

Lake County Illinois July 2017 Flood

Modern Technological Systems for Flood Response Operations

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Chief Engineer

Neil Schindelar, RPIC
Engineering Technician



STORMWATER MANAGEMENT COMMISSION

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00:22 JULY 12, 2017

#

EMERGENCY ALERT

#

FLOOD WARNING FOR ALL OF LAKE COUNTY

#

EXPECT SEVERE THUNDERSTORMS &

INTENSE HEAVY RAINS

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The Disaster Declaration Process



Lake County Illinois July 2017 Flood

Cloud-Based Virtual Emergency Operations Center



STORMWATER MANAGEMENT COMMISSION



www.VEOCI.com
iOS & Android Apps

Notifications/Check-In Requests

Create New... Review or Resend...

Recipients:
All Room Members

Response Options:
☒ Request Response ☐ Notify Only ☐ Call Tree

Digit	Value	Message	Remove
1	Yes	Phone: Press 1 to respond Yes. SMS: Text 1 to respond Yes.	✖
2	No	Phone: Press 2 to respond No. SMS: Text 2 to respond No.	✖

+ Add Another Option

Communication Methods:

☒ Push Notification (Mobile App) ☐ Allow Quick Response
 Recipients without a registered mobile device will be contacted via the next selected method. Recipients that do not respond within 2 minutes will also be contacted via the next selected method.

☒ Phone ☐ Use Recording
 Recipients without a registered phone number will be contacted by the next selected method. Recipients that do not answer the phone will also be contacted by the next selected method.

The Lake County Storm Water Management Commission has moved to Red Alert Flood Response Level due to the moderate flooding that is occurring in Lake County. You are requested to check in to the July 12, 2017 Flash Flood VEOCI coordination room. Please report all flooding incidents in VEOCI. A flood briefing is

☒ SMS ☐ Confirm SMS Response
☒ Append Default Footer
 Recipients without a registered mobile phone will receive emails. Recipients with a registered number that do not respond within 5 minutes will also receive emails.

The Lake County Storm Water Management Commission has moved to Red Alert Flood Response Level due to the moderate flooding that is occurring in Lake County. You are requested to check in to the July 12, 2017 Flash Flood VEOCI coordination room. Please report all flooding incidents in VEOCI. A flood briefing is

Sent by {me}.

☒ Email
 Subject: July 12, 2017 Flash Flood Event - Veoci Check-in Request

B I U S

The Lake County Storm Water Management Commission has moved to Red Alert Flood Response Level due to the moderate flooding that is occurring in Lake County. You are requested to check in to the July 12, 2017 Flash Flood VEOCI coordination room. Please report all flooding incidents in VEOCI. A flood briefing is scheduled at 9 AM.

Cancel Delete Template Save as Template Send Now

veoci

Home Alerts 2 Threads 17 Rooms Start a Room

Home

Lake County IL, EMA[ORG] / LC Stormwater Management[GROUP] /
July 12, 2017 Flash Flood Event[ROOM]

View Op

Room Details

Side Rooms

Members

Tasks

Forms

Workflows

Files

Operational Periods

SQL Reports

Bulk Actions Filter Items... Edit View 257 Tasks Shown

Complete	Task ID	Task	Progress	Assigned To	Due Date	Modified	Modified By	Creator
✓	1344	Prepare request for CERT to assist with DA	Complete	(Multiple Assignees) Mike Jac...	No Due Date	05-Dec-2017	Scott M.Robertson	Kent McKenzie
✓	1338	Compile Initial Public Assistance (PA) data and input into reporting f...	Complete	Sharon Østerby	24-Jul-2017	27-Jul-2017	Sharon Østerby	Kurt Woolford
	1364	Pumping in Long Grove	Acknowledged	Mike Grinnell	No Due Date	25-Jul-2017	Mike Grinnell	Kent McKenzie
	1363	Kazimour Drive Drone Flyover, Port Barrington	In Progress	(Multiple Assignees) Kelcey T...	25-Jul-2017	25-Jul-2017	Kelcey Traynoff	Kurt Woolford
✓	1362	Williams Park Drone Flyover	Complete	(Multiple Assignees) Kelcey T...	25-Jul-2017	25-Jul-2017	Kelcey Traynoff	Kurt Woolford
✓	1361	Call Back Wauconda Township Highway Commissioner. 847-951-9881	Complete	Kent McKenzie	No Due Date	24-Jul-2017	Kent McKenzie	Alex Carr
✓	1360	Bar in Third Lake in need of a pump(s)	Complete	(Multiple Assignees) Phil Pern...	22-Jul-2017	22-Jul-2017	Mike Grinnell	Dan Eder
	1356	Needs Housing	Acknowledged	(Multiple Assignees) Kent Mc...	21-Jul-2017	22-Jul-2017	Amy McEwan	Mike Belmonte
	1351	Grandwood Park Lake Dam Inspection	In Progress	Mike Warner	21-Jul-2017	22-Jul-2017	Mike Warner	Mike Warner
✓	1345	Assess floating bog obstruction at the upstream side (south) of Rout...	Complete	(Multiple Assignees) Mike Wa...	20-Jul-2017	22-Jul-2017	Mike Warner	Kurt Woolford
✓	1358	Would either of you be able to talk with CBS 2 at 5 am, 5:30 am, 8:0...	Complete	(Multiple Assignees) Mike Wa...	No Due Date	22-Jul-2017	Mike Warner	Alex Carr
✓	1359	Request for additional Sandbags and Sand	Complete	Mike Grinnell	21-Jul-2017	21-Jul-2017	Mike Grinnell	Mike Belmonte
✓	1353	Bog Jam (spelled correctly) on Squaw Creek at Route 59 in Fox Lake	Complete	(Multiple Assignees) Brooke H...	21-Jul-2017	21-Jul-2017	Haley Meents	Mike Warner
✓	1355	Andrew, Assistant Village Manager for the Village of Deerfield, is see...	Complete	Mike Grinnell	No Due Date	21-Jul-2017	Mike Grinnell	Alex Carr
✓	1357	Deliver 4-yards sand and 500 sand bags Strawberry Condos 3061 Be...	Complete	Mike Grinnell	21-Jul-2017	21-Jul-2017	Mike Grinnell	Scott M.Robertson
✓	1247	Route 120 Closed	Complete	Mike Dacey	15-Jul-2017	21-Jul-2017	Rob Scaramella	Mike Dacey
	1354	Debris Clean Up Resource	Acknowledged	(Multiple Assignees) Kent Mc...	21-Jul-2017	21-Jul-2017	Amy McEwan	Mike Belmonte
	1352	Potentially compromised railroad	New	Kent McKenzie	21-Jul-2017	21-Jul-2017	Mike Belmonte	Mike Belmonte
✓	1350	SMC Field Team 3 deploying for IDA Assistance - RLB/RLB - per PB...	Complete	(Multiple Assignees) Glenn W...	20-Jul-2017	21-Jul-2017	Glenn Westman	Glenn Westman
✓	1307	Compile list of affected properties in Fox Lake incorporated limits (be...	Complete	Jeff Laramy	18-Jul-2017	20-Jul-2017	Jeff Laramy	Kurt Woolford
✓	1310	Call reporter regarding SMC shapefiles.	Complete	Jeff Laramy	18-Jul-2017	20-Jul-2017	Jeff Laramy	Kurt Woolford
✓	1336	Drone flights review & correlation for IDA						
✓	1348	Wauconda Township Supervisor needs 6000 sand						
✓	1346	Request for Clean Up Kits						

Current Time 08:55:55

GREEN ALERT (THREAT DECREASING)

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Home Alerts 2 Threads 17 Rooms Start a Room

Home

Lake County IL, EMA[ORG] / LC Stormwater Management[GROUP] /
July 12, 2017 Flash Flood Event[ROOM]

View Op

Room Details

Side Rooms

Members


Bulk Actions Filter Items... Apply View 4 Side Rooms

	State	Join	Name
<input type="checkbox"/>	●		Partner Information
<input type="checkbox"/>	●		Lake County EOC
<input type="checkbox"/>	●		PIO Public Information
<input type="checkbox"/>	●		Damage Assessment


Tasks and Side Rooms

Partner Resource Dashboard

- Damage Assessment Forms / Instructions
- Inundation Maps
- Proclamations and Policy Documents

 EM Partners Dashboard

← → ↻ Secure https://veoci.com/veoci/p/dashboard/dxg39pvda4?preview=true

 **veoci** [Privacy Policy](#)

Lake County IL, EMA / **EM Partners Dashboard**

Online Forms <ul style="list-style-type: none">Individual Assistance entryPublic Assistance entryProclamation Template (word)Resource Request Form	Chain Inundation Forecast Maps <ul style="list-style-type: none">Chain Overall - 7/15/17 - 8.5 ftChain North - 7/15/17 - 8.5 ftChain N Ctrl - 7/15/17 - 8.5 ftChain S Ctrl - 7/15/17 - 8.5 ftChain South - 7/15/17 - 8.5 ftChain Overall - 7/13/17 - 8.0 ftChain North - 7/13/17 - 8.0 ftChain N Ctrl - 7/13/17 - 8.0 ftChain S Ctrl - 7/13/17 - 8.0 ftChain South - 7/13/17 - 8.0 ft	Fox River Maps <ul style="list-style-type: none">Fox - North of ChainFox - South of Chain	LC PB&D Damage Assess **LARGE FILES** <ul style="list-style-type: none">Unincorp - Fox - CountywideUnincorp - Fox - NorthUnincorp - Fox - SouthUnincorp - Des Plaines RiverUnincorp - Countywide	Des Plaines Inundation Maps <ul style="list-style-type: none">IDNR Inundation Depth MapsDPR Impacted Structure Forecast
EM Partner Information Submission <p>SAVE your form with your township or community name in front.</p> <p>EMAIL form(s) as attachments to: room-43200@room.veoci.com</p>	IEMA Links <ul style="list-style-type: none">IEMA - Disaster Impact FormIEMA - IA Flood FormIEMA - IA Flood - Form InstructionsIEMA - PA Form & InstructionsIEMA - PA Program Docs	PA Key Information <p>PA State Threshold \$18,358,055.43 \$1.43 per person 12,837,801 population</p> <p>PA County Threshold \$2,539,497.82 \$3.61 per person 703,462 population</p>	Reference Documents <ul style="list-style-type: none">IDNR Fox Update 7-14-17IDNR - Fox Closure - SouthIDNR - Fox Closure - NorthLake County Disaster ProclamationAerial Imagery Website	

Public Resource Dashboard

- Damage Assessment Forms / Instructions
- Inundation Maps
- Resource Links

The screenshot shows a web browser window with the URL <https://veoci.com/veoci/p/dashboard/zq88dr3g3n?preview=true>. The page header features the Veoci logo and a navigation bar with the text "Lake County IL, EMA / July 2017 Lake County IL Flood PUBLIC Information". The main content area is divided into five columns:

- Report My Impacts!**
 - Report My Damage
 - Resident Flood FAQs
- How to Help**
 - Volunteer w/ Red Cross
- Fox / Chain Flooding Maps**
 - Fox River - Far North Forecast
 - Chain Overall Forecast - 7/15/17
 - Chain - North Forecast - 7/15/17
 - Chain - N Central Fcst - 7/15/17
 - Chain - S Central Fcst - 7/15/17
 - Chain - South Forecast - 7/15/17
 - Fox River - South Forecast
- Des Plaines Flooding Maps**
 - DPR Inundation Maps - IDNR
 - DPR Impacted Structures - LCSMC
- Red Cross Reception Centers**

These Red Cross centers are open today, July 17, 2017. The need for having reception centers open will be assessed daily, and this list may change. Please check back here for updates.

 - **Magee Middle School**
500 N. Cedar Lake Road
Round Lake
 - **Jefferson Middle School**
600 South Lewis Avenue
Waukegan

Red Cross Flood Hotline: 847-220-7495
- Links**
 - Alert Lake County
 - Flood Safety Tips
 - Local Road Closures
 - IDNR - Fox Closure - South
 - IDNR - Fox Closure - North
 - Lake Co Disaster Proclamation

Map

Create New Entry

Draw Filter Box

Other Tools

Edit Form

Edit Custom Actions

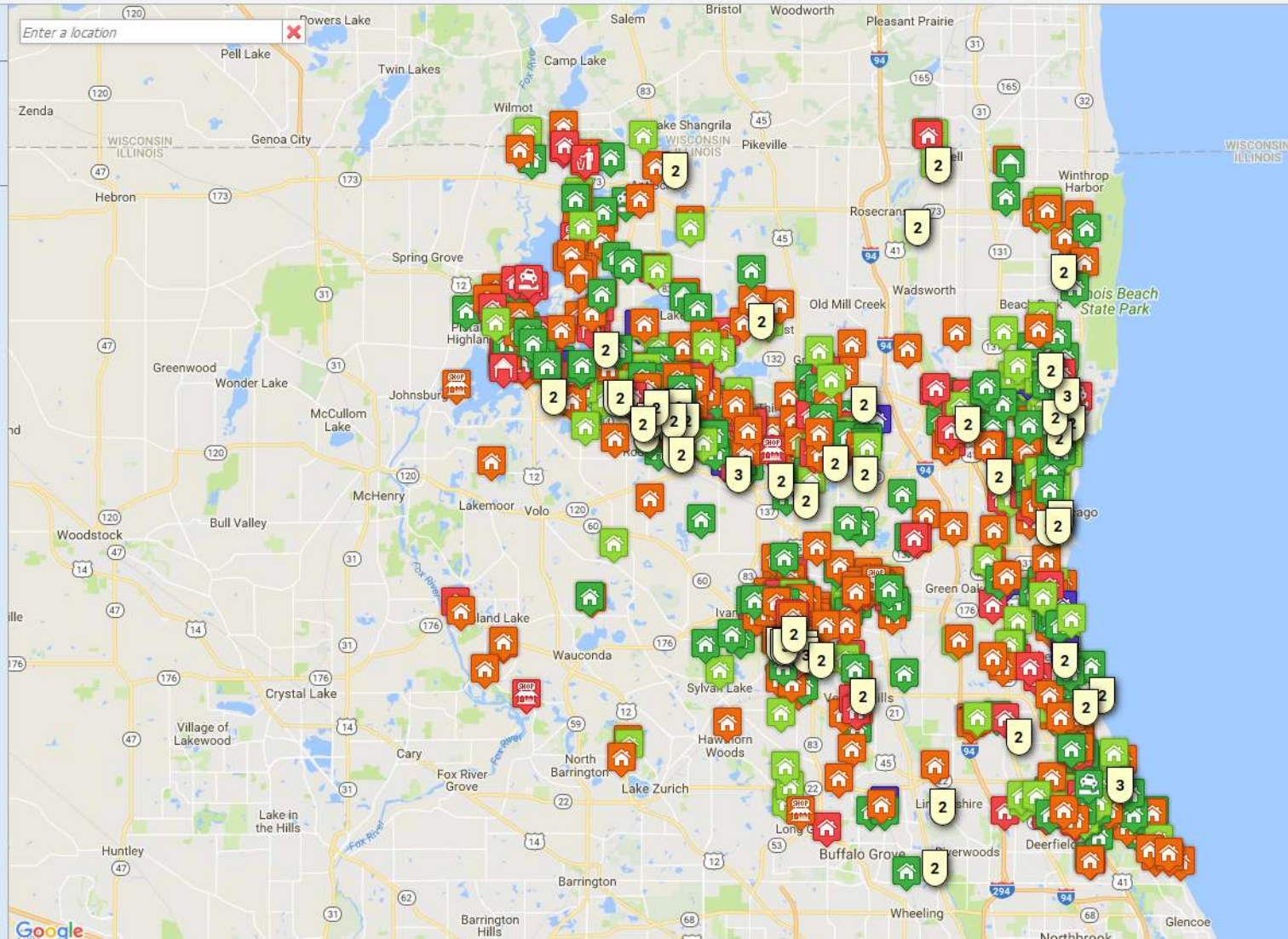
Schedule Review

View Room Dashboard

Export Data to Excel

Export Data to PDF

View All Forms



SELF-REPORT FORMS - residents could enter their location, contact information, damage description, amount of water, help needed? insured?

Lake County Illinois July 2017 Flood

Rainfall and River Analyses



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- Local forecast by "City, St" Go
RSS RSS Feeds
Warnings
Current
By State/County...
UV Alerts
Observations
Radar
Satellite
Snow Cover
Surface
Weather...
Observed Precip
Forecasts
Local
Graphical
Aviation
Marine
Hurricanes
Severe Weather
Fire Weather
Text Messages
By State
By Message Type
National
Forecast Models
Numerical Models
Statistical
Models...
MOS Prod
GFS-LAMP Prod
Climate
Past Weather
Predictions
Weather Safety
Weather Radio
Hazard Assmt...
StormReady /
TsunamiReady
Skywarn™
Education/Outreach
Information Center
Tsunamis
Publications...
Contact Us
FAQ
Comments...

The precipitation output files have changed formats.

As of approximately 8:15 pm EDT, on June 27, the precipitation file formats were updated as discussed in this Service Change Notification.

Warnings & Forecasts Graphical Forecasts National Maps Radar Water Air Quality Satellite Climate
River Observations River Forecasts Experimental Long-Range River Flood Risk Precipitation River Download Other Information
QPE: Quantitative Precipitation Estimates Download About NWS Precip Analysis Other Useful Information Survey & Feedback Regional / RFC Precip Data

Last Update: 09/11/2017 1343 GMT

(1) Choose Format (2) Select Time Range (3) Select Date (4) Select Download (5) Press the "Download" Button
☐ NCEP Stage IV Archive
☒ NetCDF
☐ GeoTIFF
☐ Full resolution image for CONUS
Year: 2017 Month: July Day: 12
1 Day
Download

File Name	Files Included
nws_precip_1day_2017712_netcdf	nws_precip_1day_20170712_ak.nc nws_precip_1day_20170712_conus.nc nws_precip_1day_20170712_pr.nc

General Information

The precipitation data are quality-controlled, multi-sensor (radar and rain gauge) precipitation estimates obtained from National Weather Service (NWS) River Forecast Centers (RFCs) and mosaicked by National Centers for Environmental Prediction (NCEP). The original data from NCEP is in GRIB (GRidded Binary or General Regularly-distributed Information in Binary form) format (files pre-March 22nd, 2017 are in XMRG format) and projected in the Hydrologic Rainfall Analysis Project (HRAP) grid coordinate system, a polar stereographic projection true at 60°N / 105°W.

Use the form above to download these files. To automate or download multiple datasets, you can download a program called wget. Due to increased web security, the anonymous FTP server is no longer available.

If you wish to use WGET (see above) or to manually download the data see:

- QPE data derived from NCEP Stage IV Data post-March 22nd, 2017
- QPE data derived from Stage III analysis pre-March 22nd, 2017

If you have any questions or problems, please contact AHPS.Precip@noaa.gov.

Metadata

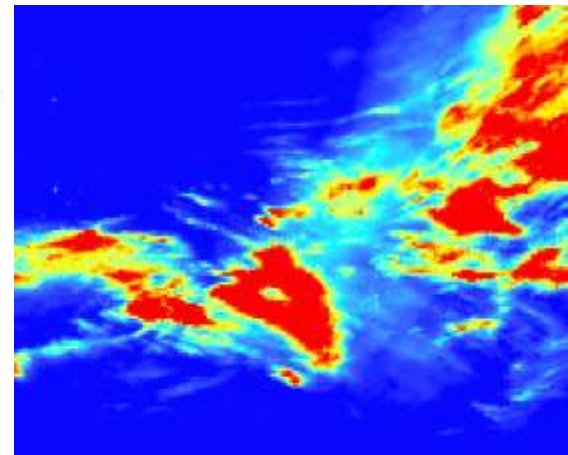
The following links provide more information about the observed precipitation, normal precipitation, and derived precipitation products:

- Observed precipitation
- Normal precipitation
- Departure from normal precipitation
- Percent of normal precipitation

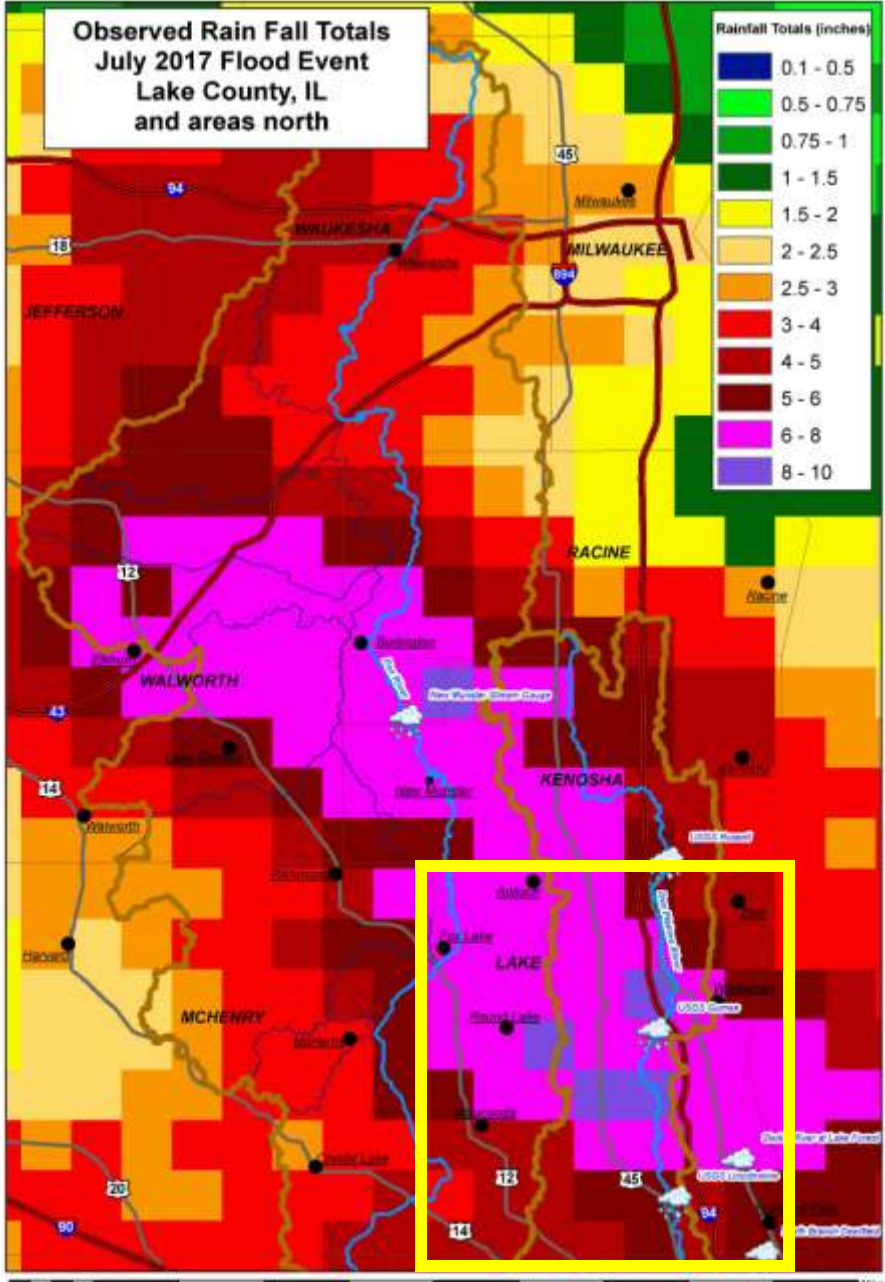
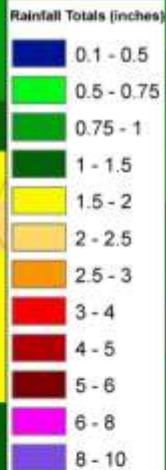
Network Common Data File

Input netCDF File
Variable: observation
Dimension: 1
Output Raster Layer: observation_layer1
Band Dimension (optional):
Dimension Values (optional):
Value Selection Method (optional):
OK Cancel Environment... Show Help >>

Observed Rainfall (Radar) 3m/5km



Observed Rain Fall Totals July 2017 Flood Event Lake County, IL and areas north



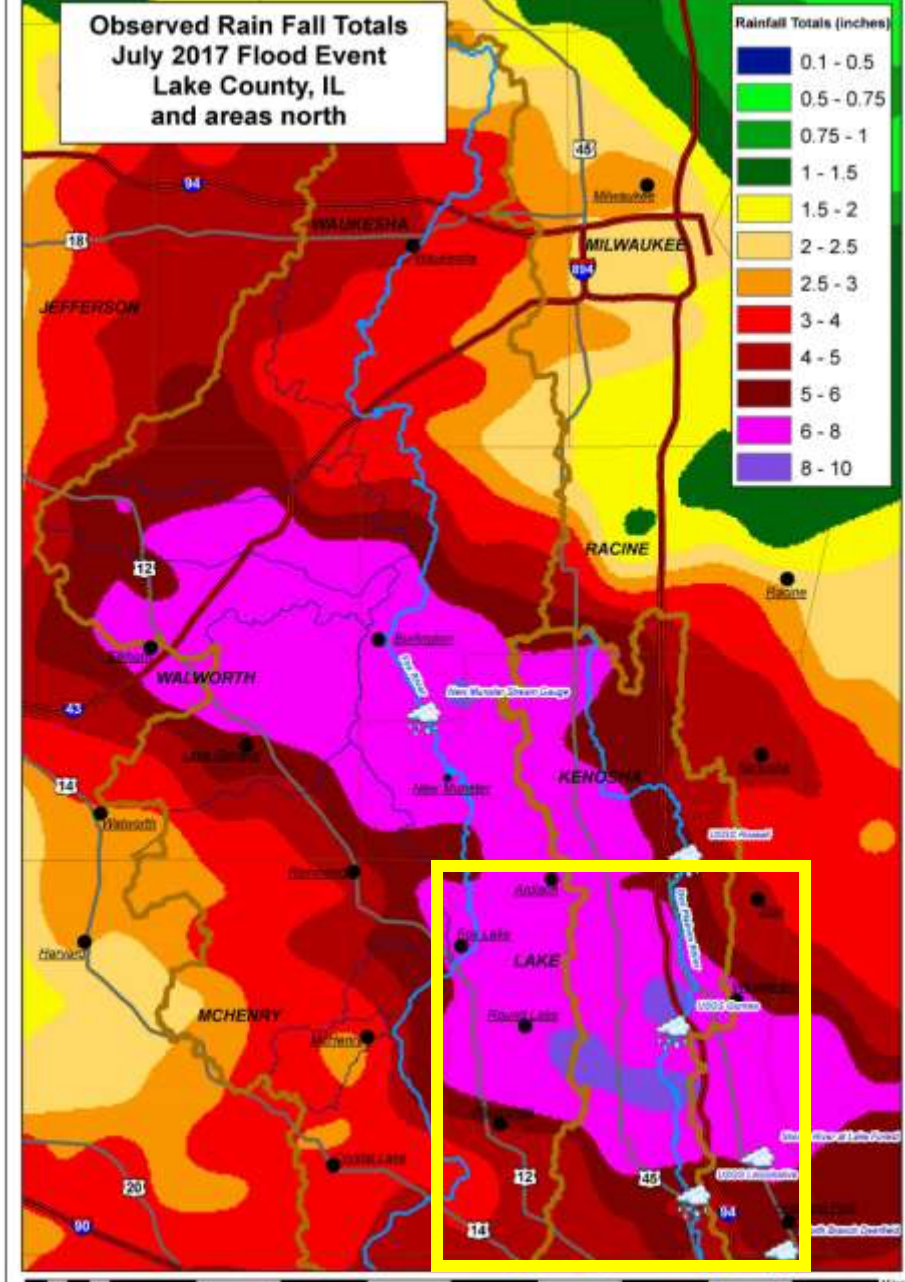
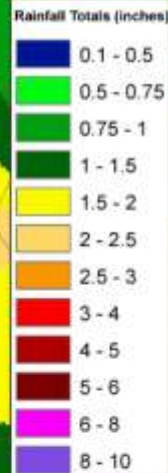
-DRAFT-

This map is provided for general informational purposes only. Map features have been derived from various sources, each of which has its own errors and omissions. The location of all features and boundaries shown on this map are approximate. Lake County Stormwater Management Commission, November 1, 2017.

DATA SOURCES:
U.S. Census Bureau
National Weather Service
United States Geological Service
Lake County Stormwater Management

STORMWATER MANAGEMENT COMMISSION

Observed Rain Fall Totals July 2017 Flood Event Lake County, IL and areas north



-DRAFT-

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National Weather Service
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Lake County Stormwater Management

STORMWATER MANAGEMENT COMMISSION

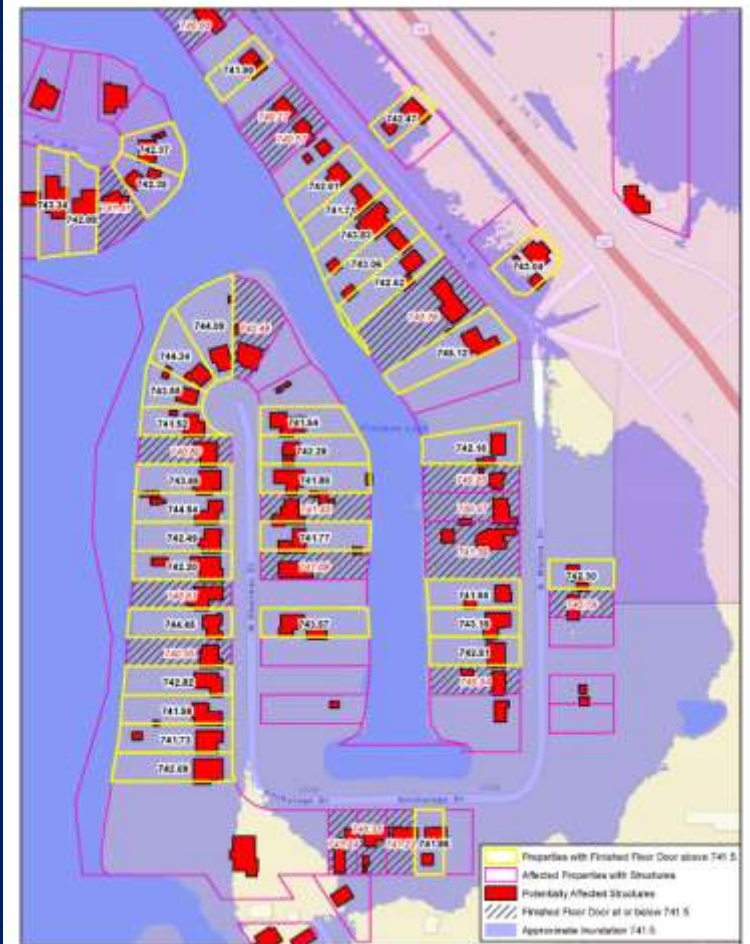
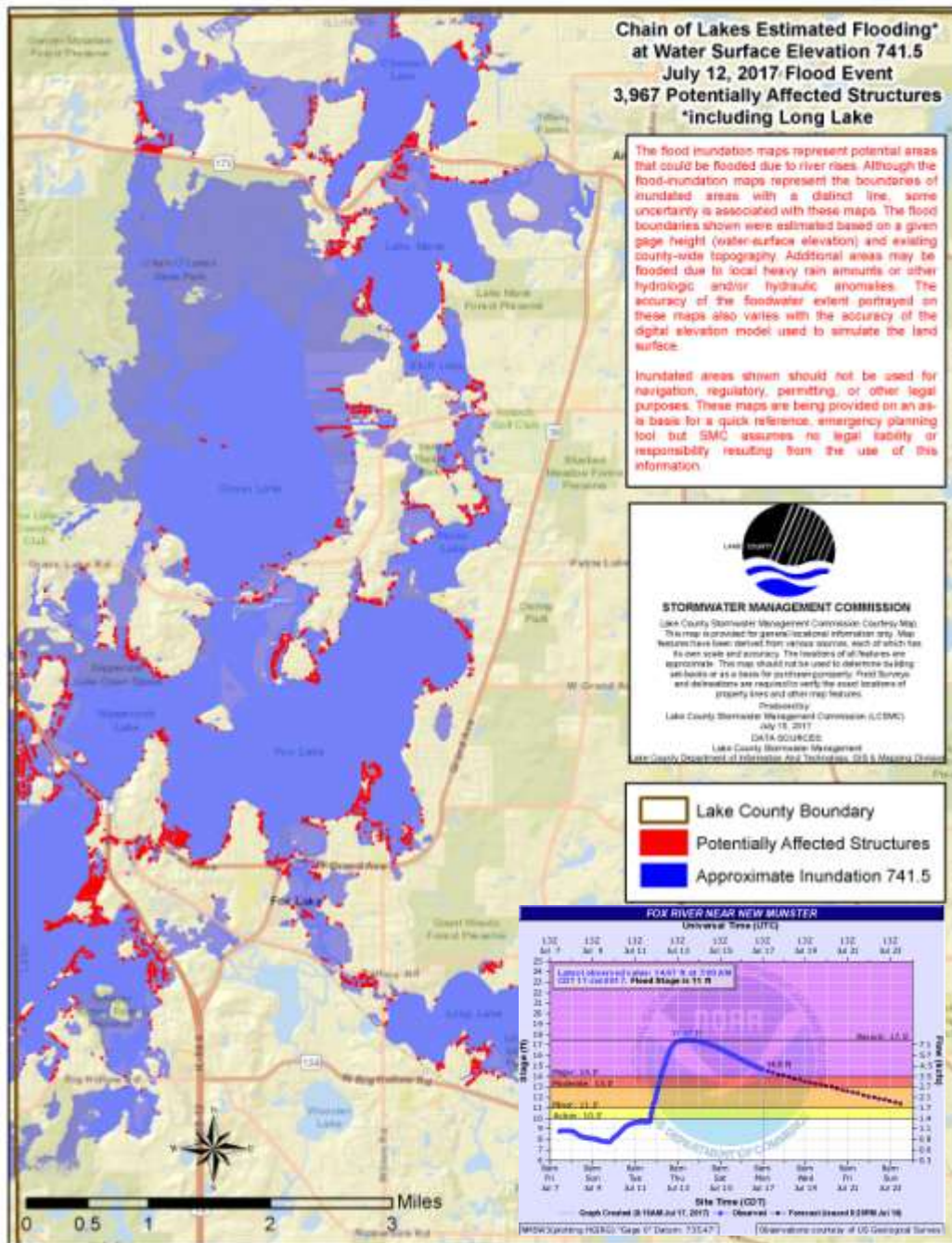
- National Weather Service forecast and forecast discussion
- Storm Prediction Center (SPC)
- Weather Prediction Center (WPC)
- Weather Underground Wundermap
- Advanced Hydrologic Prediction Service (AHPS) hydrographs and river forecasts for:
 - Fox River at New Munster, Fox River at Algonquin Dam Tailwater; Des Plaines River at Russell, Des Plaines River at Gurnee and Des Plaines River at Lincolnshire
 - USGS river gage information for Fox Lake near Lake Villa, North Branch Chicago River and the Skokie River
- Fox River and Chain of Lakes update from the IDNR/OWR
- Coordination with the National Weather Service Forecasters on an as-needed basis
- Rain gages
 - SMC rain gages
 - USGS rain gages
 - National Weather Service Co-Op sites
 - National Weather Service CoCoRaHS
 - National Weather Service – River Forecast Center Radar Estimated Rainfall distribution graphics
- Any other source of reliable information that could be identified

Lake County Illinois July 2017 Flood

Inundation Maps



STORMWATER MANAGEMENT COMMISSION



Lower Fox River Estimated Flooding

Fox River at Algonquin Tailwater

Predicted Crest of 13ft on July 20, 2017

July 2017 Flood Event

STORMWATER MANAGEMENT COMMISSION
Lake County Stormwater Management Commission (LCSM) Map
This map is provided for general information only. It is not intended to be used for engineering or construction purposes. The Commission is not responsible for any errors or omissions. This map should not be used as a basis for engineering or construction purposes. For more information, contact the Commission at (920) 339-1000.

Map of Lower Fox River at Algonquin Tailwater
The flood inundation map represents potential areas that could be flooded due to river rises. Although the flood inundation map represents the boundaries of inundated areas with a dotted line, some uncertainty is associated with these maps. The flood boundaries shown were estimated based on a green gauge height (water surface elevation) and existing nearby water topography. Additional areas may be flooded due to local heavy rain amounts or other hydrologic and/or hydraulic anomalies. The accuracy of the floodwater extent portrayed on these maps also varies with the accuracy of the digital elevation model used to generate the flood surface.

Properties with Potentially Affected Structures
Potentially Affected Structures
Approximate Inundation on 20JUL2017

FOX RIVER AT ALGONQUIN TAILWATER
Inundation Time (hrs)
100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 2100 2150 2200 2250 2300 2350 2400 2450 2500 2550 2600 2650 2700 2750 2800 2850 2900 2950 3000 3050 3100 3150 3200 3250 3300 3350 3400 3450 3500 3550 3600 3650 3700 3750 3800 3850 3900 3950 4000 4050 4100 4150 4200 4250 4300 4350 4400 4450 4500 4550 4600 4650 4700 4750 4800 4850 4900 4950 5000 5050 5100 5150 5200 5250 5300 5350 5400 5450 5500 5550 5600 5650 5700 5750 5800 5850 5900 5950 6000 6050 6100 6150 6200 6250 6300 6350 6400 6450 6500 6550 6600 6650 6700 6750 6800 6850 6900 6950 7000 7050 7100 7150 7200 7250 7300 7350 7400 7450 7500 7550 7600 7650 7700 7750 7800 7850 7900 7950 8000 8050 8100 8150 8200 8250 8300 8350 8400 8450 8500 8550 8600 8650 8700 8750 8800 8850 8900 8950 9000 9050 9100 9150 9200 9250 9300 9350 9400 9450 9500 9550 9600 9650 9700 9750 9800 9850 9900 9950 10000 10050 10100 10150 10200 10250 10300 10350 10400 10450 10500 10550 10600 10650 10700 10750 10800 10850 10900 10950 11000 11050 11100 11150 11200 11250 11300 11350 11400 11450 11500 11550 11600 11650 11700 11750 11800 11850 11900 11950 12000 12050 12100 12150 12200 12250 12300 12350 12400 12450 12500 12550 12600 12650 12700 12750 12800 12850 12900 12950 13000 13050 13100 13150 13200 13250 13300 13350 13400 13450 13500 13550 13600 13650 13700 13750 13800 13850 13900 13950 14000 14050 14100 14150 14200 14250 14300 14350 14400 14450 14500 14550 14600 14650 14700 14750 14800 14850 14900 14950 15000 15050 15100 15150 15200 15250 15300 15350 15400 15450 15500 15550 15600 15650 15700 15750 15800 15850 15900 15950 16000 16050 16100 16150 16200 16250 16300 16350 16400 16450 16500 16550 16600 16650 16700 16750 16800 16850 16900 16950 17000 17050 17100 17150 17200 17250 17300 17350 17400 17450 17500 17550 17600 17650 17700 17750 17800 17850 17900 17950 18000 18050 18100 18150 18200 18250 18300 18350 18400 18450 18500 18550 18600 18650 18700 18750 18800 18850 18900 18950 19000 19050 19100 19150 19200 19250 19300 19350 19400 19450 19500 19550 19600 19650 19700 19750 19800 19850 19900 19950 20000 20050 20100 20150 20200 20250 20300 20350 20400 20450 20500 20550 20600 20650 20700 20750 20800 20850 20900 20950 21000 21050 21100 21150 21200 21250 21300 21350 21400 21450 21500 21550 21600 21650 21700 21750 21800 21850 21900 21950 22000 22050 22100 22150 22200 22250 22300 22350 22400 22450 22500 22550 22600 22650 22700 22750 22800 22850 22900 22950 23000 23050 23100 23150 23200 23250 23300 23350 23400 23450 23500 23550 23600 23650 23700 23750 23800 23850 23900 23950 24000 24050 24100 24150 24200 24250 24300 24350 24400 24450 24500 24550 24600 24650 24700 24750 24800 24850 24900 24950 25000 25050 25100 25150 25200 25250 25300 25350 25400 25450 25500 25550 25600 25650 25700 25750 25800 25850 25900 25950 26000 26050 26100 26150 26200 26250 26300 26350 26400 26450 26500 26550 26600 26650 26700 26750 26800 26850 26900 26950 27000 27050 27100 27150 27200 27250 27300 27350 27400 27450 27500 27550 27600 27650 27700 27750 27800 27850 27900 27950 28000 28050 28100 28150 28200 28250 28300 28350 28400 28450 28500 28550 28600 28650 28700 28750 28800 28850 28900 28950 29000 29050 29100 29150 29200 29250 29300 29350 29400 29450 29500 29550 29600 29650 29700 29750 29800 29850 29900 29950 30000 30050 30100 30150 30200 30250 30300 30350 30400 30450 30500 30550 30600 30650 30700 30750 30800 30850 30900 30950 31000 31050 31100 31150 31200



- *Develop profile for the system based on surveyed high water marks at various locations*
- *Intersect Lake County building polygons with inundation layers (Potentially Affected Structures)*
- *Use parcel layer to come up with Potentially Affected Properties*
- *Surveyed structure database with elevations*



- *IDNR – Office of Water Resources Des Plaines River Inundation Model*
- *Intersect Lake County building polygons with inundation layers (Potentially Affected Structures)*
- *Use parcel layer to come up with Potentially Affected Properties*
- *Surveyed structure database with elevations*

July 2017 Flood Event Potentially Affected Structures based on Inundation Layers

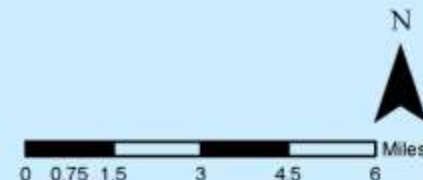
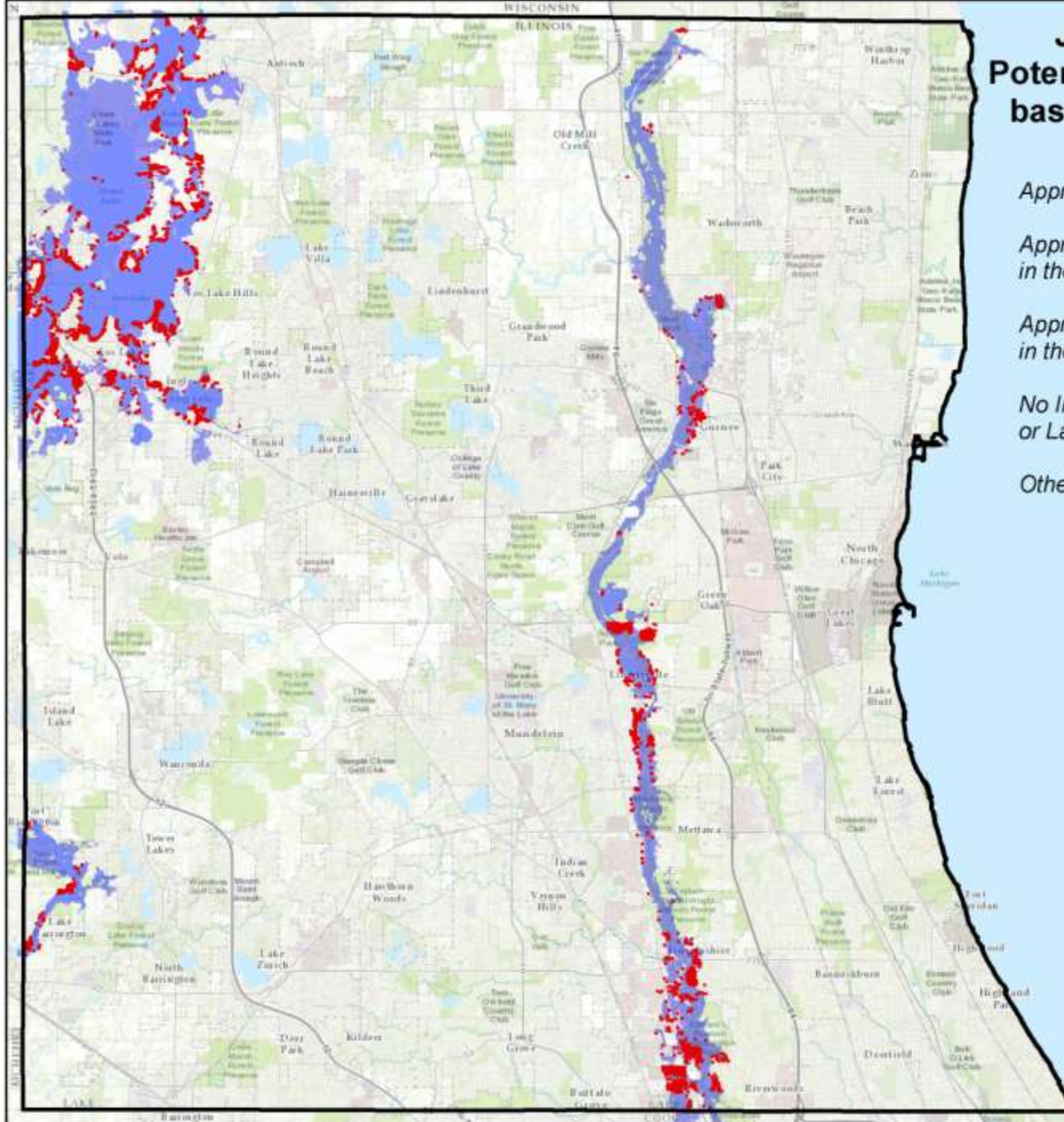
Approx 6000 Potentially Affected Structures

*Approx 1700 Potentially Affected Structures
in the Des Plaines Watershed*

*Approx 4300 Potentially Affected Structures
in the Fox Watershed*

*No Inundation Layers for the North Branch
or Lake Michigan Watersheds*

Other Flooding Locations?



- Lake County Boundary
- Approximate Inundation
- Potentially Affected Structures



STORMWATER MANAGEMENT COMMISSION

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Lake County Stormwater Management Commission
September 12, 2017

DATA SOURCES:
Lake County Stormwater Management
Illinois Department of Natural Resources
Lake County Planning, Building, and Development
Lake County Department of Information And Technology, GIS & Mapping Division

July 2017 Flood Event Potentially Affected Structures based on Inundation Layers and Veoci Self Reporting Tool

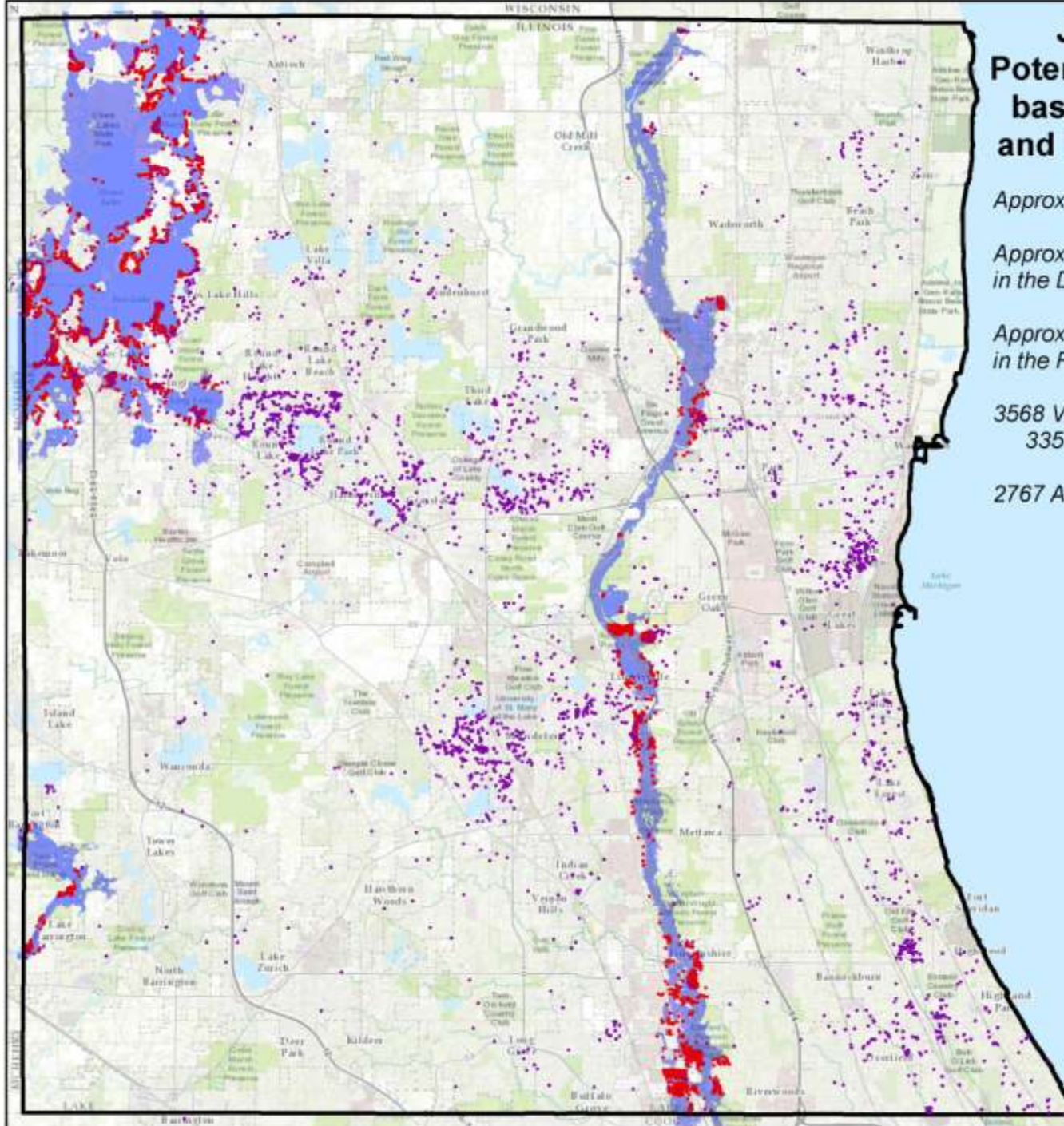
Approx 6000 Potentially Affected Structures

*Approx 1700 Potentially Affected Structures
in the Des Plaines Watershed*





*Approx 4300 Potentially Affected Structures
in the Fox Watershed*

*3568 Veoci Self Reports
335 reports of water in 1st Floor*

2767 Addresses/Properties submitted to IEMA



0 0.75 1.5 3 4.5 6 Miles

-  Lake County Boundary
-  Approximate Inundation
-  Potentially Affected Structures
-  Veoci Self Reports



STORMWATER MANAGEMENT COMMISSION

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September 12, 2017

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Lake County Illinois July 2017 Flood

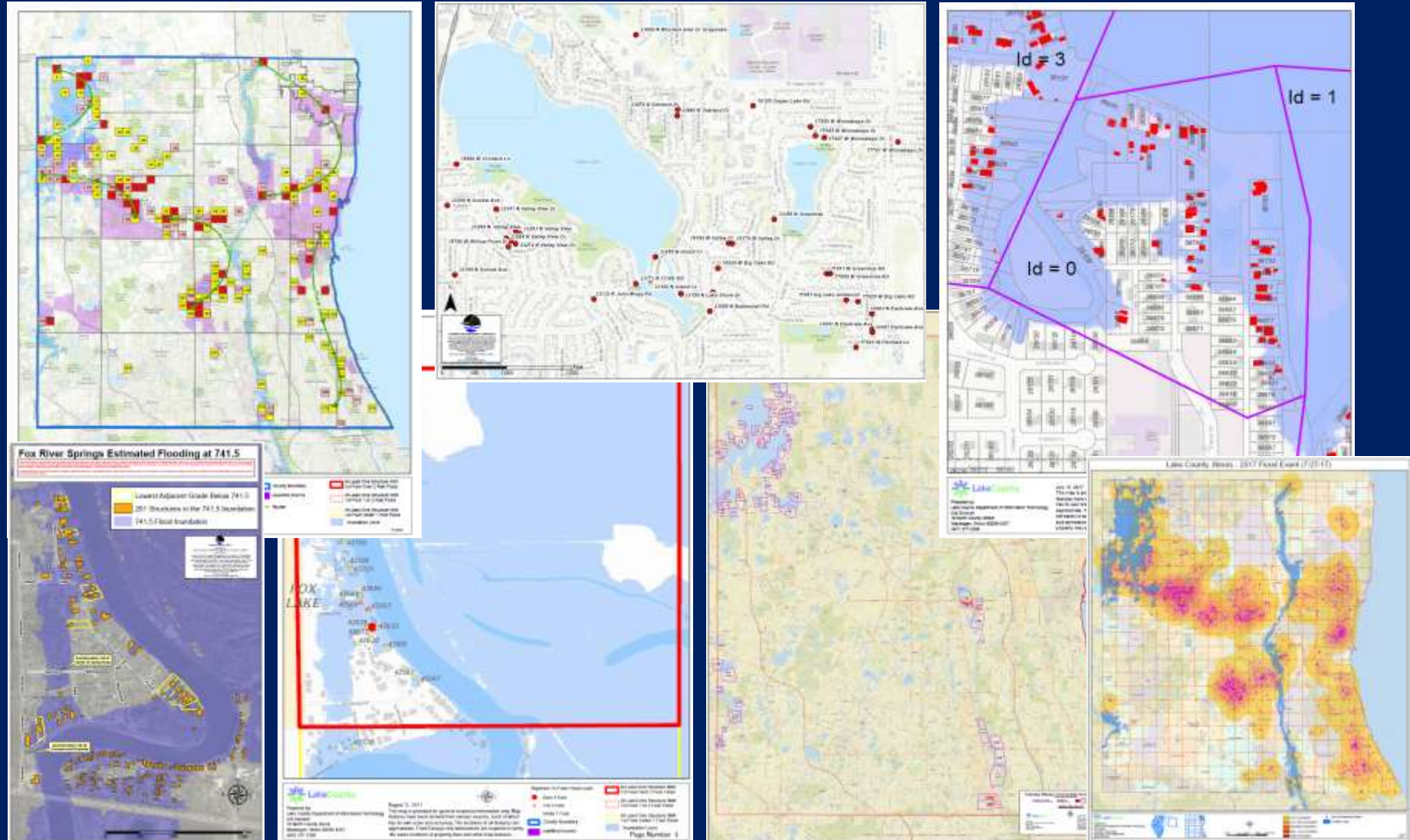
Field Tools



STORMWATER MANAGEMENT COMMISSION

Good Old Fashion Paper Maps

Over 200 paper map products produced to assist field crews, decision makers, and local officials



Tablets, Smart Phones, Laptops

ArcGIS Explorer App



Flood Event Viewer

Public Web Mapping Application

2017 Flood Event Viewer

Find aerial photographs at various geographic locations along flooded areas. Click the points to view a thumbnail, and click the thumbnail to view an enlarged image. For more information and the latest updates, please visit the [2017 Flood Information page](#).



Operational layers

- ▶ ☒ CAP Points with Aerial Photographs
- ▶ ☒ Ground Photographs
- ▶ ☒ Drone Photographs
- ▶ ☒ Drone Flight Path & Video



Lake County SMC sUAS Program

NEIL SCHINDELAR



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graph TD; A[What is an sUAS?] --> B[SMC Policy and FAA Regulations]; B --> C[Uses and efficiencies provided by sUAS's]; C --> D[Imagery and Data Results]
```

What is an sUAS?

SMC Policy and
FAA Regulations

Uses and
efficiencies
provided by
sUAS's

Imagery and
Data Results

What is an sUAS?

- Small Unmanned Aerial System
- Synonymous with UAV (Unmanned Aerial Vehicle) and Drone
- Unmanned and Under 55 pounds

Selecting a drone!

Features:

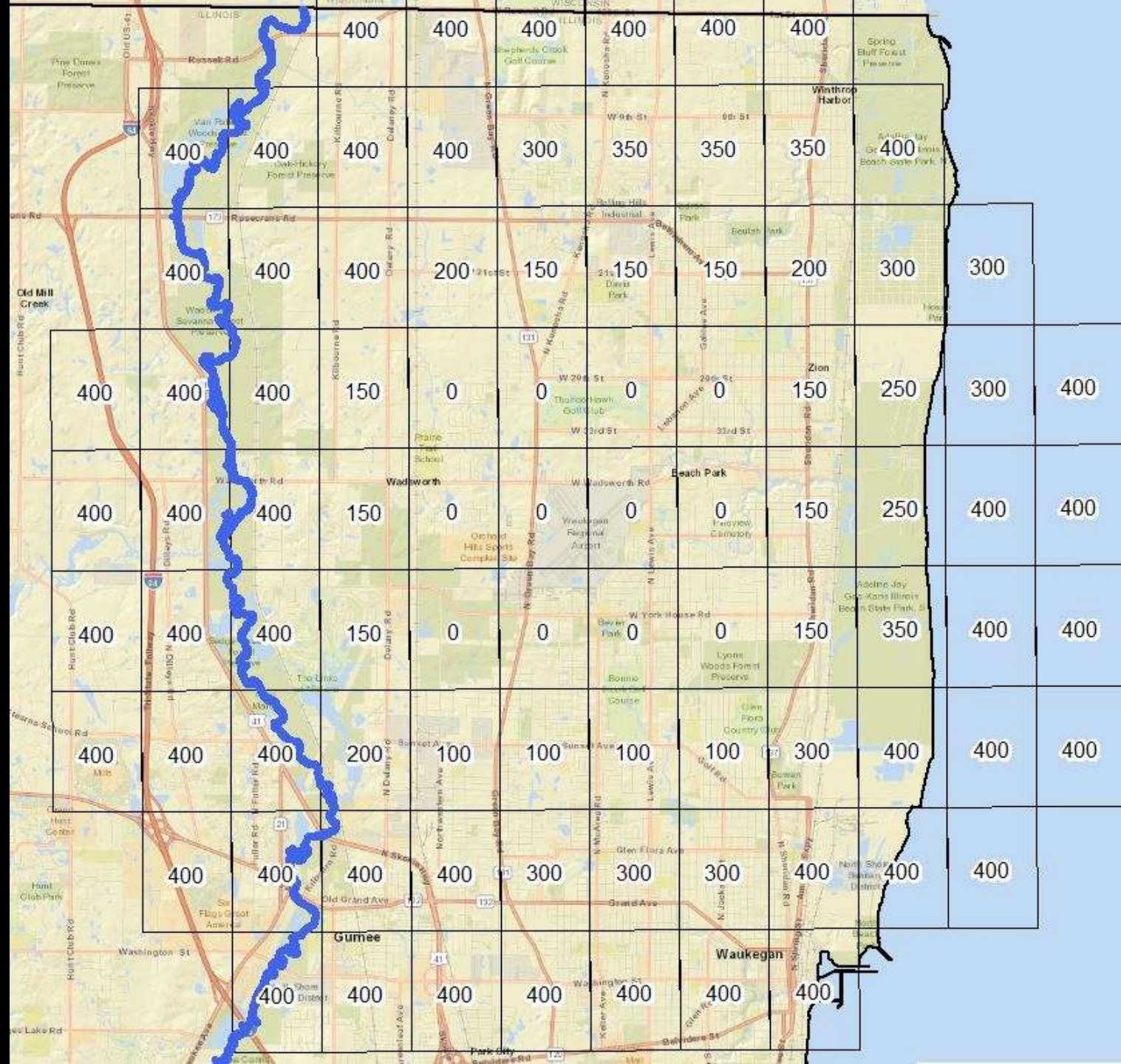
- GPS Assistance
- Adjustable Camera
- 4K Video
- High megapixel photos
- Collision Detection

Usability:

- Flight automation
- Apps (Pix4D, Litchi, AutoPilot)
- tablet vs built-in controller

SMC sUAS Policy and FAA Regulations

- Remote Pilot Certification is required for all commercial/government use
- Policy is closely based off the FAA Part 107 Regulations
 - Cannot fly over people
 - Cannot fly higher than 400 feet, unless within 400 feet of a structure
 - Cannot fly over private property without permission (except in an emergency, in which we will not fly low enough to see into buildings)
 - MUST fly within Visual Line of Sight (VLOS) and follow Visual Flight Rules (VFR)
 - Cannot fly within 5 miles of an airport with controlled airspace without prior authorization from the FAA or the tower's Air Traffic Controller (ATC)
 - FAA sUAS Airspace Map: LAANC System (Low Altitude Authorization Notification Capability)



Uses and Efficiencies

- Regulatory Site Inspections
- Project Progress Video
- Generate site-specific Topography (Orthos, DTM, DSM, contours)
- Building/Facility inspections (roofs, bridges, towers)
- Indoor and Underground Applications
- Disaster/Emergency Response – Flood Response!
- Dirty Jobs Video



FLOOD RESPONSE - DRONE FLIGHT STATS



35

TOTAL FLIGHTS

3

TOTAL HOURS

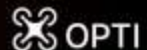
20

TOTAL MILES



or calibrate compass.

Compass E



5.8G

72%



Auto ISO
100

SHUTTER
120

F
4.0

EV
+0.0

WB
Auto

N/A

47.49GB



AFC/MF

AE



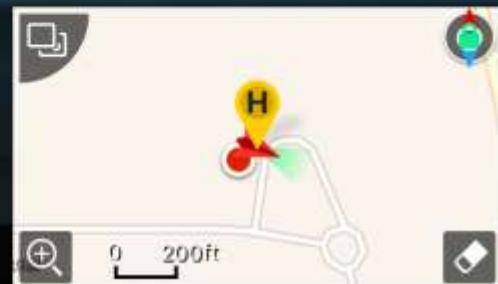
D 13 ft

H 0.0 ft

H.S 0.0 mph

V.S 0.0 mph

VPS 0.3 ft

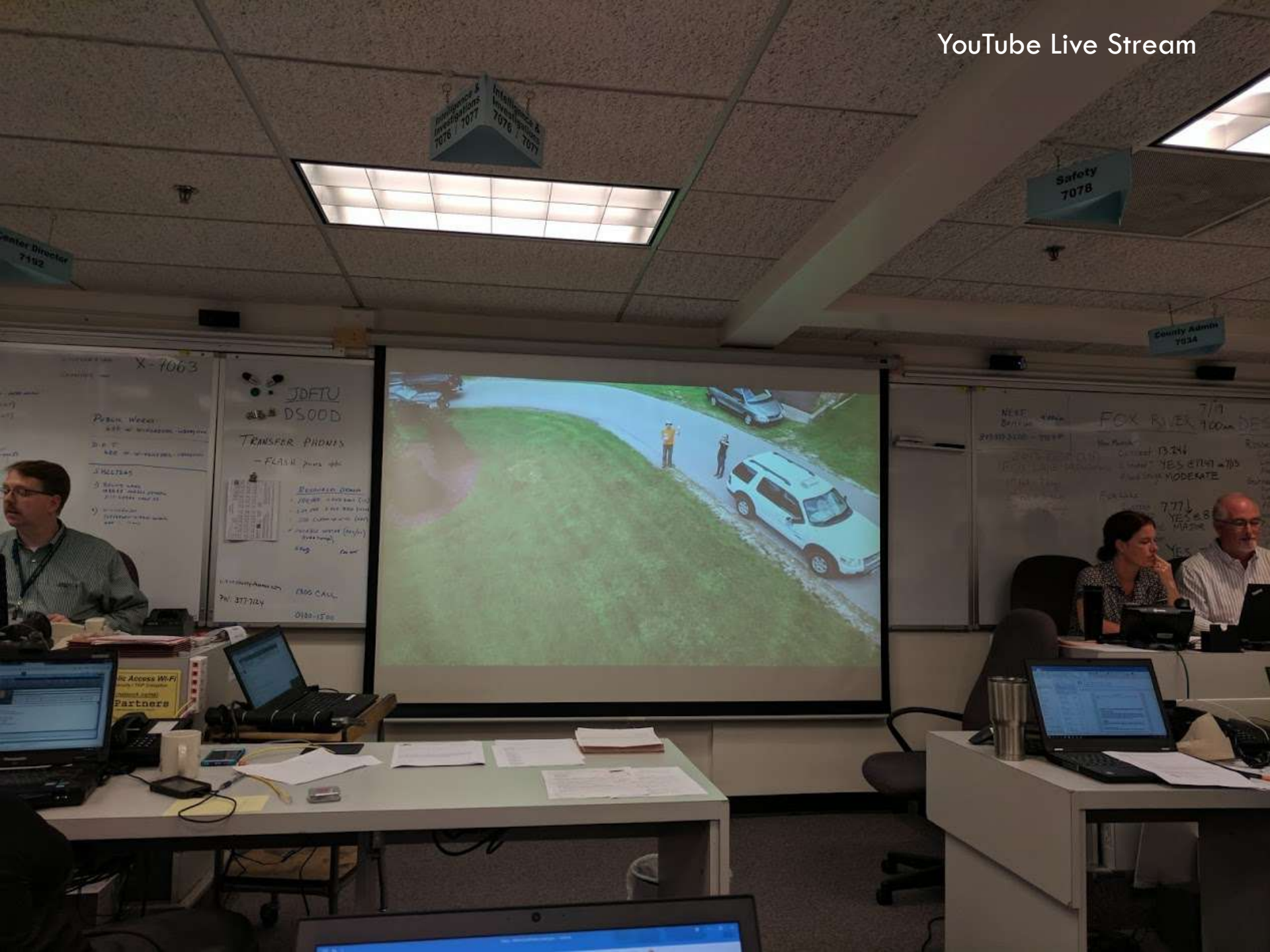


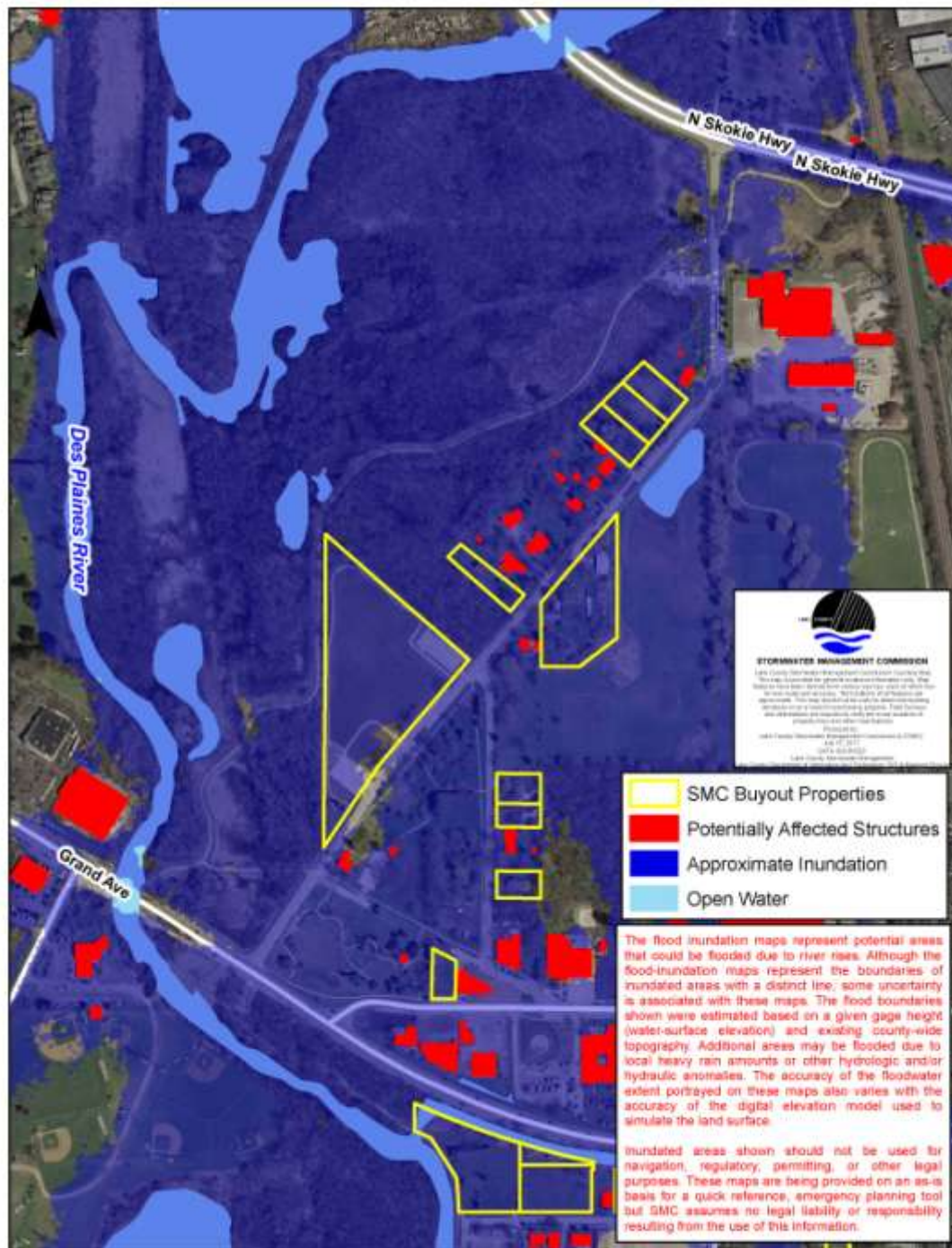
102.3 XLC Radio Station



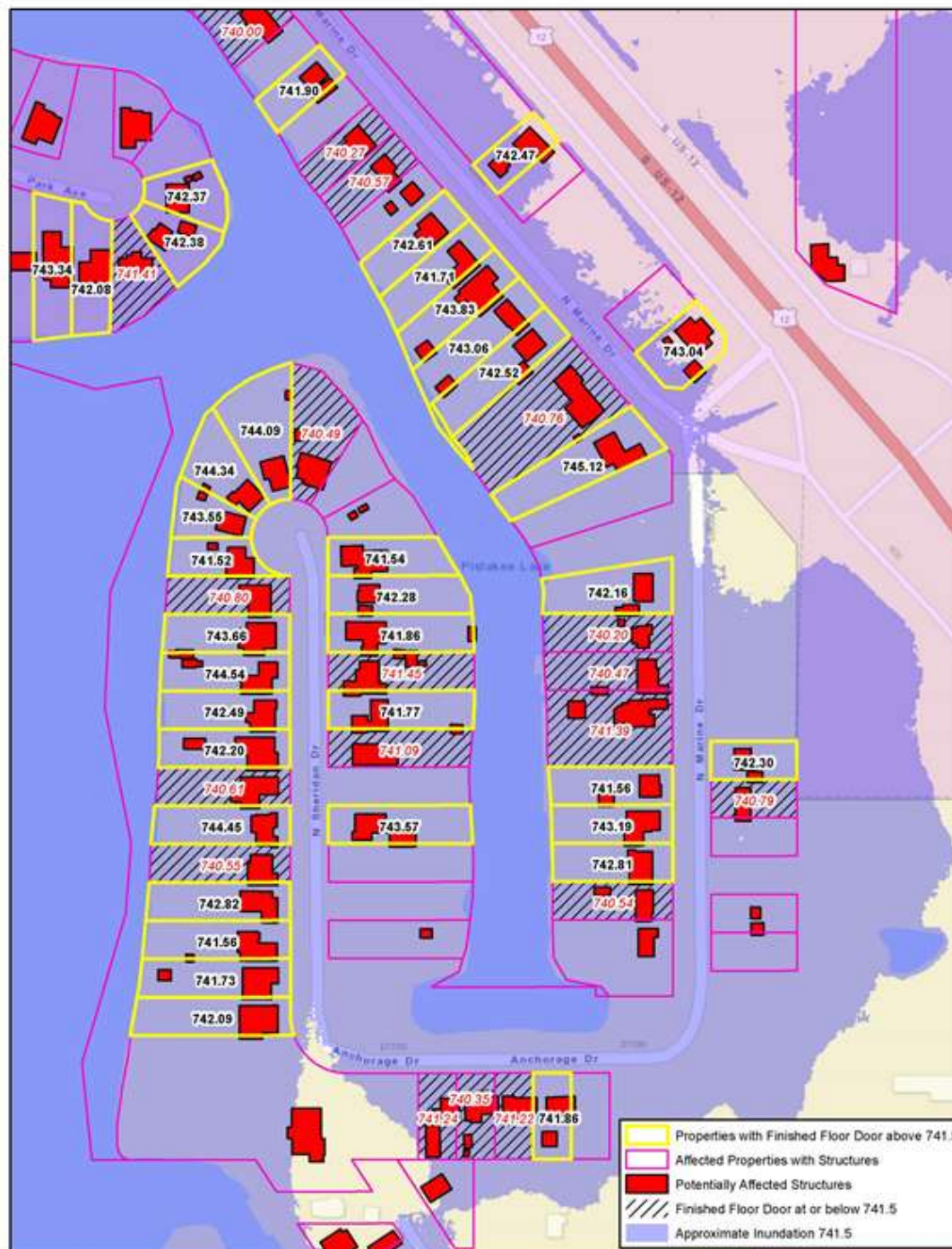


Slocum Lake — Williams Park

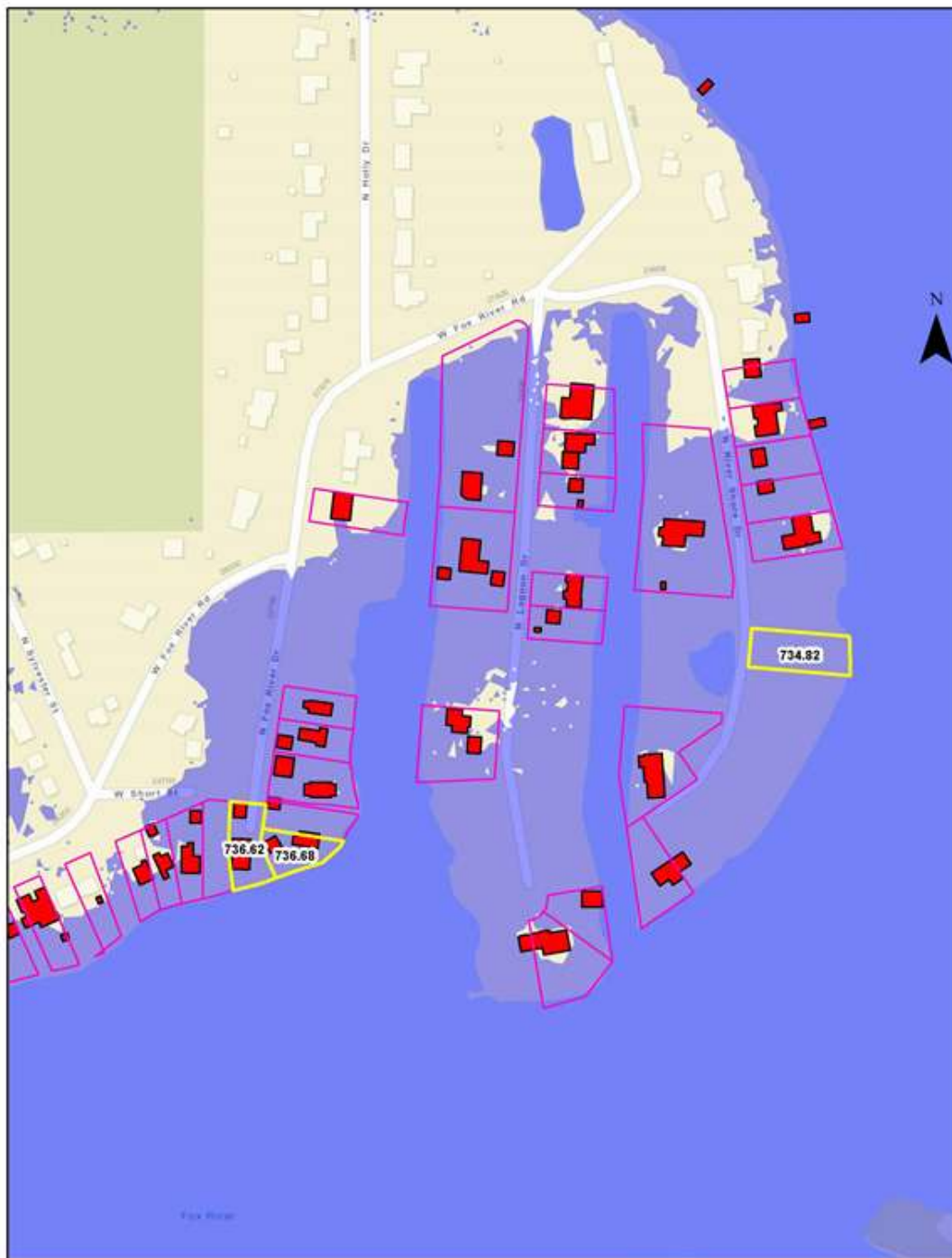
















Home

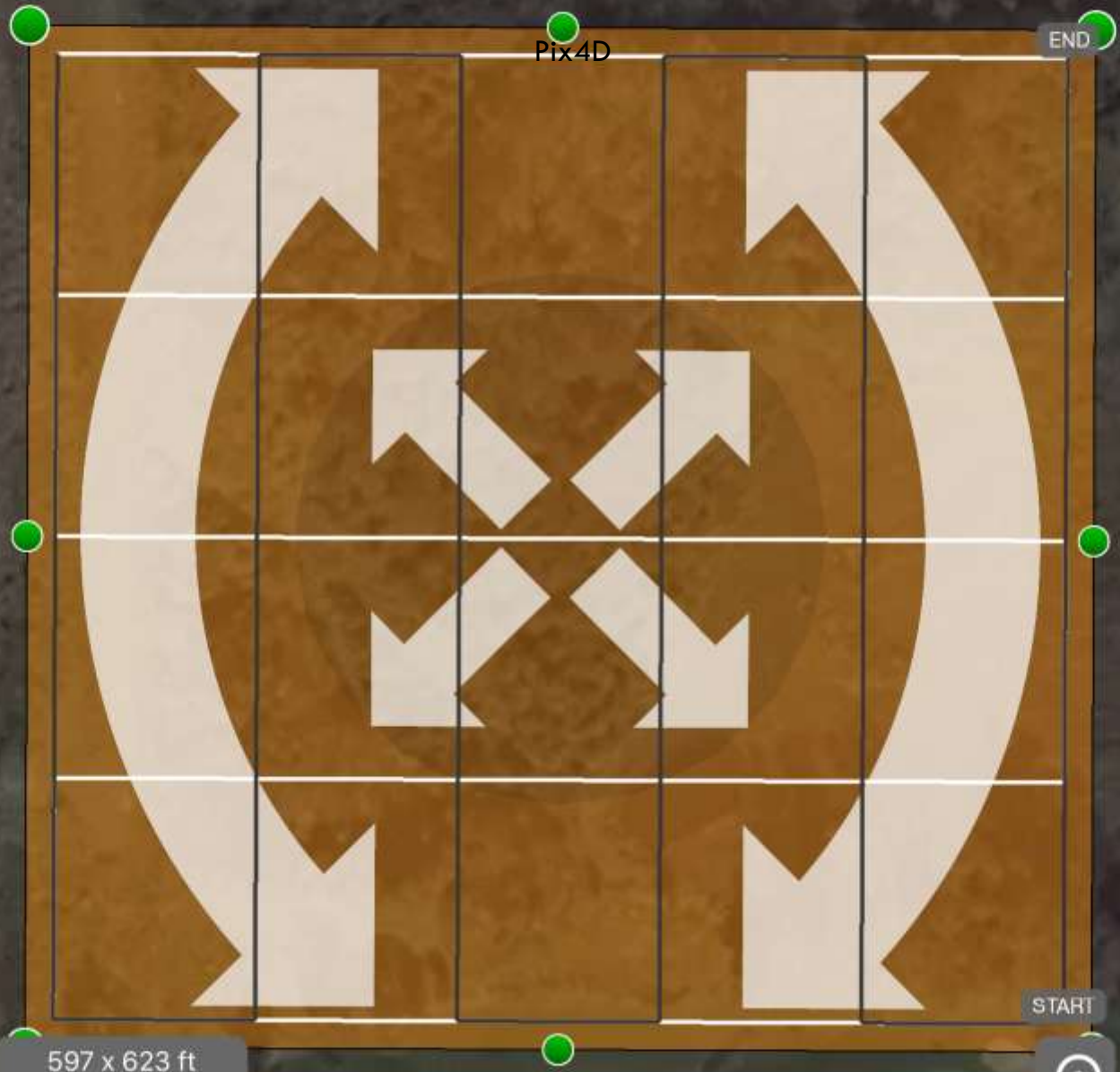
Too far !  

GSD
1.13
in/px

 326

325

324
ft



 Phantom 4 Pro

 Phantom 4 Pro C...

 0%

 0%

 0

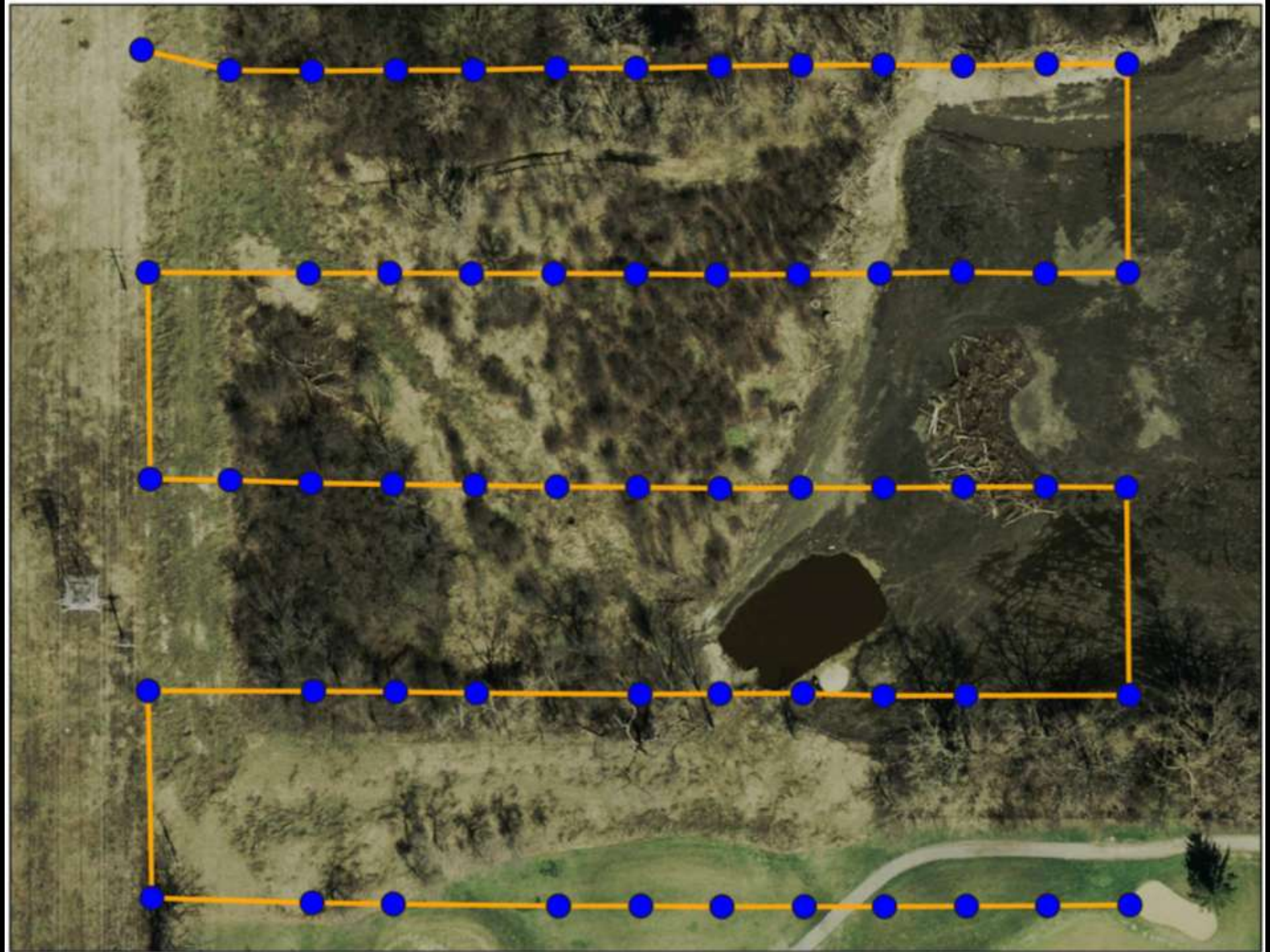
 Ready

Speed: 0.0 ft/s

Alt: 0.0 / 325.0 ft

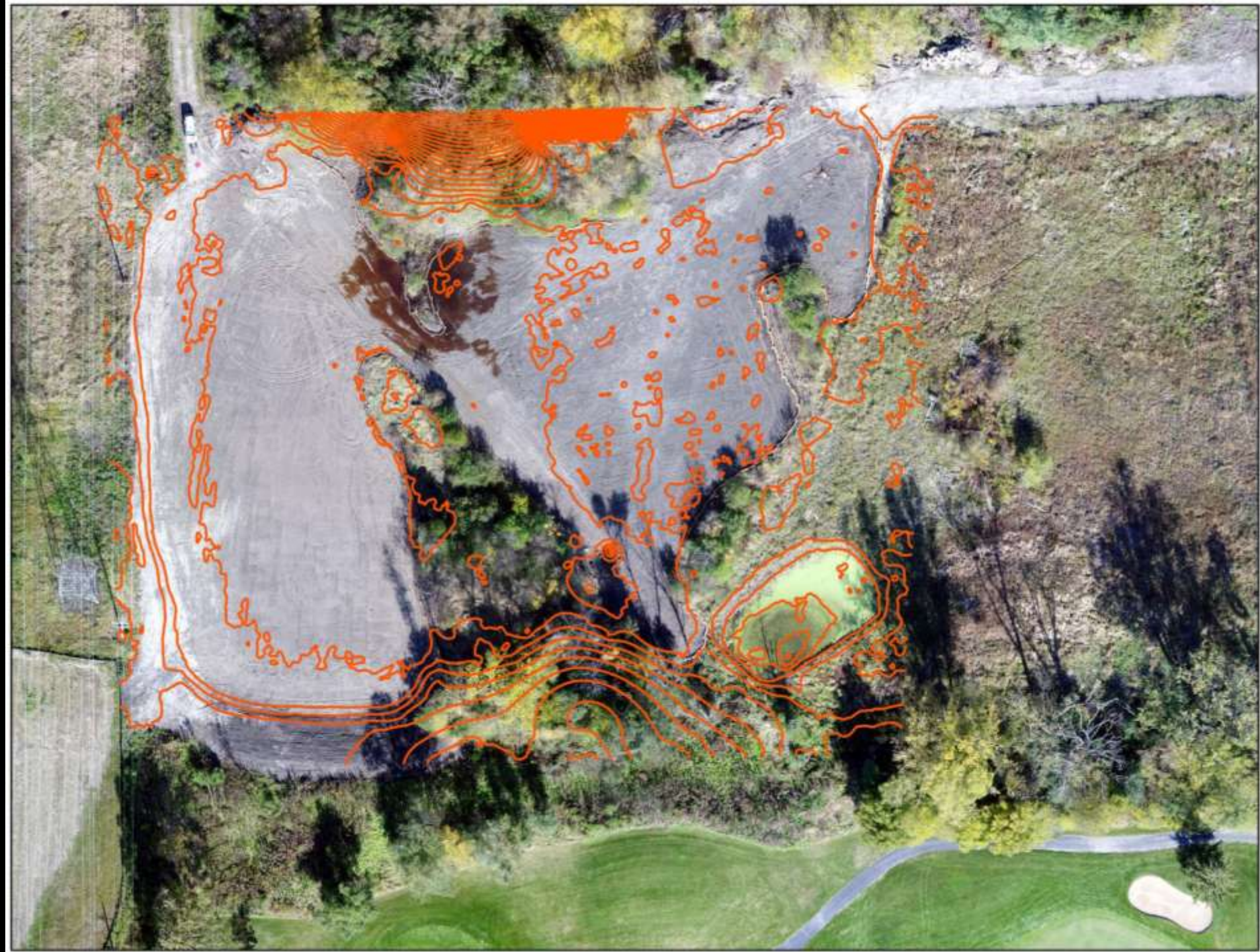
N/A ft away

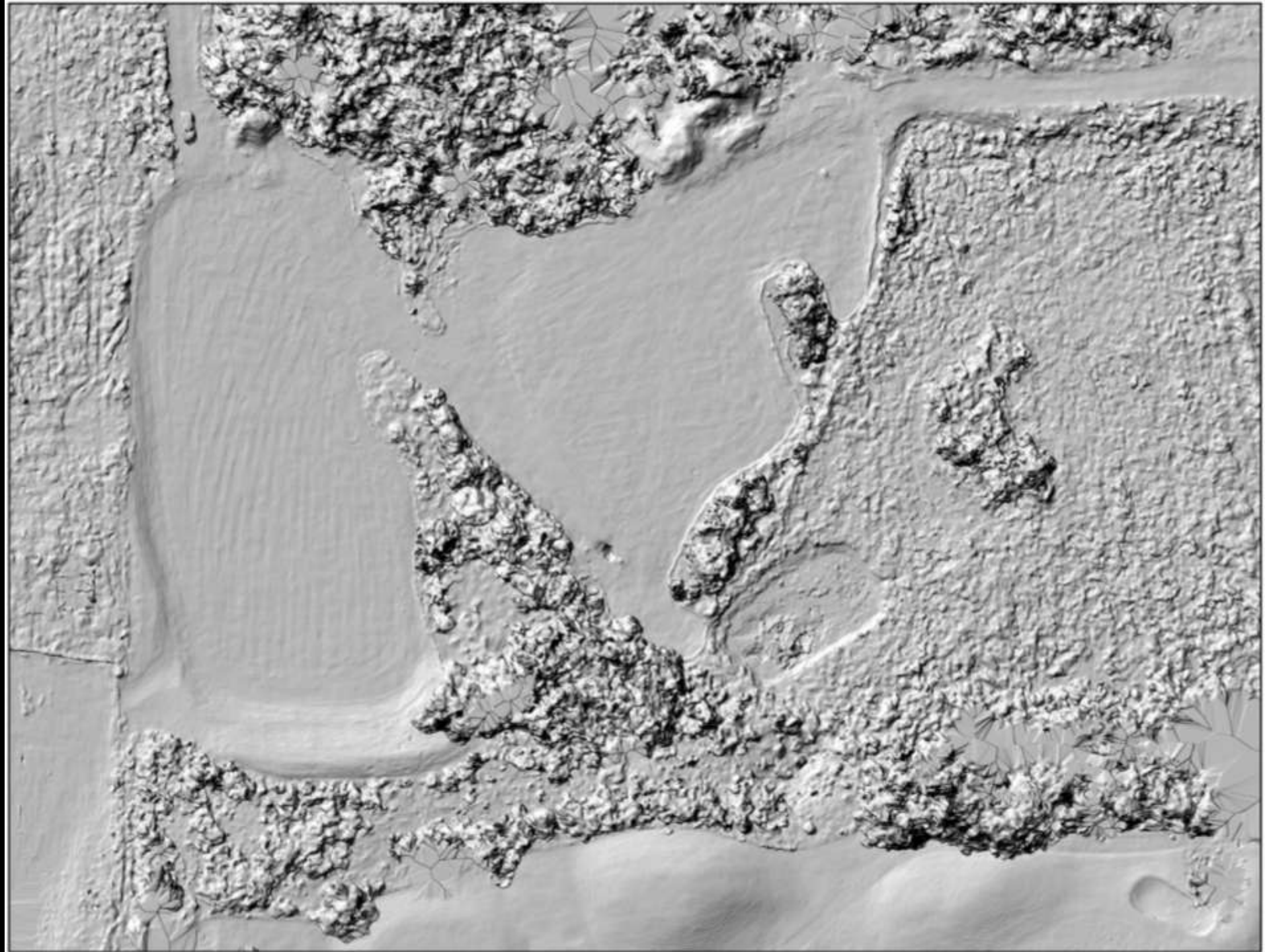














Questions?



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STORMWATER MANAGEMENT COMMISSION