ORLAND PARK

Storm Water Detention Basin Maintenance Program

2026 Wet/Dry Pond Edge Restoration

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Storm Pond Edge Maintenance

Work beyond stewardship

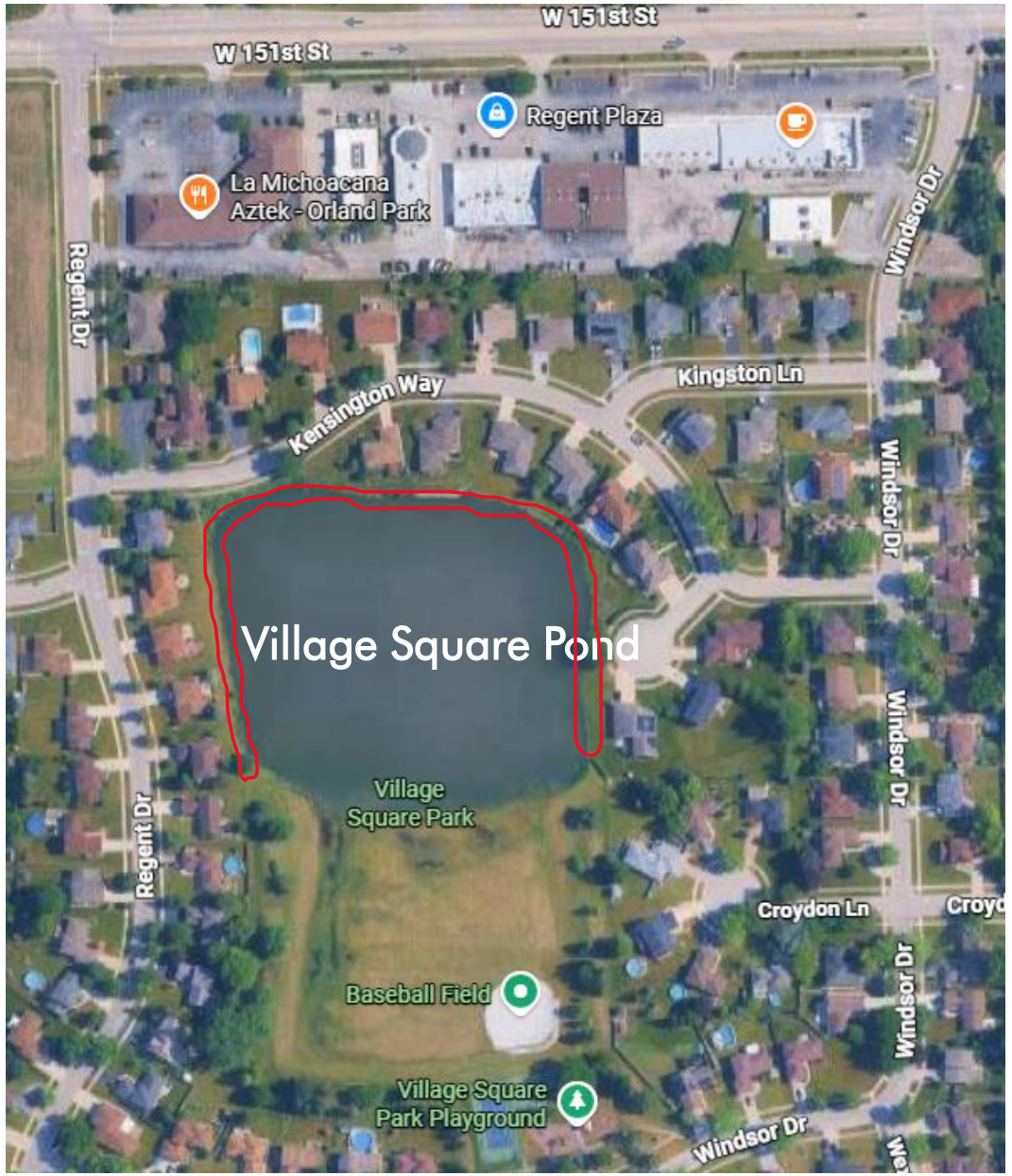
- Public Works has 195 detention basins (Dry/Wet)

- Stewardship contract maintains 117 basin shorelines
- Stewardship reduces the degradation (erosion and sedimentation) of basins

- Two ponds require higher level of work beyond the stewardship scope.

- **#1: Village Square Pond (Wet Pond)**

Work will halt shoreline erosion and restore the edge with underwater stone edge, fabric wrap and natural plantings along edge following the Village's Best Management Practice



Storm Pond Edge Maintenance

Work beyond stewardship

- #2: Brook Hills Pond #2 (Dry Pond)

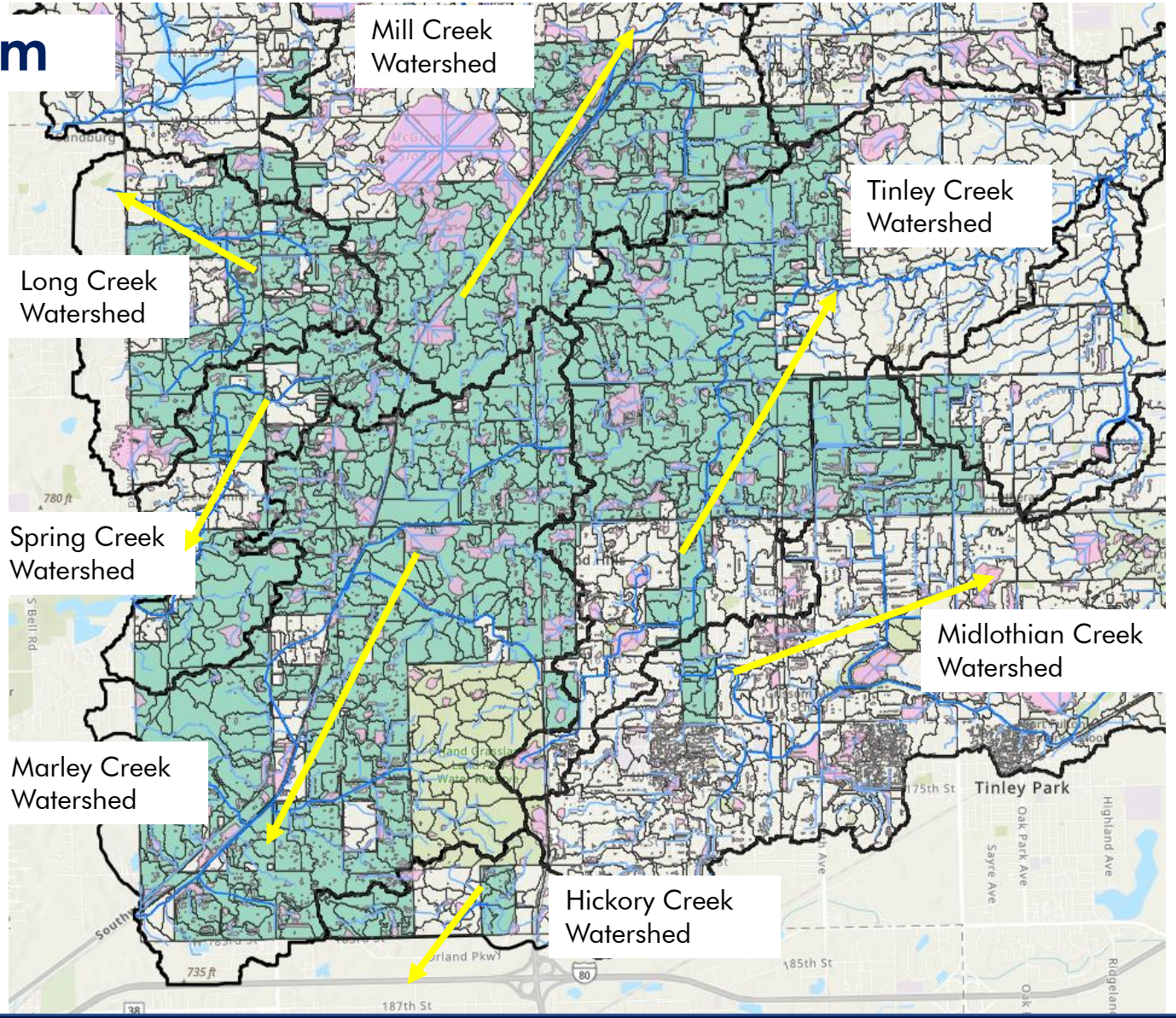
Due to sediment restricting flow and creating standing water, the work will clear shrubs and regrade creek and slopes to re-establish the function of the creek.

Backup Slides

Village's Storm Conveyance System

- 7 Main Watersheds:
  - Tinley Creek
  - Mill Creek
  - Marley Creek
  - Long Creek
  - Spring Creek
  - Hickory Creek
  - Midlothian Creek
- Storm System Includes:
  - Lake/Sloughs (Public)
  - Creeks (Public & Privately owned)
  - Storm Piping (Public)
  - Detention Basins (500+)
    - 195 Public (Dry & Wet Ponds)
    - 321 Private (Dry & Wet Ponds)

- **Interlocked storm conveyance system between public and private entities**



➢ While ponds are often considered as water features, their main function is to serve as detention/retention for storm water to protect homes/businesses.

➢ For new development, ponds are privately maintained by

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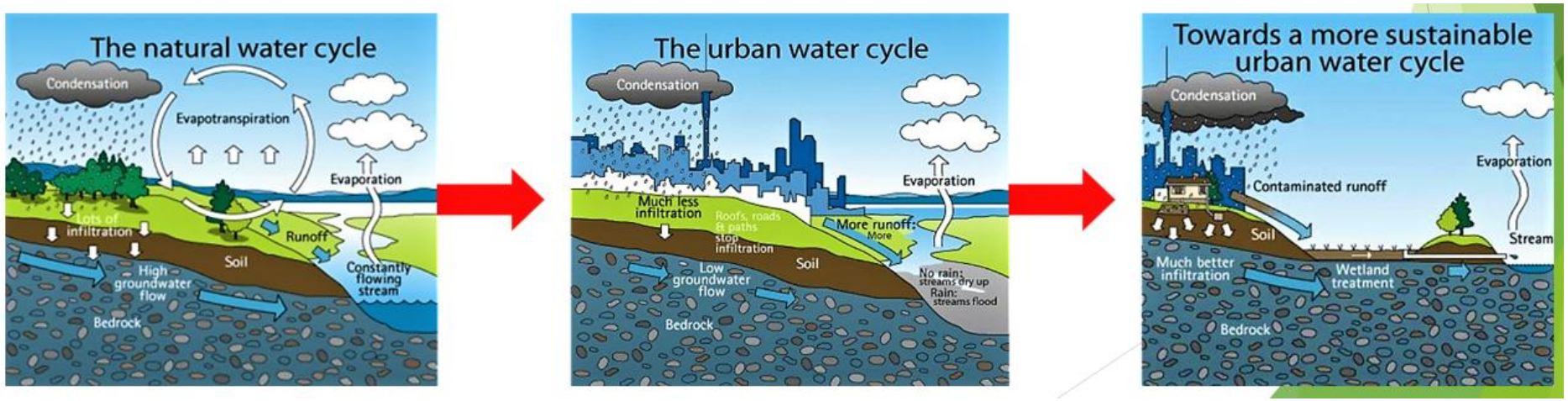
Stormwater "Best Practice" Sustainable Management System

- Stormwater basins (Detention ponds) primary function:
  - Serve as collection of excess runoffs from impervious surfaces like parking lots, sidewalks, and roofs created by urban development. The basins collect the rainwater and slowly release to streams/creeks or wetlands.

- Stormwater basins mitigate:
  - Flooding of homes near basin
  - Stream/creek damage
  - Flooding on properties downstream



Village's Basin Best Practice Program

- February 2011, Village adopted Basin Best Practices Program (BBPP) to create a unified approach for restoration and stabilization of stormwater basin shorelines.

- Goals:
  - Establish a comprehensive Village-wide approach to water and basin shoreline management
  - Provide consistency in expectations among all stakeholders
  - Utilize the right resources at the right time provided by the best qualified parties
  - Follow industry best practices for ecological restoration and maintenance

- Progress:
  - At onset of program, 24 basins identified for shoreline restoration
  - Currently, 117 of basin are managed with the assistance of qualified ecological restoration contractors


Imperial West Pond - Before

Shoreline Restoration Approach

- The primarily approach: Use of native vegetation versus "hard edge" techniques such as sheet piling or stone riprap.
  - Sheet piling or stone riprap are costly to install and maintain
  - Native grasses/forbs proven to provide excellent means of erosion control and have been shown to filter out nutrient and sediment runoff from adjacent land, which contributes to improved water quality
  - The USEPA, US Army Corps of Engineers, the Morton Arboretum and the Chicago Botanic Garden utilize native plantings

- Benefits:
  - Protect shorelines from erosion
  - Provide and improve habitat for fish and other wildlife
  - Improve water quality and filter nutrients/sediments
  - Attract natural wildlife
  - Increase shoreline stability
  - More resilient that hard edge shorelines over time


Imperial West Pond - After

Shoreline Restoration Approach (Cont.)

- Shoreline restoration projects include:
  - Establishment period (2-3 years):
    - Existing turf grass or invasive vegetation is removed and the establishment of native plant species begins. Occasional regrading of pond slopes also occurs at sites where substantial erosion or scouring has occurred. Additional work includes goose protection and seed/blanket.
  - A multi-year stewardship (maintenance) program follows:
    - Shoreline stewardships include the control of invasive woody and herbaceous flora through cultural methods, physical removal or the application of appropriate herbicides.

Shoreline Restoration Approach (Cont.)

- The BBPP encourages the reduction of turf mowing areas around the stormwater basins throughout the Village. As turf grass provides little to no erosion control, bare spots, mower wheel tracks and toe of slope scour are often observable.

- Village's Land Development Code currently requires a minimum of 15' of native shoreline plantings, also known as buffer yards, around all new stormwater basins (Section 6-305.D.8), with the intent of establishing resilient shorelines and hopefully avoiding the need for future restoration projects. A turf grass shoreline is no longer permitted.

Typical Restoration Costs

- Shoreline Erosion Repair — $100 or more, per linear foot
  - Design, permitting, restoration/construction
  - 500 lineal feet of restoration ~$50,000
- Vegetation Management — $2,500 per acre (over a 3-year period)
- Brush Clearing — $15,000 to $20,000 per acre
- Pipe Section Repair — $3,000 or more per location
- Dredging — $150 per cubic yard
  - Example Cost -1 acre/foot ~1,600 cubic yards
  - Design, permitting, dredging, disposal, restoration, and observation +/-$250,000