MS4 Year 22 (2024) Inspection Summary Report
Skokie Consolidated Drainage District

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Prepared For:
Skokie Consolidated Drainage District (SCDD)

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Tab 1 - Inspection and Methodology

The Skokie Consolidated Drainage District, which recently merged the East and West Skokie Drainage Districts, have approximately 500 outfalls combined along the stretches. To comply with the ILR40 NPDES permit requirements and track the overall health/condition of both waterways, inspections of both outfalls and streambank stretches were performed along the Skokie River and the Middle Fork of the North Branch Chicago River.

The Middle Fork and Skokie River run through 10 municipalities and 2 townships. These communities were contacted to determine inspection frequency (if any). Based upon the communication we received, 8 communities either perform their own inspections, or contract with a consultant. Minimal information regarding inspection locations and details were shared. It is worth noting, all pipes running into both the Middle Fork and Skokie River are owned by their respective communities in which they reside.

Although the district does not own any storm sewer systems, they are responsible for monitoring and maintaining the waterways into which these systems discharge. Based upon this understanding, GHA performed inspections of outfalls which may also be on the inspection rotation of the respective community. In the event a pipe is damaged or the water surrounding/exiting the pipe appears compromised, the district would notify the community and work to resolve the issue as appropriate.

1.1 Data

The data used to determine prime outfall inspection locations was originally collected by Lake County Stormwater Management Commission in 2014. This data includes outfall ID, location, photo and indicates whether there was a "problem" with the outfall structure and a description. GHA used this data to determine prime locations across both stretches of Rivers for inspection. Locations were chosen based upon public accessibility, "problem" status, and choosing enough to represent the entirety of each stretch. It is our understanding that Lake County Department of Transportation (LCDOT) conducts their own inspections, thus any roads maintained by LCDOT were excluded from our inspection.

Based upon the above listed criteria, a total of 38 outfalls were chosen for inspection. There were 7 outfalls inspected while in the field which were in the vicinity of those chosen based upon the above criteria. Inspection criteria included structural measures (shape/size of pipe, staining, damage etc.), water quality (colors, odor, floatables, etc.) and whether there is flow or not (triggers new line of questioning). These categories cover the necessary aspects required by the ILR40 permit and beyond, but also provide valuable data to monitor and assess each stretch accurately and effectively.

Tab 2 - Findings and Recommendations

2.1 Results

After performing field inspections in September 2024, a total of 30 outfalls were inspected. There were 10 outfalls within the naval base, Goodwill Naval Station Great Lakes and were inaccessible. 2 locations no longer had outfalls. There were a few locations which outfalls were replaced related to projects along the Skokie River. Outfalls 516-518 are new and are included in Appendix A. Photos of the streambanks associated with the outfalls inspected can be found in Appendix C.

2.2 Outfalls with Issues

Several outfalls were noted to have problems, most of which were structural. Below is a list of outfalls and their problems as well as their locations and associated exhibits. Please see Appendix A for the outfall inspection summary for photos and details of overall conditions.

Table 1: Outfall Problems

Outfall ID	River Stretch	Pipe Type	Problem	Location	Exhibit
2	MF	Clay tile	End of tile broke off	42.280656, -87.898466	9
5	MF	CMP*	Underside of pipe corroded	42.291049, -87.899853	8
44	MF	RCP*	Pipe broken at junction	42.221938, -87.864225	11
121	Skokie	Clay tile	Erosion between pipe and river	42.206544, -87.830614	3
118	Skokie	CMP*	Needs stabilizing – underside is eroded away	42.205533, -87.830522	3
119	Skokie	CMP*	Needs stabilizing – underside is eroded away	42.205623, -87.830528	3
109	Skokie	CMP*	Buried nearly 75% filled w/sediment	42.199975, -87.826802	2
26	Skokie	Clay tile	Pipe filled 25% w/sediment	42.177164, -87.813319	1
38	Skokie	CMP*	Buried w/sediment	42.167046, -87.806707	1
20	Skokie	RCP*	End section broken off pipe	42.238082, -87.849292	6
24	MF	N/A	Ditch – no pipe	42.241278, -	10

				87.881210	
21	Skokie	RCP*	End section disconnected from pipe	42.248122, -87.853708	7
121	Skokie	Clay tile	Erosional feature forming where water exits pipe	42.208634, -87.830838	3
516	Skokie	RCP*	Minor algal bloom	42.229568, -87.844528	4
518	Skokie	PVC*	Underside of pipe cracked	42.227660, -87.843650	4

*CMP: Corrugated metal pipe
*RCP: Reinforced concrete pipe
*PVC: Polyvinyl chloride

2.3 Engineering Recommendations

Based upon the outfalls listed in section 2.2, the following are recommendations related to the issues listed. One outfall not noted above, SCDD 3, appears to have broken off as there are pieces in the water. There are currently no structural issues, although banks are eroded which was likely the cause of the broken pipe. Our recommendations based on our observations of the inspected outfalls are listed in Table 2 below. There were numerous stretches of both the middle fork and Skokie River which were heavily eroded. The severity of the observed erosion is listed in Table 3 below, 1 being minor erosion and 5 being severely eroded.

Table 2: Recommendations

Outfall ID	Recommendation
2	Replace tile and stabilize eroded banks – regrade banks and stabilize with native vegetation as slopes are severe
5	Repair eroded bank and stabilize underside of pipe, replacing and raising pipe height to lift pipe off the ground and reduce risk of future sediment filling pipe
44	Reconnect end section to pipe and repair surrounding erosion where the River is undercutting the banks
121	Stabilize soil beneath pipe, potentially replace entirety of pipe to extend farther out from bank and support new pipe below
118	Provide support below pipe
119	Provide support below pipe
109	Replace buried pipe with new pipe extending farther out, closer to channel to remove possibility of being buried again
26	Fill beneath pipe to stabilize

38	Replace pipe and extend into channel to avoid future burying/fill with sediment
20	Reattach and add support beneath end section
24	Add rock to bottom of gully to prevent further erosion
21	Reconnect end section to pipe, provide structural support beneath newly secured end section
516	Perform water quality testing at this location – perform site investigation/coordinate with Lake Forest to determine point source (GHA)
518	Patch pipe to ensure flow exits the pipe correctly – Overtime, pipe could create issues by flow exiting underside of pipe

Table 3: Channel Bank Erosion Severity

Channel	Location	Issue	Severity	Exhibit
Middle Fork	Between W Old Elm and W Everett Rd	Erosion of both sides of channel, vegetation overhanging due to undercut banks and steep slopes	3-4 (3 near outfall 44, 4 where outfall 294 is located)	1
Skokie	East of Danny Cunniff Park along Trailway Street – Highland Park	Extremely steep slopes with lack of vegetation leaving soils exposed and easily erodible – near outfalls 118, 118, and 121 where pipes 119 and 118 have fallen due to lack of support caused by erosion	5	3
Skokie	West of Highland Park Fire Department Station	Slopes steep and highly eroded, lack of vegetation leaves soils vulnerable to erosion. Pipes 109, 108 and 107 located here.	5	2
Skokie River	Hidden Creek Aqua Park	Erosion causing outfall 26 to fall into the water,	4	1

		exposed roots below soil layer		
Skokie	North of Deer Creek Courts on the southern edge of Bob-O-Link	Lack of vegetation leaves soils vulnerable to erosion	2	
Skokie	North of W Owentsia Rd where outfall 20 is located	Slopes vegetated but steep due to erosion	3	6
Skokie	West of Lake Forest Police Station near outfall 21	Steep slopes with lack of vegetation, soils vulnerable to further erosion	4	7
Middle Fork	North of Rockland Rd and just west of the Metra line where outfalls 2-4 and 515 are located	Steep slopes, little to no vegetation, undercut with risk to losing vegetation on top of slope	5	9
Middle Fork	Atkinson basin	Erosion located on north side of Atkinson Rd, especially where outfall 5 is located	2	8

Tab 3 - Future Planning

Based on our findings and feedback from the District, we have determined the path moving forward will include an increased number in outfall inspections and inspecting longer stretches beyond just those where outfall inspections are occurring. Next years inspections will include 48 outfalls on the Skokie and 15 on the Middle Fork. There are more outfalls on the Skokie than the Middle fork, hence the disparity. A map of outfall locations is attached in Appendix B (Exhibit 14).

Both the Skokie River and Middle Fork were broken into 5 sections (zones) (See Exhibit 13 in Appendix B). One zone will be inspected per year, thus over the 5-year period of the permit, 100% of the stream will be inspected. Inspections will include walking the specified stretch of stream where possible and taking note of issues including, but not limited to, water quality, blockages, erosion, and vegetative cover/quality. Any illicit discharge issues found during these inspections will be investigated in the field as much as possible, then mapping technology will be used to determine exact locations of illicit discharge sources