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## Larchmere Kendall Parking Lot Green Infrastructure Inspection

### Project Description

The Kendall and Larchmere Green Infrastructure Parking Lot Renovation is a green infrastructure project that includes pervious pavers and bioretention areas as stormwater control measures. The implementation of green infrastructure reduces the amount of storm runoff into the combined sewer system, improves the water quality, provides educational opportunities for residents, and adds beautification to the streetscape and neighborhood.

### Inspection

On Tuesday May 25<sup>th</sup>, 2021 a thorough inspection of the green infrastructure at Larchmere Kendall Parking Lot was conducted and noted some minor issues with the control measures. The first issue noticed upon inspection was the trash and litter found on the bottom and sides of the bioretention basin on the East side of the parking lot, see **Picture 1** below. All trash and litter must be cleaned to protect the integrity of the bioretention areas to ensure it functions as designed and to limit the possibility of any trash from clogging the outlet structures and drains during a storm event.

Another issue identified during the inspection is the inlet pipe for the North West bioretention area. It has a small build up of debris inside of the pipe, see **Picture 2** below. All debris found inside of the pipe must be cleaned out to reduce the chance of the inlet pipe of clogging and not allowing water to enter the basin as designed. The clogging of the inlet pipe could cause water to surcharge and potentially flood the upstream area of the inlet pipe. To ensure these problems don't occur, regular cleaning and maintenance on the inlet pipe should be conducted.

Lastly, it was observed that low points in the pervious pavers have formed near the curb inlets of the bioretention area on the east side of the parking lot, see **Pictures 3 & 4** below. The low are very minor and should be monitored if they continue to settle then they should be reset to the desired grade.

### Conclusion

Overall the control measures are in a good condition however, there are a few issues that require attention and action. The trash and litter build up in the eastern bioretention area and the debris inside the inlet pipe of the north west bioretention area are all minor problems that can become major problems in the future if left unchecked. But if these items are given the proper attention and maintenance, a healthy, strong and long lasting green infrastructure can be achieved. The pervious pavers shall continued to be inspected for additional settling.

## Photos



***Picture 1: Garbage and Litter Found in Bioretention Pond to the East***



***Picture 2: Debris in the Inlet Pipe of the Bioretention Pond to the North West***



***Picture 3 & 4: Low Points in Pervious Pavers to the East of the Parking Lot***

## Bioretention Area Inspection and Maintenance Checklist

<b>Facility:</b> Kendall Larchmere Parking Lot			
<b>Location/Address:</b> 12795 Larchmere Boulevard			
<b>Date:</b> 05/25/21	<b>Time:</b> 8:00 am	<b>Weather Conditions:</b> Clear/Sunny	<b>Date of Last Inspection:</b>
<b>Inspector:</b> Kyle Kotecki		<b>Title:</b>	
<b>Rain in Last 48 Hours</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>If yes, list amount and timing:</b>			
<b>Pretreatment:</b> <input type="checkbox"/> vegetated filter strip <input type="checkbox"/> swale <input type="checkbox"/> turf grass <input type="checkbox"/> forebay <input type="checkbox"/> other, specify: _____ <input type="checkbox"/> none			
<b>Site Plan or As-Built Plan Available:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Inspection Item	Comment	Action Needed
<b>1. PRETREATMENT</b>		
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Trash and debris have accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>2. DEWATERING</b>		
Standing water is present after 24 hours. If yes, describe sheen, color, or smell.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>3. INLETS</b>		
Inlets are in poor structural condition.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sediment has accumulated and/or is blocking the inlets.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Erosion is occurring around the inlets.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>3. VEGETATION</b>		
Vegetation is wilting, discolored, or dying due to disease or stress.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Vegetation needs to be controlled through mowing or manual removal.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>4. BIORETENTION MAIN INFILTRATION AREA</b>		
Trash and debris have accumulated.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Some trash has accumulated in the bottom of the bioretention area <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sediment has accumulated at the surface.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Topmost layer is caked or crusted over with sediment.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Erosion is evident.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Mulch is compacted.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sinkholes or animal borrows are present.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>5. SIDE SLOPES AND EMBANKMENT</b>		
Erosion is evident.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sinkholes or instability is evident.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>6. OUTLETS AND OVERFLOW STRUCTURE (i.e., catch basin)</b>		
Outlets or overflow structures in poor structural condition.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sediment, trash or debris is blocking the outlets or overflow structure.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Erosion is occurring around the outlets or overflow structure.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Height from surface of practice to top of overflow structure is insufficient to allow for ponding during rain events.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**Additional Notes**

The inlet pipe for the bioretention area to the North West of the parking lot has some debris/dirt that needs to be cleaned to prevent future build up.

**Wet weather inspection needed**    ☐ Yes   ☒ No

**Site Sketch:**

## Permeable Pavement Inspection and Maintenance Checklist

<b>Facility:</b> Kendall Larchmere Parking Lot			
<b>Location/Address:</b> 12795 Larchmere Boulevard			
<b>Date:</b> 05/25/21	<b>Time:</b> 8:00 am	<b>Weather Conditions:</b> Clear/Sunny	<b>Date of Last Inspection:</b>
<b>Inspector:</b> Kyle Kotecki		<b>Title:</b>	
<b>Rain in Last 48 Hours</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>If yes, list amount and timing:</b>			
<b>Pavement Type:</b> <input checked="" type="checkbox"/> permeable interlocking concrete pavement (PICP) <input type="checkbox"/> asphalt <input type="checkbox"/> concrete <input type="checkbox"/> other, specify:			
<b>Pretreatment:</b> <input type="checkbox"/> vegetated filter strip <input type="checkbox"/> swale <input type="checkbox"/> turf grass <input type="checkbox"/> forebay <input type="checkbox"/> other, specify: <span style="float: right;"><input checked="" type="checkbox"/> none</span>			
<b>Site Plan or As-Built Plan Available:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

\*Permeable interlocking concrete pavement (PICP)

Inspection Item		Comment	Action Needed
<b>1. PRETREATMENT</b>			
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Trash and debris have accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>2. PAVEMENT TRANSITION AREA</b>			
Non-permeable transition area at pavement edges is unstable/deteriorating.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>3. DEWATERING</b>			
Standing water is visible on the surface after a rain event.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>4. PAVEMENT SURFACE AND JOINTS</b>			
Sediment has accumulated on pavement surface.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Trash and debris have accumulated on pavement surface or around curbing.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Pavement has deteriorated, cracked, settled, or raveled.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sediment has accumulated in the joints of PICP.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Vegetation is growing in the joints of PICP.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Gravel is insufficient in the joints of PICP.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

### Additional Notes

Low points were identified to the East of the parking lot near the inlets into the bioretention area.

**Wet weather inspection needed**   ☐ Yes   ☒ No

**Site Sketch:**