

Bioretention Area Inspection and Maintenance Checklist

(EAST BASIN)

Facility:	ST. CASIMIR		
Location/Address:	8223 SOWINSKI CLEVELAND		
Date:	5/20/21	Time:	10AM
Weather Conditions:	CLOUDY	Date of Last Inspection:	NOT SURP
Inspector:	JOHN NIEDZIALEK	Title:	CPESSC
Rain in Last 48 Hours	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, list amount and timing:	SEE PHOTOS
Pretreatment:	<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		
Site Plan or As-Built Plan Available:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. DEWATERING		
Standing water is present after 24 hours. If yes, describe sheen, color, or smell.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3. INLETS		
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
3. VEGETATION		
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
4. BIORETENTION MAIN INFILTRATION AREA		
Trash and debris have accumulated.	<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 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
5. SIDE SLOPES AND EMBANKMENT		
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
6. OUTLETS AND OVERFLOW STRUCTURE (i.e., catch basin)		
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

SEE PHOTOS.

BASIN IN GOOD SHAPE -

NEW MULCH WAS ADDED JUNE 2020.

PLANTINGS OF SHRUBS/FLOWERS
STILL BEING DISCUSSED.

Wet weather inspection needed ☐ Yes ☐ No

Site Sketch:

East Basin (Behind Rectory and Church) Photo taken 5-26-21

Basin with new mulch added June/ 2020



East Basin (Behind Rectory and Church) Photo taken 5-26-21

Inlet pipe from rectory gutters

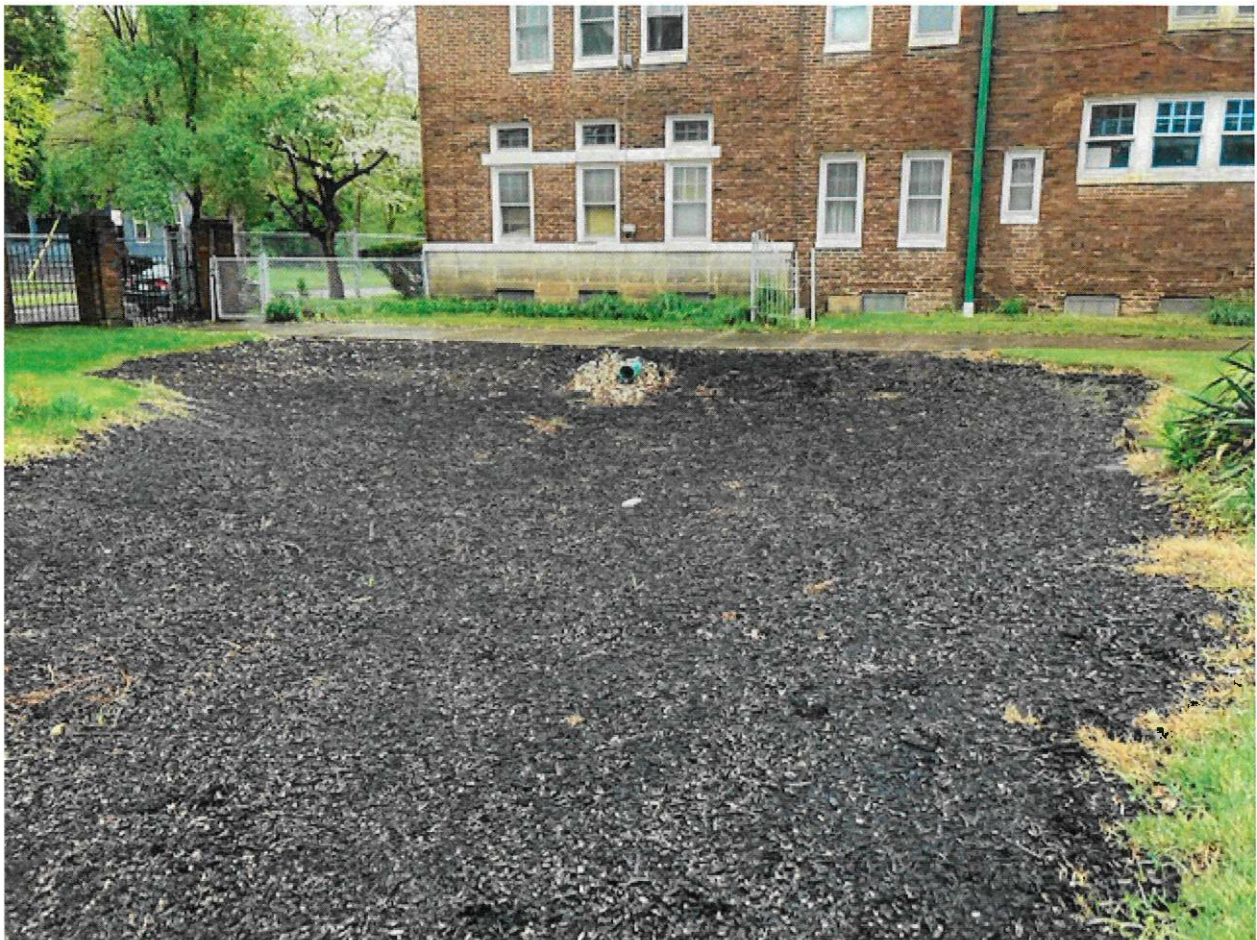


Outlet pipe at East basin behind rectory and church (photo taken 5-26-21)



(DURING RAIN EVENT)

East Basin-Photo taken 5/9/21 during 1.8" rainfall event showing complete infiltration



what is bioretention?

Bioretention areas are stormwater basins that use soil, mulch, and vegetation to treat runoff and improve water quality for small drainage areas. They give runoff a place to go so it doesn't overload the storm sewer system, contribute to local flooding, or damage streams and other aquatic ecosystems.

HOW IT WORKS
A bioretention area is a landscaped area that captures, stores, and filters stormwater runoff. It is designed to mimic natural processes and provide a place for water to infiltrate the ground.

What are the benefits of a bioretention area?
These features reduce stormwater runoff, naturally filter pollutants, and provide habitat for native plants and animals. They also improve water quality and reduce the risk of flooding.

Why plant a bioretention area in grass or ground cover?
Installing a bioretention area in grass or ground cover helps reduce stormwater runoff and filter pollutants. It also improves water quality and reduces the risk of flooding.

Water quality in a regional watershed
Water quality in a regional watershed is important for the health of the ecosystem. Bioretention areas help improve water quality by filtering pollutants and reducing runoff.

*** Plant choices**
Selecting plants that are native to the area and can tolerate wet conditions is important for the success of a bioretention area. Native plants are more likely to thrive in wet conditions and provide habitat for native wildlife.

Pretreatment area
A pretreatment area is a small basin that captures and filters stormwater runoff before it enters a bioretention area. It is designed to remove large debris and sediment.

Landscaped ponding area
A landscaped ponding area is a small basin that captures and stores stormwater runoff. It is designed to provide a place for water to infiltrate the ground and filter pollutants.

Filter layer (6")
A filter layer is a layer of material that is placed between the ponding area and the bioretention area. It is designed to filter out sediment and other pollutants.

Gravel layer and underdrain system
A gravel layer and underdrain system is a system that is used to collect and remove excess water from the bioretention area. It is designed to prevent waterlogging and maintain the health of the plants.

Mulch and soil layer
A mulch and soil layer is a layer of material that is placed on top of the filter layer. It is designed to provide a place for water to infiltrate the ground and filter pollutants.

Stormwater runoff
Stormwater runoff is water that flows over the ground and into a stormwater system. It is a major source of pollution and can cause flooding and damage to property.

Stormwater management
Stormwater management is the process of controlling the flow of stormwater. It includes practices such as bioretention, detention basins, and stormwater pumps.

Stormwater treatment
Stormwater treatment is the process of removing pollutants from stormwater. It includes practices such as bioretention, detention basins, and stormwater pumps.

Stormwater infiltration
Stormwater infiltration is the process of allowing stormwater to soak into the ground. It is a natural process that helps recharge groundwater and filter pollutants.

Stormwater storage
Stormwater storage is the process of holding stormwater for a period of time. It is used to prevent flooding and provide a place for water to infiltrate the ground.

Stormwater conveyance
Stormwater conveyance is the process of moving stormwater from one place to another. It includes practices such as pipes, ditches, and stormwater pumps.

Stormwater collection
Stormwater collection is the process of gathering stormwater from a specific area. It is the first step in stormwater management.

Stormwater treatment plant
A stormwater treatment plant is a facility that treats stormwater before it is discharged into a water body. It is designed to remove pollutants and improve water quality.

Stormwater management plan
A stormwater management plan is a document that describes the practices and procedures for managing stormwater. It is a key tool for preventing flooding and improving water quality.

Stormwater management system
A stormwater management system is a collection of practices and procedures that are used to manage stormwater. It includes bioretention, detention basins, stormwater pumps, and other practices.

Stormwater management practices
Stormwater management practices are the specific actions that are taken to manage stormwater. They include bioretention, detention basins, stormwater pumps, and other practices.

Stormwater management techniques
Stormwater management techniques are the methods that are used to manage stormwater. They include bioretention, detention basins, stormwater pumps, and other techniques.

Stormwater management strategies
Stormwater management strategies are the overall plans and approaches that are used to manage stormwater. They include bioretention, detention basins, stormwater pumps, and other strategies.

Stormwater management goals
Stormwater management goals are the objectives that are sought through stormwater management. They include reducing flooding, improving water quality, and protecting the environment.

Stormwater management objectives
Stormwater management objectives are the specific targets that are set for stormwater management. They include reducing runoff, improving water quality, and protecting the environment.

Stormwater management measures
Stormwater management measures are the actions that are taken to achieve stormwater management goals and objectives. They include bioretention, detention basins, stormwater pumps, and other measures.

Stormwater management actions
Stormwater management actions are the specific steps that are taken to implement stormwater management measures. They include installing bioretention areas, building detention basins, and operating stormwater pumps.

Stormwater management activities
Stormwater management activities are the tasks that are performed as part of stormwater management. They include site assessment, design, construction, and maintenance.

Stormwater management programs
Stormwater management programs are the organized efforts that are used to manage stormwater. They include bioretention, detention basins, stormwater pumps, and other programs.

Stormwater management systems
Stormwater management systems are the integrated collections of practices and procedures that are used to manage stormwater. They include bioretention, detention basins, stormwater pumps, and other systems.

Stormwater management infrastructure
Stormwater management infrastructure is the physical structures and facilities that are used to manage stormwater. They include bioretention areas, detention basins, stormwater pumps, and other infrastructure.

Stormwater management facilities
Stormwater management facilities are the specific buildings and structures that are used to manage stormwater. They include bioretention areas, detention basins, stormwater pumps, and other facilities.

Stormwater management equipment
Stormwater management equipment is the tools and machinery that are used to manage stormwater. They include bioretention areas, detention basins, stormwater pumps, and other equipment.

Stormwater management materials
Stormwater management materials are the substances and materials that are used in stormwater management. They include mulch, soil, gravel, and other materials.

Stormwater management services
Stormwater management services are the professional and technical services that are provided for stormwater management. They include design, construction, and maintenance services.

Stormwater management contractors
Stormwater management contractors are the companies and individuals that are hired to perform stormwater management services. They include bioretention area installers, detention basin builders, and stormwater pump operators.

Stormwater management consultants
Stormwater management consultants are the professionals who provide advice and guidance on stormwater management. They include engineers, planners, and other consultants.

Stormwater management committees
Stormwater management committees are the groups of people who are responsible for overseeing stormwater management. They include bioretention area committees, detention basin committees, and stormwater pump committees.

Stormwater management boards
Stormwater management boards are the governing bodies that are responsible for making decisions about stormwater management. They include bioretention area boards, detention basin boards, and stormwater pump boards.

Stormwater management commissions
Stormwater management commissions are the highest level of stormwater management authority. They are responsible for setting policy and overseeing all stormwater management activities.

Stormwater management agencies
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Stormwater management departments
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Stormwater management sections
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Stormwater management units
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Stormwater management committees
Storm



Bioretention Area Inspection and Maintenance Checklist (WEST BASIN)

Facility: <u>ST. CASIMIR</u>			
Location/Address: <u>8223 SOWINSKI CLEVELAND</u>			
Date: <u>5/26/21</u>	Time: <u>10AM</u>	Weather Conditions: <u>CLOUDY</u>	Date of Last Inspection: <u>?</u>
Inspector: <u>John NIEDZIALEK</u>		Title: <u>CPEFC</u>	
Rain in Last 48 Hours <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If yes, list amount and timing: <u>See Photos</u>	
Pretreatment: <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			
Site Plan or As-Built Plan Available: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. DEWATERING		
Standing water is present after 24 hours. If yes, describe sheen, color, or smell.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3. INLETS		
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. VEGETATION		
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
4. BIORETENTION MAIN INFILTRATION AREA		
Trash and debris have accumulated.	<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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5. SIDE SLOPES AND EMBANKMENT		
Erosion is evident.	<input type="checkbox"/> Yes <input 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 type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6. OUTLETS AND OVERFLOW STRUCTURE (i.e., catch basin)		
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

MINOR - REPLACE MULCH

SINKHOLE WAS REPAIRED BY ADDING ROCK IN 2019

Additional Notes

see photos
photos showing existing
CONDITION AS OF 5/26/21
✕ photo shows
INFILTRATION RATE ON
MAY 9, 2021 DURING
RAIN EVENT.

Wet weather inspection needed ☐ Yes ☐ No

Site Sketch:

West Basin (behind old convent building) Photo taken 5/26/2021

New mulch was added June 2020 (some minor scouring near inlet pipe



West Basin (behind old convent building) Photo taken 5/26/2021

Noting area of repair made in 2019 where rock was placed in area that was sinking)-still appears stable). This area may require future maintenance to monitor any new sinking.



what is bioretention?

Bioretention areas are stormwater basins that use soil, mulch, and vegetation to treat runoff and improve water quality for small drainage areas. They give runoff a place to go so it doesn't overload the storm sewer system, contribute to local flooding, or damage streams and other aquatic ecosystems.

DESIGNING
Bioretention systems are designed to capture and treat stormwater runoff from impervious surfaces such as roofs, parking lots, and streets. They are designed to mimic natural hydrology and provide a habitat for plants and animals.

What are the benefits of a bioretention area?
These features reduce stormwater runoff, naturally filter harmful bacteria and pollutants from stormwater, and support biological longevity of the region for the use of native plants.

Why plant a bioretention area on private property?
Installing a bioretention area can protect property below from stormwater and flood damage, stormwater and flood damage, stormwater and flood damage, stormwater and flood damage.

Water quality is a regional concern. Our community and the Northeast Ohio Regional Sewer District are dedicated to reducing stormwater runoff and its effects on the environment. Water quality and stormwater management are personal and community priorities.

Plant choices
Native plants are recommended for bioretention areas because they are well adapted to growing in their native area. Typically they are unlikely to require fertilizers or pesticides. Through constant, plant uptake, soil and water temperatures are moderated, and the surrounding area is protected from erosion and wind.

Pretreatment area
Flow to the pretreatment area is from the main stormwater line. The pretreatment area is designed to capture and treat stormwater runoff before it enters the bioretention area.

Underground ponding area
The underground ponding area is designed to capture and treat stormwater runoff before it enters the bioretention area.

Filter layer (6")
A gravelly layer of sand and pea gravel is used to filter out debris and sediment. The filter layer is designed to be replaced every 5 years.

Ground layer and underdrain system
A 12" deep gravelly layer is used to filter out debris and sediment. The ground layer is designed to be replaced every 5 years.

Mulch and soil layers
The mulch and soil layers are designed to capture and treat stormwater runoff before it enters the bioretention area.

USE THE SOIL
The soil is designed to capture and treat stormwater runoff before it enters the bioretention area.

Northeast Ohio Regional Sewer District



Showing West Basin on May 9, 2021 during 1.8" rainfall event.

Positive Infiltration /Outlet ok



INLET WITH SURROUNDING PAVER BY GARAGE

Permeable Pavement Inspection and Maintenance Checklist

Facility:	ST. CASIMIR		
Location/Address:	8223 SOWINSKI CLEVELAND		
Date:	5/26/21	Time:	10:00 AM
Inspector:	John Niezdzialek	Title:	CPESS
Rain in Last 48 Hours	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, list amount and timing: see photos & MAY 9	
Pavement Type:	<input checked="" type="checkbox"/> permeable interlocking concrete pavement (PICP) <input type="checkbox"/> asphalt <input type="checkbox"/> concrete <input type="checkbox"/> other, specify:		
Pretreatment:	<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		
Site Plan or As-Built Plan Available:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

*Permeable interlocking concrete pavement (PICP)

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<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.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. PAVEMENT TRANSITION AREA		
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
3. DEWATERING		
Standing water is visible on the surface after a rain event.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. PAVEMENT SURFACE AND JOINTS		
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 type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input 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 type="checkbox"/> No
Additional Notes		

AREA WAS CLEANED NOVEMBER 2020.

Wet weather inspection needed ☐ Yes ☐ No

Inlet with surrounding pavers-photo taken 5-26-21. Additional cleaning would help between pavers.
Pavers were cleaned November 2020.



Close up photo on May 26, 2021



Inlet with surrounding pavers-photo taken May 9, 2021 during 1.8" rain event . Infiltration is occurring.



EAST LOT - Between Church & Hall

Permeable Pavement Inspection and Maintenance Checklist

Facility: <u>ST CASIMIR</u>			
Location/Address: <u>8223 SCWINSKY CLEVELAND</u>			
Date: <u>5/26/21</u>	Time: <u>10AM</u>	Weather Conditions:	Date of Last Inspection: <u>0</u>
Inspector: <u>John NIEDZIELA</u>		Title: <u>CPECS</u>	
Rain in Last 48 Hours <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, list amount and timing: <u>See photos from 5/19/21 & 5/26/21</u>			
Pavement Type: <input checked="" type="checkbox"/> permeable interlocking concrete pavement (PICP) <input type="checkbox"/> asphalt <input type="checkbox"/> concrete <input type="checkbox"/> other, specify:			
Pretreatment: <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			
Site Plan or As-Built Plan Available: <input type="checkbox"/> Yes <input type="checkbox"/> No			

*Permeable interlocking concrete pavement (PICP)

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes <input 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 type="checkbox"/> No
2. PAVEMENT TRANSITION AREA		
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
3. DEWATERING		
Standing water is visible on the surface after a rain event.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. PAVEMENT SURFACE AND JOINTS		
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 checked="" type="checkbox"/> Yes <input 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

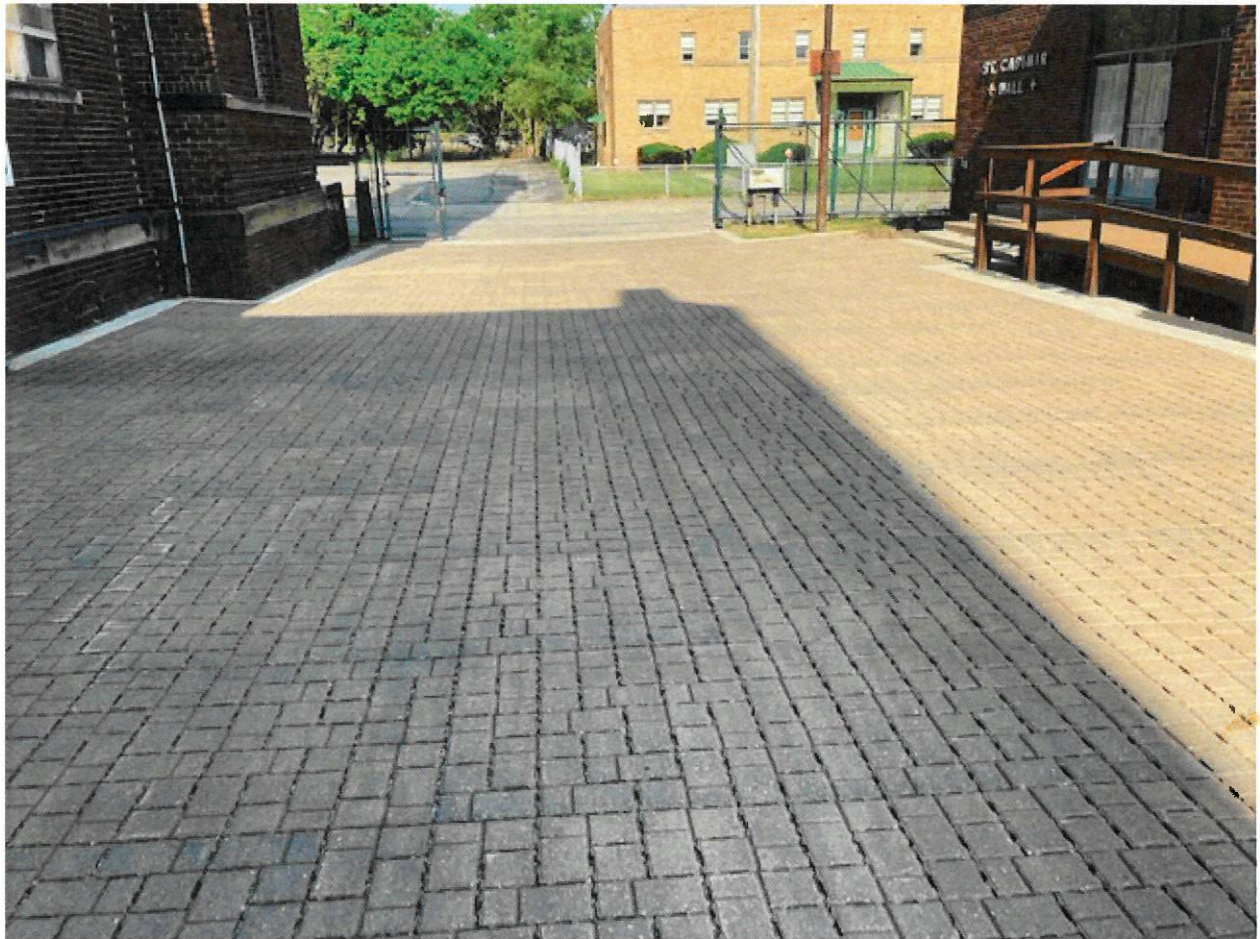
LOT WAS CLEANED/VACUUMED
NOVEMBER/2020.

NEXT CLEANING PLANNED
FOR 2021

VOLUNTEER & COMMUNITY
EVENT HELD TO MAINTAIN
PAVERS - see photos

Wet weather inspection needed ☐ Yes ☐ No

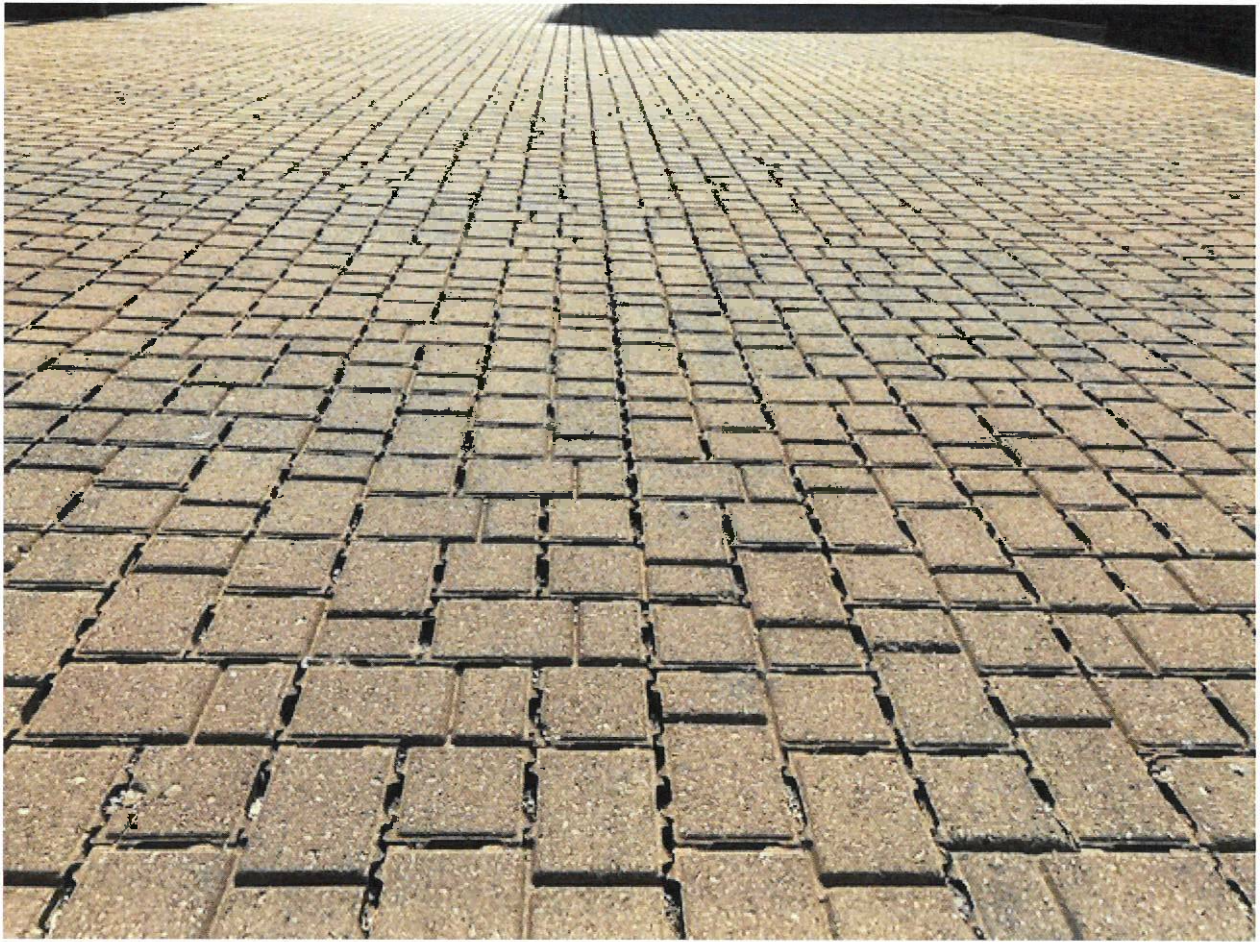
East Lot of Permeable Pavers Photo 5-26-2021



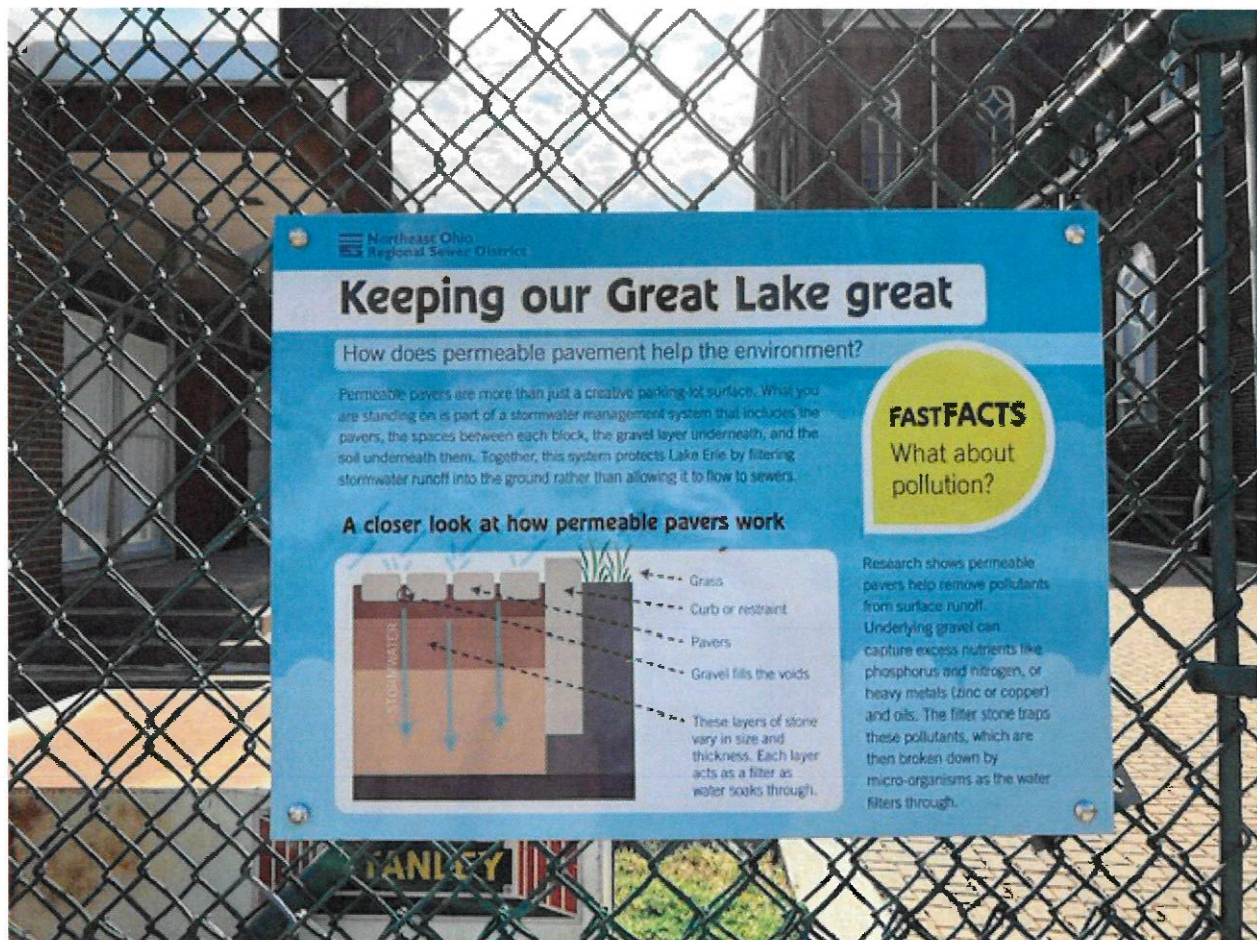
East Lot-Showing where gutters outlets on pavers



East lot pavers close-up Photo: 5/26/2021



Permeable paver signage for both lots Photo taken 5-26-2021



On Saturday November 7, 2020 members of St. Gabriel Parish in Concord participated in Community Service Day and spent the day working at St. Casimir Church. St. Gabriel parishioners teamed up with St. Casimir volunteers to provide maintenance of the Northeast Ohio Sewer District Green Infrastructure Project at the church.

Bioretention areas were cleaned out (Earlier this summer mulch was added), permeable pavers were cleaned of moss, sediment, and leaves and vacuumed , and rain barrels were drained for the winter season.

Volunteers also learned of the benefits of the project while providing hands on maintenance of the practices.

To top it off, volunteers picked up trash in the neighborhood and were treated to cabbage and noodles and paczki for lunch!!!

Volunteers Cleaning pavers November 9, 2020





Community Volunteers maintaining Green Infrastructure Project enjoying Polish food after!! November 7, 2020



May 9, 2021 photo of East lot pavers during 1.8' rainfall event



Showing East Lot on May 9, 2021 1.8" rainfall event near outlet of lot where all rain appears to have infiltrated with no offsite runoff observed



WEST LOT - ACROSS STREET FROM CHURCH

Permeable Pavement Inspection and Maintenance Checklist

Facility: <u>ST. CASIMIR</u>			
Location/Address: <u>8223 SCOWINSKI CLEVELAND</u>			
Date: <u>5/26/21</u>	Time: <u>10 AM</u>	Weather Conditions:	Date of Last Inspection: <u>0</u>
Inspector: <u>John NIEDZIALSKI</u>		Title: <u>CPESES</u>	
Rain in Last 48 Hours <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, list amount and timing: <u>See photos from 5/9/21 & 5/26/21</u>			
Pavement Type: <input checked="" type="checkbox"/> permeable interlocking concrete pavement (PICP) <input type="checkbox"/> asphalt <input type="checkbox"/> concrete <input type="checkbox"/> other, specify:			
Pretreatment: <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			
Site Plan or As-Built Plan Available: <input type="checkbox"/> Yes <input type="checkbox"/> No			

*Permeable interlocking concrete pavement (PICP)

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes <input 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 type="checkbox"/> No
2. PAVEMENT TRANSITION AREA		
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
3. DEWATERING		
Standing water is visible on the surface after a rain event.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. PAVEMENT SURFACE AND JOINTS		
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 checked="" type="checkbox"/> Yes <input 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

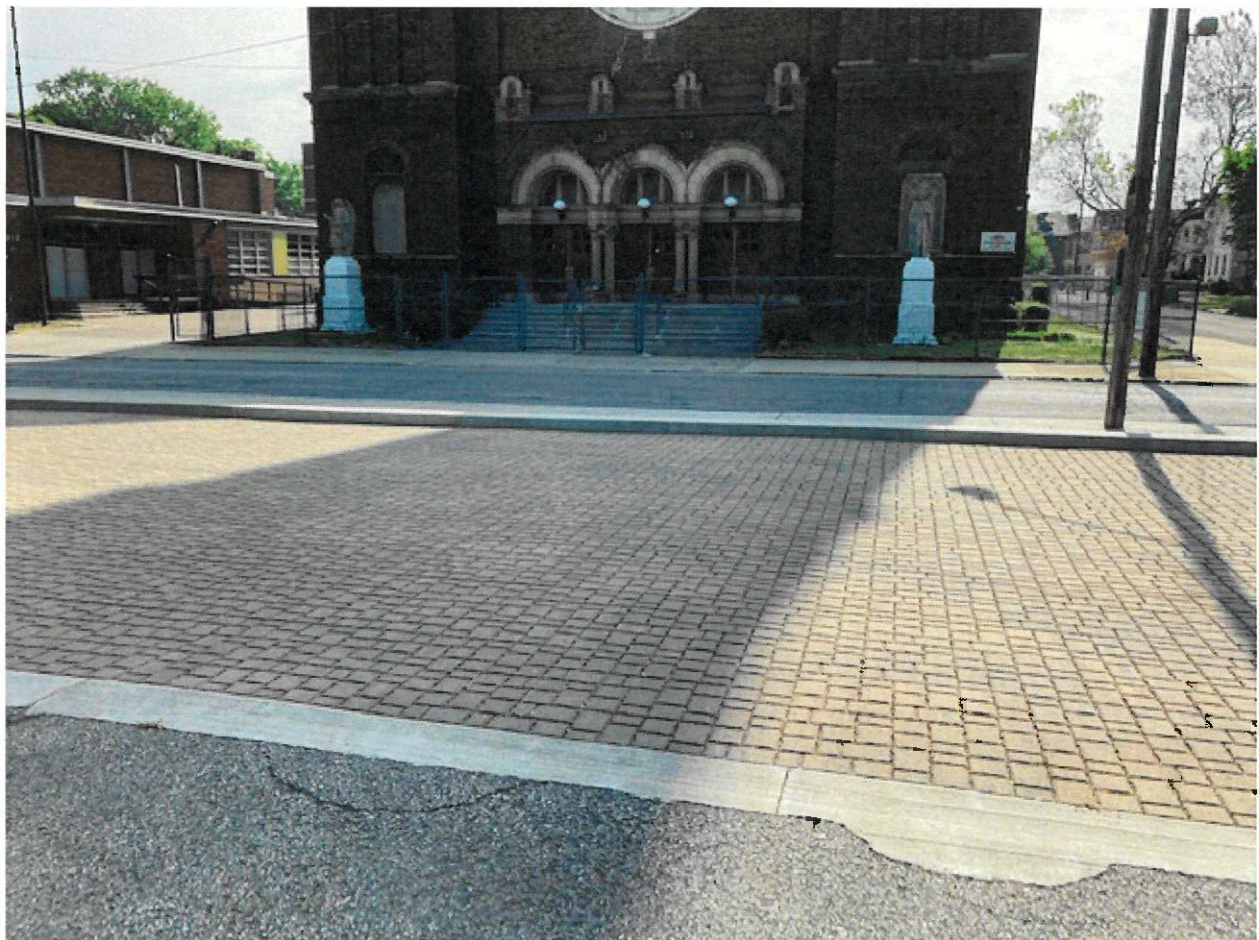
Additional Notes

LOT WAS CLEANED / VACUUMED
NOVEMBER / 2020.

NEXT CLEANING PLANNED
FOR 2021

Wet weather inspection needed ☐ Yes ☐ No

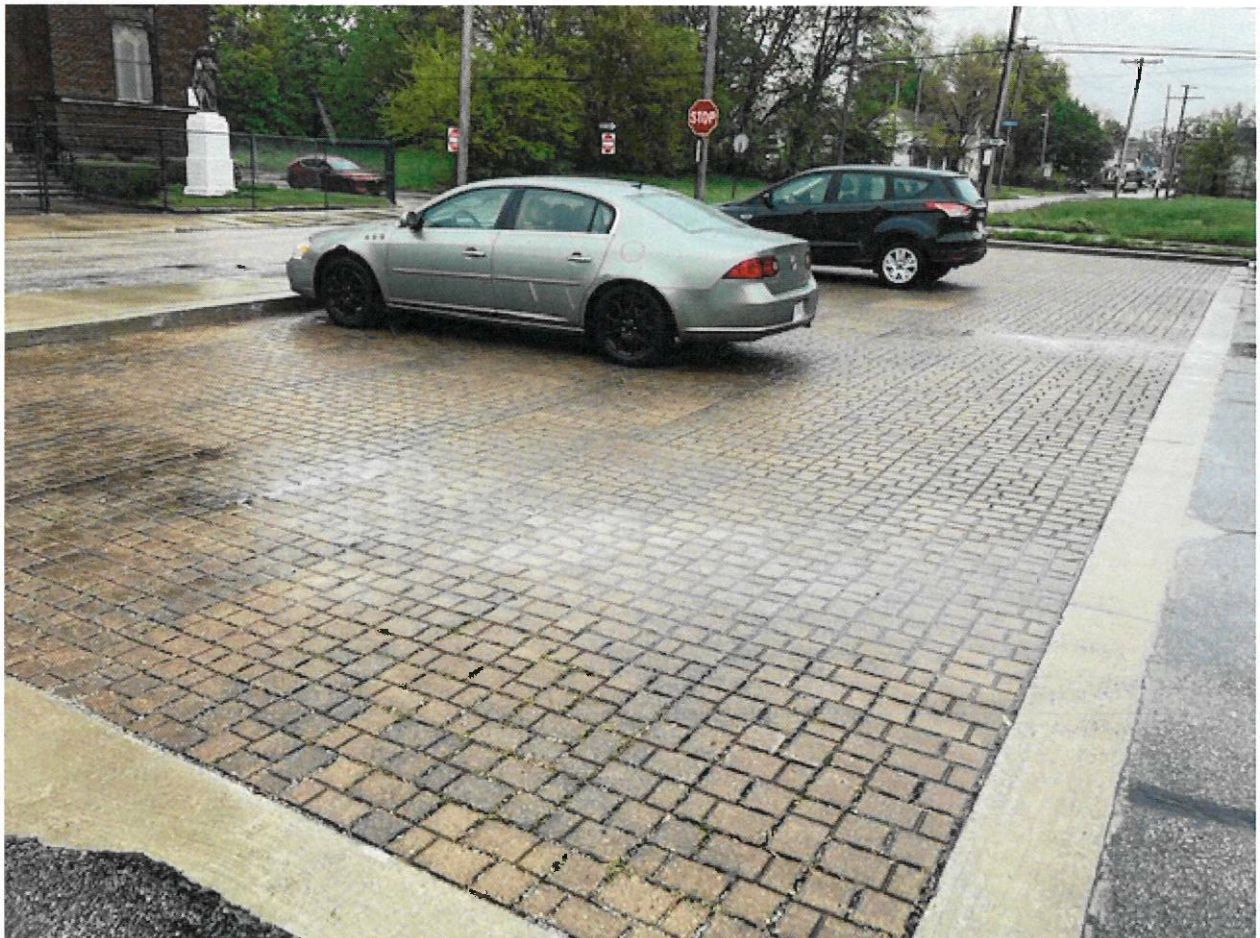
West lot pavers -photo: May 26, 2021



Close up of West lot pavers in good shape May 26,2021 photo



View of West Lot on May 9, 2021 during 1.8" rain event-minor ponding with good infiltration still visible



Rain Barrel/Cistern Inspection and Maintenance Checklist

Facility: <u>ST. CASIMIR</u>			
Location/Address: <u>8223 SOWINSKI CLEVELAND</u>			
Date: <u>5/26/21</u>	Time: <u>10AM</u>	Weather Conditions: <u>CLOUDY</u>	Date of Last Inspection: <u>?</u>
Inspector: <u>John NIEDZIALSKI</u>		Title: <u>CPESS</u>	
Rain in Last 48 Hours <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, list amount and timing:			
Pretreatment: <input type="checkbox"/> downspout screen <input type="checkbox"/> gutter guards <input type="checkbox"/> rain barrel filter/screen <input type="checkbox"/> other, specify:			
Site Plan or As-Built Plan Available: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment and debris have accumulated in gutter.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The screen or trap is clogged or not attached.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. FOUNDATION		
Barrel foundation is unstable.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3. INLETS/DOWNSPOUTS		
Gutters and downspouts joints are disconnected and/or leaks 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
Downspouts are disconnected to barrel and/or leaks 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
Diverter is disconnected and/or leaks 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
3. SPIGOT		
Visible leaks are present and connections are not tight.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Valves and knobs do not turn.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4. RAIN BARREL/CISTERN		
Sediment accumulated at bottom of barrel.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor of mildew present or algae is visible inside the barrel.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Cracks or leaks are visible in barrel.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Mosquito larva is visible in barrel.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5. OVERFLOW STRUCTURE		
Overflow is directed away from the structure or disconnected from the downspout.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No

Special Notes: An untrained individual should never enter a cistern. Never drink water from a rain barrel or a cistern. Always follow the manufacturer's manual and recommended maintenance schedule.

Additional Notes

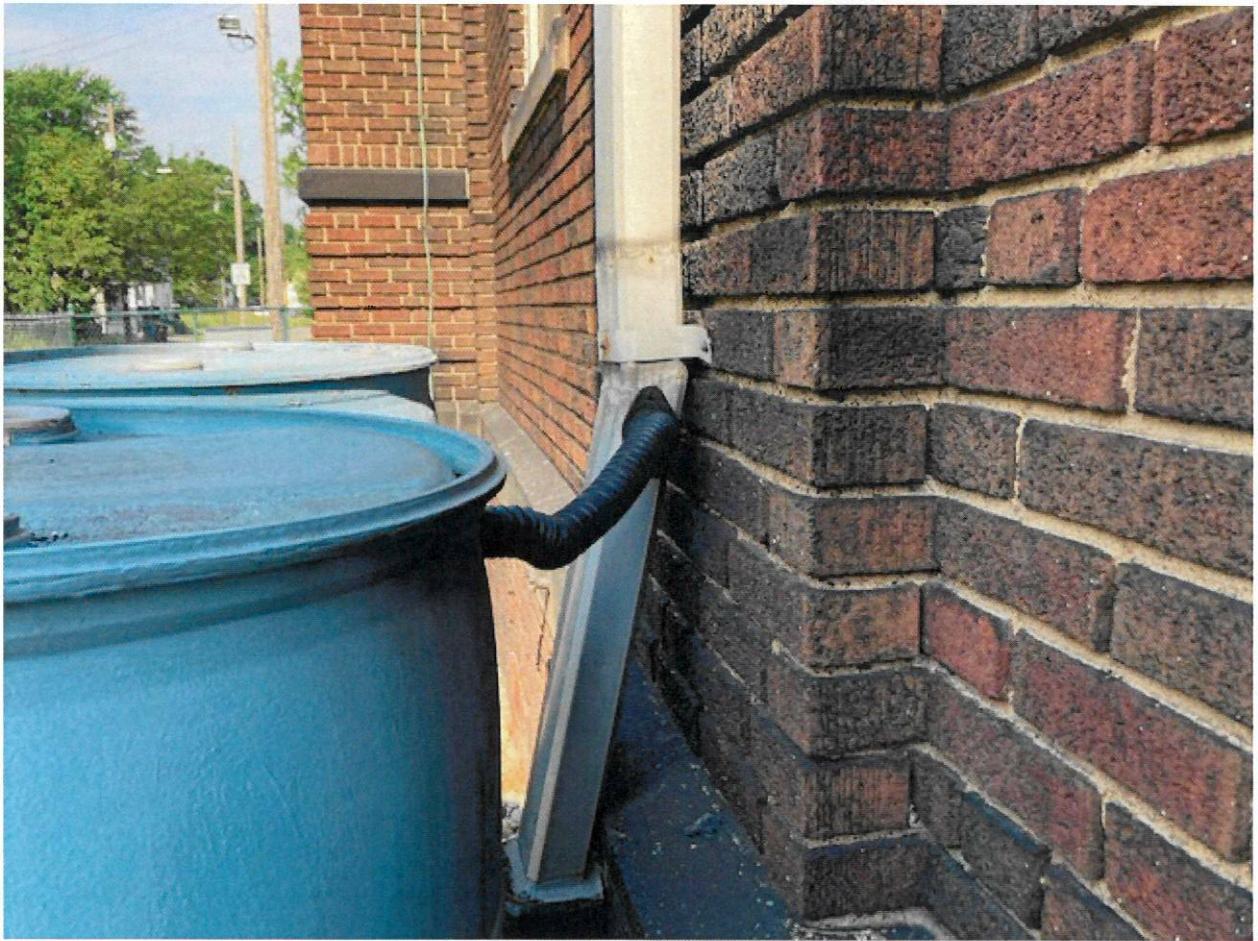
BARRELS ARE IN GOOD
SHAPE JUST RECONNECTED
AFTER DORMANT THROUGH
WINTER

Wet weather inspection needed ☐ Yes ☐ No

View of rain barrels 5/26/2021 (Paintings made by students at neighboring Willson Public School)



View of rain barrels connected 5/26/2021



Rain Barrell sign May 26, 2021



St. Casimir Green Infrastructure Project

Controlling Stormwater and Keeping our Great Lake great!

PROJECT PARTNERS

Project Funded by a Green Infrastructure Grant from:

Northeast Ohio Regional Sewer District

Project Designed By:

BRAMHALL
ENGINEERING AND SURVEYING COMPANY
400 MADISON ROAD AUSTIN, OHIO 44015
(440) 924-7878 (440) 916-7878 FAX

Project Constructed by 2017 by:

LCI
Lateral Co., Inc.

Additional Project Partners:

CITY OF CLEVELAND
CLEVELAND METROPOLITAN POLICE DEPARTMENT
COAST GUARD
SOILS WATER
Large County Soil & Water
Parkway
Ohio
Ohio Department of Agriculture
Ohio Interfaith Power and Light

"Let us be protectors of nature, protectors of God's plan described in nature, protectors of one another and the environment"
- Pope Francis

PROJECT SITE MAP

Stormwater Control Measures (SCMs) utilized on this project:
Bio-retention Cells which intercept roof water runoff from non-paved downspouts,
Permeable Pavement which captures stormwater runoff flowing over them and
Rain Barrels which harvest roof water that will be used for watering gardens.

Project Summary

The Northeast Ohio Regional Sewer District supports the strategic implementation and long-term maintenance of green infrastructure that protects, preserves, enhances, and restores natural hydrologic function, including funding projects within the combined sewer area through the Green Infrastructure Grants Program. Green infrastructure refers to stormwater source control measures that store, filter, infiltrate or evapotranspire stormwater to increase resiliency of infrastructure by reducing stress on wet-weather drainage and collection systems which increase co-benefits in support of healthy environments and strong communities.

This Green Infrastructure Project is home to the historic St. Casimir Parish which has stood since 1893. In an urban site such as St. Casimir, (>72% impervious) it can be difficult to achieve results that reduce the amount of runoff reaching the sewers due to the large percentage of surface area that drains directly to the sewers, however, the naturally sandy and well-drained soils in the area make this challenge easier. The green infrastructure makes the most use of the Diocesan property's sandy soils by keeping a significant amount of stormwater runoff from ever reaching the combined sewers. By capturing, and redirecting stormwater runoff from rainfall and snow melts, a high percentage of annual stormwater runoff will be removed from the combined sewer system.

