

Memorandum

To: Programs, Projects and Operations Subcommittee

Re: Update to District's flood warning system

Date: May 4, 2011

From: Amanda Grint, Water Resources Engineer

In 1993, the District worked with the US Army Corps of Engineers (USACE) to install a flood warning system for the Papillion Creek Watershed. The system currently consists of 22 gage stations, five of which report rain data and the remaining 17 report rain and stream stage data. The attached map shows the location of the gages. The data is reported real time and is available to the public through the National Weather Service web site. Also, an agreement is in place with Douglas County, Sarpy County, Washington County and the City of Omaha to share the cost of the system.

A maintenance contract between Aquatracker and the District has been in place since 1994 to maintain and service these sites. The data has become unreliable as the equipment is showing signs of aging. In addition, the City of Omaha has expressed concern on the data reliability for use in their federally regulated CSO program. In an effort to provide the most accurate data for the National Weather Service, the partners who cooperatively pay for the system, for new hydrologic models and for record keeping it is necessary to update the floodwarning system.

High Sierra Electronics is the current equipment provider and they spent several days in March with NRD staff reviewing each site and providing recommendations for an upgrade. A complete report of the status of the system and recommended equipment upgrades was provided. A list of recommended equipment along with the cost for those items totaling \$142,428.00 was compiled and is attached for review. The proposed equipment upgrades include radar sensors and will provide the District with the most current technology. The maintenance contract with Aquatracker will be terminated at the end of the summer and the maintenance will be the responsibility of District staff.


Additionally, beyond the proposed upgrade to the system, rain gage equipment and calibration were necessary to collect the rain data this year. More funds were spent than anticipated in Account #01 03 536 4410, the current balance is \$26,096 and the budgeted amount was \$20,000. With additional purchases for the system such as an antennae modification kit and two circuit boards yet to come, staff requests that the Subcommittee recommend to the Board that the account be allowed to exceed the budgeted amount by more than 10%. The additional funds needed for equipment will come from Account #01 03 536 4400.

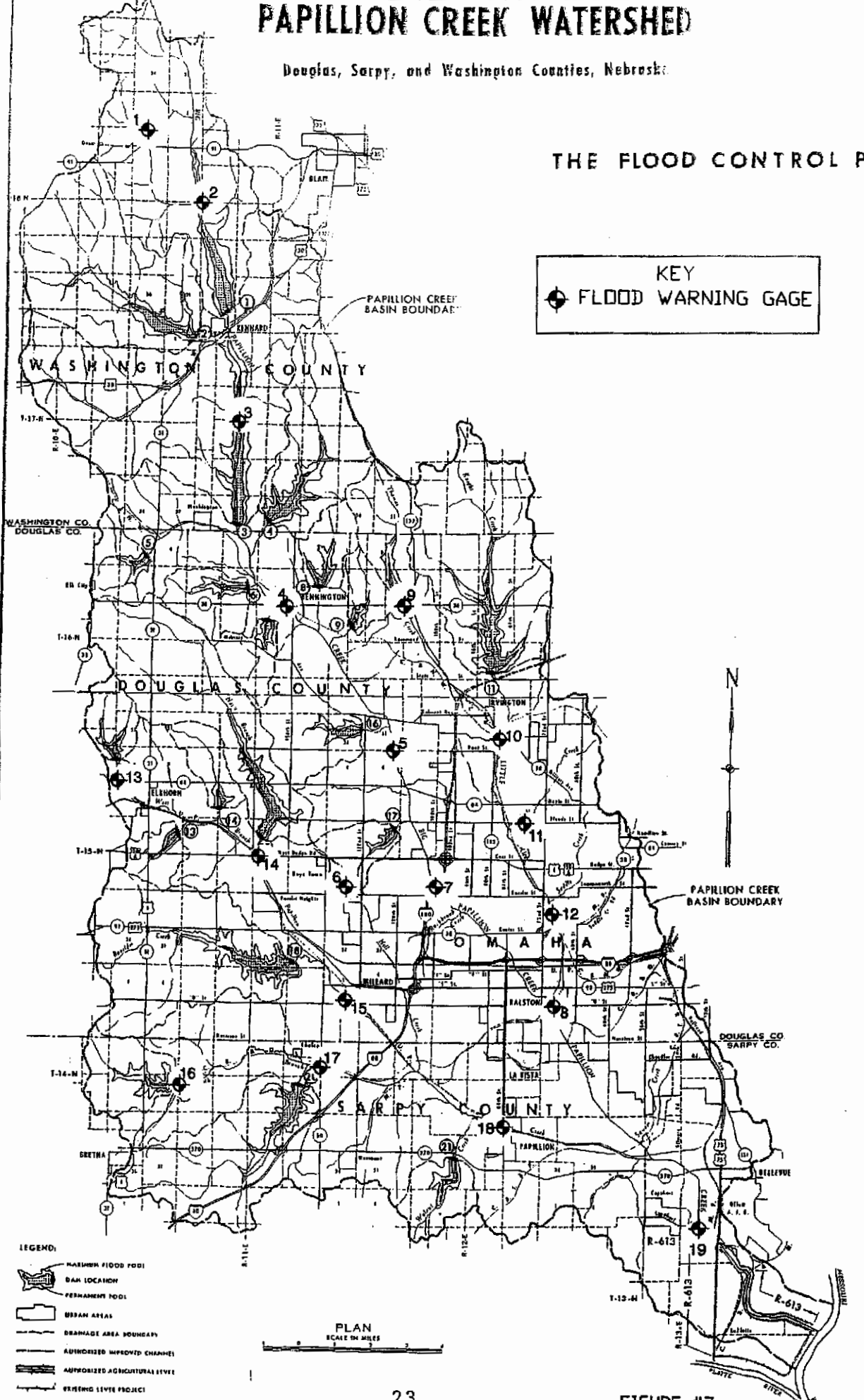
- **Management recommends that the Subcommittee recommend to the Board that Account # 01 03 536 4410 Flood Preparedness – Construction be allowed to exceed 110% of the budgeted amount and that the General Manager be authorized to execute a contract with High Sierra Electronics in the amount of \$142,428.00 for equipment to update the District's floodwarning system.**

PAPILLION CREEK WATERSHED

Douglas, Sarpy, and Washington Counties, Nebraska

THE FLOOD CONTROL PLAN

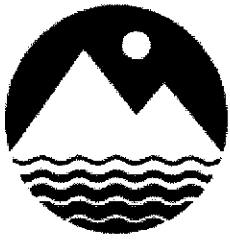
KEY
 FLOOD WARNING GAGE



LEGEND:

-  WASHBURN FLOOD POOL
-  DAM LOCATION
-  PERMANENT POOL
-  DRAINAGE AREA
-  DRAINAGE AREA BOUNDARY
-  AUTHORIZED IMPROVED CHANNEL
-  AUTHORIZED AGRICULTURAL LEVEE
-  EXISTING LEVEE PROJECT

PLAN
SCALE IN MILES



High Sierra Electronics
 155 Spring Hill Drive, Suite 106
 Grass Valley, California 95945-5929
 Ph: 800-275-2080
 Ph: 530-273-2080
 Fx: 530-273-2089

Quotation

Date	Quote #
4/22/2011	110445b

Papio-Missouri River NRD
 Attn: Amanda Grint, P.E.
 8901 South 154th Street
 Omaha, NE 68138-3635

Quote Valid
60 Days

TERMS	FOB	Phone:	Fax:	S Rep	Office	Est. Ship
Net 30	Grass Valley	402-444-6222	402-895-6543	TO	CS	

ITEM#	MODEL#	DESCRIPTION	QTY	PRICE	TOTAL
1.1	7000-13	10ft. Standpipe Section; (for screw mount rain gauge) Includes 7000-01 Door, Pull Rope, Mast & Mast Cover. without 7110 Omni Antenna, 7150 Antenna Cable, Sites - 7, 8, 12, 14 and 19	5	900.00	4,500.00
1.2	7002-13	Retrofit Standpipe Sleeve; consisting of 5' Standpipe Section (slotted) with 7000-01 Door, Grounding Tab and Antenna Mast without 7110-00 Omni Antenna and Cable. Sites - 4, 9, 10, 11, 13, 15, 17 and 18	8	1,100.00	8,800.00
1.3	7307-00	Antenna Mast Retrofit Kit; Includes: Mast Cover, Top Plate, U bolts & Hwd. Sites - 2, 3 and 16	3	300.00	900.00
1.4	7000-09	Standpipe Base Guard; 16" H x 15.25" Dia. All Sites except - 9 and 18	15	175.00	2,625.00

TOTAL



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ITEM#	MODEL#	DESCRIPTION	QTY	PRICE	TOTAL
2.1	3306-00	ALERT/IFLOWS Data Transmitter; with integrated data logging capability. Analog & Digital Inputs including SDI-12. Includes GUI & 64 MB removable memory. *Without radio. Re-use radios in current 3206 Transmitters All Sites	17	2,050.00	34,850.00
2.2	7105-04	High Gain Directional Antenna; (Yagi) 7.1dB, VHF Freq Range: 166 to 174 MHz. Sites - 7, 8, 9, 12, 14 and 19	6	275.00	1,650.00
2.3	7150-03	Antenna Cable Set; (23 ft.) for Model 7101-00/7105-04/7113-01/7113-03 Yagi Antenna used with a lightning protector (sold separately). All Sites	17	60.00	1,020.00
2.4	7200-00	Antenna Lightning Protector All Sites	17	95.00	1,615.00

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ITEM#	MODEL#	DESCRIPTION	QTY	PRICE	TOTAL
2.5	3701-00	Telemetry Transceiver; VHF Frequency Range: 148-174 MHz Channels: 1 to 16 dip switch selectable. Add narrowband radios to base and repeater for FCC compliance Sites - Repeater and Base Station	2	500.00	1,000.00
3.1	6752-00	RLS Radar Sensor; w/SDI-12, 4-20mA, or RS-485 Output. Includes operating instructions, swivel mounting hardware, factory acceptance test certificate, and manufacturers two year warranty. Engineered for hydrological application, sealed cone, small 6-degree footprint, low power consumption, ability to transmit error codes. All Sites except - 13 and 18	15	3,260.00	48,900.00
3.2	5101-00	Signal Cable, 3-conductor (priced per foot) All Radar Sensor sites - length by site varies	1,966	0.50	983.00

TOTAL



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ITEM#	MODEL#	DESCRIPTION	QTY	PRICE	TOTAL
3.3	Equipment	SDI-12 Pressure transducer, Ott ceramic diaphragm not damaged by freezing Sites 13 and 18	2	1,165.00	2,330.00
3.4	Parts	Cable for item 3.3 Pressure transducer Sites 13 and 18	236	2.50	590.00
4.1	Materials	Installation Materials - 1500' of conduit, concrete for standpipes, paint for standpipes		3,150.00	3,150.00
5.1	Installation	Installation - Turnkey, includes travel and sustenance		24,865.00	24,865.00
5.2	Project Mgmt	Project Management		3,400.00	3,400.00
	Est. Shipping	Freight Charges, estimated; (actual charges will be billed)		1,250.00	1,250.00

TOTAL	\$142,428.00
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