Storm Water Detention Basins Maintenance Program

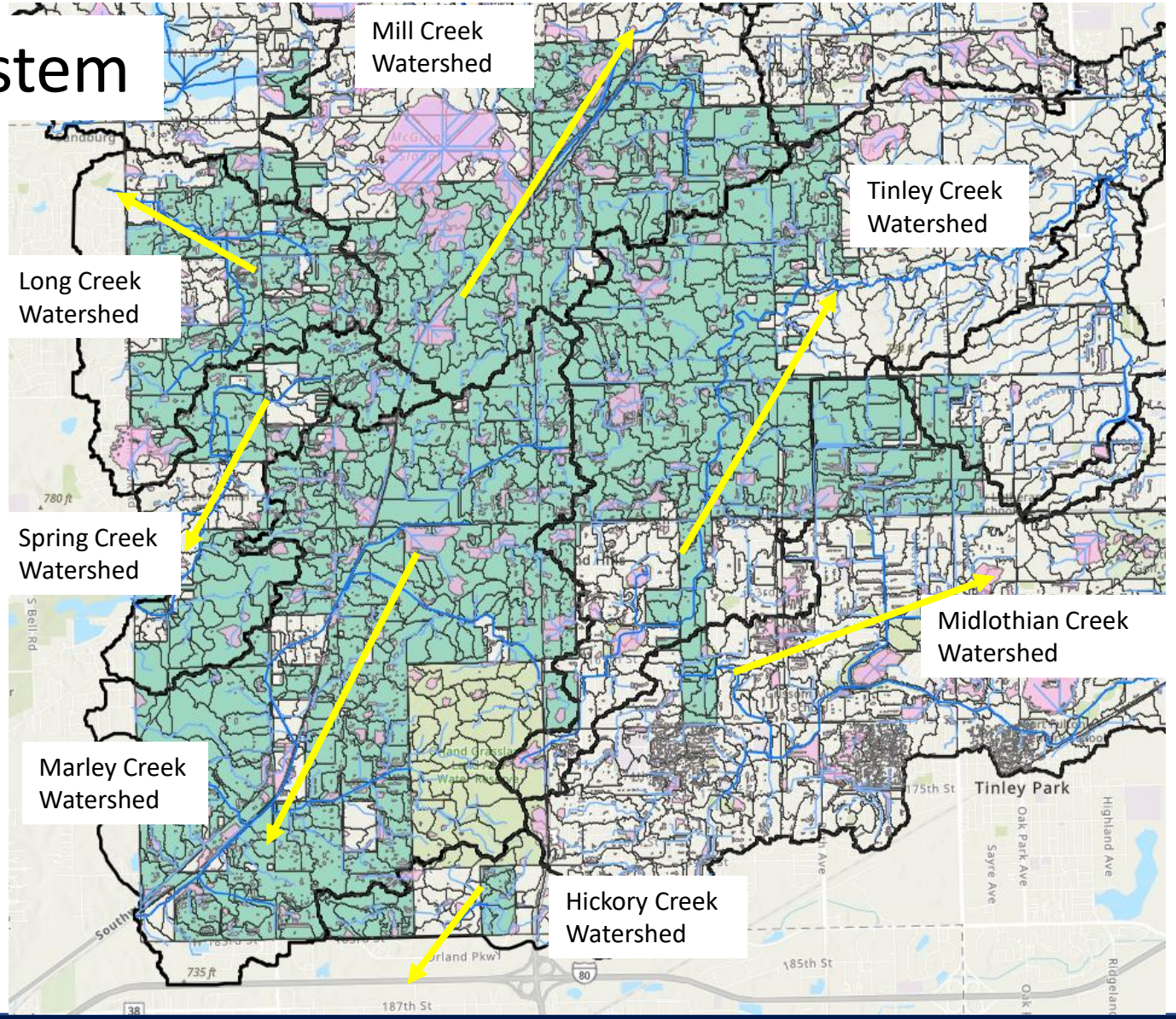
Committee of the Whole
6.02.2025

Comprehensive Update

- Part 1
  - Village's Storm Conveyance System
  - Village's Storm Flooding Concerns
  - Villages' Storm System Maintenance
- Part 2
  - Public Detention Basin Evaluation (Phase 1)
  - Private Detention Basin Evaluation (Phase 2)
- Part 3
  - Detention Basin Brush Clearing
  - Detention Basin Best Practices by Stewardships

Village's Storm Conveyance System

- 7 Main Watersheds:
  - Tinley Creek
  - Mill Creek
  - Marley Creek
  - Long Creek
  - Spring Creek
  - Hickory Creek
  - Midlothian Creek
- Storm System Includes:
  - Lake/Sloughs (Public)
  - Creeks (Public and Privately owned)
  - Storm Piping (Public)
  - Detention Basins (500+)
    - 178 Public (Dry and Wet (Ponds))
    - 321 Private (Dry and Wet (Ponds))
- **Interlocked storm conveyance system between public and private entities**



- While ponds are often considered as water features, their main function is to serve as detention/retention for storm water to protect homes/businesses.
- For new development, ponds are privately maintained by HOAs

ORLAND PARK

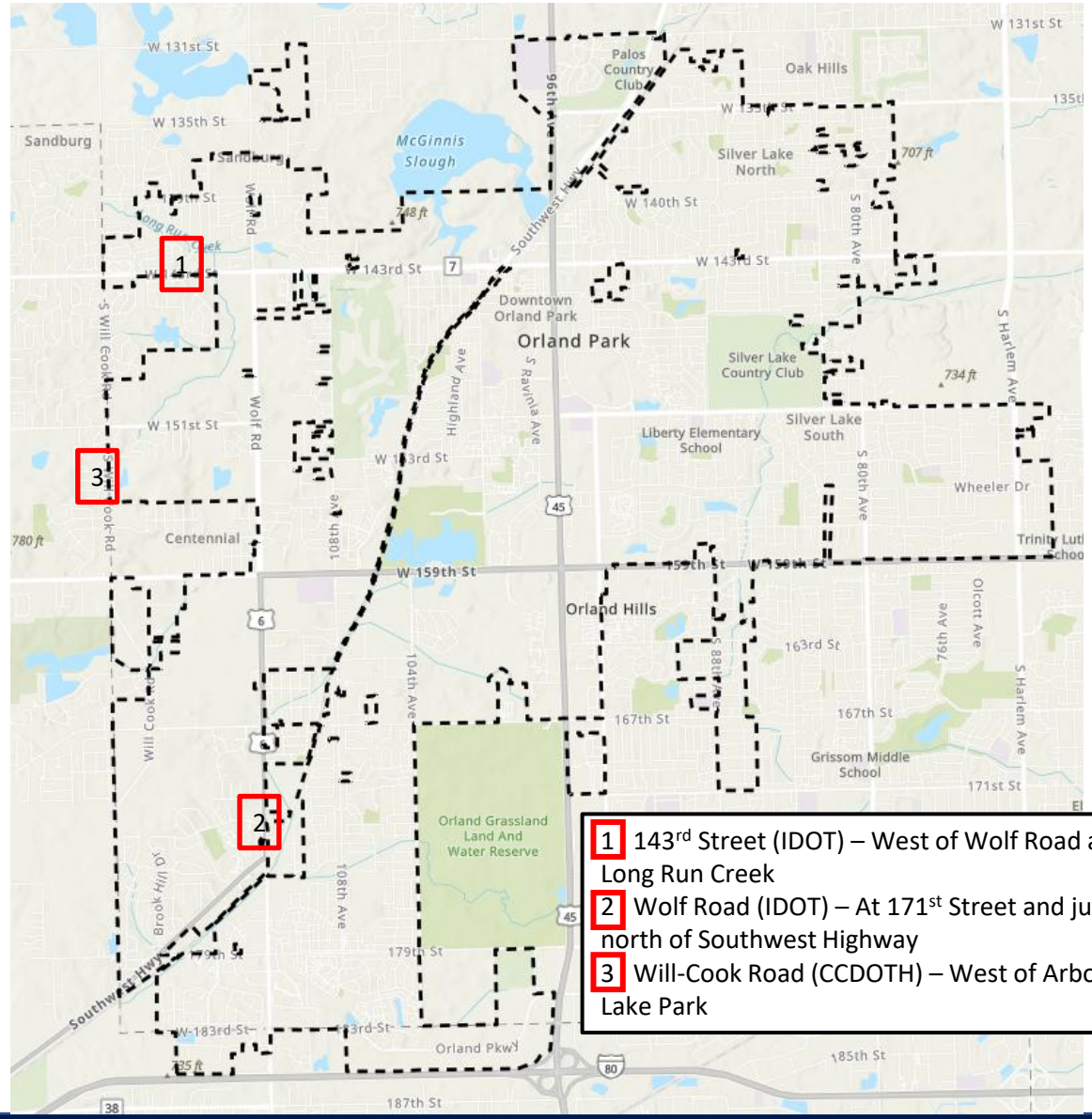
Village's Storm Flooding Concerns

- Storm flooding area concerns addressed:

Many localized flooding have been addressed with projects.

  - 2014-2022 Fernway Subdivision ditches
  - 2019 Fairway Subdivision
  - 2021 Grassland Dam
  - 2022 Southwest Highway Culvert (IDOT)
  - 2023 El Cameo Rael Subdivision
  - 2023 Laguana Subdivision ditches
  - 2024 Highland Ave/Cara Vista
  - 2024 FLC/88th Ave Culverts
  - 2024/2025 Catalina Subdivision
  - 2024/2025 Old Orland
  - 2025 Orland Hills East/West ditches

- Remaining flooding concerns on County and State roadways: Briefed March 7, 2022 by Eng.
  - 143rd
  - Wolf Road
  - Will-Cook Road



1 143rd Street (IDOT) – West of Wolf Road at Long Run Creek
2 Wolf Road (IDOT) – At 171st Street and just north of Southwest Highway
3 Will-Cook Road (CCDOTH) – West of Arbor Lake Park

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Village's Storm System Maintenance

- Storm Piping and inlet by PW In-house staff
- Storm Events Response by PW In-house staff- debris/leaves blocking inlets, specific areas we monitor during/after storm
- Creeks monitored for blockages. Looking at creek sediments in future.
- Detention Basins (Public/Private)
    - Evaluations/Stewardships
    - Dredging is most expensive condition and select basins are being budgeted for next water rate study in FY27

Storm Water Detention Basin Evaluation- Phase 1 (Public)

- History
  - June 21, 2021: Due to requirement to MWRD, age, lack of knowledge of the condition of basins and substantial investment the Village evaluated public owned basins. CBBEL award contract.
    - Scope: 178 basin inspected, and 20 evaluation elements included:
      - Infrastructure structures-inlets, outlets, weirs, etc.
      - Other utilities
      - Shoreline erosion
      - Energy dissipation
      - Settling
      - Water quality
      - Sedimentation
      - Volume/capacity
      - Encroachment
      - Vegetation
      - Wildlife management
      - Adjacent land use
    - Deliverables:
      - Condition of each basin to include photos of notable issues
      - Short term and long-term restoration projects
      - Budgeting figures for restoration costs
      - “Best Practice” methods used for shoreline erosion
  - March 2, 2022: Phase 1 Report presented to Board.

Not evaluated in report:

- Underground storm sewer network
- Natural wetlands or riparian areas that also store storm water runoff
- Creeks and drainage ways

Report: Phase 1 (Public)

- 4 page data form per pond
- As every pond ages it is in a constant state of degradation. The rate of degradation varies greatly given the context of the location.
  - Ponds in the 20 to 40 year range have the greatest needs
  - Sediment deposition is the #1 issue/constant among all ponds
  - “Natural Ponds” with limited landscape management are generally overgrown and hiding many issues due to lack of visibility.
  - Shoreline erosion in ponds with open water is problematic.
  - Mowed lawn ponds are deceiving and, in many cases, have the most severe reductions in storm water storage capacity due to significant imperceptible sediment accumulation. **In many cases sediment is several feet deep.**
  - Stormwater structures require routine inspection and maintenance Many separated pipes causing cavitation, holes, blockages, sediment loading and excessive erosion.

Standardized Pond Evaluation Form							CBBEL Project No: 210335
Orland Park Pond ID #:	29-39						
Site Name:	Deer Trail Lot						
Evaluator(s)	Michael Downs						
Date:	9/9/2021						
Time:	2:40pm						Pond Ranking: 1
Weather:	80 Degrees F, Partly Cloudy						Priority Ranking System
Approx. days since last precip:	5						1 - Low priority, Monitor condition annually
Eng Plans Available?	Yes		No		Rev'd?		2/3 - Maintenance Active issues - monitor
MMP Available?	Yes		No		Rev'd?		4 - Maintenance Recommended Soon
Planting Plan Available?	Yes		No		Rev'd?		5 - Urgent Maintenance Required

	Question			Maintenance Necessary		Rank How Critical	Comments:
Emergency Spillway	Y	N	N/A	Y	N	1 Low - 5 High	
1. Present -Found?			x				
2. Spillway level?			x				
3. Adequate vegetation and groundcover? Overgrown?			x				
4. Adequate freeboard?			x				
5. Embankment erosion evident?			x				
6. Cracking, bulging, or slumping?			x				
a) upstream face?			x				
b) downstream face?			x				
c) at or below toe upstream?			x				
d) at or below toe downstream?			x				
e) emergency spillway?			x				
7. Pond and toe drains clear and functioning?			x				
8.Evidence of animal burrows?			x				
9. Seeps or leaks on downstream face?			x				
10. Vertical/horizontal alignment on the top of the dam per plan?			x				
11. Emergency Spillway clear?			x				
12. Access available for maintenance?			x				
a) For hand labor?			x				
b) For heavy equipment?			x				
13. Other? (specify in comments below)			x				

ORLAND PARK

Report/Pond Prioritization

- Each aspect of the pond's evaluation was ranked on a scale of 1-5, based on condition and need for repair
- Each pond was then given an overall rank of 1-5, which was calculated by taking the average of its aspect's rankings
  - Ex. (Outlet = 3, Vegetation = 2, Bank Condition = 3) > **Overall Rank = 2.6**
- Maintenance prioritization was broken down by pond ranking:
  - Rank 5 = Highest Priority (immediate)
  - Rank 4 = High Priority (short term)
  - Rank 3 = Moderate Priority (long term)
  - Rank 1 & 2 = Low Priority (continue to monitor)
- The report was prepared, that includes 867 pages
  - A summary of findings
  - A discussion of all pond types, qualities and ranking
  - Maintenance recommendations
  - The data forms along with photographs of every site
  - The master spread sheet summarizing all the data

Table 1 – Summary of Dry Ponds that are recommended to receive immediate attention

Pond ID	Pond Name	Rank	Pond Type	Over-Grown
03-02	Thomas Pond	5	DP	N
06-01	Pinewood North Pond #2	5	DP	N
13-02	Cashew Ponds	5	DP	N
29-04	Mallard Landing Park Pond	5	DP	N
B18-01	Catalina Industrial Pond	5	DP	N

Table 4 – Open Water Ponds that are recommended for immediate attention

Pond ID	Pond Name	Rank	Pond Type	Over-Grown	Blue-Green Algae Present
06-03	Pinewood North Pond 3	5	OW	N	
20-01	Beemsterboer Pond	5	OW	N	
P28-02	Lake Lucille Pond	5	OW	N	
P33-01	Mill Creek Pond	5	OW	N	

Table 6 – Overgrown Ponds which are recommended for immediate attention

Pond ID	Pond Name	Rank	Pond Type	Over-Grown
06-07	Creekside Pond	5	OG	Y
16-12	Cemeno Park Pond (Police)	5	OG	Y
17-02	Equestrian Trail West Pond	5	OG	Y
22-01	Seton Place Pond	5	OG	Y

Storm Water Detention Basin Evaluation- Phase 2 (Private)

- History
  - June 20, 2022: Due to requirement to MWRD, age, lack of maintenance and substantial investment to private owners of ponds, private owned basins were evaluated. ERA award contract.
    - Scope: 321 ponds were evaluated based upon 20 elements falling under 6 categories:
      - Spillway Condition
      - Outlet Condition
      - Inlet Condition
      - Bank Condition
      - Vegetation Condition
      - Other Infrastructure Condition
    - Deliverables
      - Condition of each basin to include photos of notable issues
      - Each inlet/outlet structure were individually evaluated & located.
        - Riprap failures and slope erosion
        - Pipe, FES, and headwall condition
        - Restrictor condition
        - Additional issues (clogging, settling, and accessibility for repair)
    - May 1, 2023: Phase 2 Report presented to Board.

Report- Phase 2 (Private)

- Common issues were noted
  - Sediment accumulation
  - Overgrown/invasive vegetation
  - Eutrophication – Excessive richness of nutrients which causes dense growth of plant life & death of animal life from lack of oxygen.

Orland Park Pond ID #:	Site Name:	Rank	Type of pond:	Spillway Condition?	Outlet Condition?	Inlet Condition?	Bank Condition?	Vegetation Condition?	Other Infrastructure Condition?
11-12	Silver Lake #9 South	5	Wet			5	5	4	
07-17	Pinewood Wetland - The Bogs	5	Wetland				4	5	
13-17	Goodwill Pond	5	Dry				4	5	
03-17	Nagel Auto Pond	4	Wet		5		3	5	
03-24	Orland Crossing Wetland	4	Wetland			5	4	4	
13-21	15690 Harlem South Retail Pond	4	Wet			3	5	5	
F06-03	Huellett Back Lot	4	Dry		4	4		5	
P33-02	Shell Pond	4	Dry		5	4	4	4	
03-12	Bp Amoco Pond	4	Dry		4	4	4	4	
07-09	Country Lane Pond	4	Dry				3	5	
07-19	Kahn Wetland	4	Wetland				4	4	
08-05	Crystal Springs	4	Wet		5	3	4		
08-26	Crystal Tree 9A	4	Wet				4	4	
13-20	15690 Harlem North	4	Dry			5	4	3	
21-08	Marcus Theater Pond	4	Wet	4	5	5	3	3	
31-39	West Wind Pond	4	Dry			4	4	4	
P33-03	Mill Road Pond	4	Wet		4	3	4	5	
08-32	Deer Haven Pond 2	4	Wet		5	4	3	3	
03-25	Orland Hills Wetland	4	Wetland		2	3	5	5	
10-13	144Th Place Wetland	4	Wetland		4	4	3	4	
16-05	Lakeview Plaza Pond	4	Wet		3	5	4	3	
11-06	Rolling Hills #5	4	Wet		3		5	3	
11-11	Silver Lake #11 South	4	Wet	3			4	4	
22-19	16501 Lagrange Road Wetland	4	Wetland			5	2	4	
01-10	Turtlehead Lake	4	Wetland				3	4	
03-15	Orland Crossing Se Pond	4	Wet		3	4	3	4	
05-04	Ashford Pond	4	Wetland				3	4	
06-03	Pinewood North #3	4	Wet				4	3	
06-21	44733	4	Wetland				3	4	
07-14	Sanctuary Pond	4	Wet				3	4	
08-08	Crystal Tree 1B	4	Wet		5	2	4	3	
09-08	Times Square Plaza	4	Wet		2	4	4	4	
15-12	Lowes #3	4	Wet				3	4	
18-06	County West Plaza	4	Dry			4		3	

Report/Pond Prioritization (Similar to the Public Pond Ranking)

- Each aspect of the pond's evaluation was ranked on a scale of 1-5, based on condition and need for repair
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  - Ex. (Outlet = 3, Vegetation = 2, Bank Condition = 3) > **Overall Rank = 2.6**
- Maintenance prioritization was broken down by pond ranking:
  - Rank 5 = Highest Priority (immediate)
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- The report was prepared, that includes 2,575 pages
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  - The data forms along with photographs of every site
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Property Owner Communication Plan

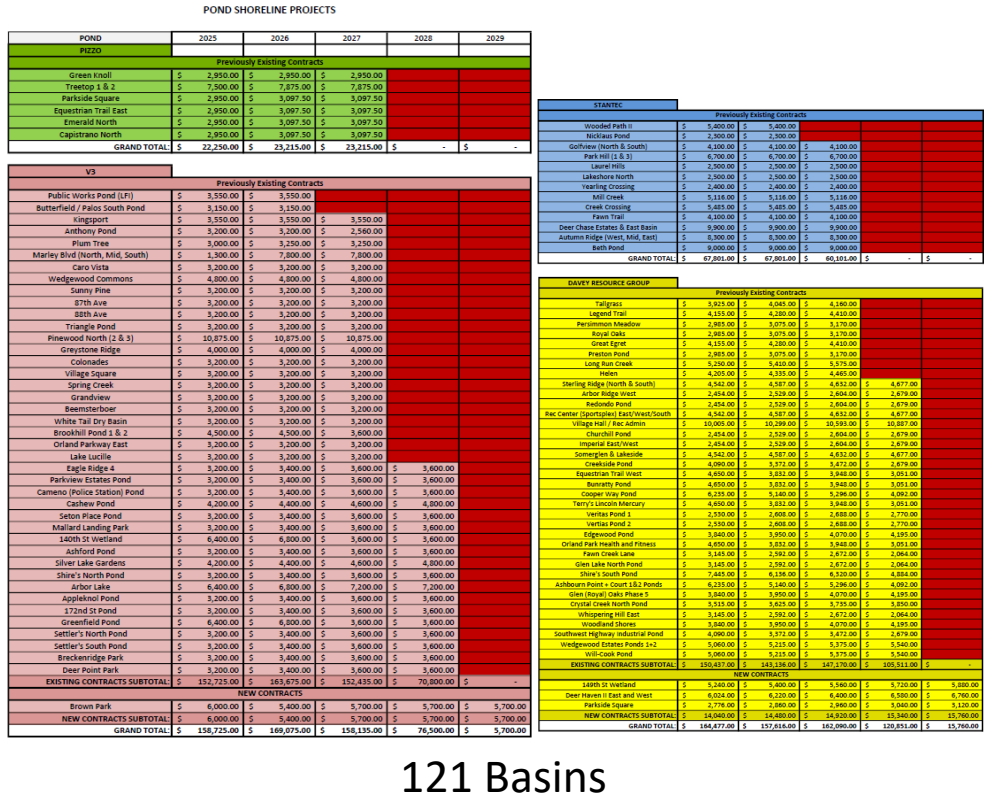
- Owner(s) will be contacted in three groups based on severity. A letter will be sent to owner(s) regarding the condition of their ponds and recommendations for maintenance and repairs. This was done in 2023 and 2024.
  - Group A: Letter will also include a required Repair Plan to be submitted to Village and to follow Village Code 6-409 Storm Sewers and Storm Water Detention criteria.
  - Group B: Letter does not require a Repair Plan at this time.
  - Group C: Letter will commend the owners on good maintenance and provide recommendations for continued maintenance.

Letter Type	A	A	A	B	B	C	C	C
Rank	5.0-4.5	4.5-4.0	4.0-3.5	3.5-3.0	3.0-2.5	2.5-2.0	2.0-1.5	1.5-1.0
# of Ponds	3	14	27	106	93	81	21	21

- Maintenance recommendations include:
  - Structure repair
  - Aeration and algae control methods
  - Dredging or conversion to wetland-bottom
  - Shoreline stabilization via armoring
  - Vegetation maintenance and native buffer establishment

Storm Water Detention Basin Stewardships

- History
  - June 14, 2022: With the results of the Phase 1, there were (4) Level 5 and (24) Level 4 detention basins that had become overgrown with excessive weeds, plants and evasive trees. The restoration would clean these 28 basins with (2) visits in 2022 and (3) visits in 2023 to conduct clearing mowing, hand cutting, pulling weeds, and herbicide application.
  - July 18, 2022: The board approved Davey Resource Group to complete work in 2022.
  - December 2022-January 2025: Storm Basin Stewardship has been budgeted annually to get Level 4 and 5 basins down to Level 3 or better with our Ecological Restoration Contractors.
    - A typical restoration project begins with a (1) year establishment, followed by (3) to (5) year of maintenance. Continued maintenance occurs then at very low manageable cost between $2K-$6K depending on the size of the basin.



POND SHORELINE PROJECTS

POND	2025	2026	2027	2028	2029
PIZZO					
Previously Existing Contracts					
Green Knoll	$ 2,950.00	$ 2,950.00	$ 2,950.00		
Treetop 1 & 2	$ 7,500.00	$ 7,875.00	$ 7,875.00		
Parkside Square	$ 2,950.00	$ 3,097.50	$ 3,097.50		
Equestrian Trail East	$ 2,950.00	$ 3,097.50	$ 3,097.50		
Emerald North	$ 2,950.00	$ 3,097.50	$ 3,097.50		
Capistrano North	$ 2,950.00	$ 3,097.50	$ 3,097.50		
GRAND TOTAL:	$ 22,250.00	$ 23,215.00	$ 23,215.00	$ -	$ -

V3					
Previously Existing Contracts					
Public Works Pond (LFI)	$ 3,550.00	$ 3,550.00			
Butterfield / Palos South Pond	$ 3,150.00	$ 3,150.00			
Kingsport	$ 3,550.00	$ 3,550.00	$ 3,550.00		
Anthony Pond	$ 3,200.00	$ 3,200.00	$ 2,560.00		
Plum Tree	$ 3,000.00	$ 3,250.00	$ 3,250.00		
Marley Blvd (North, Mid, South)	$ 1,300.00	$ 7,800.00	$ 7,800.00		
Caro Vista	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Wedgewood Commons	$ 4,800.00	$ 4,800.00	$ 4,800.00		
Sunny Pine	$ 3,200.00	$ 3,200.00	$ 3,200.00		
87th Ave	$ 3,200.00	$ 3,200.00	$ 3,200.00		
88th Ave	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Triangle Pond	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Pinewood North (2 & 3)	$ 10,875.00	$ 10,875.00	$ 10,875.00		
Greystone Ridge	$ 4,000.00	$ 4,000.00	$ 4,000.00		
Colonades	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Village Square	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Spring Creek	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Grandview	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Beemsterboer	$ 3,200.00	$ 3,200.00	$ 3,200.00		
White Tail Dry Basin	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Brookhill Pond 1 & 2	$ 4,500.00	$ 4,500.00	$ 3,600.00		
Orland Parkway East	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Lake Lucille	$ 3,200.00	$ 3,200.00	$ 3,200.00		
Eagle Ridge 4	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Parkview Estates Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Cameno (Police Station) Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Cashew Pond	$ 4,200.00	$ 4,400.00	$ 4,600.00	$ 4,800.00	
Seton Place Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Mallard Landing Park	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
140th St Wetland	$ 6,400.00	$ 6,800.00	$ 3,600.00	$ 3,600.00	
Ashford Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Silver Lake Gardens	$ 4,200.00	$ 4,400.00	$ 4,600.00	$ 4,800.00	
Shire's North Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Arbor Lake	$ 6,400.00	$ 6,800.00	$ 7,200.00	$ 7,200.00	
Appleknol Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
172nd St Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Greenfield Pond	$ 6,400.00	$ 6,800.00	$ 3,600.00	$ 3,600.00	
Settler's North Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Settler's South Pond	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Breckenridge Park	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
Deer Point Park	$ 3,200.00	$ 3,400.00	$ 3,600.00	$ 3,600.00	
EXISTING CONTRACTS SUBTOTAL:	$ 152,725.00	$ 163,675.00	$ 152,435.00	$ 70,800.00	$ -
NEW CONTRACTS					
Brown Park	$ 6,000.00	$ 5,400.00	$ 5,700.00	$ 5,700.00	$ 5,700.00
NEW CONTRACTS SUBTOTAL:	$ 6,000.00	$ 5,400.00	$ 5,700.00	$ 5,700.00	$ 5,700.00
GRAND TOTAL:	$ 158,725.00	$ 169,075.00	$ 158,135.00	$ 76,500.00	$ 5,700.00

STANTEC					
Previously Existing Contracts					
Wooded Path II	$ 5,400.00	$ 5,400.00			
Nicklaus Pond	$ 2,300.00	$ 2,300.00			
Golfview (North & South)	$ 4,100.00	$ 4,100.00	$ 4,100.00		
Park Hill (1 & 3)	$ 6,700.00	$ 6,700.00	$ 6,700.00		
Laurel Hills	$ 2,500.00	$ 2,500.00	$ 2,500.00		
Lakeshore North	$ 2,500.00	$ 2,500.00	$ 2,500.00		
Yearling Crossing	$ 2,400.00	$ 2,400.00	$ 2,400.00		
Mill Creek	$ 5,116.00	$ 5,116.00	$ 5,116.00		
Creek Crossing	$ 5,485.00	$ 5,485.00	$ 5,485.00		
Fawn Trail	$ 4,100.00	$ 4,100.00	$ 4,100.00		
Deer Chase Estates & East Basin	$ 9,900.00	$ 9,900.00	$ 9,900.00		
Autumn Ridge (West, Mid, East)	$ 8,300.00	$ 8,300.00	$ 8,300.00		
Beth Pond	$ 9,000.00	$ 9,000.00	$ 9,000.00		
GRAND TOTAL:	$ 67,801.00	$ 67,801.00	$ 60,101.00	$ -	$ -

DAVEY RESOURCE GROUP					
Previously Existing Contracts					
Tallgrass	$ 3,925.00	$ 4,045.00	$ 4,160.00		
Legend Trail	$ 4,155.00	$ 4,280.00	$ 4,410.00		
Persimmon Meadow	$ 2,985.00	$ 3,075.00	$ 3,170.00		
Royal Oaks	$ 2,985.00	$ 3,075.00	$ 3,170.00		
Great Egret	$ 4,155.00	$ 4,280.00	$ 4,410.00		
Preston Pond	$ 2,985.00	$ 3,075.00	$ 3,170.00		
Long Run Creek	$ 5,250.00	$ 5,410.00	$ 5,575.00		
Helen	$ 4,205.00	$ 4,335.00	$ 4,465.00		
Sterling Ridge (North & South)	$ 4,542.00	$ 4,587.00	$ 4,632.00	$ 4,677.00	
Arbor Ridge West	$ 2,454.00	$ 2,529.00	$ 2,604.00	$ 2,679.00	
Redondo Pond	$ 2,454.00	$ 2,529.00	$ 2,604.00	$ 2,679.00	
Rec Center (Sportsplex) East/West/South	$ 4,542.00	$ 4,587.00	$ 4,632.00	$ 4,677.00	
Village Hall / Rec Admin	$ 10,005.00	$ 10,299.00	$ 10,593.00	$ 10,887.00	
Churchill Pond	$ 2,454.00	$ 2,529.00	$ 2,604.00	$ 2,679.00	
Imperial East/West	$ 2,454.00	$ 2,529.00	$ 2,604.00	$ 2,679.00	
Somerglen & Lakeside	$ 4,542.00	$ 4,587.00	$ 4,632.00	$ 4,677.00	
Creekside Pond	$ 4,090.00	$ 3,572.00	$ 3,472.00	$ 2,679.00	
Equestrian Trail West	$ 4,650.00	$ 3,832.00	$ 3,948.00	$ 3,051.00	
Bunratty Pond	$ 4,650.00	$ 3,832.00	$ 3,948.00	$ 3,051.00	
Cooper Way Pond	$ 6,235.00	$ 5,140.00	$ 5,296.00	$ 4,092.00	
Terry's Lincoln Mercury	$ 4,650.00	$ 3,832.00	$ 3,948.00	$ 3,051.00	
Veritas Pond 1	$ 2,550.00	$ 2,608.00	$ 2,688.00	$ 2,770.00	
Veritas Pond 2	$ 2,550.00	$ 2,608.00	$ 2,688.00	$ 2,770.00	
Edgewood Pond	$ 3,840.00	$ 3,950.00	$ 4,070.00	$ 4,195.00	
Orland Park Health and Fitness	$ 4,650.00	$ 3,832.00	$ 3,948.00	$ 3,051.00	
Pawn Creek Lane	$ 3,145.00	$ 2,592.00	$ 2,672.00	$ 2,064.00	
Glen Lake North Pond	$ 3,145.00	$ 2,592.00	$ 2,672.00	$ 2,064.00	
Shire's South Pond	$ 7,445.00	$ 6,136.00	$ 6,320.00	$ 4,884.00	
Ashbourn Point + Court 1&2 Ponds	$ 6,235.00	$ 5,140.00	$ 5,296.00	$ 4,092.00	
Glen (Royal) Oaks Phase 5	$ 3,840.00	$ 3,950.00	$ 4,070.00	$ 4,195.00	
Crystal Creek North Pond	$ 3,515.00	$ 3,625.00	$ 3,735.00	$ 3,850.00	
Whispering Hill East	$ 3,145.00	$ 2,592.00	$ 2,672.00	$ 2,064.00	
Woodland Shores	$ 3,840.00	$ 3,950.00	$ 4,070.00	$ 4,195.00	
Southwest Highway Industrial Pond	$ 4,090.00	$ 3,572.00	$ 3,472.00	$ 2,679.00	
Wedgewood Estates Ponds 1+2	$ 5,060.00	$ 5,215.00	$ 5,375.00	$ 5,540.00	
Will-Cook Pond	$ 5,060.00	$ 5,215.00	$ 5,375.00	$ 5,540.00	
EXISTING CONTRACTS SUBTOTAL:	$ 150,437.00	$ 143,136.00	$ 147,170.00	$ 105,511.00	$ -
NEW CONTRACTS					
149th St Wetland	$ 5,240.00	$ 5,400.00	$ 5,560.00	$ 5,720.00	$ 5,880.00
Deer Haven II East and West	$ 6,024.00	$ 6,220.00	$ 6,400.00	$ 6,580.00	$ 6,760.00
Parkside Square	$ 2,776.00	$ 2,860.00	$ 2,960.00	$ 3,040.00	$ 3,120.00
NEW CONTRACTS SUBTOTAL:	$ 14,040.00	$ 14,480.00	$ 14,920.00	$ 15,340.00	$ 15,760.00
GRAND TOTAL:	$ 164,477.00	$ 157,616.00	$ 162,090.00	$ 120,851.00	$ 15,760.00

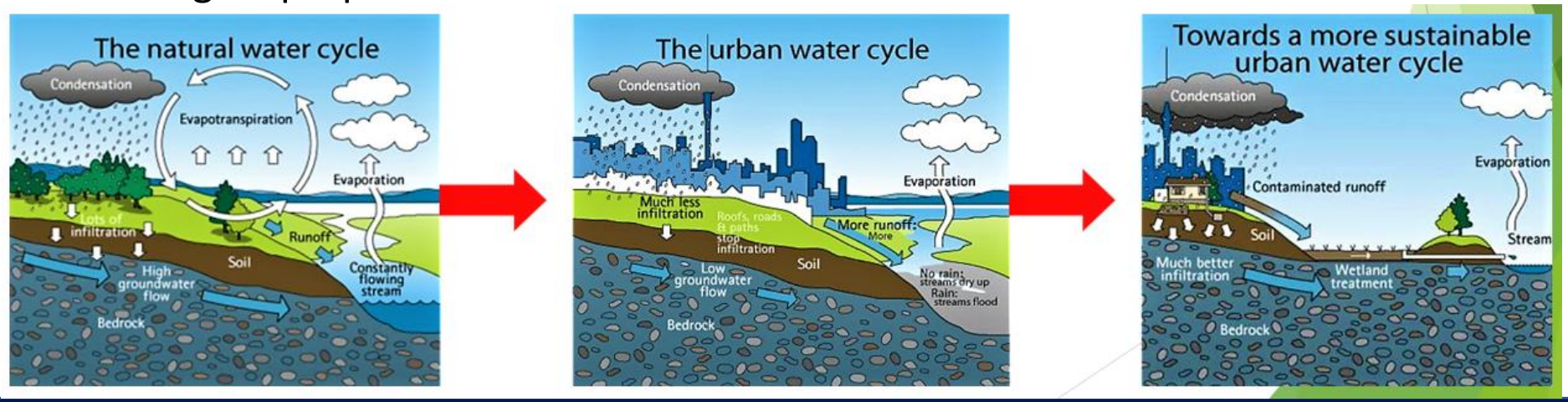
121 Basins

★ Prior to 2022, we had about 24 ponds already receiving stewardship work.

ORLAND PARK

Stormwater “Best Practice” Sustainable Management System

- Stormwater basins (Detention ponds) primary function:
  - Serve as collection of excess runoffs from impervious surfaces like parking lots, sidewalks, and roofs created by urban development. The basins collect the rainwater and slowly release to streams/creeks or wetlands.
- Stormwater basins mitigate:
  - Flooding of homes near basin
  - Stream/creek damage
  - Flooding on properties downstream



Village's Basin Best Practice Program

- February 2011, Village adopted Basin Best Practices Program (BBPP) to create a unified approach for restoration and stabilization of stormwater basin shorelines.
- Goals:
  - Establish a comprehensive Village-wide approach to water and basin shoreline management
  - Provide consistency in expectations among all stakeholders
  - Utilize the right resources at the right time provided by the best qualified parties
  - Follow industry best practices for ecological restoration and maintenance
- Progress:
  - At onset of program, 24 basins identified for shoreline restoration
  - Currently, 121 of basin are managed with the assistance of qualified ecological restoration contractors

Shoreline Restoration Approach

- The primarily approach: Use of native vegetation versus "hard edge" techniques such as sheet piling or stone riprap.
    - Sheet piling or stone riprap are costly to install and maintain
    - Native grasses/forbs proven to provide excellent means of erosion control and have been shown to filter out nutrient and sediment runoff from adjacent land, which contributes to improved water quality
    - The USEPA, US Army Corps of Engineers, the Morton Arboretum and the Chicago Botanic Garden utilize native plantings
- Benefits:
    - Protect shorelines from erosion
    - Provide and improve habitat for fish and other wildlife
    - Improve water quality and filter nutrients/sediments
    - Attract natural wildlife
    - Increase shoreline stability
    - More resilient that hard edge shorelines over time


Imperial West Pond - After

Shoreline Restoration Approach (Cont.)

- Shoreline restoration projects include:
  - Establishment period (2-3 years):
    - Existing turf grass or invasive vegetation is removed and the establishment of native plant species begins. Occasional regrading of pond slopes also occurs at sites where substantial erosion or scouring has occurred. Additional work includes goose protection and seed/blanket.
  - A multi-year stewardship (maintenance) program follows:
    - Shoreline stewardships include the control of invasive woody and herbaceous flora through cultural methods, physical removal or the application of appropriate herbicides.

Shoreline Restoration Approach (Cont.)

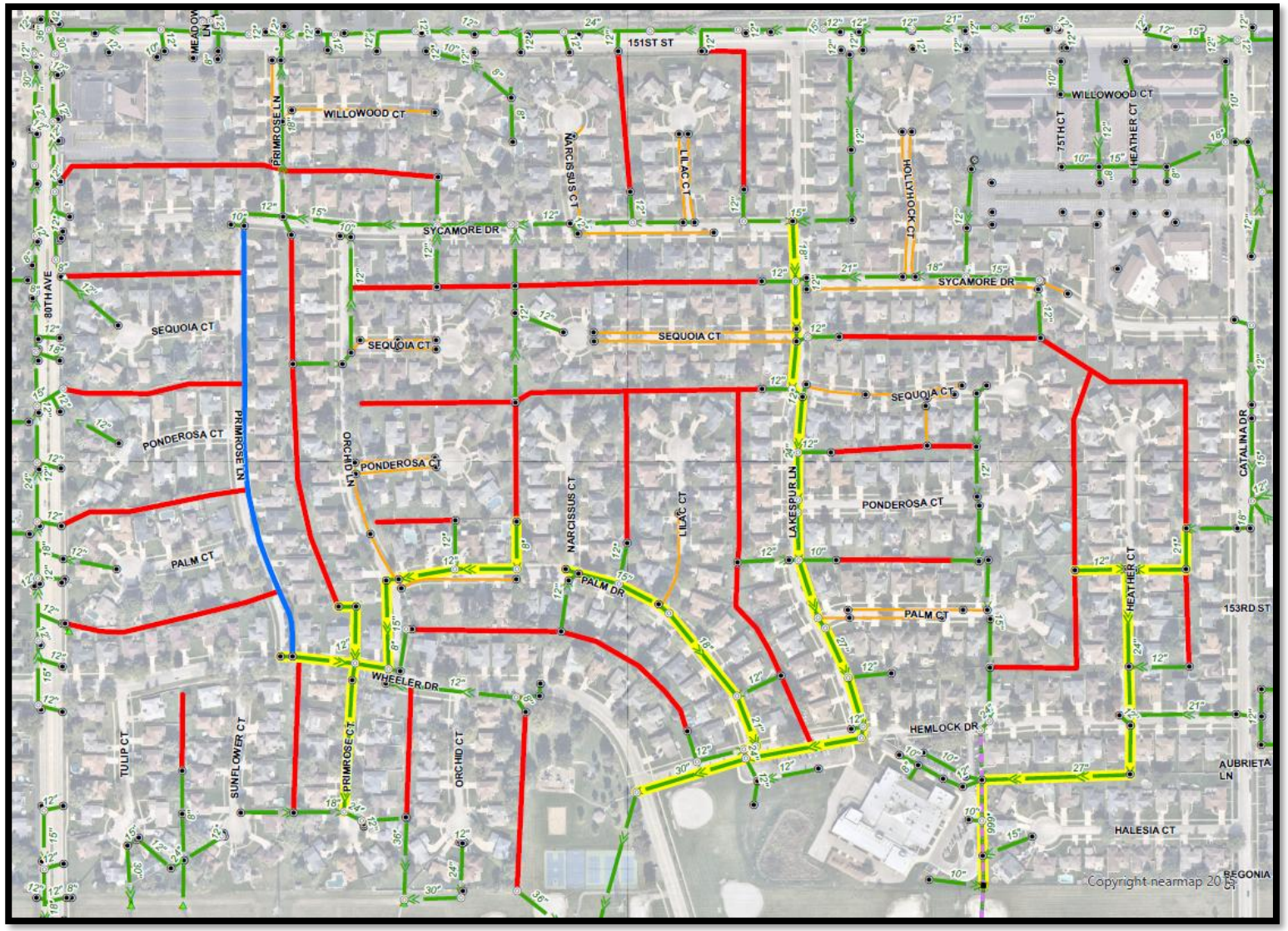
- The BBPP encourages the reduction of turf mowing areas around the stormwater basins throughout the Village. As turf grass provides little to no erosion control, bare spots, mower wheel tracks and toe of slope scour are often observable.

- Village's Land Development Code currently requires a minimum of 15' of native shoreline plantings, also known as buffer yards, around all new stormwater basins (Section 6-305.D.8), with the intent of establishing resilient shorelines and hopefully avoiding the need for future restoration projects. A turf grass shoreline is no longer permitted.

QUESTIONS ?

Backup Slides

Storm Sewer Improvement Area - Catalina
2023 - 2025



Proposed Trunk Line (Approx. 1,260 LF)

Proposed Upsizing (Approx. 6,550 LF)

ORLAND PARK

Typical Restoration Costs

- Shoreline Erosion Repair $100 or more, per linear foot
  - Design, permitting, restoration/construction
  - 500 lineal feet of restoration ~$50,000
- Vegetation Management $2,500 per acre (over a 3-year period)
- Brush Clearing $15,000 to $20,000 per acre
- Pipe Section Repair $3,000 or more per location
- Dredging $150 per cubic yard
  - Example Cost -1 acre/foot ~1,600 cubic yards
  - Design, permitting, dredging, disposal, restoration, and observation +/-$250,000