

SAND HILL RIVER WATERSHED DISTRICT
IMPROVEMENT PETITION FOR DITCH 80
INFORMATIONAL MEETING
March 13, 2017

1. **Attendance:** Managers present were Scott Balstad, JJ Hamre, Roger Hanson and Phillip Swenson. Two staff members were present: Daniel Wilkens – Administrator and April Swenby – Administrative Assistant. Others in attendance: Zach Herrmann – Houston Engineering. Landowners in attendance were: Larry Ricard, Paul Engelstad, Charles Lewis, Bruce Hanson, Chris Cournia, Don Andringa, David Johnstad Elliot Solheim, Charles Hawkins, Robin Brekken, Mike Skaug, Brent Gullekson, Brian Gullekson, and Alex Engelstad.
2. **Purpose of meeting:** Three options were developed by the Engineer, and were presented by Herrmann. All options were designed to handle 1.5” per day of runoff from the 2,760-acre estimated contributing watershed. Each of these options are summarized as follows:
 - a. **Option 1:** Improving lateral 1: This option would improve the existing Polk County Ditch 80, and add Lateral 1 to the system. Lateral 1 is approximately 0.5 miles long, and travels north-south along the ¼ section line in the south half of Section 26 (Russia Township). Under this option, all runoff that is currently traveling along 390th Street SW would continue to travel west until reaching the south end of the Lateral 1. At this location, the existing 36” CMP would be replaced with a 60” equivalent CMP-Arch. Lateral 1 would be excavated to provide a constructed channel that would be approximately 3’ – 4’ deeper than the existing channel with an 8-foot bottom and 4:1 side slopes. The main line of Polk County Ditch 80 would be reconstructed to provide an 8-foot bottom and 4:1 side slopes. Rock drops would be used to minimize future head cutting in the ditch channel. Approximately 2’-3’ of additional depth would be required between the outlet at Maple Creek and the outlet of Lateral 1 to provide an adequate outlet for Lateral 1. The remaining ditch channel will generally be excavated to provide an 8’ ditch bottom and 4:1 side slope. A 72” diameter RCP is proposed at Polk County Road 48, and existing culverts would be used at 200th Avenue SW, 190th Avenue SW, and a field crossing located in the west ½ of Section 30. Cost per acre is estimated to be approximately \$338 per acre.
 - b. **Option 2:** Improving lateral 1 and 2: Option 2 would improve the existing Polk County Ditch 80, and add Lateral 1 and Lateral 2 to the system. Lateral 1 would be located as described in Option 1. Lateral 2 would be located just east of the west line in the SW ¼ of Section 25 (Russia Township), east of 200th Avenue SW. The alignment is approximately 0.5 miles long. Under this option, Lateral 2 would be sized to handle 1.5” of runoff from the drainage area coming along 390th Street SW. To handle this, a 54” equivalent CMP-Arch would be installed through 390th Street SW, and the in-place 48” CMP currently taking water west would be removed. Lateral 2 would also require an excavated channel with 4:1 side slopes and an 8’ bottom width that is approximately 2’ – 3’ deeper than the existing ditch. At the north end of Lateral 2, the in-place driveway culvert would be replaced with a 60” equivalent CMP-Arch. Because Lateral 2 is providing an additional outlet, the hydraulic requirements for Lateral 1 would be reduced. This would allow for a 36” CMP to be lowered at the south end of Lateral 1, and require a channel with 4:1 side slopes and an 8’ bottom that is 2’ – 3’ deeper than the existing channel. The main line of Polk County Ditch 80 would be reconstructed to provide an 8-foot bottom and 4:1 side slopes. Rock drops would be used to minimize future head cutting in the ditch channel. Between the outlet at Maple Creek and the outlets of Lateral 1 and Lateral 2, depths are set to ensure adequate outlets for Lateral 1 and Lateral 2. The remaining ditch channel will generally be excavated to provide an 8’ ditch bottom and 4:1 side slope. A 72” diameter RCP is proposed at Polk County Road 48. The existing 48” CMP located at 200th Avenue SW would be upsized to a 66”

equivalent CMP-Arch. The existing culverts at 190th Avenue SW and a field crossing located in the west ½ of Section 30 would remain as existing. Cost per acre are estimated to be \$357 per acre.

- c. **Option 3:** Improving laterals 1, 2 and 3: Option 3 would provide Lateral 1, as described in Option 2, Lateral 2, and Lateral 3. Both Lateral 1 and Lateral 2 would be located as described in Options 1 and 2, respectively. Lateral 3 would be located just west of the east line in the SE ¼ of Section 25 (Russia Township), west of 190th Avenue SW. The alignment is approximately 0.5 miles long. Under this option, Lateral 3 would be sized to handle 0.8” of runoff from the drainage area coming along 390th Street SW. The remaining 0.7” of runoff would continue along the south road ditch of 390th Street SW and use Lateral 2 as an outlet to the main line. To accommodate this flow split, the existing 48” CMP through 190th Avenue SW in the south road ditch of 390th Street SW would be replaced with a 36” CMP. Lateral 3 would primarily consist of one line of 48” dual wall HDPE pipe that would be used to provide access to the main line through the ridge. The line is approximately 2,380 feet long, and would require that four manholes be used to provide access for future maintenance. Due to deep cuts, anticipated geotechnical concerns, and the overhead power lines, an open ditch wasn’t considered to be feasible. Because Lateral 3 is providing an additional outlet, the hydraulic requirements for Lateral 2 would be reduced as compared to Option 2. At the south end of Lateral 2, a 48” equivalent CMP-Arch would be installed through 390th Street SW. A channel would be constructed to provide an 8’ bottom with 4:1 side slopes, and would be excavated approximately 6” shallower than what was proposed in Option 2. At the north end of Lateral 2, the in-place driveway culvert would be replaced with a 54” equivalent CMP-Arch. Lateral 1 would remain the same as described in Option 2. The main line of Polk County Ditch 80 would be reconstructed to provide an 8-foot bottom and 4:1 side slopes. Rock drops would be used to minimize future head cutting in the ditch channel. Between the outlet at Maple Creek and the outlets of Lateral 1, Lateral 2, and Lateral 3, depths are set to ensure adequate outlets for all Laterals. The remaining ditch channel will generally be excavated to provide an 8’ ditch bottom and 4:1 side slope. A 72” diameter RCP is proposed at Polk County Road 48. The existing 48” CMP located at 200th Avenue SW would be upsized to a 66” equivalent CMP-Arch. The existing culverts at 190th Avenue SW and a field crossing located in the west ½ of Section 30 would remain as existing. Cost per acre is estimated to be \$517 per acre.

Right of Way and Spoil Easement Summary of Each Option: Herrmann presented information on the required right of way and spoil easement for each option. Herrmann explained that permanent right of way would include the ditch and a minimum 16.5’ buffer strip, as required by state law. This area would be seeded and not allowed to be disturbed. The Spoil Easement (temporary) is only to grant property rights to ensure the spoil can be cast and construction operations are not impeded. Dan Wilkens explained that this is generally assumed to be approximately equal to two years of rent value. A summary of required right of way and spoil easement for each option is presented in the following table:

	Additional Right-of-Way (Acres)	Spoil Easement (Acres)
Option 1	44.003	98.548
Option 2	46.430	101.309
Option 3	50.767	109.152

Cost Comparison Charts for each Option: It was noted there is a 15% contingency of these estimates. It was noted that a Multipurpose Drainage Management Grant was awarded for \$62,929 for the cost of the side inlet pipes. The following table presents costs associated with each option:

	Option 1	Option 2	Option 3
Construction Costs <i>(with 15% Contingency)</i>	\$ 695,298.25	\$ 740,223.50	\$1,156,870.00
Non-Construction Costs <i>(Engineering, Legal, Land Acquisition, Permitting, Etc.)</i>	\$ 301,000.00	\$ 309,600.00	\$ 331,700.00
Total Costs	\$ 996,298.25	\$1,049,823.50	\$1,488,570.00
Multipurpose Drainage Management Grant <i>(BWSR)</i>	\$ 62,929.00	\$ 62,929.00	\$ 62,929.00
Ditch Expense	\$ 933,369.25	\$ 986,894.50	\$1,425,641.00

3. Questions/Comments:

- a. Chris Cournia: Will Project # 17 handle all the new water coming into it? Herrmann said that Project # 17 is designed to handle the water.
- b. Elliot Solheim: Is more drainage area being added to ditch # 80? Herrmann said yes.
- c. Mike Skaug: If they do not do option 3, will lateral 2 hold all the water? Herrmann said yes. Skaug is concerned that the stability of the soil will prevent them from not proceeding with option 3. Skaug felt it must be a pipe, or nothing.
- d. Paul Engelstad: The idea is to get the water to the ditch and get it to head west.

- e. Brent Gullekson asked what the total drop is on the whole ditch. Herrmann stated it was 45'.
 - f. Elliot Solheim: On option #2, was it ever thought of to extend option # 2 easterly. Wilkens concurred that Larry Walters called with the same question. Herrmann stated that was not considered because only the laterals as described in the petition could be investigated. Herrmann stated that adding another mile of ditch as an option can be reviewed but we would need to consult with the watershed districts attorney to give direction on the proper way to proceed.
 - g. Paul Engelstad: What would it cost to extend Lateral 2 easterly? Herrmann stated that survey information would need to be obtained to determine an accurate estimate.
 - h. Elliot Solheim: Is there money available in the clean water fund for drop structures? Herrmann said that it was tried on other systems and it was denied.
4. **Action:** Herrmann will present a proposal to extend lateral 2 easterly as a compromise to completing option 2 and not option 3. Houston Engineering will perform the necessary survey. The district will check with legal requirements and if amending the petition is required.
5. **Adjournment:** The meeting ended at 12:20 PM.

April Swenby, Administrative Assistant

JJ Hamre, Secretary