Kristy J. Treichel
Civil Engineer/Water Resources
(715) 425-0900 x152
(715) 425-0915 (fax)
ktreichel@rfcity.org

Memorandum

To: Jim Devlin, WDNR

From: Kristy Treichel, Civil Engineer/Water Resources

Date: June 22, 2007

Re: Phase II Permit – Item #E28, Storm Water Quality

This submittal is to demonstrate that the City of River Falls meets the requirement for 20% and 40% reduction on an average annual basis of total suspended solids on a City wide level. Analysis was completed in WinSLAMM version 9.2.1.

I have attached documentation for the "no controls" and "with controls" conditions. I assumed silty soil for both no controls and with control models. I have also included maps outlining the areas modeled and the land uses assumed for each area. As stated on the land use map for the no controls conditions, assumptions were made based on the zoning map, the UWRF Stormwater Utility Rate Map and the City Land Use Map created in conjunction with the City's Comprehensive Plan. Areas of the City that were (or will be) included under the revised NR 151 requirements (effective October 2004) are shown, but were emitted from all modeling.

The no controls condition resulted in an annual yield of 555,797 pounds of solids. Therefore 40% removal would require the removal of approximately 222,319 pounds on an annual basis. I modeled only 17 of the approximately 45 eligible ponds within the City to show that we are meeting the 40% removal requirement. If all ponds were modeled, this figure would likely be much higher.

For the 17 ponds modeled, street sweeping was modeled twice a year because the entire City is swept twice a year, in spring and in fall. Therefore, much of the street sweeping benefits within the City as a whole are not accounted for within the model. The downtown area is swept twice a week and this modeling was included.

If you have any questions please feel free to contact me.

NO CONTROLS SUMMARY

File Number	File Name	Catchment Area (ac)	Number of Years in Model Run	Runoff Volume (cf)	Rv	Biological Condition	Particulate Solids Yield (lbs)
1	No Controls SLU Commercial Downtown	57.27	0.998	4222101	0.633	Poor	29961.19
2	No Controls SLU Commercial	226.42	0.987	6297470	0.285	Poor	48526.94
3	No Controls SLU Hospital	32.38	0.987	1702775	0.539	Poor	22926.57
4	No Controls SLU Light Industrial	394.96	0.987	1.90E+07	0.493	Poor	167054.2
5	No Controls SLU Low Density Residential	1343.42	0.987	1.82E+07	0.139	Fair	118991.6
6	No Controls SLU Med Density Res no alleys	147.81	0.987	2933688	0.203	Poor	25214.97
7	No Controls SLU Mobile Home	31.7	0.987	1114931	0.36	Poor	7942.961
8	No Controls SLU Multi-Family Res no alleys	227.04	0.987	8306784	0.375	Poor	44671.86
9	No Controls SLU Open Space	1124.13	0.987	9355296	0.085	Good	12667.66
10	No Controls SLU Schools	284.89	0.987	1.11E+07	0.398	Poor	77839.38
		3870.02					**555,797.33**

20% removal= 111,159.47
40% removal= 222,318.93

CITY OF RIVER FALLS
POLLUTANT LOAD LAND USE

0 0.5 1 Miles

N W E S

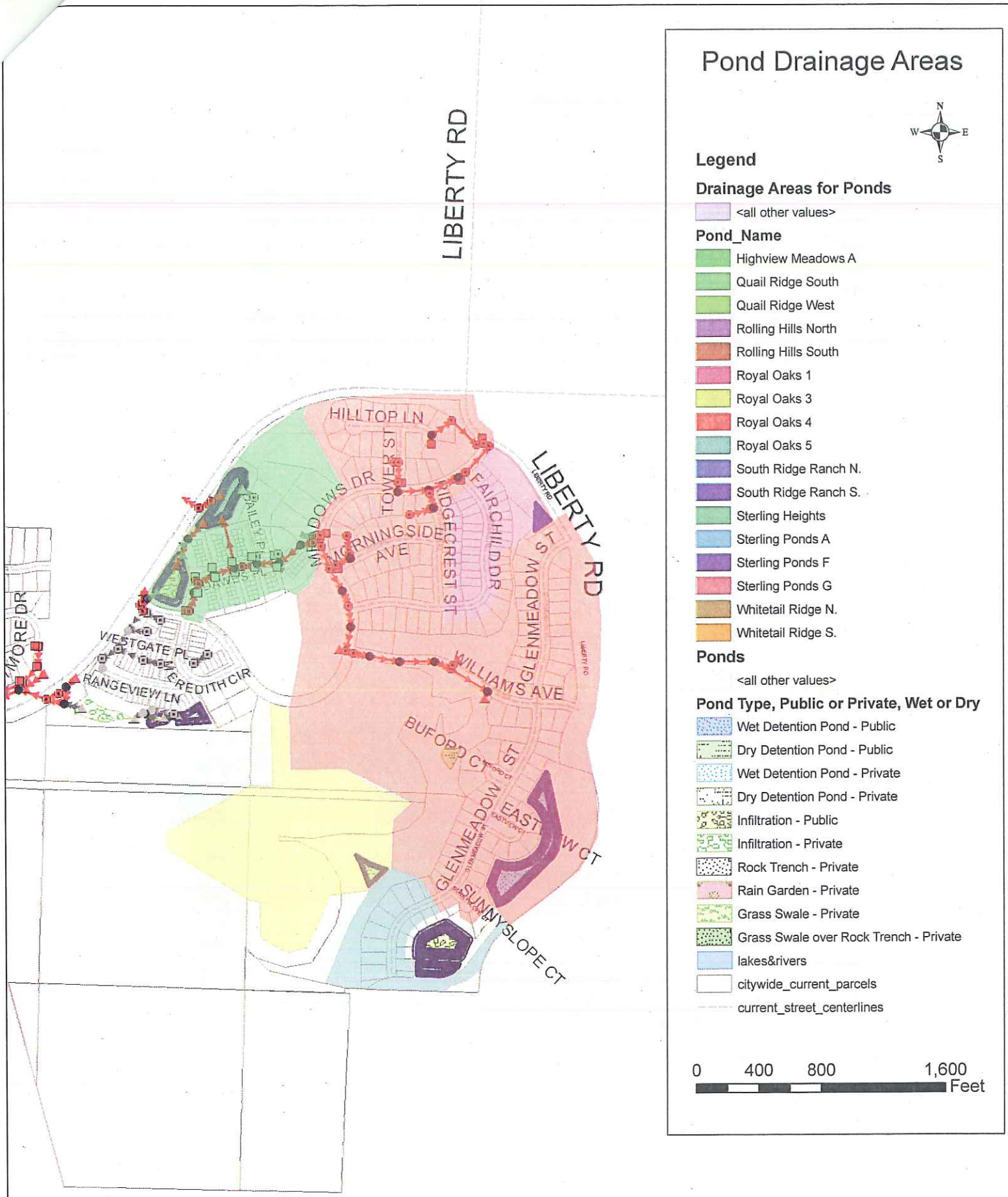
Notes:
1. This map was created from the City of River Falls Official Zoning Map, the UWRF Stormwater Utility Rate Land Use Map and the City Land Use Map created in conjunction with the City's Comprehensive Plan. This map has been created to model the pollutant runoff from the city as a whole. Modeling assumptions will be made for each land use shown here.
2. UWRF agricultural land and athletic fields were included in the open space category.
3. Under 151 = Areas of the City that were excluded from the model because the are/were subject to the revised NR 151 requirments (since October 2004).

Corporate Limits	4196.48 ac
Under 151	329.46 ac
Commercial	226.42 ac
Downtown Business	56.27 ac
Industrial	394.96 ac
Institutional	282.89 ac
Hospital	32.40 ac
Mobile Home Park	31.69 ac
Open Space/Parks	1124.13 ac
Single Family	1343.42 ac
Duplex	147.81 ac
Multi Family	227.04 ac

V:\Eng\Storm Water\WinSLAMM\City Wide Modeling\Pollutant Loading Map.mxd

WITH CONTROLS SUMMARY

File Number	File Name	Catchment Area (ac)	Runoff Volume (cf)	Particulate Solids Yield without controls (lbs)	Particulate Solids Yield with controls (lbs)	Percent Reduction
1	Boulder Ridge SLU Low Density Res Silt	61.11	779086	12373	1229	90.07%
2	Downtown with sweeping	57.27	3708000	29961	23589	21.27%
3	Highview A SLU Multi-Family Res Silt no alleys	20.54	751766	15594	0	100.00%
4	Quail Ridge SLU Low Density Res Silt	29.65	401509	9837	3433	65.10%
5	Quail Ridge S. Pond SLU Low Density Res Silt	1.23	6256	57	0	100.00%
6	Rolling Hills N. SLU Low Density Res Silt	27.204	369045	9633	1833	80.97%
7	Rolling Hills S. SLU Low Density Res Silt	10.91	148485	8281	1706	79.40%
8	Royal Oaks 1 SLU Low Density Res Silt	9.51	128530	8160	1225	84.99%
9	Royal Oaks 3 SLU Low Density Res Silt	25.4	344051	9482	0	100.00%
10	Royal Oaks 4 SLU Low Density Res Silt	107.57	1277000	18249	0	100.00%
11	Royal Oaks 5 SLU Low Density Res Silt	8.97	121529	8111	192	97.63%
12	South Ridge Ranch N. SLU Low Density Res Silt	12.4	168849	8396	2339	72.14%
13	South Ridge Ranch S. SLU Low Density Res Silt	4.53	61343	7747	1538	80.15%
14	Sterling Heights SLU 7ac Commercial, 19ac multi family	26.02	877954	20495	7511	63.35%
15	Sterling Ponds A SLU Low Density Res. Silt	61.11	779089	12373	0	100.00%
16	Sterling Ponds F SLU Low Density Res. Silt	15.02	203787	8623	0	100.00%
17	Sterling Ponds G SLU Low Density Res. Silt	21.98	734110	16970	0	100.00%
18	Whitetail Ridge N. SLU 47ac Light Ind. Silt, 10ac Open	57.75	2368000	37007	10378	71.96%
19	Whitetail Ridge S. SLU 76ac Light Ind. Silt, 96ac Open	171.82	4448000	48607	461	99.05%
	Totals	729.994		289956	55434	
			Pounds Removed =		**234522**	



Pond Drainage Areas

N
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Legend

Drainage Areas for Ponds

- <all other values>

Pond_Name

- Highview Meadows A
- Quail Ridge South
- Quail Ridge West
- Rolling Hills North
- Rolling Hills South
- Royal Oaks 1
- Royal Oaks 3
- Royal Oaks 4
- Royal Oaks 5
- South Ridge Ranch N.
- South Ridge Ranch S.
- Sterling Heights
- Sterling Ponds A
- Sterling Ponds F
- Sterling Ponds G
- Whitetail Ridge N.
- Whitetail Ridge S.

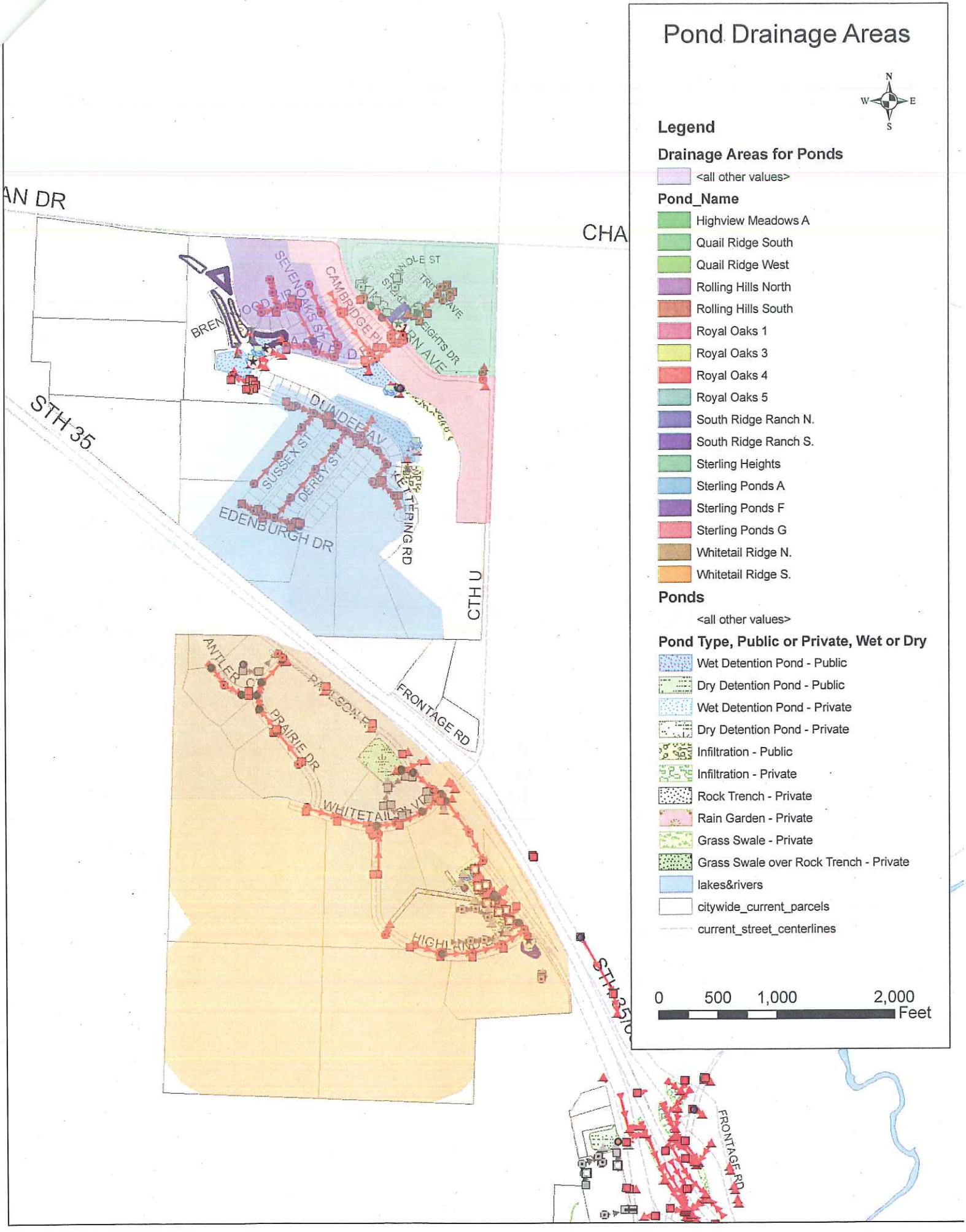
Ponds

- <all other values>

Pond Type, Public or Private, Wet or Dry

- Wet Detention Pond - Public
- Dry Detention Pond - Public
- Wet Detention Pond - Private
- Dry Detention Pond - Private
- Infiltration - Public
- Infiltration - Private
- Rock Trench - Private
- Rain Garden - Private
- Grass Swale - Private
- Grass Swale over Rock Trench - Private
- lakes&rivers
- citywide_current_parcels
- current_street_centerlines

0 400 800 1,600 Feet


Pond Drainage Areas
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Legend
Drainage Areas for Ponds
<all other values>
Pond_Name
Highview Meadows A
Quail Ridge South
Quail Ridge West
Rolling Hills North
Rolling Hills South
Royal Oaks 1
Royal Oaks 3
Royal Oaks 4
Royal Oaks 5
South Ridge Ranch N.
South Ridge Ranch S.
Sterling Heights
Sterling Ponds A
Sterling Ponds F
Sterling Ponds G
Whitetail Ridge N.
Whitetail Ridge S.
Ponds
<all other values>
Pond Type, Public or Private, Wet or Dry
Wet Detention Pond - Public
Dry Detention Pond - Public
Wet Detention Pond - Private
Dry Detention Pond - Private
Infiltration - Public
Infiltration - Private
Rock Trench - Private
Rain Garden - Private
Grass Swale - Private
Grass Swale over Rock Trench - Private
lakes&rivers
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current_street_centerlines
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DERBY ST
EDENBURGH DR
KETTERING RD
FRONTAGE RD
ANTLER CT
PRAIRIE DR
WHITETAIL VI
HIGHLAND
STH 25
FRONTAGE RD

Pond Drainage Areas

0 250 500 1,000 1,500 Feet

N W E S

Legend

Drainage Areas for Ponds
- <all other values>

Pond_Name
- Highview Meadows A
- Quail Ridge South
- Quail Ridge West
- Rolling Hills North
- Rolling Hills South
- Royal Oaks 1
- Royal Oaks 3
- Royal Oaks 4
- Royal Oaks 5
- South Ridge Ranch N.
- South Ridge Ranch S.
- Sterling Heights
- Sterling Ponds A
- Sterling Ponds F
- Sterling Ponds G
- Whitetail Ridge N.
- Whitetail Ridge S.

Ponds
- <all other values>

Pond Type, Public or Private, Wet or Dry
- Wet Detention Pond - Public
- Dry Detention Pond - Public
- Wet Detention Pond - Private
- Dry Detention Pond - Private
- Infiltration - Public
- Infiltration - Private
- Rock Trench - Private
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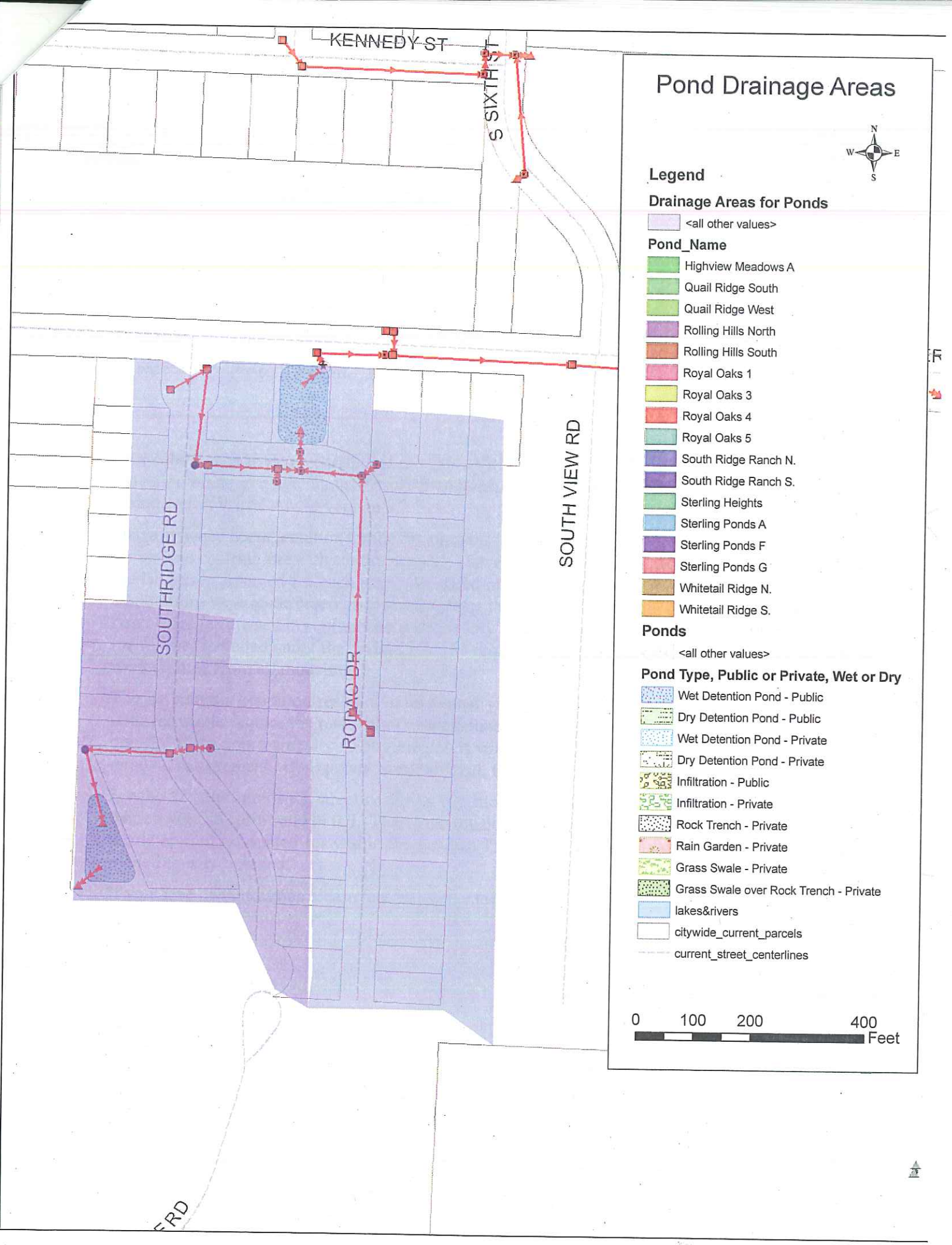
KENNEDY ST
S SIXTH ST
SOUTH VIEW RD
SOUTHRIDGE RD
ROMAO DR
Pond Drainage Areas
N
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Legend
Drainage Areas for Ponds
<all other values>
Pond_Name
Highview Meadows A
Quail Ridge South
Quail Ridge West
Rolling Hills North
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Royal Oaks 1
Royal Oaks 3
Royal Oaks 4
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South Ridge Ranch N.
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Sterling Ponds G
Whitetail Ridge N.
Whitetail Ridge S.
Ponds
<all other values>
Pond Type, Public or Private, Wet or Dry
Wet Detention Pond - Public
Dry Detention Pond - Public
Wet Detention Pond - Private
Dry Detention Pond - Private
Infiltration - Public
Infiltration - Private
Rock Trench - Private
Rain Garden - Private
Grass Swale - Private
Grass Swale over Rock Trench - Private
lakes&rivers
citywide_current_parcels
current_street_centerlines
0
100
200
400
Feet

Kristy Treichel

From: Kristy Treichel

Sent: Tuesday, June 26, 2007 2:23 PM

To: Jim Devlin (james.devlin@dnr.state.wi.us)

Attachments: Rocky Branch Area.jpg; Rocky Branch S. SLU Low Density Residential Silt - Output Summary.txt; Rocky Branch S. SLU Low Density Residential Silt.INP; Total With Controls Yield.pdf

(Sorry, the send and the attach buttons are right next to each other, this should be a complete submittal now)

Jim, as requested I deleted the Sterling Heights Pond from the modeling, because that was under the new NR 151 requirements. I have added the Rocky Branch South pond to the model to meet the gap for our 40% removal. I have attached a map of the drainage area for this pond as well as the two output summaries from WinSLAMM for this pond. I also included a revised With Controls Summary table.

If you have any additional questions, please let me know.

Thanks, Kristy

Kristy J. Treichel
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City of River Falls
123 E. Elm St.
River Falls, WI 54022
(715) 425-0900 ext 152
(715) 425-0915 fax

WITH CONTROLS SUMMARY

File Number	File Name	Catchment Area (ac)	Runoff Volume (cf)	Particulate Solids Yield without controls (lbs)	Particulate Solids Yield with controls (lbs)	Percent Reduction
1	Boulder Ridge SLU Low Density Res Silt	61.11	779086	12373	1229	90.07%
2	Downtown with sweeping	57.27	3708000	29961	23589	21.27%
3	Highview A SLU Multi-Family Res Silt no alleys	20.54	751766	15594	0	100.00%
4	Quail Ridge SLU Low Density Res Silt	29.65	401509	9837	3433	65.10%
5	Quail Ridge S. Pond SLU Low Density Res Silt	1.23	6256	57	0	100.00%
6	Rocky Branch South SLU Low Density Res Silt	17.18	233548	8802	493	94.40%
7	Rolling Hills N. SLU Low Density Res Silt	27.204	369045	9633	1833	80.97%
8	Rolling Hills S. SLU Low Density Res Silt	10.91	148485	8281	1706	79.40%
9	Royal Oaks 1 SLU Low Density Res Silt	9.51	128530	8160	1225	84.99%
10	Royal Oaks 3 SLU Low Density Res Silt	25.4	344051	9482	0	100.00%
11	Royal Oaks 4 SLU Low Density Res Silt	107.57	1277000	18249	0	100.00%
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17	Sterling Ponds G SLU Low Density Res. Silt	21.98	734110	16970	0	100.00%
18	Whitetail Ridge N. SLU 47ac Light Ind. Silt, 10ac Open	57.75	2368000	37007	10378	71.96%
19	Whitetail Ridge S. SLU 76ac Light Ind. Silt, 96ac Open	171.82	4448000	48607	461	99.05%
	Totals	721.154		278263	48416	
			Pounds Removed =		**229847**	

Rocky Branch South Pond Drainage Area

0 175 350 700 1,050 Feet

N W E S

Legend

- Drainage Areas for Ponds

Ponds

- <all other values>

Pond Type, Public or Private, Wet or Dry

- Wet Detention Pond - Public
- Dry Detention Pond - Public
- Wet Detention Pond - Private
- Dry Detention Pond - Private
- Infiltration - Public
- Infiltration - Private
- Rock Trench - Private
- Rain Garden - Private
- Grass Swale - Private
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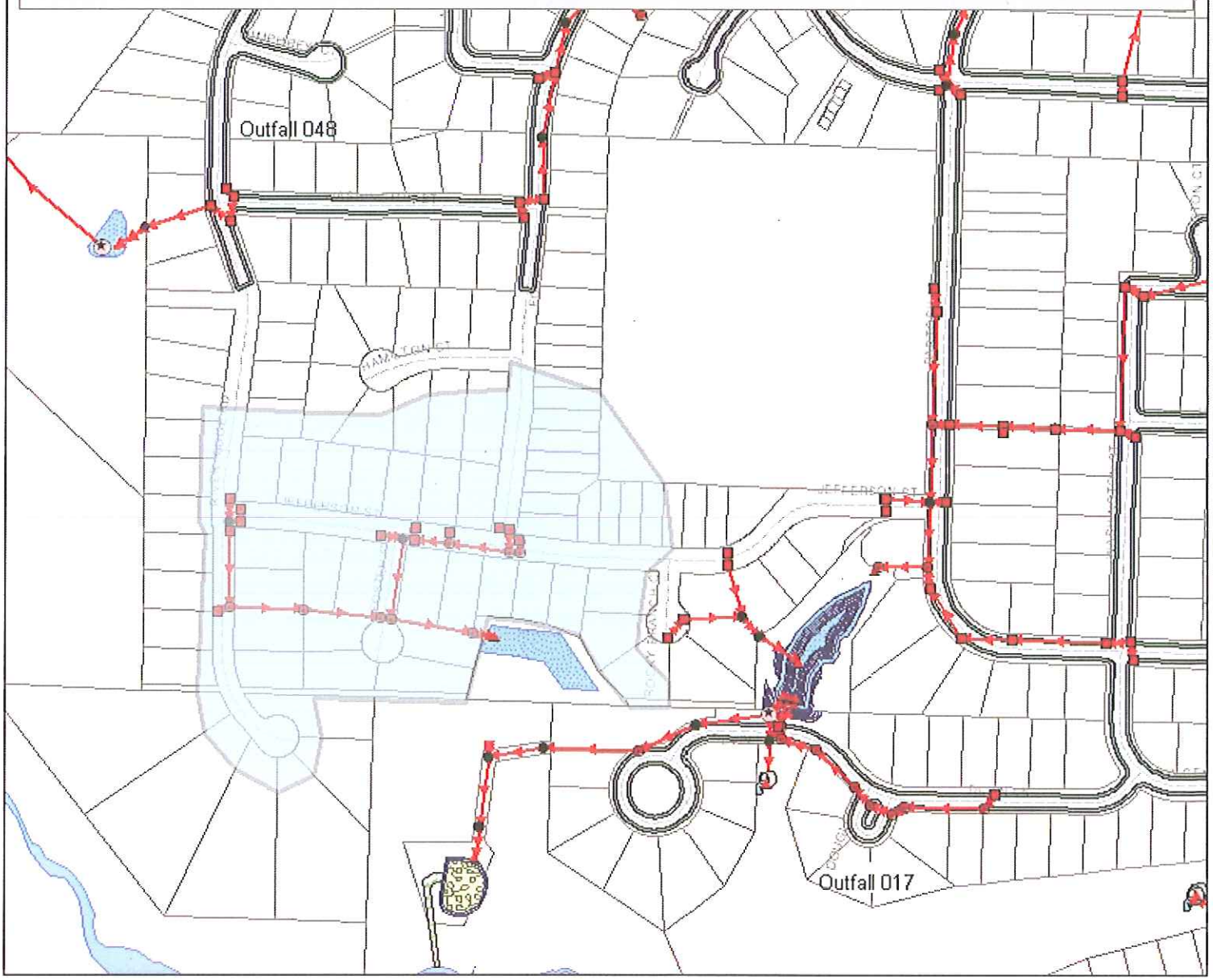

SLAMM for Windows Version 9.2.1

Data file name: V:\Eng\Storm Water\WinSLAMM\City Wide Modeling\With Controls\Rocky Branch S. SLU Low Density Residential Silt.DAT
Data file description: SLU/SILT-LDR-Low Density Residential
Rain file name: C:\Program Files\WinSLAMM\Rain Files\WisReg - Minneapolis MN 1959.RAN
Particulate Solids Concentration file name: C:\PROGRAM FILES\WINSLAMM\WI_AVG01.PSC
Runoff Coefficient file name: C:\Program Files\WinSLAMM\WI_SL06 Dec06.rsv
Particulate Residue Delivery file name: C:\PROGRAM FILES\WINSLAMM\WI_DLV01.PRR
Residential Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\Program Files\WinSLAMM\Freeway Dec06.std
Pollutant Relative Concentration file name: C:\PROGRAM FILES\WINSLAMM\WI_GEO01.PPD
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Model Run Start Date: 01/02/59 Model Run End Date: 12/28/59
Date of run: 06-26-2007 Time of run: 14:07:56
Total Area Modeled (acres): 17.19
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls:	233548	0 %	604.2	8802	0 %
Total Before Drainage System:	233542	0.00%	528.4	7698	12.54%
Total After Drainage System:	233542	0.00%	528.4	7698	12.54%
Total After Outfall Controls:	172631	26.08%	45.78	493.1	94.40%
Annualized Total After Outfall Controls:	175029			499.9	

Rocky Branch S. SLU Low Density Residential Silt.INP
Data file name: V:\Eng\Storm Water\WinSLAMM\City Wide Modeling\With Controls\Rocky Branch S. SLU Low Density Residential Silt.DAT
SLAMM Version V9.2
Rain file name: C:\Program Files\WinSLAMM\Rain Files\WisReg - Minneapolis MN 1959.RAN
Particulate Solids Concentration file name: C:\PROGRAM FILES\WINSLAMM\WI_AVG01.PSC
Runoff Coefficient file name: C:\Program Files\WinSLAMM\WI_SL06 Dec06.rsv
Particulate Residue Delivery file name: C:\PROGRAM FILES\WINSLAMM\WI_DLV01.PRR
Residential Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\Program Files\WinSLAMM\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\PROGRAM FILES\WINSLAMM\WI_GEO01.PPD
Seed for random number generator: -3
Study period starting date: 01/02/59 Study period ending date: 12/28/59
Start of Winter Season: 11/04 End of Winter Season: 03/13
Date: 06-26-2007 Time: 14:08:05
Fraction of each type of Drainage System serving study area:
1. Grass Swales 0
2. Undeveloped roadside 0
Curb and Gutters, `valleys', or sealed swales in:
3. Poor condition (or very flat) 0
4. Fair condition 1
5. Good condition (or very steep) 0
Site information: SLU/SILT-LDR-Low Density Residential

	<===== Areas for each Source (acres) =====>				
Source Area	Residential Areas	Institutional Areas	Commercial Areas	Industrial Areas	Other Urban Areas
Roofs 1	0.32	0.00	0.00	0.00	0.00
Roofs 2	1.04	0.00	0.00	0.00	0.00
Roofs 3	0.00	0.00	0.00	0.00	0.00
Roofs 4	0.00	0.00	0.00	0.00	0.00
Roofs 5	0.00	0.00	0.00	0.00	0.00
Paved Parking/Storage 1	0.02	0.00	0.00	0.00	0.00
Paved Parking/Storage 2	0.00	0.00	0.00	0.00	0.00
Paved Parking/Storage 3	0.00	0.00	0.00	0.00	0.00
Unpaved Prkng/Storage 1	0.00	0.00	0.00	0.00	0.00
Unpaved Prkng/Storage 2	0.00	0.00	0.00	0.00	0.00
Playground 1	0.00	0.00	0.00	0.00	0.00
Playground 2	0.00	0.00	0.00	0.00	0.00

	Rocky Branch S.	SLU Low Density Residential Silt.INP			
Driveways 1	0.55	0.00	0.00	0.00	0.00
Driveways 2	0.23	0.00	0.00	0.00	0.00
Driveways 3	0.00	0.00	0.00	0.00	0.00
Sidewalks/Walks 1	0.06	0.00	0.00	0.00	0.00
Sidewalks/Walks 2	0.06	0.00	0.00	0.00	0.00
Street Area 1	0.38	0.00	0.00	0.00	0.00
Street Area 2	0.73	0.00	0.00	0.00	0.00
Street Area 3	0.11	0.00	0.00	0.00	0.00
Large Landscaped Area 1	0.00	0.00	0.00	0.00	0.00
Large Landscaped Area 2	0.00	0.00	0.00	0.00	0.00
Undeveloped Area	0.75	0.00	0.00	0.00	0.00
Small Landscaped Area 1	12.85	0.00	0.00	0.00	0.00
Small Landscaped Area 2	0.00	0.00	0.00	0.00	0.00
Small Landscaped Area 3	0.00	0.00	0.00	0.00	0.00
Isolated/Water Body Area	0.03	0.00	0.00	0.00	0.00
Other Pervious Area	0.04	0.00	0.00	0.00	0.00
Other Dir Cnctd Imp Area	0.00	0.00	0.00	0.00	0.00
Other Part Cnctd Imp Area	0.02	0.00	0.00	0.00	0.00
Total	17.19	0.00	0.00	0.00	0.00

Freeway Source Area	Area (acres)
Roofs 1	0.00
Roofs 2	0.00
Roofs 3	0.00
Roofs 4	0.00
Roofs 5	0.00
Paved Parking/Storage 1	0.00
Paved Parking/Storage 2	0.00
Paved Parking/Storage 3	0.00
Unpaved Prkng/Storage 1	0.00
Unpaved Prkng/Storage 2	0.00
Total	0.00

Total of All Source Areas	17.19
Total of All Source Areas less All Isolated Areas	17.16

Source Area Control Practice Information

Land Use: Residential
Roofs 1 Source area number: 1
The roof is pitched
The Source Area is directly connected or draining to a directly connected area
Roofs 2 Source area number: 2
The roof is pitched
The Source Area is draining to a pervious area (partially connected impervious area)
The SCS Hydrologic Soil Type is Silty
Paved Parking/Storage 1 Source area number: 6
The Source Area is directly connected or draining to a directly connected area
Driveways 1 Source area number: 13
The Source Area is directly connected or draining to a directly connected area
Driveways 2 Source area number: 14
The Source Area is draining to a pervious area (partially connected impervious area)
The SCS Hydrologic Soil Type is Silty
Sidewalks/Walks 1 Source area number: 16
The Source Area is directly connected or draining to a directly connected area
Sidewalks/Walks 2 Source area number: 17
The Source Area is draining to a pervious area (partially connected impervious area)
The SCS Hydrologic Soil Type is Silty
Street Area 1 Source area number: 18
1. Street Texture: smooth
2. Total study area street length (curb-miles): 1.4
3. Initial Street Dirt Loading (lbs/curb-mi): 0
4. Street Dirt Accumulation Coefficients: Default value used
Control Practice: Street Cleaning
1. Street cleaning frequency: Two Passes per Year (Spring and Fall)
Street Cleaner Type: Mechanical Broom Sweeper
2. Street cleaner productivity: Default
3. Parking density: Light
4. Parking controls imposed? No
5. Equation coefficient M (slope): 0.44
6. Equation coefficient B (intercept): 245
Street Area 2 Source area number: 19
1. Street Texture: intermediate
2. Total study area street length (curb-miles): 2.7
3. Initial Street Dirt Loading (lbs/curb-mi): 0
4. Street Dirt Accumulation Coefficients: Default value used
Control Practice: Street Cleaning
1. Street cleaning frequency: Two Passes per Year (Spring and Fall)
Street Cleaner Type: Mechanical Broom Sweeper
2. Street cleaner productivity: Default
3. Parking density: Light
4. Parking controls imposed? No

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          5. Equation coefficient M (slope):   0.55
          6. Equation coefficient B (intercept):   310
   Street Area 3    Source area number:  20
          1.  Street Texture:  rough
          2.  Total study area street length (curb-miles):  0.4
          3.  Initial Street Dirt Loading (lbs/curb-mi):   0
          4.  Street Dirt Accumulation Coefficients:  Default value used
      Control Practice:  Street Cleaning
          1. Street cleaning frequency:  Two Passes per Year (Spring and Fall)
          Street Cleaner Type:  Mechanical Broom Sweeper
          2. Street cleaner productivity:  Default
          3. Parking density:  Light
          4. Parking controls imposed?  No
          5. Equation coefficient M (slope):   0.65
          6. Equation coefficient B (intercept):   400
   Undeveloped Area    Source area number:  23
        The SCS Hydrologic Soil Type is Silty
   Small Landscaped Area 1    Source area number:  24
        The SCS Hydrologic Soil Type is Silty
   Isolated/Water Body Area    Source area number:  27
        The source area is an isolated area generating no runoff
   Other Pervious Area    Source area number:  28
        The SCS Hydrologic Soil Type is Silty
   Other Part Cnctd Imp Area    Source area number:  30
        The Source Area is draining to a pervious area (partially connected impervious area)
        The SCS Hydrologic Soil Type is Silty

Drainage System

Outfall
      Control Practice 1 :  Wet Detention Ponds
         1.  Area served by detention ponds (acres)=  17.19
         2.  Particle Size Distribution file name:  C:\PROGRAM FILES\WINSLAMM\NURP.CPZ
         3.  Initial stage elevation (ft):   0
         4.  Peak to Average Flow Ratio:   3.8
         5.  Outlet Characteristics:
              Outlet number 1
                Outlet type:  Vertical Stand Pipe
                     1.  Stand pipe diameter (ft):   2
                     2.  Stand pipe height above datum (ft):   7
         6.  Pond stage and surface area
                   Entry    Stage     Pond Area   Natural Seepage   Other Outflow
                   Number    (ft)      (acres)       (in/hr)           (cfs)
                   0        0.00       0.0000         0.00             0.00
```

Rocky Branch S. SLU Low Density Residential Silt.INP

1	0.01	0.0640	0.00	0.00
2	3.00	0.1740	0.00	0.00
3	4.00	0.2130	0.00	0.00
4	6.00	0.2960	0.00	0.00
5	9.00	0.4360	0.00	0.00

Pollutants to be Analyzed and Printed:

Pollutant Name	Pollutant Type
Solids	Particulate