Village of Orland Park
Hey and Associates, Inc.

Volume Control
Alternatives to Infiltration

IAFSM 2023, Session 5A

March 15, 2023

Agenda

I. Introductions

II. Basin Volume Control Requirements

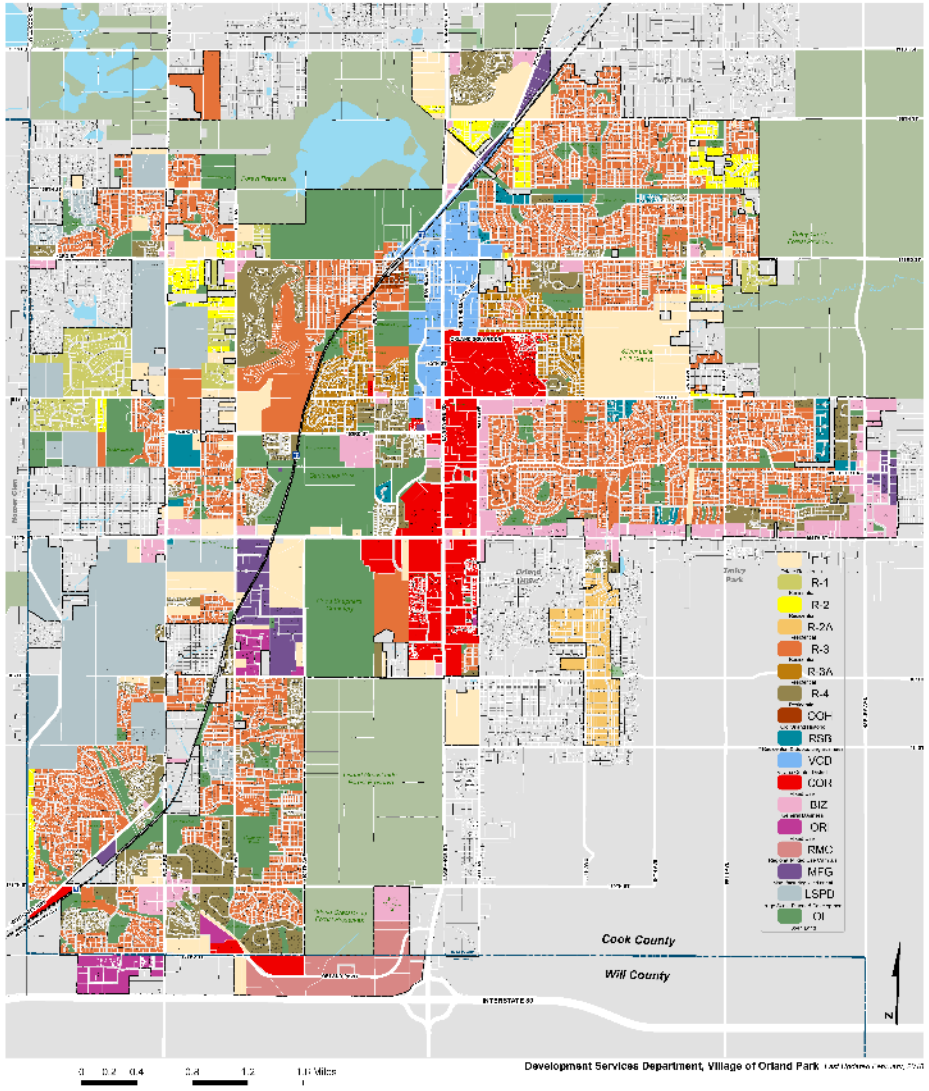
III. “Why is the water still here?”

IV. Potential Solutions

V. Open Discussion / Q&A

Village of Orland Park

- Located in southern Cook County
- 22.31 square miles with a population of 58,700
- Adopted MWRD WMO (Auth. Municipality)
- Approximately 500 public and private basins
- Village struggling with some underperforming and/or old basins
- Acknowledge Session 5A of 2022 IAFSM Conference presentation – “Village of Orland Park, Cook County, IL Pond Evaluations” by Jedd Anderson



Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

ORLAND PARK

Volume Control Requirements

MWRD

- Maintenance and Monitoring Plan required. Schedule R required.
- WMO Section 306.4: *If the constructed grades, geometries, inverts, acreage, or volumes of constructed stormwater facilities, volume control practices, detention facilities, compensatory storage, native planting conservation areas, wetland mitigation areas, or riparian environment mitigation areas are not in conformance with the approved plans, the applicant shall be responsible for any modifications required for compliance with this Ordinance.*

- Technical Guidance Manual (5.0) “Retention-based Practice Feasibility Assessment”

Volume Control Requirements

Village of Orland Park

- A Monitoring and Management Plan (M&M Plan) shall be submitted along with the required landscape plan for all applicable projects, as determined by the Development Services Department. M&M Plans shall coincide with the project Watershed Management Ordinance (WMO) Permit, if applicable. For further details see Section 6-305.F.2 Naturalized Landscaping Area Management Standards.
- Summary of 6-305.F.2
  - Stick to the approved landscape plan and M&M Plan

Volume Control Requirements

What happens if the plan simply doesn't work out?
What happens when significant maintenance is needed in the future?
What happens if the designed plantings are not growing?

Issues Experienced

- Underdrain not able to outlet
- Obstructions in restrictor or no upstream restriction protection
- Siltation over time
- Inundation of wetland plantings

Example:

- A 3 acre, square-shaped, dry-bottom, naturalized basin in a development has final landscape plans that have a specific detention volume, permitted volume control, has shown soil borings that indicate infiltration and drawdown is achievable, groundwater table is not an issue, and underdrain is proposed. It is one year after construction and the volume control is not infiltrating.
- If you're a regulator: Is the pond, project, or permit enforceable? How?
  - Establish milestones for remediation
  - Site visits – underdrain, plantings, erosion, outlet structure
  - Surety – Letter of Credit, Bond
  - Code Enforcement
  - What will acceptable "retrofit" options be?
- If you are an engineer tasked with remediation, what options do you have?

Possible Solutions

- Transplant the plantings that are working to other areas
- Plantings from outside inwards to assist with infiltration
- Cofferdam sections along shoreline for underdrain install
- Drain the pond, re-grade, assess underdrains (start over)
- Reconsider volume control locations and depth
  - Depends on governing agencies
- (Each option) Re-assess M&M Plan

Site #1 (2021)

Site #1 (2022)

Site #2 (not in Orland Park but same issue)

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Goals

- Adopt a standard procedure or “menu” of basic retrofit options
- Consider shallow and deep zones (exceeding 1’ max depth allowable under WMO), additional discussion with MWRD on naturalized BMP methodology and volume control depth to meet intent of regulations.
- Stewardship and long-range M&M
- Obtain input from other stormwater and natural resource professionals

Q&A – Open Discussion