Glenview Park Golf Club

March 10, 2016

When all of us come together and work towards a common goal, we can and will accomplish something amazing and beneficial for our community.

Today's Presenters

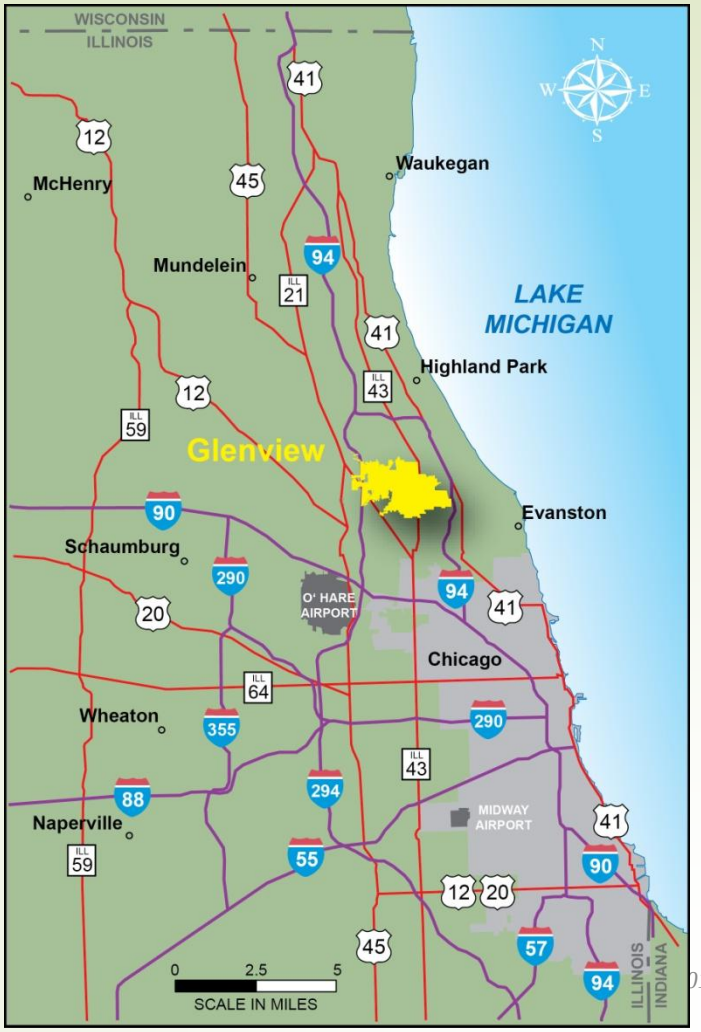
Joe Kenney, P.E., CFM, Director of Community Development, Village of Glenview

Karl Jensen, P.E., CFM, Gewalt Hamilton Associates, Inc.

Tom Rychlik, P.E., LEED-AP, Gewalt Hamilton Associates, Inc.

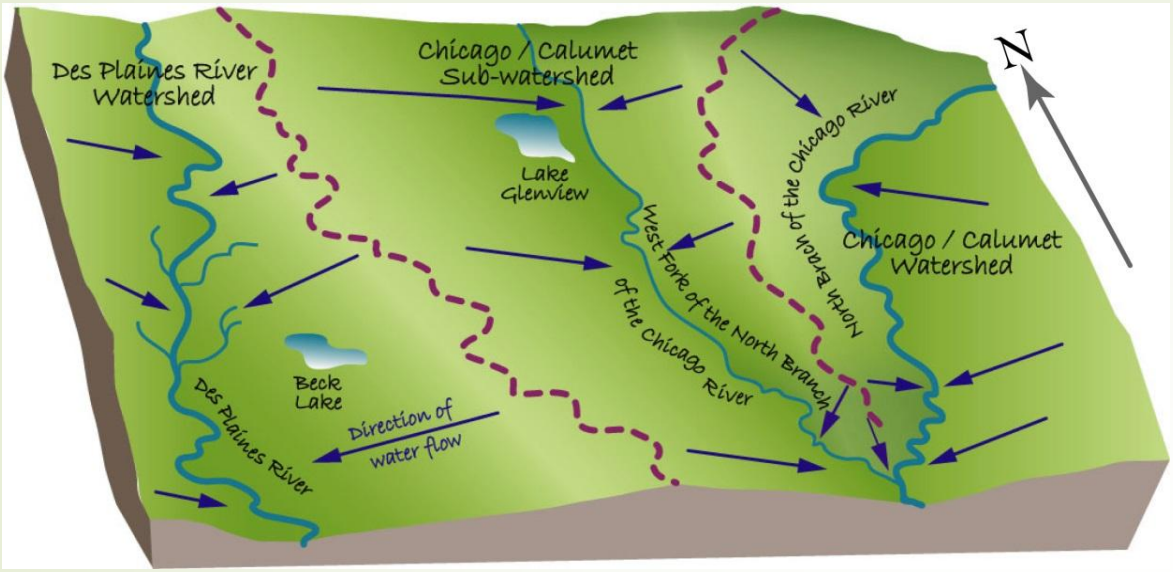
Glenview, Illinois

- Near north suburb of Chicago
- Incorporated 1899
- Population: 45,529



Drainage in Glenview

- Three primary watersheds
- 48 sub-watersheds
- 60% of Village built to old standards
  - No stormwater detention
  - No overland flow paths
  - Limited conveyance



2007-08 Flooding Events

- August 2007: ***Microburst***
  - 10-year flood event (monthly total > 11 inches)
  - Downed trees and leaves blocking inlets
  - Mass power outages (up to four days)

- September 2008: ***Flood of record***
  - Six inches of rain in four hours (13% > 100-year)
  - 9.5 inches total
  - All local systems beyond capacity
  - Results include all types of private property flooding
  - *Residents: demand for quick, local* ***<u>action</u>***

2008 Flooding Event

Stormwater Task Force (SWTF)

- 16 area residents
  - Village-wide representation
- Hosted 14 public meetings
  - Including two ½ day open houses
  - Over 500 attendees
- 355 responses to SWTF survey
- *Very public and active **engagement***

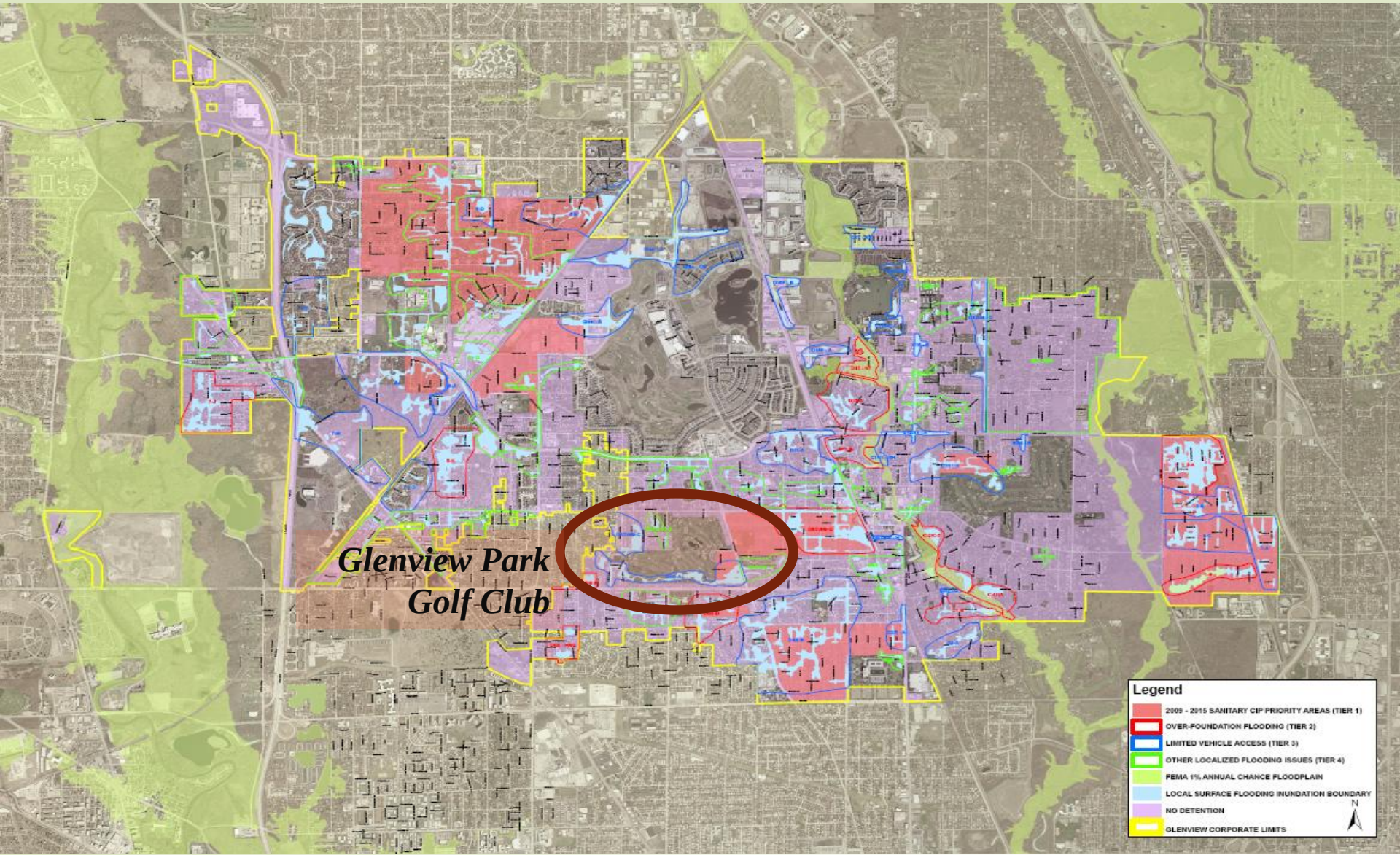
Outreach tools used:

- ***Public meetings***
- ***Brochures***
- ***Email blasts***
- ***E-glenview***
- ***Village newsletter***
- ***Glenview TV***
- ***Survey monkey***
- ***Staff roadshow***

AHA! moment: Flooding Tiers

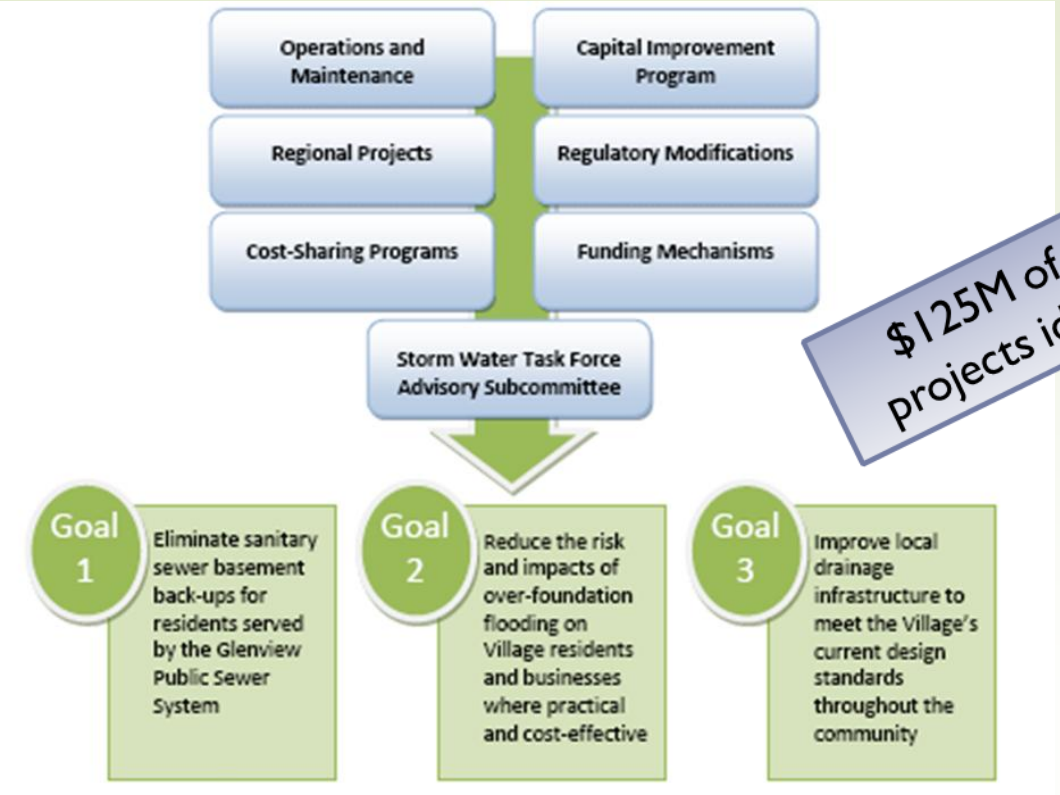
Sanitary Sewer Basement Flooding	Tier #1 – Sanitary sewer backup into homes with direct impacts on public health and structures
Property Damage Flooding of Structures	Tier #2 - Over-foundation flooding that can result from overbank flooding from rivers or surface flooding
Surface Flooding that Impacts Vehicle Access	Tier #3 – Surface flooding of streets to depths of that impair vehicle access
Other Localized Flooding	Tier #4 – Other areas impacted by street or property flooding

Flood Tier Mapping

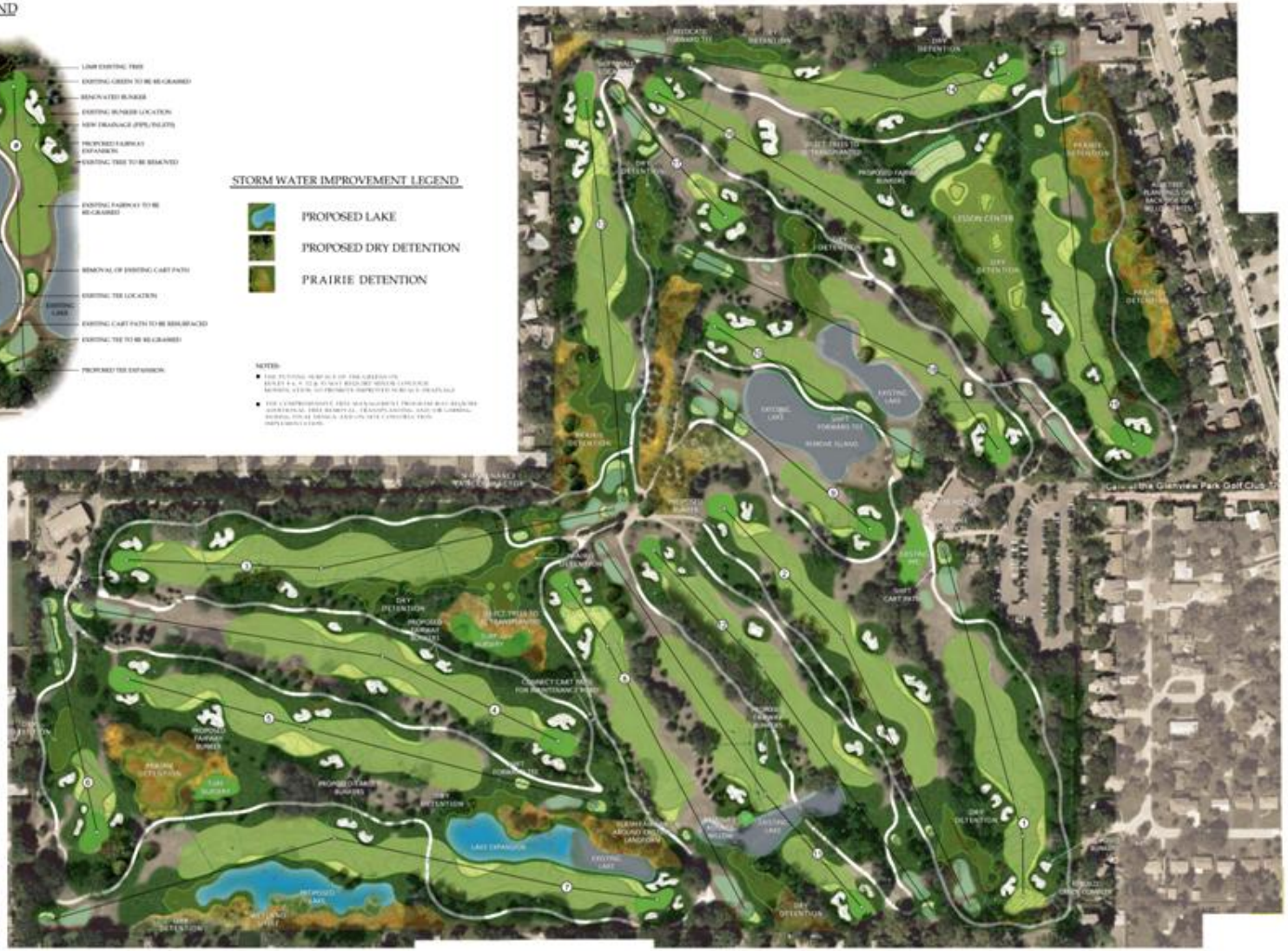


Stormwater Master Plan Approved

- *Flood Risk Reduction Program*
  - *Approved August 3, 2010*



GLENVIEW PARK GOLF CLUB



GOLF COURSE MASTER PLAN

JULY 22, 2013

JACOBSON GOLF COURSE DESIGN, INC

SCALE = 1 : 100'

0 50 100 200 300 400

Reconstruct greenside bunkers for improved proximity to putting surface and add a new "framing" bunker back / left of green

Expand fairway approach near renovated bunker which is being reduced in size

Select clear & limb trees to enhance playability of recovery shots out of renovated fairway bunker

Construct dry detention area to improve drainage and storm water management

Re-grade fairway for improved surface drainage, turfgrass condition and playability (no "washboard" movement)

Shift Red tee to accommodate space for new prairie detention area – transplant smaller trees impacted by excavation

Expand Blue tee forward to distribute wear on larger surface – reduce White tee accordingly

Hole #3

Convert the existing manicured turf into a naturalized area to the left of the pond adjacent to the tee complex on Hole #5

Expand the existing lake for enhanced golf hole strategy and storm water detention

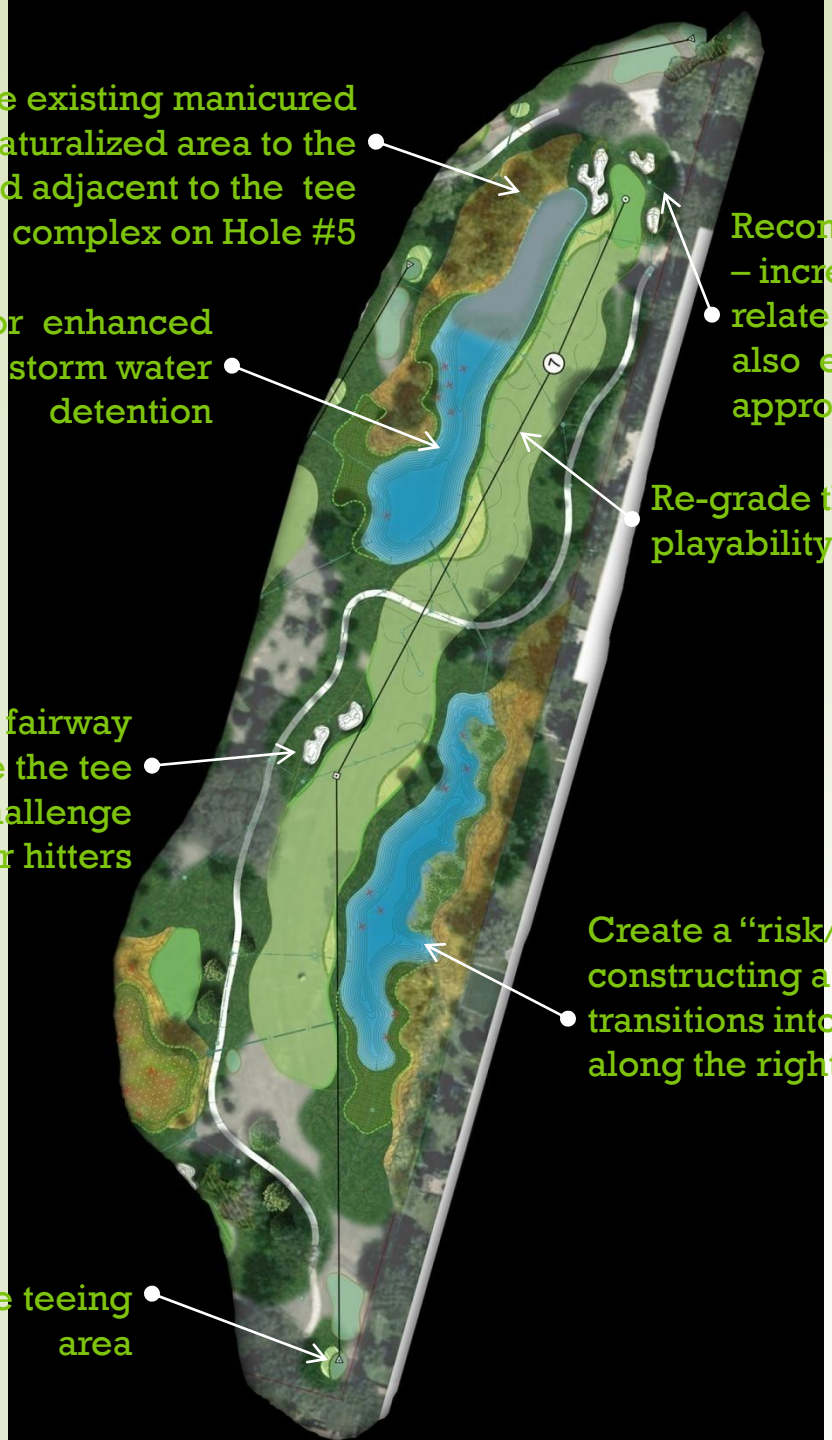
Reconstruct the greenside bunkers – increase size of left bunker to relate to the existing lake while also expanding the fairway approach to the lake

Re-grade the fairway to improve playability and drainage

Construct two (2) new fairway bunkers to visually frame the tee shot landing area and challenge the longer hitters

Create a "risk/reward" tee shot by constructing a new lake that transitions into a naturalized area along the right side of the golf

Expand Blue tee to gain more teeing area



Hole #7

Hole 7 Flyover

Engineering Project Goals

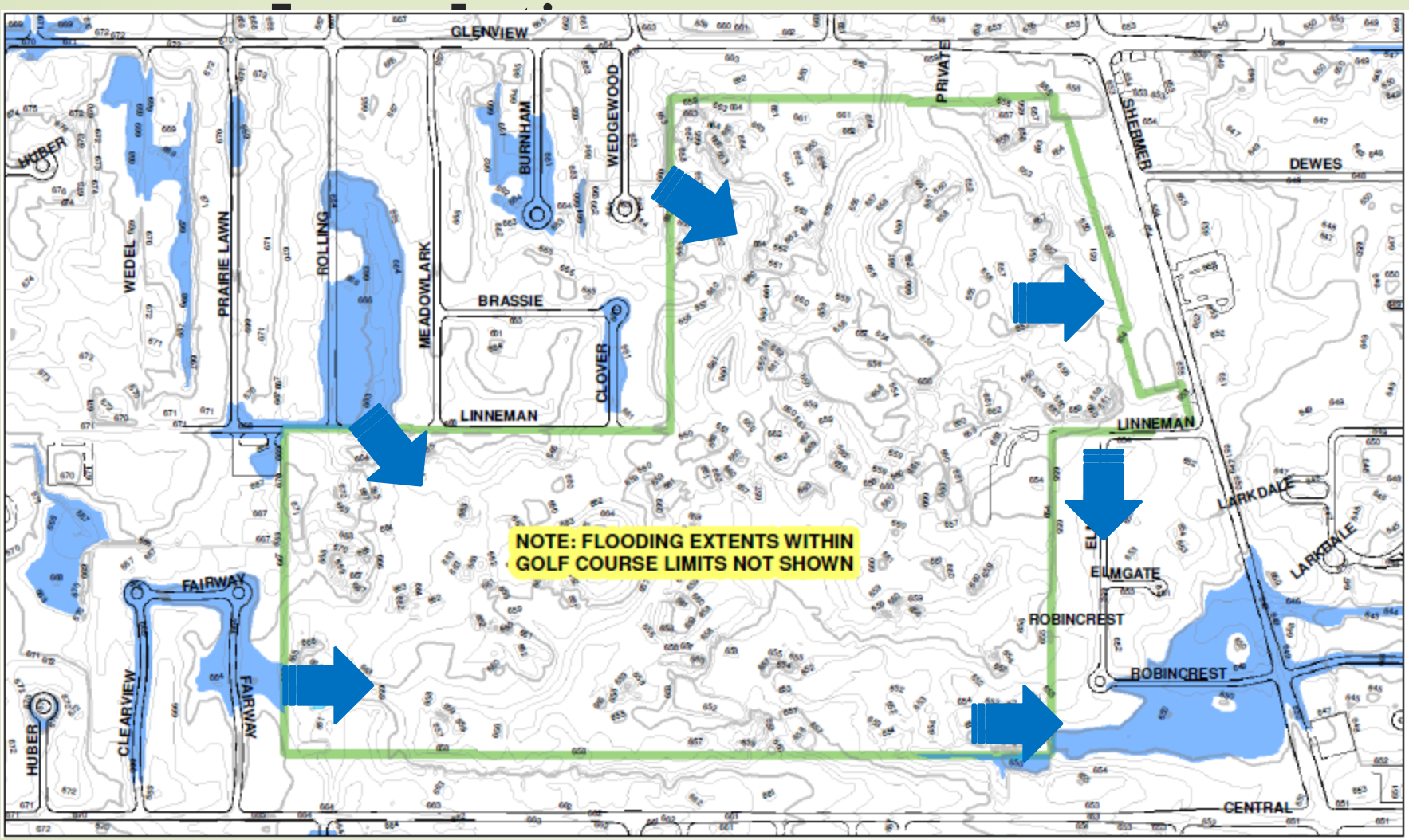
1. Improve golf course playability

2. Bring site into compliance with Metropolitan Water Reclamation District (MWRD) storm water ordinance

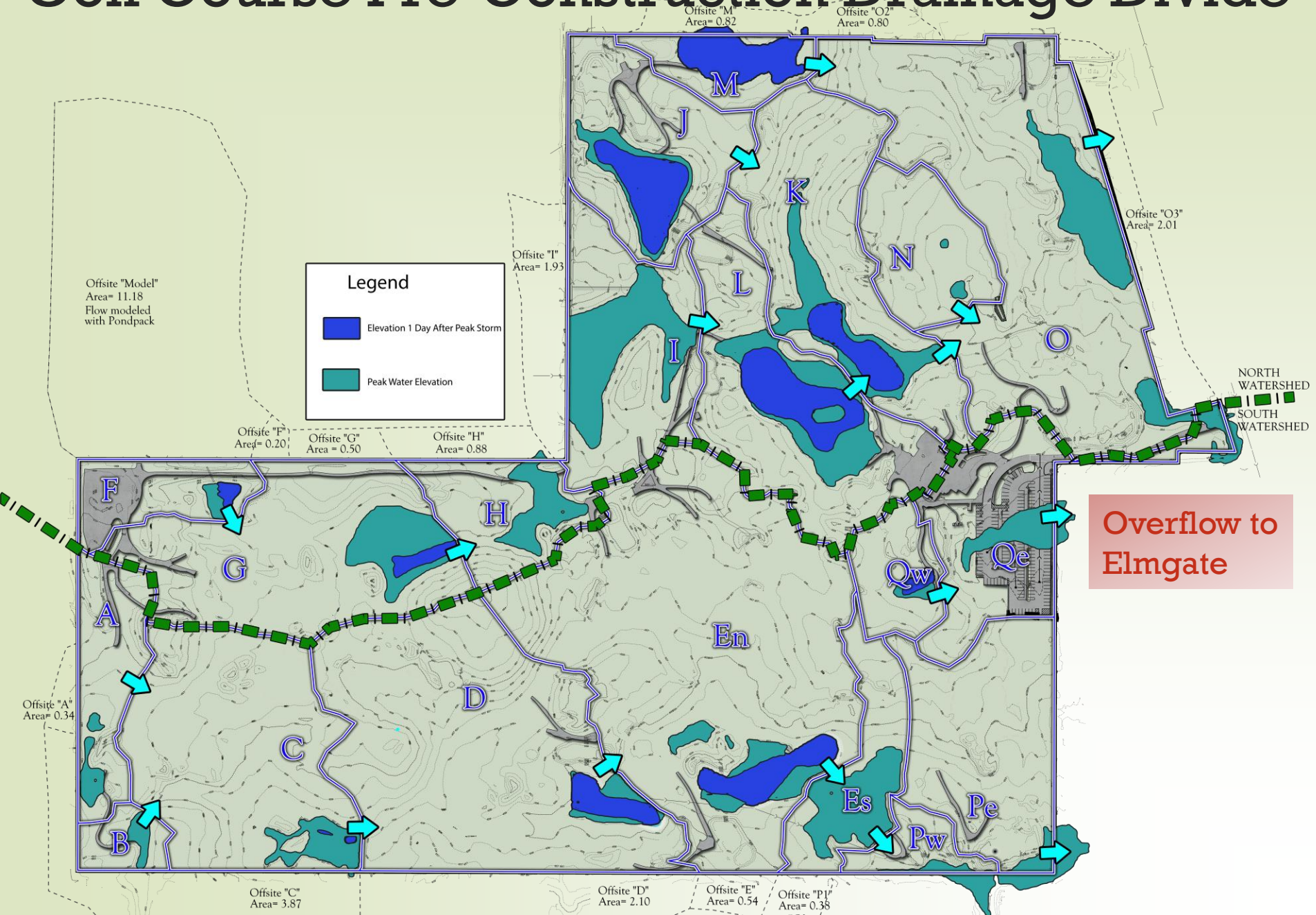
3. Support Village storm water management program

*An Intergovernmental Agreement (IGA) was executed by both the Park District and Village Boards in *March 2013* approving the parameters for this partnership.

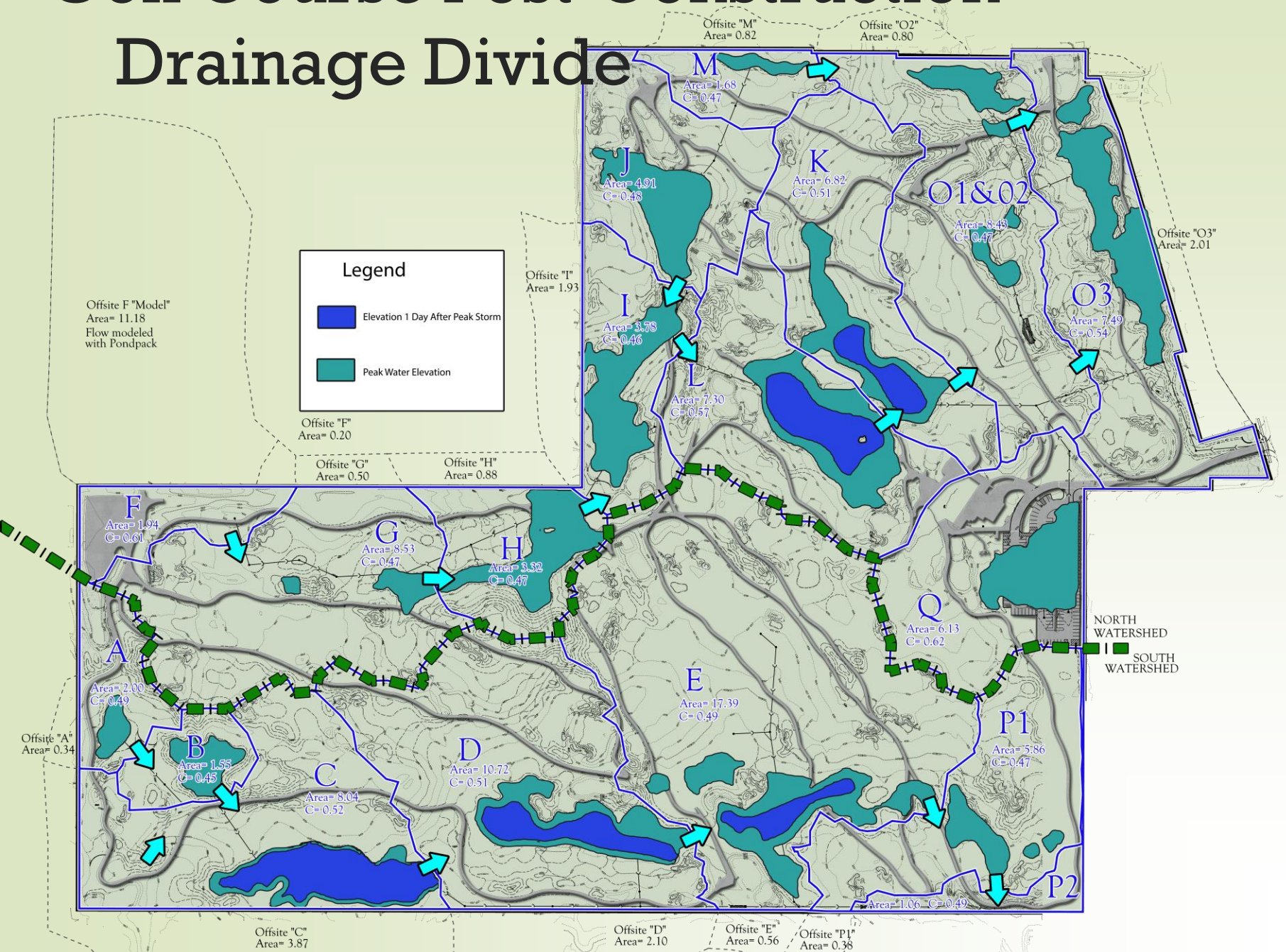
Neighborhood Existing



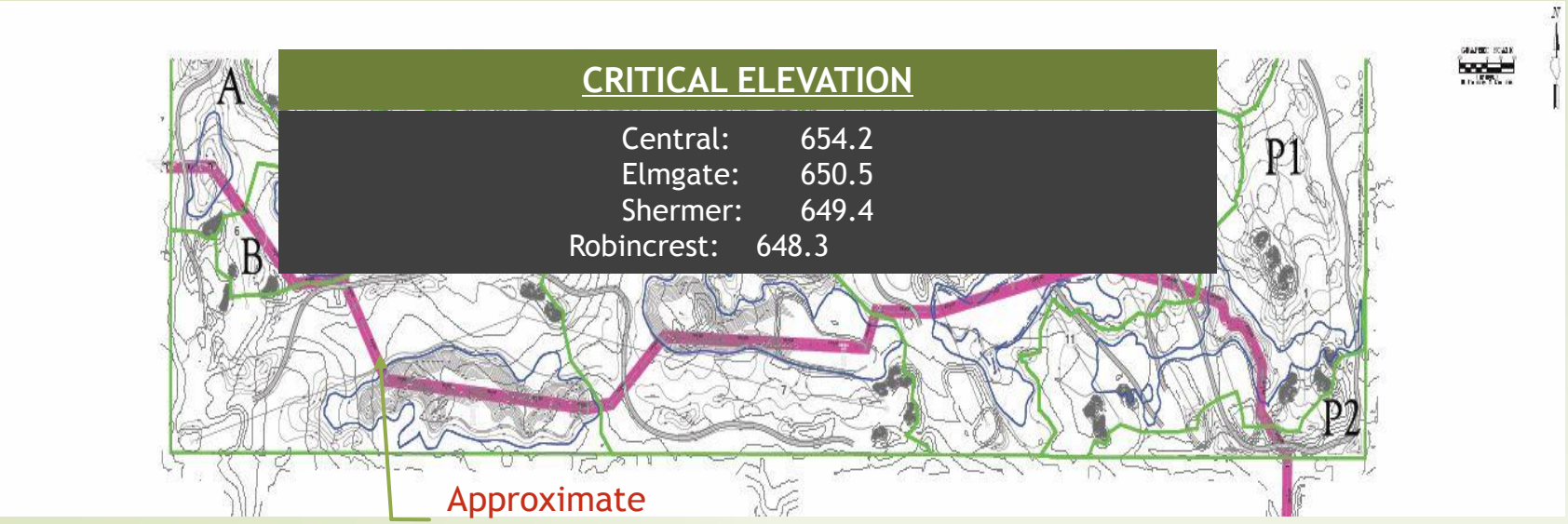
Golf Course Pre-Construction Drainage Divide



Golf Course Post-Construction Drainage Divide



Drainage Profile - South Watershed



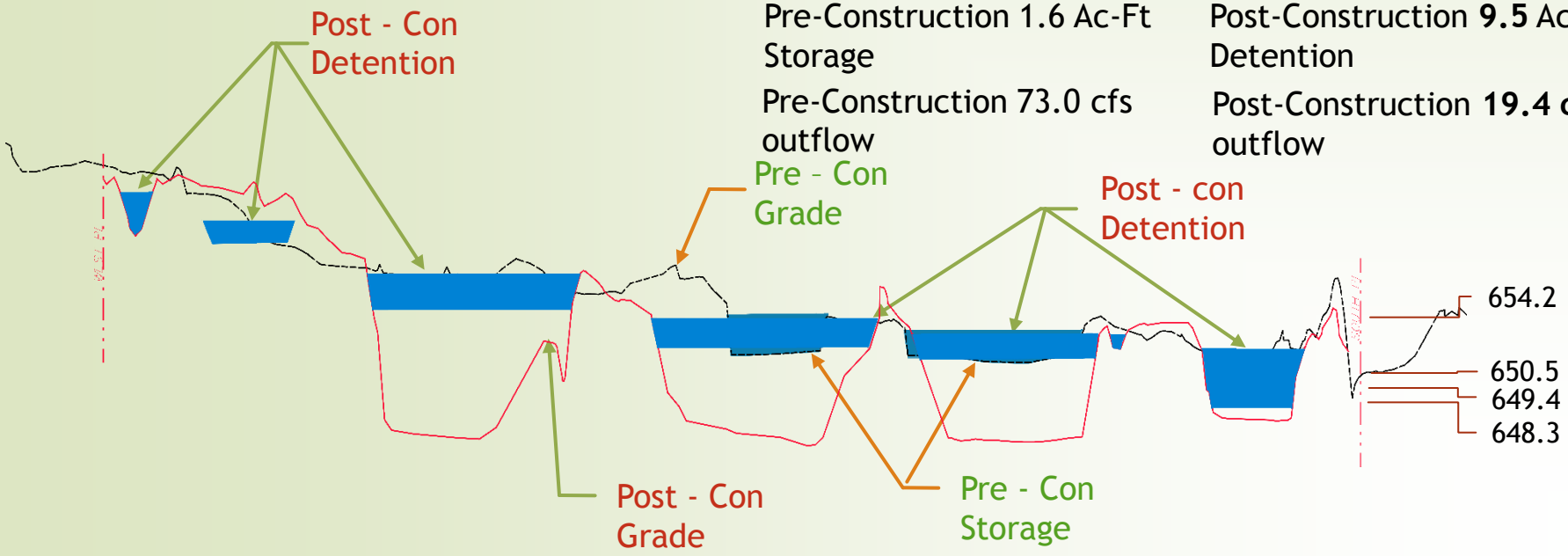
South Watershed

Pre-Construction 1.6 Ac-Ft Storage

Pre-Construction 73.0 cfs outflow

Post-Construction **9.5** Ac-Ft Detention

Post-Construction **19.4 cfs** outflow



Stormwater Management Summary

- Stormwater Detention (acre-feet):

	North	*South*	*Total*
Pre-Construction	*5.0*	*1.6*	*6.6*
Post-Construction	*12.4*	*9.5*	*21.9*
Net Increase	***7.4***	***7.9***	***15.3***

  - 1 acre-foot = 325,000 gallons of water
    - 4,970,000 gallons of new detention storage proposed
  - Storage will be used to better manage golf course runoff and runoff from tributary areas while reducing downstream discharges.
  - By utilizing the detention proposed and restricting the flow, the release rate (overland and by pipe) from the golf course during a 100-year storm event will be reduced by over 70%.

Stormwater Management and Golf Course Renovation

- *Do they really go together?*

What others See

What I see

Perception

- Take on more storm water? Are you kidding?
- "We have a hard enough time keeping turf as it is"

Remember -

- *"Collaborative efforts align units of local government to work towards a common goal." (Warn 2011)*

Reality

- The untrained eye would never know
- Performing as engineered
- Substantial improvements as a result
- Revenue/Round up $$
- Riding Cars every day

Outcomes

- To date – SWM performing as designed
  - VIP Opening July 18th
- Performing regular maintenance duties much sooner than in the past
  - Cart path provides for maintenance staff too, not just golfers (reduced compaction wear patterns
- No standing water in fairways and Bunkers
- Provide for overall system to accommodate more frequent large scale rain events
- Renewed interest in overall facility
- Win/Win IGA

Take Aways

- Glenview Park District and the Village of Glenview had to compromise and work together, both giving up control and trusting one another with the work needed to be done.
- JGCD & GHA established boundaries for design roles
- Set the stage for future partnering, about a dozen since the inception of this development
- Effective Engagement of the public; golfers, surrounding residents, Village and Park District Staff & Boards
- Correct the Perception for SWM – Not "New water" but better managed stormwater

Take Aways

- Village of Glenview valued detention by the acre foot, anticipating:
  - 100,000 per acre foot above ground
  - 400,000 per acre foot below ground
- Stormwater Committee made its case to the Village Board about 16 acre feet
  - 22 acre feet created by project
  - 6 acre feet of existing depressional storage
  - Village share was $1,842,000
  - equates to $115,000 per acre foot
- The actual contribution was calculated by a sum of hard and soft costs for the project.