



STORMWATER MANAGEMENT COMMISSION

Meeting Minutes

Meeting Date: April 16, 2020, 1:30 p.m.

Issued Date: May 4, 2020

Location: Brookside Subdivision, Unincorporated Gurnee, Lake County, IL

Topic: Resident concern about stormwater/changes to drainage within subdivision

Attendees	Representing	Contact Information
Juli Crane	Lake County SMC	jcrane@lakecountyil.gov ; 847-377-7708
Brian Frank	Lake County PBD	bfrank@lakecountyil.gov ; 847-377-2086
Steve Carlson	County Board	SCarlson@lakecountyil.gov
James Quinn	Brookside Master Association Board Member	Jimq3339@icloud.com ; 847-612-3339
Jim Matejka	HOA Board Member	Jemsam98@msn.com ; 847-855-1817

Discussion Points/Comments:

- The first four people above met to review and discuss Brookside HOA concerns about changes in stormwater within the Brookside Subdivision: The HOA seems to be wetter in recent years, and this is exacerbating problems created as much as 30 years ago. Mr. Matejka joined mid-way through the first of three stops during the field meeting (see attachment 1). The HOA provided clarification of areas of concern in attachment 2, provided after the field meeting.
- FIRST STOP: Marsh split by N. Old Woods Trail (South Loop)
 1. Stormwater volume from developed areas to south – SMC acknowledged the increase in rainfall per State Bulletin 70 and the rights established by Illinois water law. Also, recognized that stormwater regulations have changed over the years and a facility or site would reflect requirements based on regulations at the time of development.
 - a. Walmart (Gurnee) – The detention basin appears smaller. Is maintenance/ dredging needed to restore the stormwater storage volume at the basin? What are the maintenance requirements? Are they being followed/implemented? What is the operational procedure/requirement for the pump mechanism (e.g., when does it turn on and pull water out of the basin)?

ACTION: SMC will forward these questions/concerns to the Village of Gurnee (via these minutes) and facilitate disbursement of the Village's response. Note that Gurnee previously provided the following response to the concern about basin reconfiguration and apparent reduction in storage volume via 4/6/20 email, as modified in a 4/30/2020 email: [When Walmart expanded in 2008, they reconfigured their stormwater basin. The new wet bottom design incorporated a pump system allowing the normal water level to be below the outfall resulting in additional bounce in the basin and the requisite needed amount of storage volume (Attachment 6). Even though the footprint was decreased, the amount of storage volume was increased. Current basin storage volume is 6.04 ac-ft. The pump system is designed to kick on when water starts to flow out of the basin at elevation 744.50. A single pump run will discharge at 1.3 cfs out through an 18" storm sewer into a vegetated swale at elevation 750.00. From that point, the water travels south to twin 24" culverts (that serve as the emergency overflow route) through the berm at elevation 748.1 and travels into the Grandwood Park wetland complex. A two-pump run is designed to trigger at elevation 747.0 and will double the output of the pump system to 2.6 cfs. The Village of Gurnee performs annual inspections of the stormwater systems at all sites in the village to verify that proper maintenance is being performed. The Walmart basin is currently in compliance.]

- b. Car Dealership (Gurnee) – This area doesn't appear to have detention. Where/how is detention provided for this large area of impervious surface?

ACTION: Brian Frank will look at the records for Unincorporated Lake County and determine if detention requirements for the car dealership were part of the nearby Brookhill

Subdivision detention pond. [PBD 4/21/2020: Brookside Phase 5 plans showed a proposed commercial subdivision in this "Outlot F" area, and the proposed plans had the storm sewers tying directly into the detention basin in Outlot P. This development did not move forward apparently but instead this property annexed and developed under the jurisdiction of the Village of Gurnee (Rosen Resubdivision - 1999).]

ACTION: SMC will forward this question/concern to the Village of Gurnee (via these minutes) and facilitate disbursement of the Village's response. [Gurnee 4/30/2020: The 1997 construction of the Rosen Honda and Lincoln Mercury dealerships utilized the existing stormwater basin that was designed and installed to accept drainage from their property (Outlot F) The drainage rights thereof are recorded on the subdivision plat of Brookside Phase 1 (2735811) and Brookside Phase 2 (2774556) along with the covenant documents.]

c. South of Grand Ave (Gurnee) – Adequacy of detention for the impervious area into the wetlands north of Grand.

ACTION: SMC will forward these questions/concerns to the Village of Gurnee (via these minutes) and facilitate disbursement of the Village's response. [Gurnee 4/30/2020: The Village of Gurnee regulated the development of the Grand Hunt Center in the early 1990s in accordance with the rules and regulations that were in place at the time. A good portion of the drainage from the site travels east along the Grand Avenue right-of-way into the Des Plaines River. All drainage from the Target building around the corner to Jewel-Osco follows that easterly drainage pattern.]

2. Restriction of water movement through wetland – Participants observed approximately 6 inches of standing water on the north apron at the road crossing.

a. Density of cattails – SMC suggested management options, including prescribed burning, herbicide application, mowing (some maintenance companies have a machine that can cut up cattails in wetlands, including the company the HOA currently uses), cutting (on ice) as temporary measures to enhance flow.

ACTION: HOA will coordinate with their environmental management consultant to determine options and associated costs.

b. Absence of low-flow channel through wetland except on northern end. The amount/volume of water moving through the wetlands from increased off-site runoff is promoting down-cutting of Lambs Corners Creek (aka Tributary to Mill Creek – FEMA FIS) through to the clay soil beneath. The nick point associated with the creek will continue to migrate upslope naturally. Could conveyance of water through the wetland be enhanced (where currently the water is getting 'stuck' or 'delayed') by creating a low-flow channel?

ACTION: If HOA wishes to pursue this activity, permitting for wetland impacts may be needed. Would first have to determine jurisdiction (USACE or WDO/UDO), then determine permit requirements.

Mr. Carlson had an alternate meeting to attend and left at this point, as did Mr. Matejka. The remaining three people walked to the northern end of the wetland to observe the channel downcutting on Lambs Corners Creek. The channel bottom at this location has self-armored with rocks, but the banks are being undercut, which will result in channel widening over time—generally viewed as unhealthy for stream condition, plus resulting in downstream sedimentation.

ACTION: HOA can coordinate with their environmental management company to determine potential courses of action to address this and/or determine priorities.

- SECOND STOP: Central area (north of N. Old Woods Trail's north loop), by the horse alley and wooded area with tree mortality
 1. Dead trees – Many trees within east half of the lot (PIN #07-08-302-012) were dead. Trees appeared to be mostly be green ash and box elder. Bud break had not occurred, so distinguishing dead trees from living trees was difficult except for trees that had begun to shed bark. Living trees may be more evident in a few weeks.
SMC Opinion: Green ash mortality most likely relates to emerald ash borer damage rather than wetness.

2. Nuisance lot wetness/flooding – Brookside HOA concerned that increased wetness in the northwest corner of 36735 N. Old Woods Trail is due to drainage flow constriction within the adjoining Hunt Club Farms Unit 2 subdivision. The area of concern on the residential lot has a large weeping willow and is the low point within the property.
ACTION: SMC to review historic aerials and soils maps. [Based on SMC's review, this area was historically wet, being mapped as hydric soils (i.e., developed under conditions of historic soil wetness) and as FEMA Zone AE floodplain. The County's online maps show a hydroline (drainage) through that corner of the property that conveys water from up-drainage branches to the east (one on Hunt Club Farms and the other in the Brookside subdivision). Water ultimately discharges into Lambs Corners Creek to the west (PIN #07-08-302-012).]
ACTION: Recommend HOA/property owner maintenance of the drainage pattern through the residential lot and the adjacent outlot to reduce the depth/duration of nuisance flooding on the property. Appropriate permits should be obtained prior to performing any actions.
3. Wetness within horse alley – Efforts have been made to reduce wetness within the horse alley along the southern perimeter of Hunt Club Farms Unit 2 through installation of two green PVC pipes. Neither pipe had measures (debris racks) installed to prevent material from being washed into the pipe and restricting flow. The pipes appear to have been placed at locations where stormwater runoff braids through the Brookside HOA outlot to the south. The FEMA floodplain maps Zone AE floodplain through this area and braided around two upland "islands." The culvert for Lambs Corners Creek was submerged. There was a metal grate observed south of the horse alley that was clogged with sediment and lacked a cover grate across the top. It was not clear if that structure connected to the storm system, but it appears likely as a culvert discharge point was located north of the alley.
ACTION: Recommend HOA maintenance of the culverts and associated drainage patterns north and south of the horse alley to ensure conveyance is not blocked or reduced.
Permits/approvals may be needed prior to performing any actions.
4. Relocation of Lambs Corners Creek - During construction of Hunt Club Farms Unit 2, the creek was rerouted north of the horse alley around the southern perimeter of the subdivision (see attachment 3). [This likely required a permit from the Army Corps.] Rerouting the creek resulted in two right angles in the channel, which can affect conveyance flow, as does apparent lack of maintenance. The channel/drainage is heavily vegetated by Phragmites and other species, reducing the capacity of the channel and likely delaying flow conveyances as well.
ACTION: Recommend routine HOA/property owner maintenance of the drainage to ensure conveyance is not blocked or reduced. Permits/approvals may be needed prior to performing any actions.
5. Off-line Pond emergency overflow – The pond immediately north of the horse alley does not appear to have formal emergency overflow location (i.e., participants observed no rock at the overflow location). Further, there was a build-up of soil at the outer edge (i.e., adjacent to Lambs Corners Creek), where the ground surface appears to have built up due to willow establishment and development. That ground build-up results in an apparent reverse slope toward the basin, which would affect the elevation at which overflow would occur from the pond to the creek, as well as from the creek into the pond.
ACTION: Recommend PBD review approved plans for the basin to determine if it is functioning as designed. [PBD 4/22/2020: Attachment 5. Hunt Club Farms – As-built Sheet 7_12-10-1986" appears to indicate that the pond normal water surface is controlled by the tail water elevation of the adjacent drainageway (Lambs Corner Creek). No other issues observed in comparing the as-built plan to our inspection observations. We can reassess, in coordination with HOA or property owner, during low water conditions or following drainageway maintenance.]
ACTION: The HOA/owner should perform maintenance as needed to ensure the basin functions as designed. Permits/approvals may be needed prior to performing any actions.

- THIRD STOP: Pond southeast of N. Mill Creek Drive and outlet to channel leading to Mill Creek
 1. Online Pond – Concern that this pond is holding back more water (based on observation of submerged rip rap and underlayment fabric) and therefore creating a back-up /constriction of

drainage up-channel of the pond. A willow colony has developed at discharge point; some were cutback (hatchet? beaver?). Mesh hanging down from bridge crossing of outlet—what purpose?

ACTION: PBD to review files and aerials to determine if the pond has been intentionally enlarged (there also should be permits on file from PBD & the US Army Corps for installing the rip rap and fabric). [PBD 4/20/20: Attachment 4 provides a series of aerials regarding Jim's (HOA) concern with the downstream pond in Hunt Club Farms. I do not see evidence that this pond is being held to a higher water surface elevation than in the past. I do notice that the turf grass side of this pond is experiencing erosion while the unmanicured side is holding in place.]

ACTION: HOA/owner should perform regular maintenance of the pond and outflow to ensure water is not being backed up.

2. Culvert installation by N. Mill Creek Drive – A pair of large culverts was recently installed at the trail/horse alley just south of N. Mill Creek Drive. There is a shallow mud pile/debris at the upstream side of the culverts (not large enough to block flow).

ACTION: SMC to review permit files to see if this work was permitted (as a public development in floodplain).

ACTION: Owner to perform routinely scheduled maintenance to ensure continued free-flowing conveyance to and through the culverts.

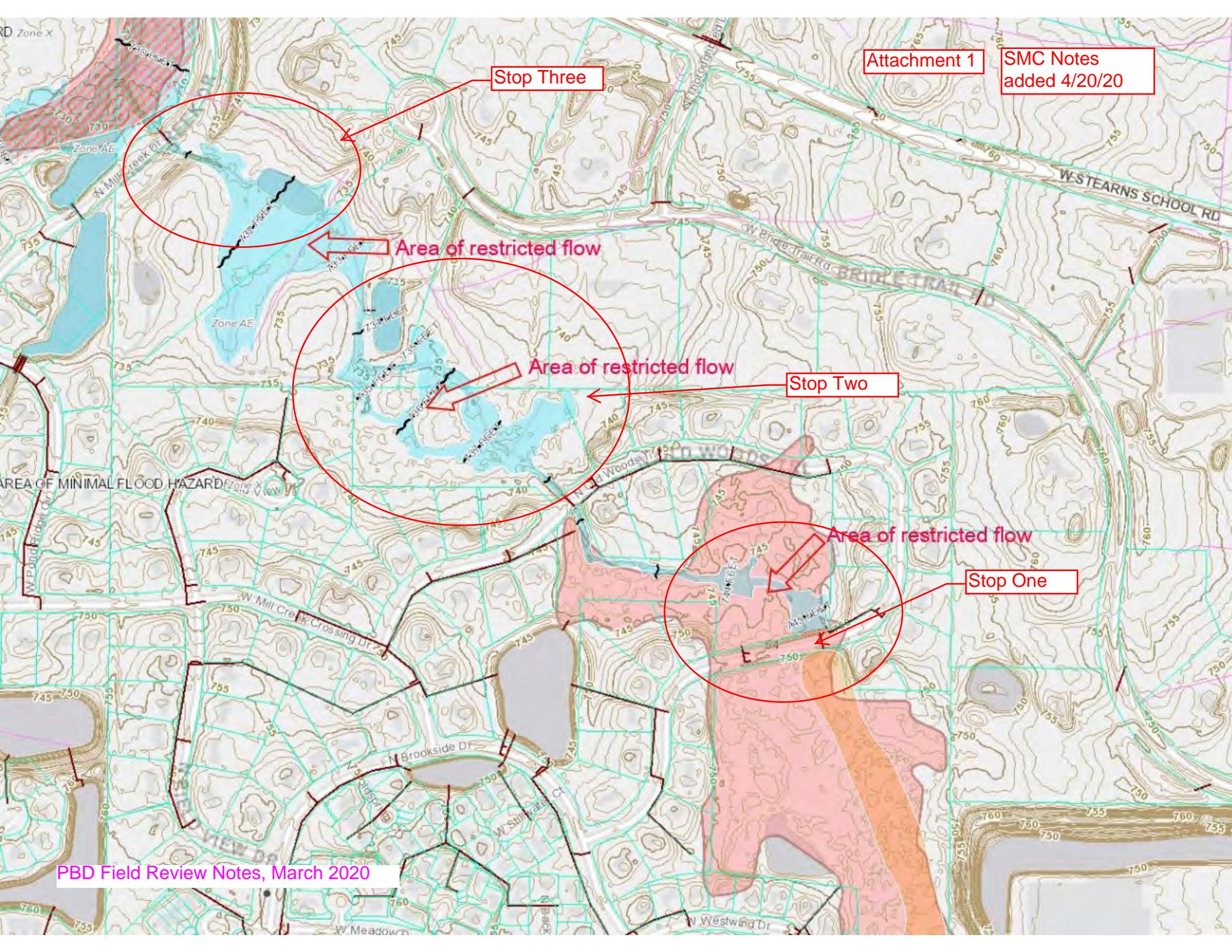
SMC Opinion: Depending on the plan of action, approaches to address HOA flooding concerns/issues may be eligible for Watershed Management Board (WMB) grant funding, through a competitive application process. SMC is happy to meet prior to HOA submission of a WMB application to provide suggestions to help maximize potential scoring. Water quality-related projects (only) do not tend to score competitively, but flood-related projects typically score well, as do combination flood and water quality projects.

Attachments:

1. PBD: Area of restricted flow (with SMC notes on Field Meeting "Stops")
2. HOA: Brookside Drainage revB
3. HOA: Hunt Club Farms Creek obstruction
4. PBD 4-20-20 attachment
5. Hunt Club Farms – As-built Sheet 7_12-10-1986
6. Walmart Drainage

xc: Mike Warner/Kurt Woolford, SMC
David Ziegler/Heather Galan/Nathan Leach, Village of Gurnee
Dan Krill/Eric Steffen/Joel Krause, PBD
Kristy Vik, President, Brookside Village HOA

Attachment 1



PBD Field Review Notes, March 2020

Attachment 1

SMC Notes
added 4/20/20

The diagram below illustrates the drainage path for the Brookside subdivision, which is on the north side of Grand Ave. west of Hunt Club Rd. There are 4 areas of concern labeled A, B, C and D in the diagram. A represents the drain for the neighborhood while B, C and D represent external water sources.

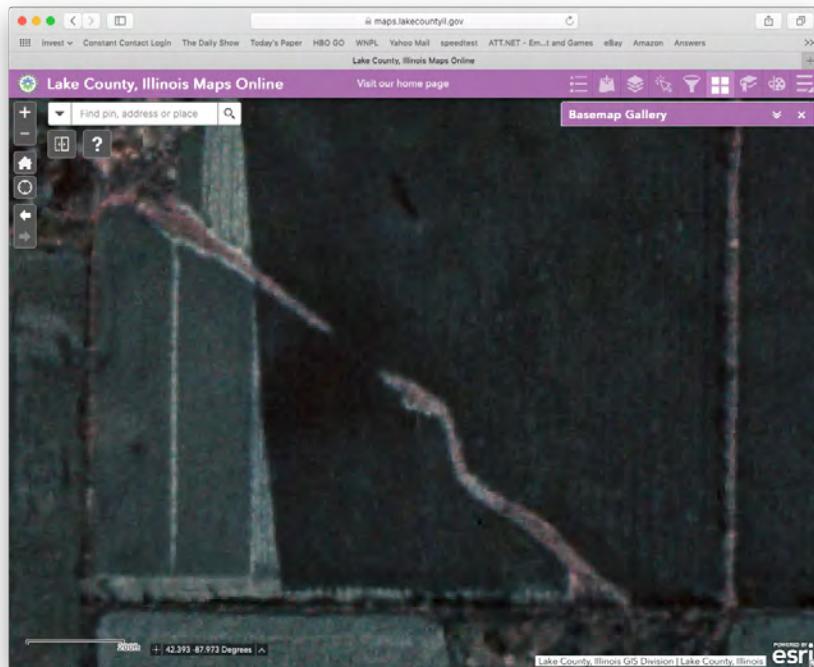


Area A

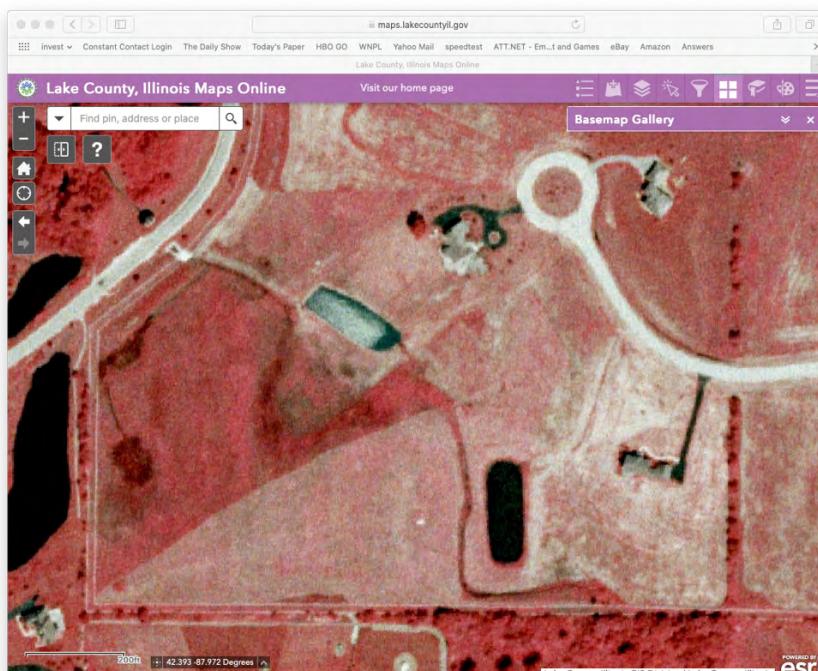
This is the drain for Brookside. It eventually flows into Mill Creek. Where the creek crosses the boundary between Brookside and Hunt Club Farms, which happens to include a bridle path, the creek appears to be obstructed on Hunt Club Farms property. This has caused the wooded area on the Brookside property to become much wetter, killing the trees which grow naturally. In approximately 1990 during the construction period, the creek was moved and a pond created on the Hunt Club Farms property. See the aerial photos below for a 1980 vs. 1993 comparison.

Brookside Master Association
Neighborhood Drainage Report

Attachment 3



Area A North of Brookside in 1980



Area A North of Brookside in 1993
Owned by 17557 W. Bridle Trail Rd.

Brookside Master Association
Neighborhood Drainage Report

The creek from 1993 follows the property line and has contributed to wetland expansion on both sides of the property line.

- Diversion of an established creek around the newly created pond probably needed a permit. Was a permit issued?
- The second pond in which the creek flows has had a dam built to raise the water level in the pond. This has caused a backup of water in the area of the property line. The dam needs to be removed.
- A few years ago, new pipes were installed under the bridle path where it parallels N. Mill Creek Dr. Which contractor did that work and who approved it?

Area B

Area B drains into the Brookside subdivision. Brookside is part of unincorporated Lake County and the property of Area B was annexed by Gurnee. The property was developed into a car dealership. As such, almost all the surface is covered with asphalt without apparent retention capability.

- Is there any water retention capability on the property?
- Do they contribute anything to the not-for-profit homeowner's association for maintenance of the association's retention pond that the car dealer uses?

Area C

When Wal-Mart expanded its store in 2009, the size of the retention pond on the property was reduced. In addition, a lift pump was installed to allow pumping of Wal-Mart stormwater into the wetlands, which are part of the Brookside subdivision. Area C was annexed by Gurnee and Brookside is unincorporated Lake County.

- Are there rules concerning how often and when the pump is allowed to run?
- How often is the reduced size pond dredged?

Area D

A retention pond on the south side of Grand Ave. drains Home Depot's parking lot into a culvert under Grand Ave. into Brookside wetlands.

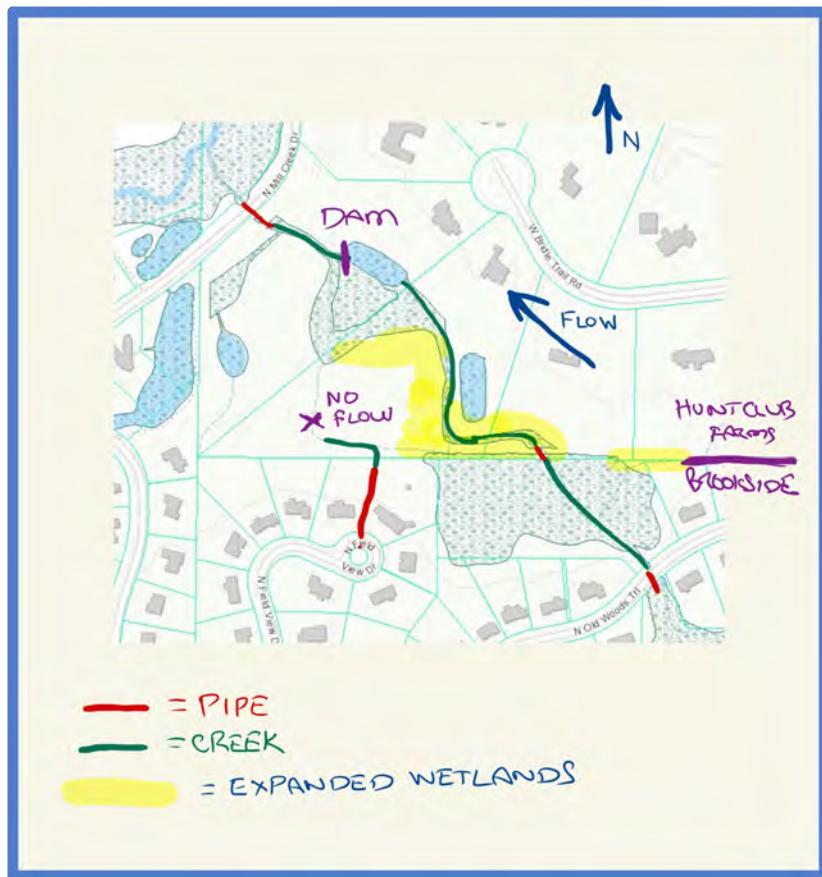
- Is Home Depot or the owner of the mall area meeting the water retention requirements?

Bottom Line

- Gurnee should be verifying that the areas B, C and D businesses are meeting their requirements for drainage. Can county Storm Water Management tell Gurnee what they need to do?
- Hunt Club Farms and/or the current property owners need to remove the dam and reestablish the creek or turn that back corner into a retention pond with a good drain.

Brookside Master Association
Hunt Club Farms Creek Obstruction Report

The diagram below illustrates the drainage path for the Brookside subdivision, which is on the north side of Grand Ave. west of Hunt Club Rd through the Hunt Club Farms subdivision and eventually to Mill Creek at the top left. There is a pipe under the bridle path between Brookside and Hunt Club Farms. It is a much smaller diameter than any other pipe in the drainage path and causes water to reach a higher level on Brookside property.



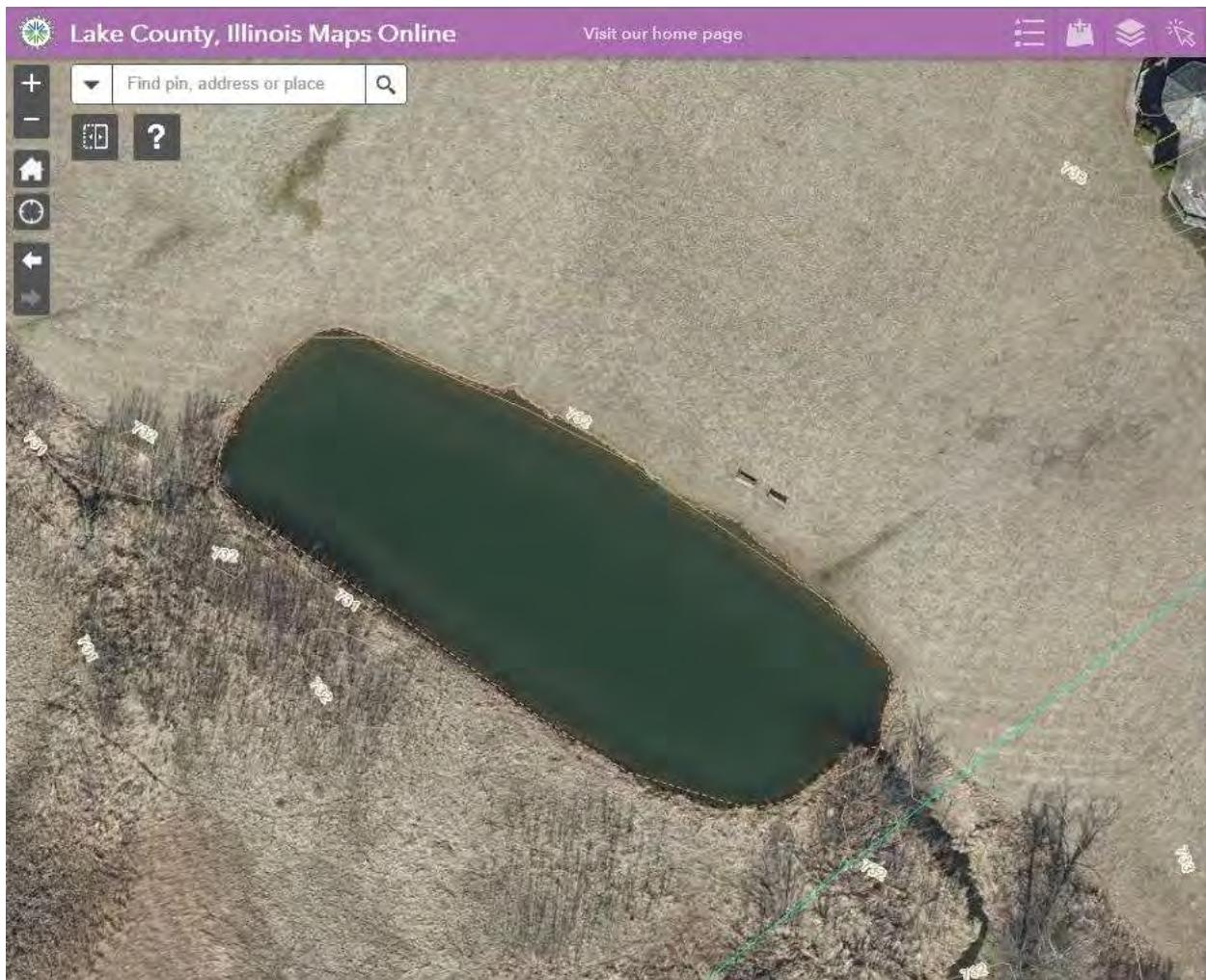
DAM

An obstruction has been built at the west end of the pond in the drainage path for Brookside. This obstruction raises the level of the water in the pond by 12-18 inches. In turn, the wetland area has expanded and has resulted in flooded land even during dry periods. Riprap was added to the pond shoreline at some point. It is now submerged. The obstruction must be removed and the original pond level restored.

NO FLOW

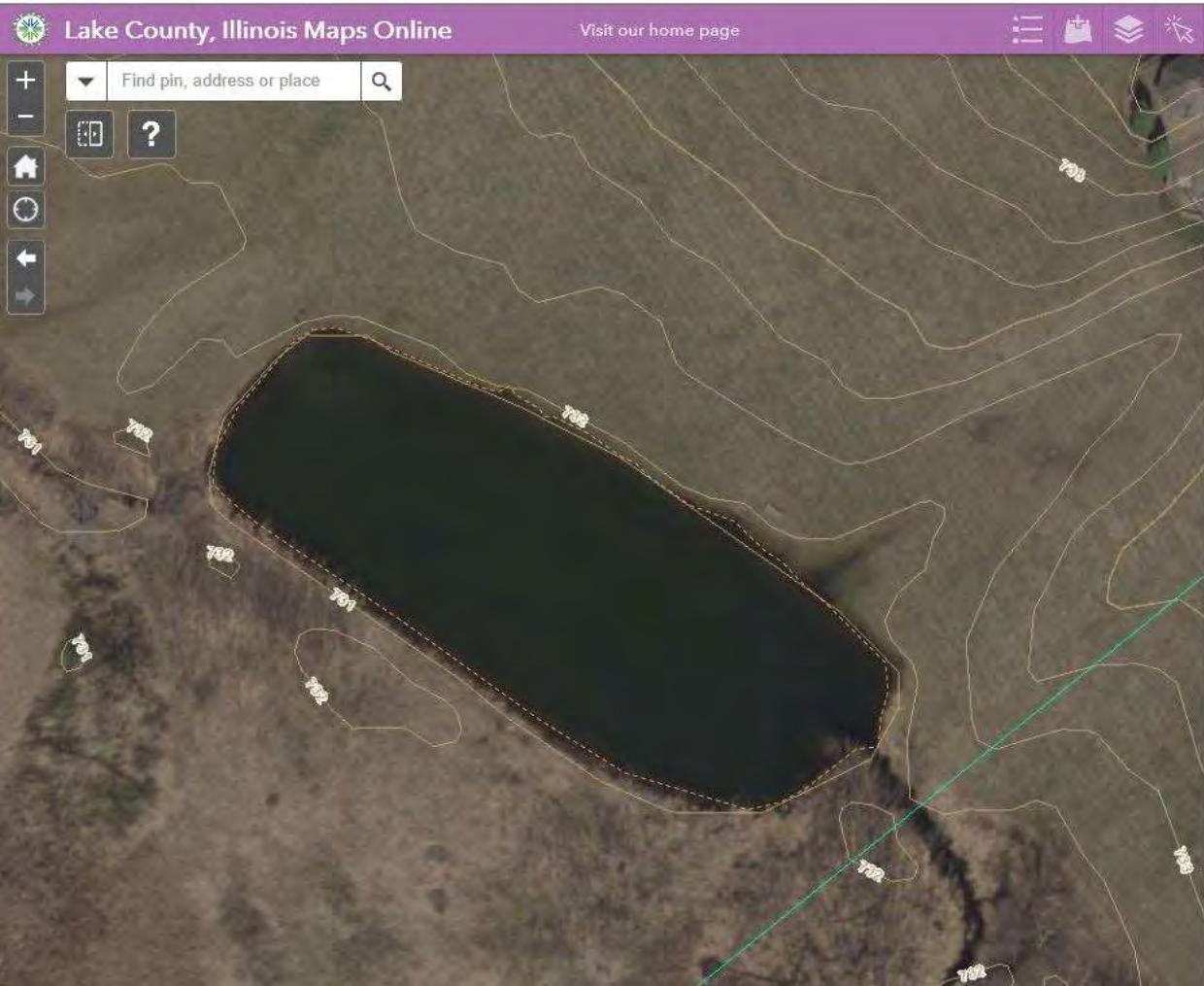
Brookside Drive and Field View Drive drain through storm sewers and a culvert to the area marked NO FLOW. At one time this flow would have made it to Mill Creek, but no longer does. The water pools on the bridle path north of Brookside. This creek needs to be re-established. Once the obstruction is removed it could be connected to the main drainage creek.

Attachment 4

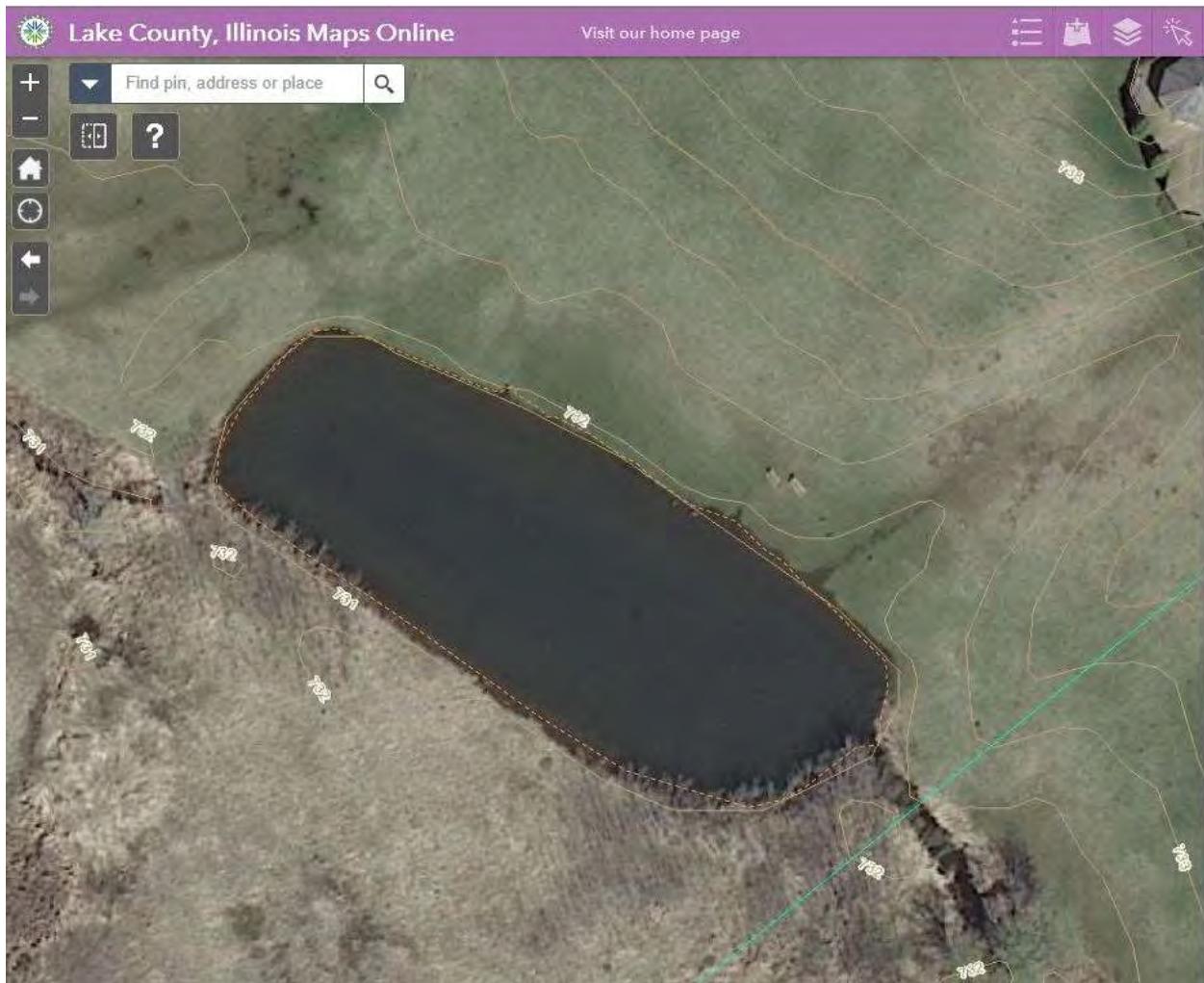


2018 pond limits aerial – See approximate shoreline highlighted with orange dashed line. Kept this line work for all years to see difference. -BLF

Received from PBD
on 4/20/2020



2015 aerial with 2018 pond limits



2010 aerial with 2018 pond limits



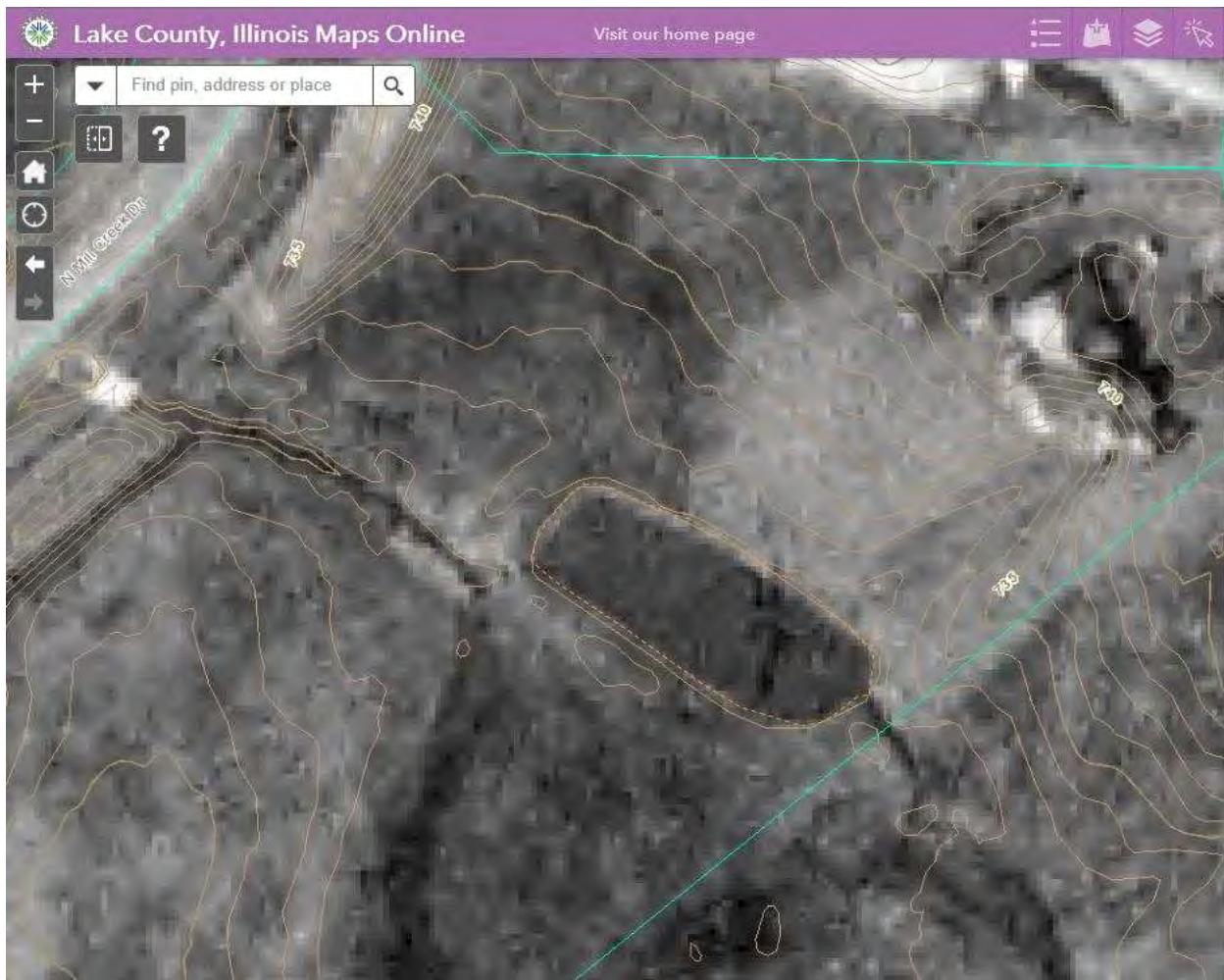
2007 (year contours/topo were taken) aerial with 2018 pond limits



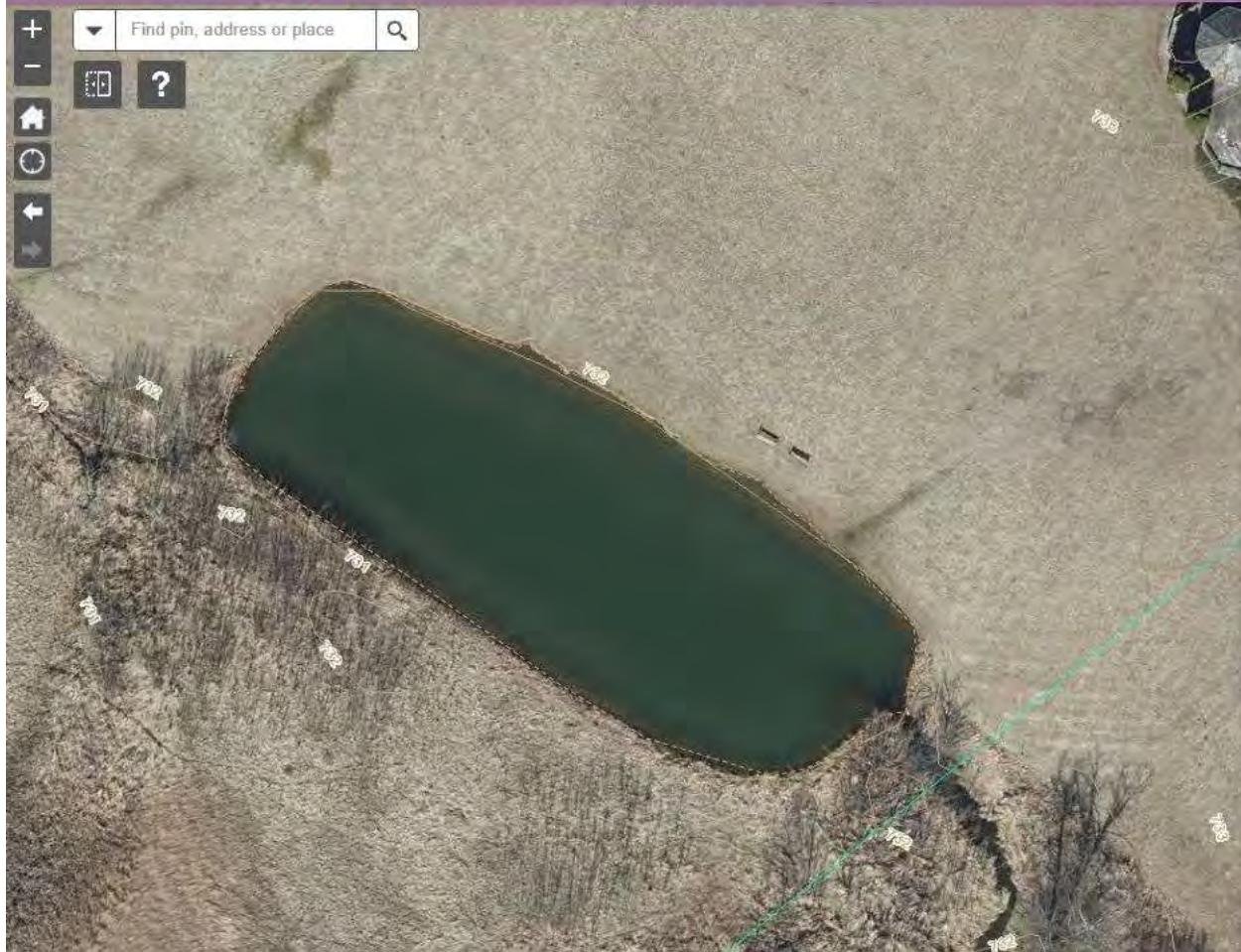
2002 aerial (older aerials have lower resolution – zoomed out) with 2018 pond limits

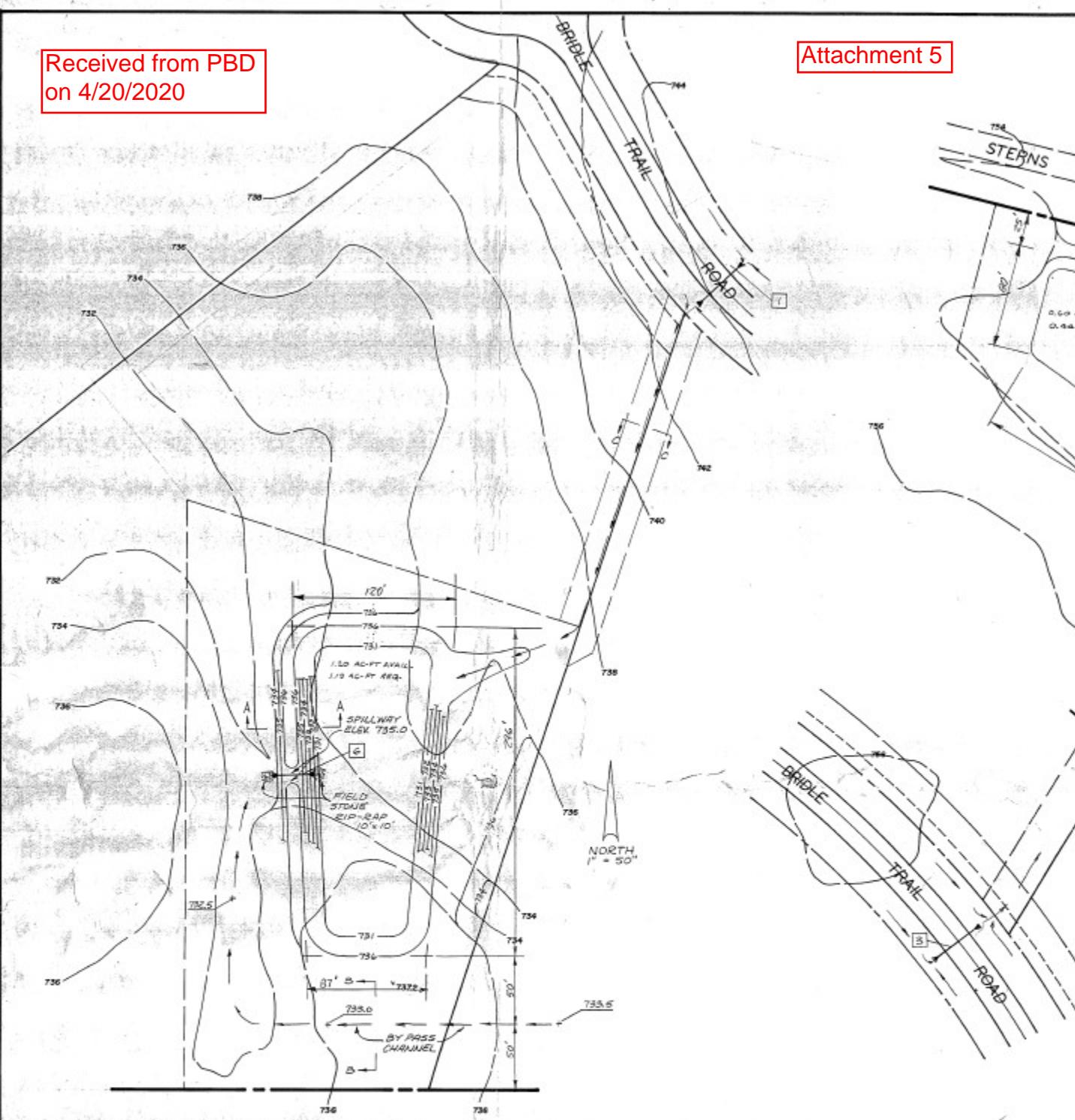


2000 aerial (older aerials have lower resolution – zoomed out) with 2018 pond limits

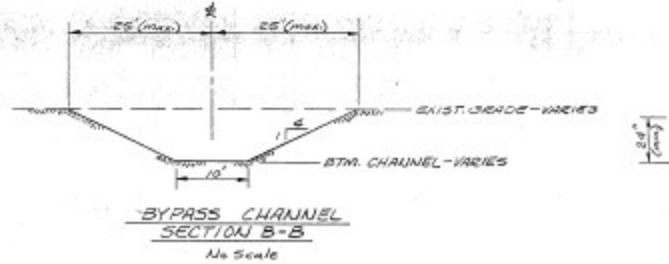
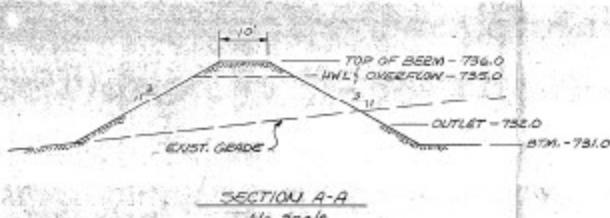


1993 aerial (County Stormwater Ordinance effective in October 1992) with 2018 pond limits

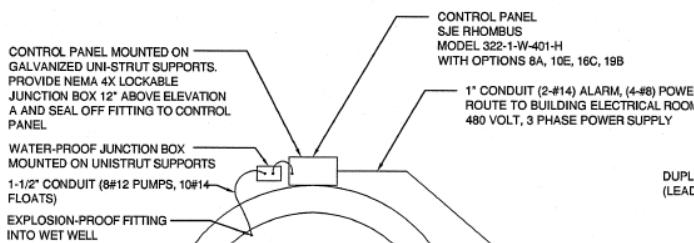




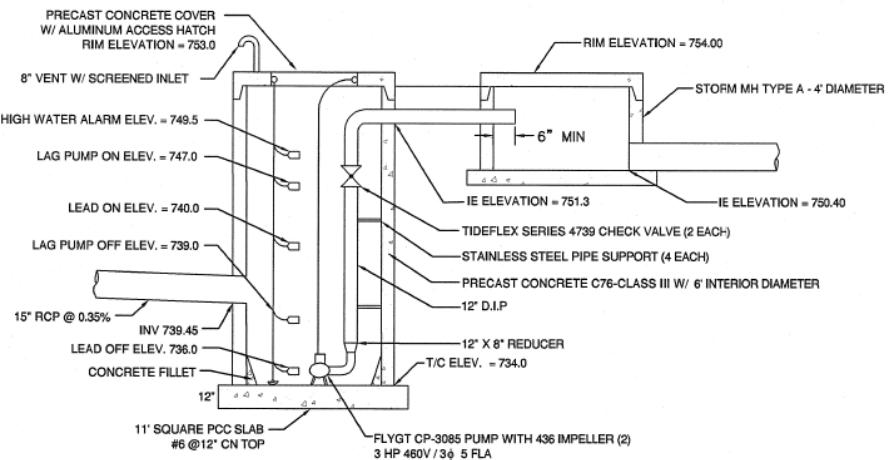
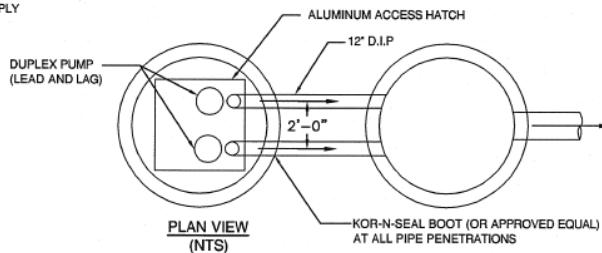
DRAINAGE AREA 'A'
(SHEET 5)



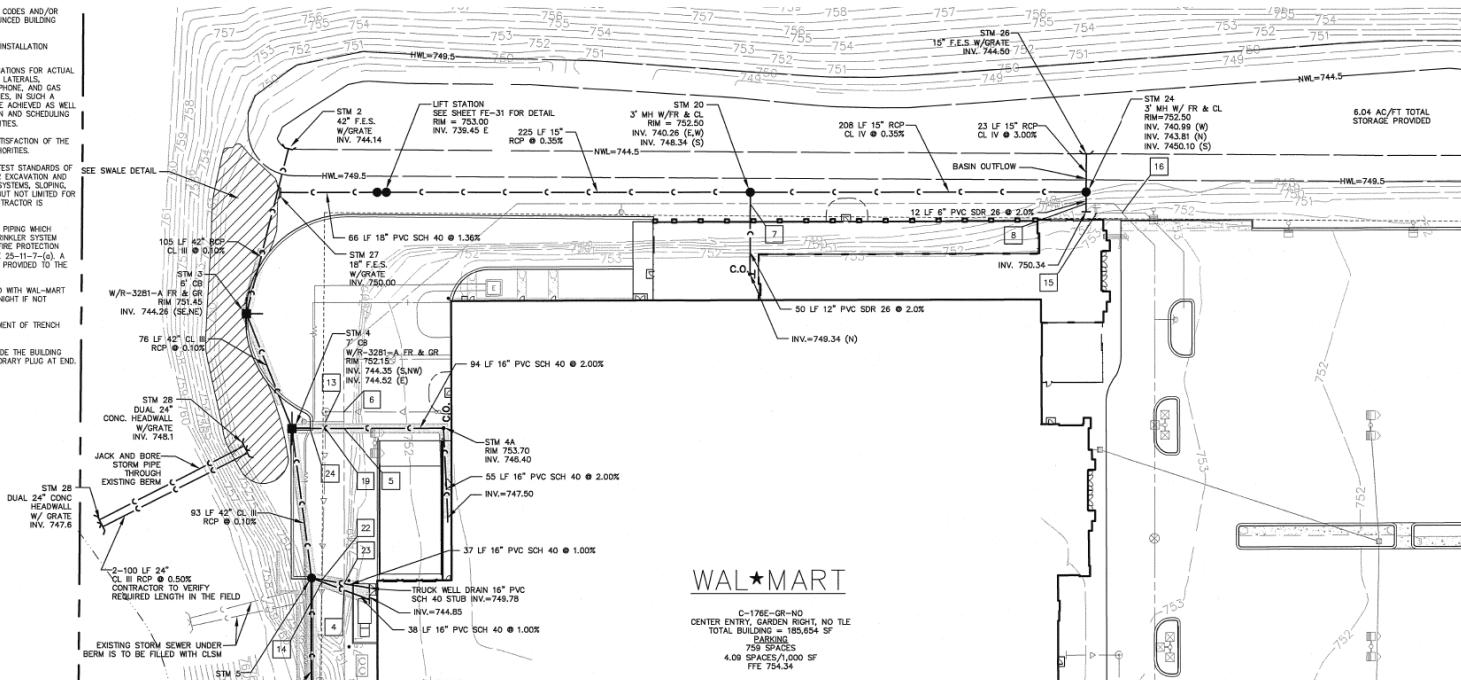
DRAINAGE
(SHEET 5)



LIFT STATION (4' MH)
SURFACE PLAN VIEW
(NTS)



STORM LIFT STATION
N.T.S.



Received by Village of
Gurnee on 4/30/2020