



AGENDA

President and Board of Trustees
Village of Arlington Heights
Committee-of-the-Whole
Board Room
Arlington Heights Village Hall
33 S. Arlington Heights Road
Arlington Heights, IL 60005
February 3, 2016
7:30 PM

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL OF MEMBERS

IV. NEW BUSINESS

- A. Draft Burke Engineering Separate Sewer Area Findings/Open House

V. OTHER BUSINESS

VI. ADJOURNMENT

Persons with disabilities requiring auxiliary aids or services, such as an American Sign Language interpreter or written materials in accessible formats, should contact David Robb, Disability Services Coordinator, at 33 S. Arlington Heights Road, Arlington Heights, Illinois 60005, (847)368-5793 (Voice), (847)368-5980 (Fax) or drobb@vah.com.



Item: Draft Burke Engineering Separate Sewer Findings/Open House

Department: Village Manager's Office

Draft Burke Engineering Separate Sewer Area Findings/Open House

ATTACHMENTS:

Description	Type
Separated Storm Sewers	Presentation

 **DRAFT**



**VILLAGE OF
ARLINGTON HEIGHTS
FLOOD STUDY SUMMARY
REPORT**

Prepared for

Village of Arlington Heights
222 North Ridge Avenue
Arlington Heights, Illinois 60005

Prepared by

Christopher B. Burke Engineering, Ltd.
9575 West Higgins Road
Rosemont, Illinois 60018
847.823.0500

CBBEL Job No. 120335

May 2013

Revised January 2016

EXECUTIVE SUMMARY

The Village of Arlington Heights experienced a major rainfall event on July 23, 2011, which resulted in widespread flooding in the Village. This storm produced approximately 7.5" of rainfall, with 3.5" coming in a single two-hour period. This report focuses on seven trouble spots with separate sewer systems that drain to local waterways. The seven project areas were selected by the Village to be evaluated in detail to determine the cause of the flooding and to develop potential flood reduction improvements. Christopher B. Burke Engineering, Ltd. (CBBEL) was hired by the Village to complete this study.

This report summarizes the results of our analysis. The key points for each study area are included in this Executive Summary. Details of the analysis and exhibits are provided within each study area's section of the report following this summary. The location of the seven study areas selected by the Village are shown on Exhibit 1 and are as follows:

- Burr Oak Drive and Dryden Place (Area A)
- 2600 Block of North Stuart Drive (Area B)
- Hintz Road west of Arlington Heights Road (Area C)
- Greenbriar/Roanoke/Wilke (Area D)
- University Drive Detention Basin (Area E)
- 600 to 1100 North Forrest Avenue (Area F)
- Regency Park East (Area G)

The following summary provides the cause, impact, potential flood reduction improvements, and conceptual level cost estimate (2013 estimated costs) for each of the study areas:

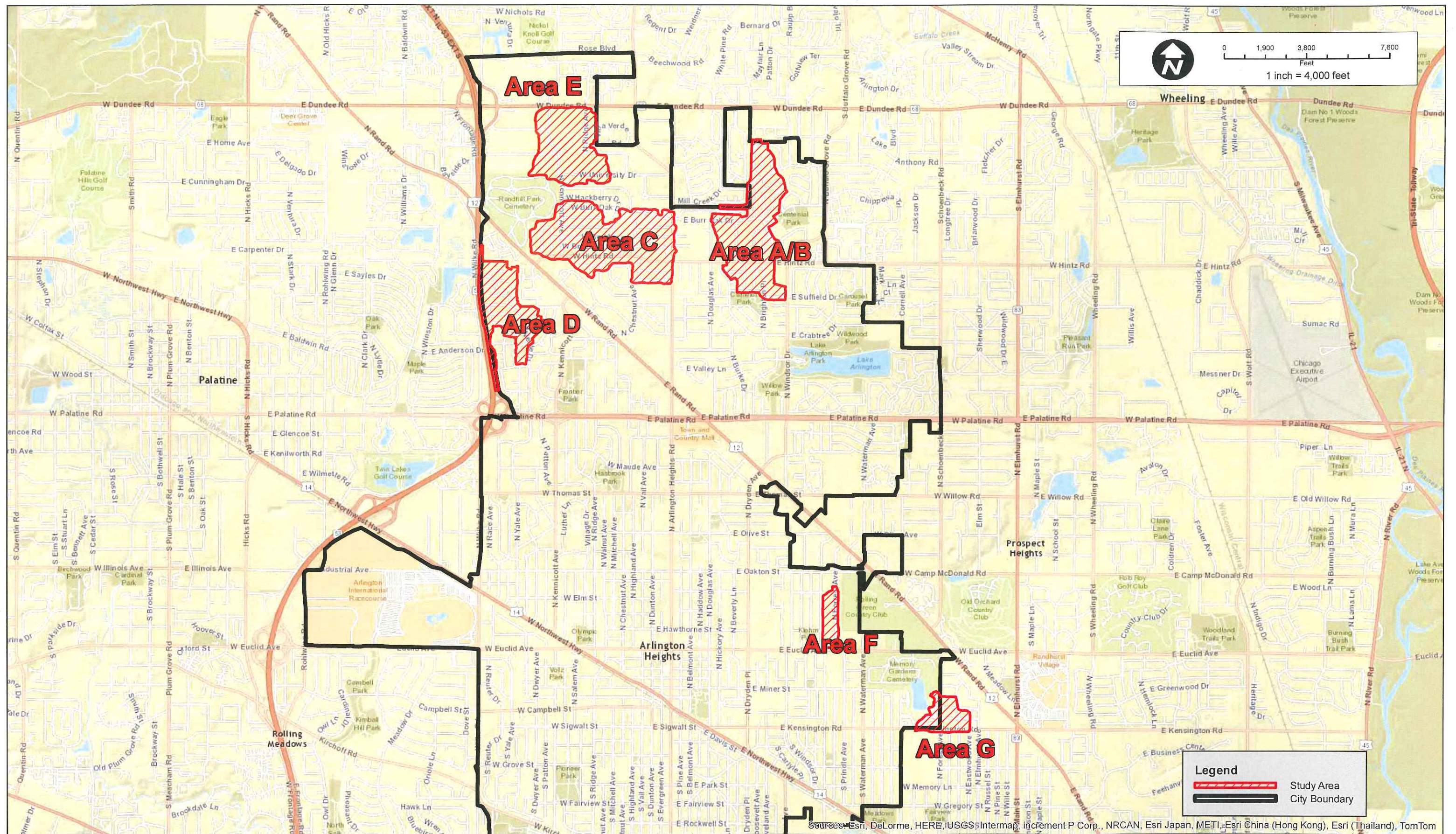
- Area A – Burr Oak and Dryden Place
 - Street flooding due to inability of storm sewers to handle runoff from extreme storms and lack of effective overland flow outlet
 - Floodwater entered at least one residence during July 2011 event
 - Five alternatives developed to improve capacity
 - Conceptual cost estimates range from \$85,000 to \$2.4 million
- Area B – North Stuart Drive
 - Floodwater entered one residence during July 2011 event
 - Recommended alternative to improve street drainage is adding inlets and connecting to an existing under-utilized 66" storm sewer
 - Conceptual cost estimated to be \$51,000

- Area C – Hintz Road west of Arlington Heights Road
 - Two types of problems causing flooding
 - Depressional areas with limited sewer capacity (Burr Oak Dr., Burning Tree Ln.)
 - Reverse slope driveways
 - Two proposed alternatives
 - Proposed storm sewer improvements on Burr Oak and Burning Tree and storage basin in Raven Park
 - New Hintz Road storm sewer to minimize overland flow that can reach reverse slope driveways
 - Conceptual cost estimated to be \$2.8 million
- Area D – Greenbriar/Roanoke/Wilke
 - Depressional areas fill due to limited sewer capacity in heavy storm events
 - Street flooding at a depth of several feet in July 2011 event
 - Proposed alternative includes a new storm sewer system to an existing detention basin and expanding the basin into vacant land
 - Conceptual cost estimated to be \$3.5 million
- Area E – University Drive Detention Basin
 - Existing basin does not have sufficient storage for the 100-year event without overtopping and causing a flood risk to adjacent homes
 - Proposed alternatives include expanding the basin by different amounts into a Village-owned parcel and/or a vacant lot across University Drive
 - Alternatives developed to provide 100-year capacity and to maximize storage that can be provided to use as a regional basin for nearby development areas
 - Conceptual cost estimates range from \$5.5 million to \$6.8 million
- Area F – Forrest Avenue
 - No storm sewers in this area – drainage is provided by poorly defined ditches and overland flow routes
 - Street, yard flooding, and occasional structure flooding occurs when depressional areas are full of stormwater and a defined overland flow outlet does not exist
 - Limited potential for private property grading improvements to improve overland flow
 - Overland flow improvements may transfer flooding to next downstream area
 - Proposed improvement would construct small storage basin in abandoned right of way
 - Storage basin would maximize storage but would not provide 100-year design storm level of protection
 - Conceptual cost estimated to be \$706,000

- Area G – Regency Park East
 - Overland flow from vicinity ends up in cul-de-sac adjacent to 116-124 Regency Drive East
 - Overland flow outlet is too high and causes flooding of adjacent homes before it is effective
 - Proposed alternative involves constructing an overland flow swale
 - Conceptual cost estimated to be \$78,000

For separate storm sewered areas, current design standards are based on 10-year storms for inlets and sewers, and 100-year storms for overland flow and detention. These standards are considered common practice because it is not economically feasible to design for storms that exceed the 100-year intensity, such as the July 2011 storm event. Throughout this report, terms such as “10-year event” have been used to describe various storm events. This term describes the statistical chance of a similar storm occurring; a “10-year event” is one that occurs *on average* once in 10 years. There are many types of “10-year” storms, depending on the duration of the rainfall event. The following table explicitly provides the rainfall depths and durations of the various storm events analyzed in this report:

Rainfall Depth and Duration	Storm Event Description
2.64" in 2 hours 4.47" in 24 hours	10-year
3.25" in 2 hours 5.51" in 24 hours	25-year
3.82" in 2 hours 6.46" in 24 hours	50-year
4.47" in 2 hours 7.58" in 24 hours	100-year



Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom



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CLIENT:
Village of Arlington Heights

NO.	DATE	NATURE OF REVISION	CHKD.	MODEL:	1:0
FILE NAME	Exhibit1_LocationMap				
PATH	N:\Village of Arlington Heights\2033\GIS\Exhibits\Exhibit1_LocationMap.mxd				

TITLE:
Study Area Location Map

PROJ. NO. 00-0000
DATE:
SHEET 0 OF 0
DRAWING NO.
EXH 1