

Village of Buffalo Grove Village-wide Drainage Improvements

by

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Project Background



- August 2007 – 11.55 inches of rain
 - August 19-24th
 - 6.38 in 5 days
 - August 23rd
 - 2.25 inches of rain from 4pm-8pm
- Runoff \approx 25-year storm event
- Average August rainfall = 3.4 inches

September 2007 Flood Study Begins



- 138 flood questionnaires returned
- Types of flooding reported*
 - Overland flow down reverse slope driveway (26)
 - Overland flow through windows or doors (37)
 - Seepage and Sump Pump failures (48)
 - Sanitary surcharge (8)
 - Yard and street flooding (33)

*some questionnaires reported multiple flooding types

October 2008 Flood Study Report

- GIS
- 16 s
- Causeways
 - Su
 - H
 - L
- Drainage
 - F
 - D
- 4 p
- Concept-level cost estimate = \$5.1M



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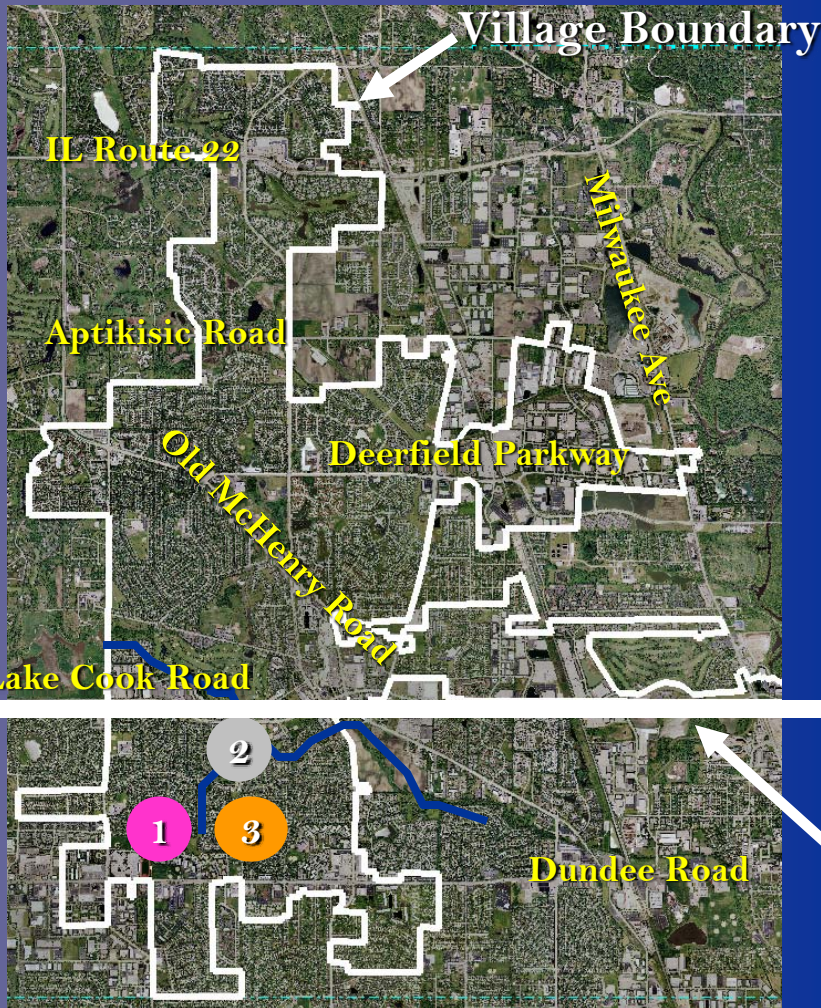
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January 2009 – Design Phase Begins

- Village makes commitment to solve flooding
- 12 study areas
 - *Regional* flooding problems
 - Improvements located on public and private property
- **Types of projects**
 - Creation of new stormwater storage
 - Upsizing existing storm sewers and culverts
 - New relief storm sewers
 - Creation of overland flow routes
 - Some locations use combination of projects

White Pine Ditch Watershed



1. Weidner Road and Beechwood Road

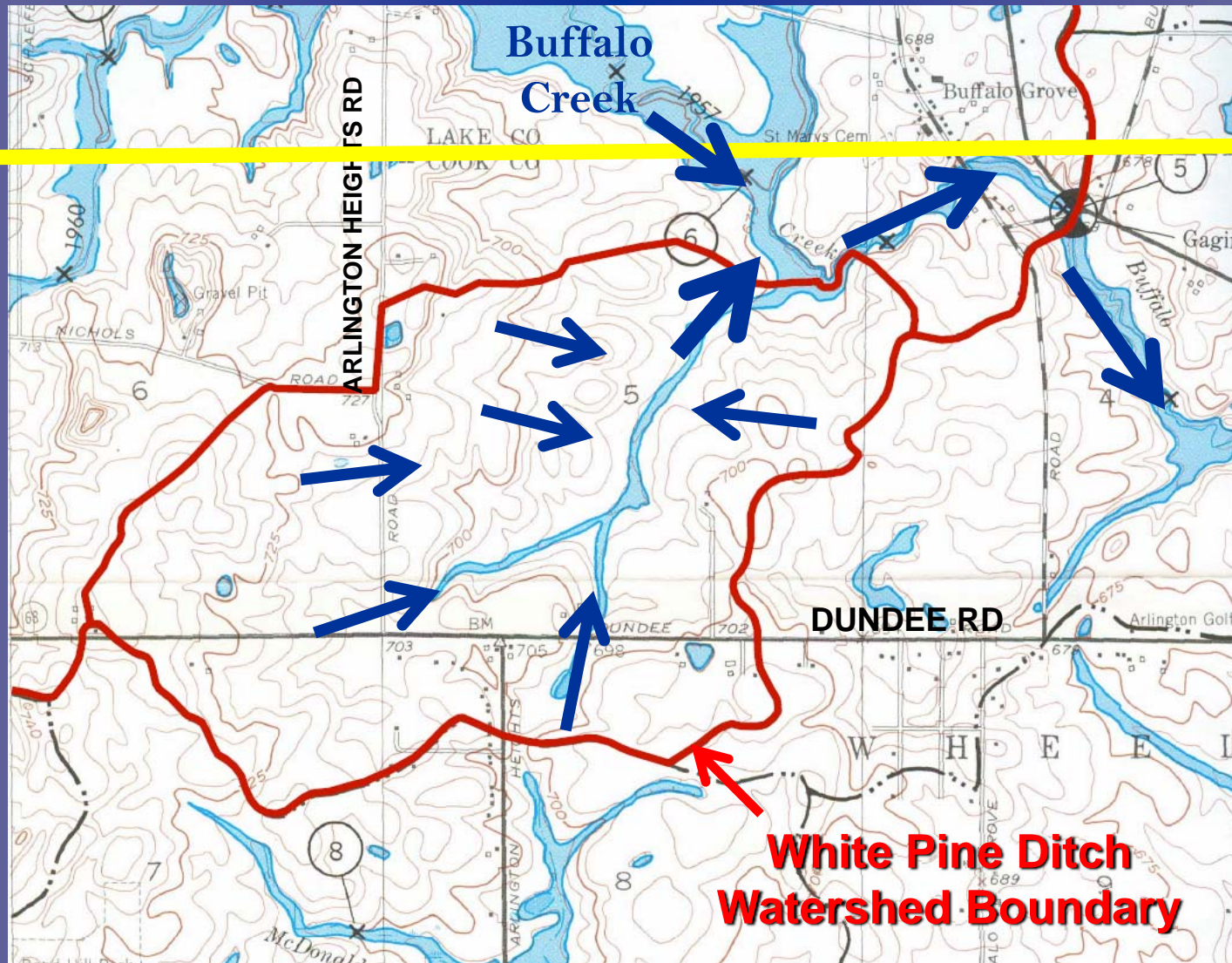
2. St. Mary's Parkway

3. White Pine Road

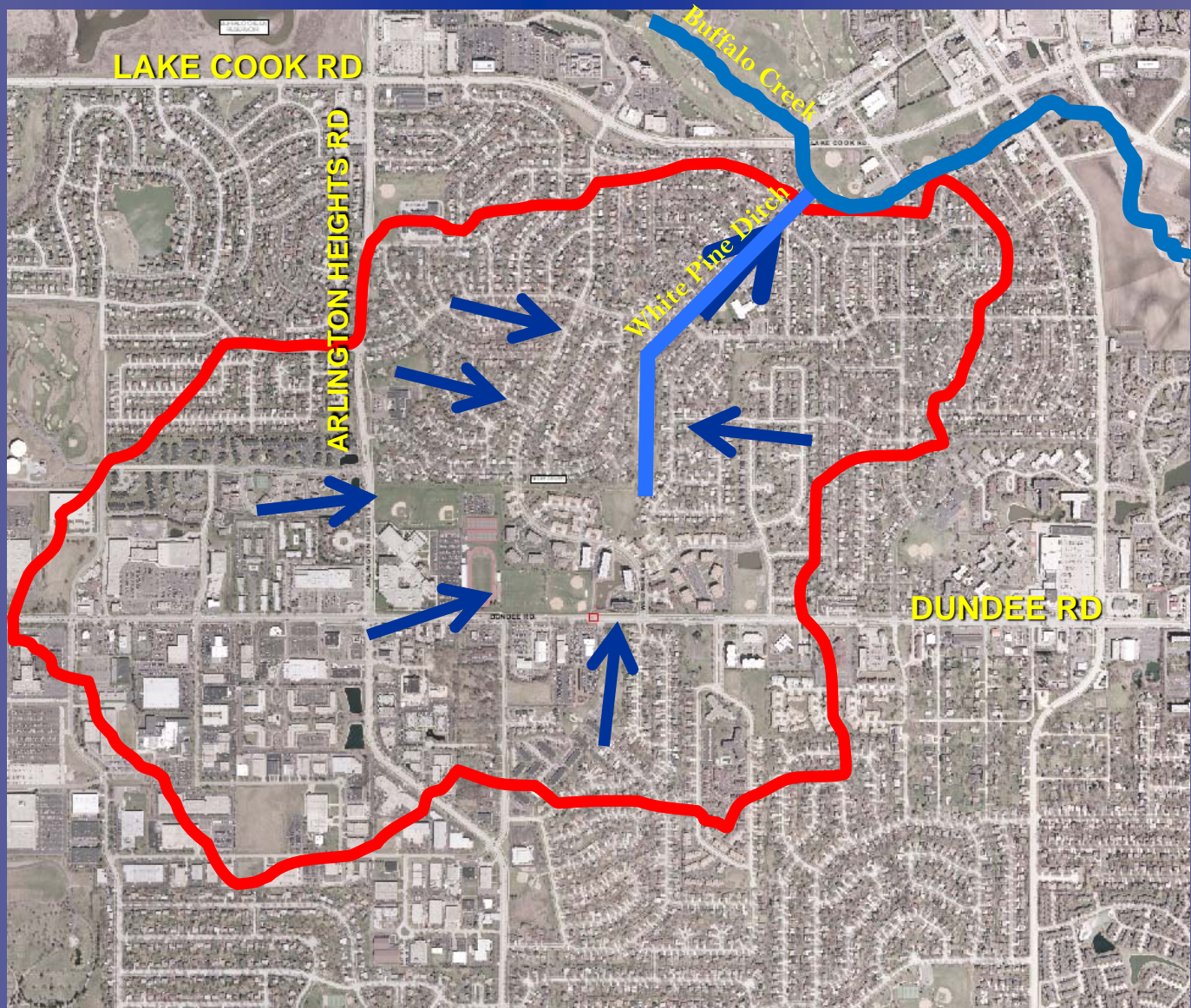
- Arlington Hills Subdivision – 1968
- Cook County

Historic Drainage Pattern

County
Boundary



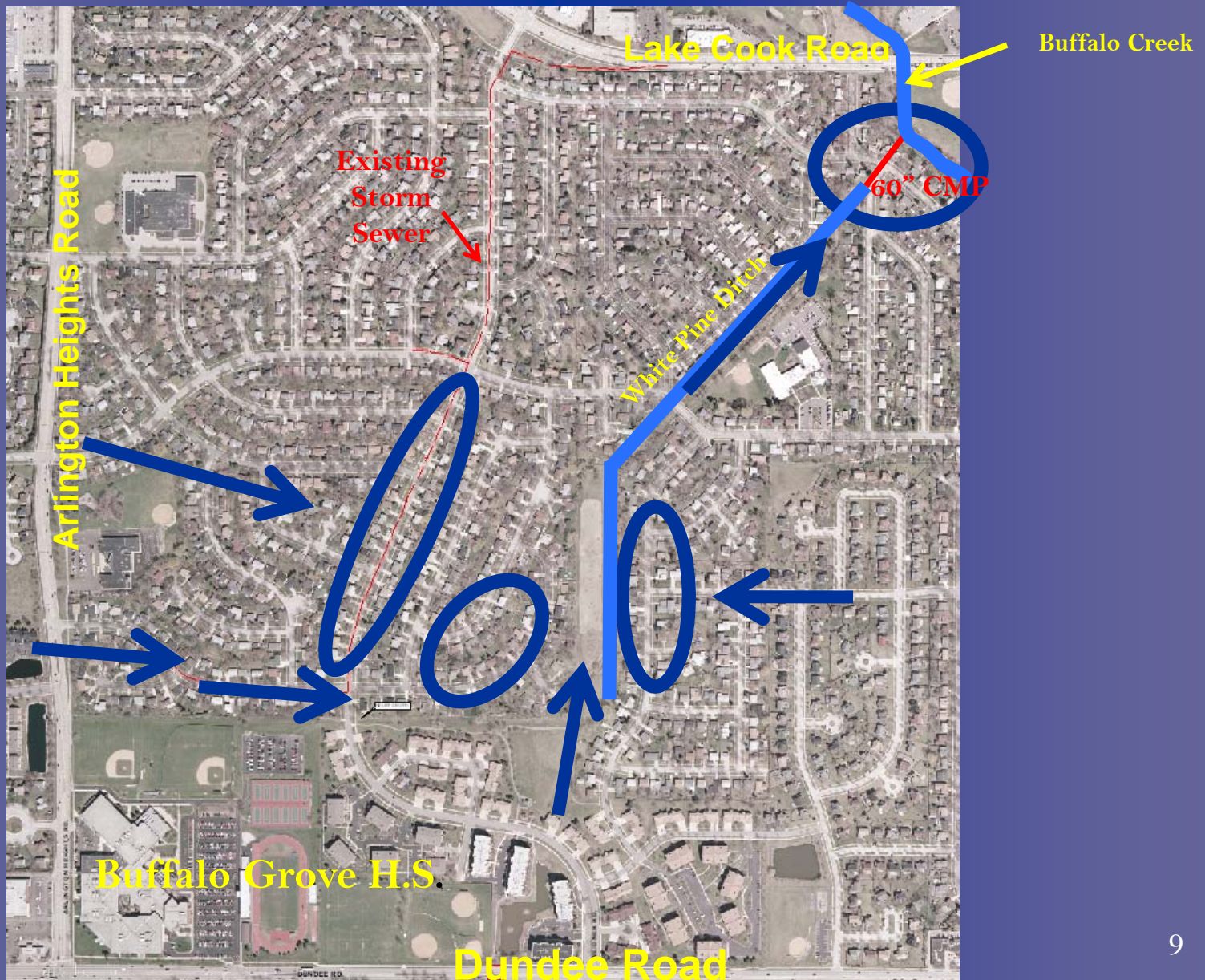
Current Watershed Conditions



March 17, 2010

Buffalo Grove Village-wide Drainage
Improvements

August 2007 Flooding Event



Design Implementation

- Topographic survey – resident notification
- XP-SWMM model developed calibrated to August 2007 and September 2008 events
- Existing level of flood protection ranges from 5-year to 25-year
- Size improvements to provide 50 to 100-year level of flood protection

Design Implementation

- **All improvements must be permittable & cannot create downstream flooding**
- **Meet needs of Park District, School District and Cook County**
 - New under-drain systems in expanded detention basins
 - No safety hazards created on school property
- **Developed 50%, 95% and 100% design drawings and hosted resident meetings**

Drainage Solutions



Project Coordination

- **Total of 12 drainage projects throughout Village**
- **Coordination in support of drainage projects**
 - Buffalo Grove Park District
 - Buffalo Grove High School District 214
 - Cook County Highway Department
 - Group and individual resident meetings
 - 6 utility companies
 - Permitting authorities
 - Illinois Department of Natural Resource – Office of Water Resources
 - Metropolitan Water Reclamation District of Greater Chicago
 - U.S. Army Corps of Engineers
 - North Cook Soil and Water Conservation District

December 2009

Design Plans Complete

- **All 12 study areas combined into 1 plan set**
- **10 temporary easements required from residents**
- **Contract documents modified to require contractor to work continuously in an area until complete**
- **Restoration requirements**
- **Engineer's Estimate of Probable Cost = \$2.4M**
- **Village authorizes bidding December 22, 2009**

January 2010

Plans Out to Bid

- **18 bids received by Village**
- **Bids ranged from \$2.6M to \$1.8M**
- **Construction begins March 15, 2010**
- **Scheduled completion = July 4, 2010**