and excavated storage area for retaining sediment. This alternative meets the water quality goals set forth in the Zorinsky Lake Community Based Watershed Management Plan and is included in the Papillion Creek Watershed Management Plan for implementation in the next 3 years.

A majority of the alternatives analysis was completed under an original agreement between the NRD and Olsson dated May 10, 2007 for $73,705. Work completed under this contract resulted in a preliminary submittal and consultation with the U.S. Army Corps of Engineers and affected landowners in late 2007. Since that time, NRD staff and Olsson's have been communicating with the Corps and landowners to enhance and finalize the Alternative Analysis. Moving forward with Phase II – Final Design Services for Zorinsky Basin 1 will require an amendment to the May 10, 2007 contract.

Initiating the Final Design of Zorinsky Basin 1 now will prepare the NRD for a projected 2010 project construction. Actions that must be completed in order to meet this schedule include:

1. Survey and Geotechnical Testing
2. Preparation of Final Design Plans and Specifications
3. Land Right Acquisition
4. Environmental Permitting
5. Technical Reviews and Approvals

Olsson is requesting an amendment to our existing contract to assist the NRD in completing these tasks by performing the following services:

1. Project Management and Coordination
2. Preliminary Design
3. Final Design
4. Permitting
5. Bidding
6. Construction Observation

2111 South 67th Street
Suite 200
Omaha, NE 68106

TEL 402.341.1116
FAX 402.341.5895

www.oaconsulting.com

The following paragraphs provide a short description for each of these services along with their respective costs. We respectfully request that you consider a total contract increase of **$228,782** to accomplish all of these activities and move the project forward.

1. Phase 100 – Project Management and Coordination **($29,180)** – Activities completed by Olsson under this phase will include all internal coordination, progress meetings with NRD staff, meetings and communication with the public and landowners concerning the project, all technical review meetings with outside agencies, and the preparation of a Nebraska Department of Environmental Quality Section 319 Grant application. A total of four (4) quarterly progress meetings beginning with a project kick-off meeting are anticipated during the Preliminary and Final Design phases of the project. As many as two (2) public or landowner coordination meetings are anticipated, including the preparation of informational materials. Technical review meetings with agencies such as the Nebraska Department of Roads (NDOR), Nebraska Department of Natural Resources (NDNR), and Nebraska Department of Environmental Quality (NDEQ) will be accomplished after the completion of 65% and 95% review plans and documents. In addition to technical coordination, it is anticipated that Olsson will prepare a grant application for the project through the Section 319 program administered by NDEQ.

2. Phase 200 – Preliminary Design **($88,640)** – Preliminary Design will be based on the conceptual design for Zorinsky Basin 1 from the Alternatives Analysis Report. This phase includes both topographic and legal surveys, which will involve survey of the site and site vicinity to determine topography, special site features, and utility locations, as well as preparing land rights maps for the project. Legal descriptions will be prepared for all fee title and easement areas. Geotechnical investigation will include any subsurface investigation required for the construction of the control weir and analysis of soils to be used during the project. Final weir configuration will be determined based on site survey, findings by the geotechnical exploration, and structural engineering expertise. Weir hydraulics will be finalized based upon configuration, materials, and possible updates to site hydrology. Weir structural design will be finalized based on configuration, materials, and geotechnical exploration as well. Preliminary design revisions will be completed after an update meeting in which 25% plans and quantities will be presented. Revisions and enhancements will be made to the 25% plans to produce 65% plans and quantities for review. All submittals are subject to an internal quality control review process.

3. Phase 300 - Final Design **($20,284)** – For the final design phase, 95% plans and quantities will be prepared and presented. Final revisions will then be completed and the preparation of project specifications will begin. This phase will include the incorporation of any final design recommendations from NDNR or NDOR.

4. Phase 400 - Permitting **($36,376)** – Olsson will prepare and submit a Nationwide 43 Section 404 Permit application for impact to wetlands and stream channel as required by the U.S. Army Corps of Engineers (Corps). Following submittal, Olsson will coordinate the approval of the permit and provide additional information or documentation as requested by the Corps. Additional documentation will require the preparation and submittal of a Conceptual Mitigation Plan to the Corps. It is anticipated that a functional stream assessment will be necessary to determine what available stream resources at or near the site will be feasible for stream mitigation. Upon approval by the Corps

documentation will require the preparation and submittal of a Conceptual Mitigation Plan to the Corps. It is anticipated that a functional stream assessment will be necessary to determine what available stream resources at or near the site will be feasible for stream mitigation. Upon approval by the Corps of the Conceptual Mitigation Plan, Olsson will design the required mitigation. Such design may include site visits, detailed topographic surveys, hydrologic analysis, determination of appropriate construction materials, coordination with resource agencies for approval, development of seed mixtures and tree planting plans, seeding/tree planting plans, specifications, preliminary and final design plans, senior review, opinion of probable costs, and modifications/revisions to NPDES permits. Additional permits for the project will be required by the NDOR for temporary and permanent uses within their right-of-way as well as a dam safety and water storage permit from NDNR.

5. Phase 500 - Bidding **($7,320)** – During this phase, Olsson will compile and format the necessary plans, specifications, and documents required for construction bids. Olsson will organize and attend a Pre-Bid Meeting with interested contractors. After opening bids, Olsson will prepare a final Engineer's recommendation prior to proceeding with construction.

6. Construction Observation **($46,982)** – Olsson will provide construction oversight and administration. This includes conducting progress meetings to be held on a bi-weekly basis, unless otherwise needed. Construction observation will include monitoring soil excavation, utility relocation, weir construction, along with field and lab material testing.

This request for additional services does include project management and meeting attendance necessary for the successful completion of these tasks.

If approved, the increase of $228,782.00 would bring the total contract amount to **$302,487**.

Thank you for your consideration of our proposal. As always, feel free to contact me with any questions you may have.

Sincerely,

Paul W Woodward

Paul W. Woodward, P.E., CFM
Project Engineer

Enclosures

CC: Marlin Petermann and Amanda Grint, P-MRNRD
Brian Marple, OA

Zorinsky Basin #1 Final Design Scope and Task Estimates
Olsson Associates
July 28, 2009

Zorinsky Basin Final Design Project	Senior Engineer $147	Project Engineer $115	Associate Engineer $93	Assistant Engineer $78	Project Scientist $107	Associate Scientist $74	Assistant Scientist $62	Senior Technician $66	Associate Technician $57	2-Man Survey Crew $120	Senior Surveyor $94	Surveyor $77	Secretarial $51	Direct Costs	Extension	Task Sub-Totals	Phase Sub-Totals
Phase 100 *Project Management and Coordination*																	
Project Management and Coordination		8	60												$ 6,500		
Progress Meetings		16	24		8										$ 4,928		
Public/Landowner Meetings		16	16		8										$ 4,184		
Technical and Agency Meetings	8	16	24		16										$ 6,960		
Prepare Section 319 Grant Application		8	40	20									8		$ 6,608	$ 29,180	$ 29,180
Phase 200 *Preliminary Design Phase*																	
Topographic Survey									24	80	16	80			$ 18,632		
Legal Surveys											20	40			$ 4,960	$ 23,592	
Geotechnical Investigation	24	16	100					80	20						$ 21,088	$ 21,088	
Analyze Weir Configuration	4	4	12												$ 2,164		
Weir Hydraulic Design			20	40											$ 4,980	$ 7,144	
Weir Structural Design	8		40	20											$ 6,456	$ 6,456	
Prepare 25% Design Documents		8	20					20	60				8		$ 7,928		
Calculate 25% Qtys/Cost			16	16											$ 2,736	$ 10,664	
Preliminary Design Revisions	4	8	8					20	20						$ 4,712		
Prepare 65 % Design Documents	4	16	20					20	40				8		$ 8,296		
Calculate 65% Qtys/Cost			8	16											$ 1,992	$ 15,000	
Internal Quality Control Review	16		16		8										$ 4,696	$ 4,696	$ 88,640
Phase 300 *Final Design Phase*																	
Prepare 95% Design Documents	4		24					20	20				8		$ 5,688		
Calculate 95% Qtys/Cost	4	8	8	16											$ 3,500		
Finalize Design Documents		8	16		8			20					16		$ 5,400		
Prepare Project Specifications		8	40					16							$ 5,696	$ 20,284	$ 20,284
Phase 400 *Permitting Phase*																	
Section 404 Permit Application (Nationwide)			8		24	40	40								$ 6,752		
Mitigation Plan and Concepts			8		24	40	80								$ 11,232	$ 19,984	
Final Mitigation Design			40			24		20	40						$ 9,096	$ 9,096	
NDOR Boring Permit Application			16						8						$ 1,944		
NDOR ROW Permit Application			16						8						$ 1,944	$ 3,888	
NDNR Dam Safety Permit	8		24												$ 3,408	$ 3,408	$ 36,376
Phase 500 *Bidding Phase*																	
Prepare Bidding Documents	4	16	16												$ 3,916		
Attend Pre-Bid Meeting		4	4												$ 832		
Attend Bid Opening		4	4												$ 832		
Prepare Engineer's Recommendations	4		8										8		$ 1,740	$ 7,320	$ 7,320
Phase 600 *Construction Oversight Phase*																	
Construction Meetings	8	16	16												$ 4,504		
Construction Observation			80				20		550				48		$ 42,478	$ 46,982	$ 46,982
Project Totals=	100	180	752	128	96	104	140	216	790	80	36	120	104				
	$14,700	$20,700	$69,936	$9,984	$10,272	$7,696	$8,680	$14,256	$45,030	$9,600	$3,384	$9,240	$5,304	$ -	$228,782	$228,782	$ 228,782

Project Schedule
Zorinsky Basin 1 Final Design

Zorinsky Basin Final Design Project	2009					2010											
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Phase 100 *Project Management and Coordination*																	
Project Management and Coordination																	
Progress Meetings																	
Public/Landowner Meetings																	
Technical and Agency Meetings																	
Prepare Section 319 Grant Application																	
Phase 200 *Preliminary Design Phase*																	
Topographic Survey																	
Legal Survey																	
Geotechnical Investigation																	
Analyze Weir Configuration																	
Weir Hydraulic Design																	
Weir Structural Design																	
Prepare 25% Design Documents																	
Calculate 25% Qtys/Cost																	
Preliminary Design Revisions																	
Prepare 65 % Design Documents																	
Calculate 65% Qtys/Cost																	
Internal Quality Control Review																	
Phase 300 *Final Design Phase*																	
Prepare 95% Design Documents																	
Calculate 95% Qtys/Cost																	
Finalize Design Documents																	
Prepare Project Specifications																	
Phase 400 *Permitting Phase*																	
Section 404 Permit Application (Nationwide)																	
Mitigation Plan and Concepts																	
Final Mitigation Design																	
NDOR Boring Permit Application																	
NDOR ROW Permit Application																	
NDNR Dam Safety Permit																	
Phase 500 *Bidding Phase*																	
Prepare Bidding Documents																	
Attend Pre-Bid Meeting																	
Attend Bid Opening																	
Prepare Engineer's Recommendations																	
Phase 600 *Construction Oversight Phase*																	
Construction Meetings																	
Construction Observation																	