

June 20, 2019

# Wisconsin EITM Zone Upper Des Plaines River Impact Analysis – TAC Update and Next Steps

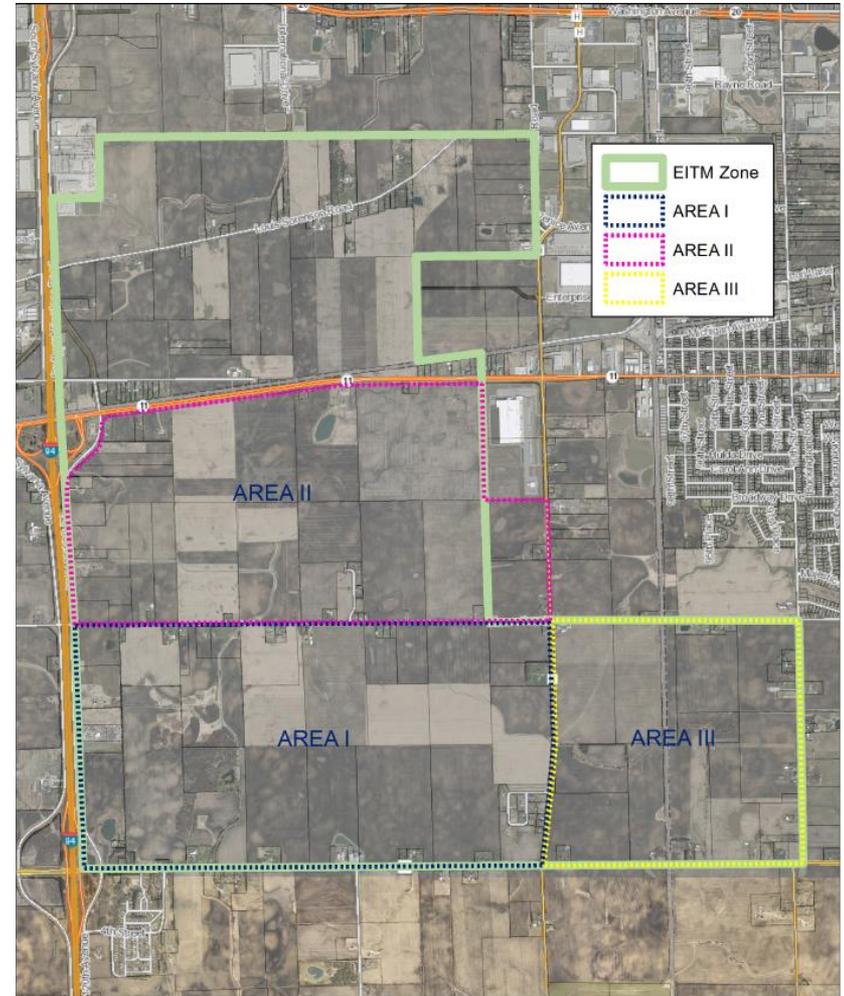


*Stormwater*  
MANAGEMENT COMMISSION  
LAKE COUNTY, IL



# ELECTRONICS AND INFORMATION TECHNOLOGY MANUFACTURING (EITM) ZONE

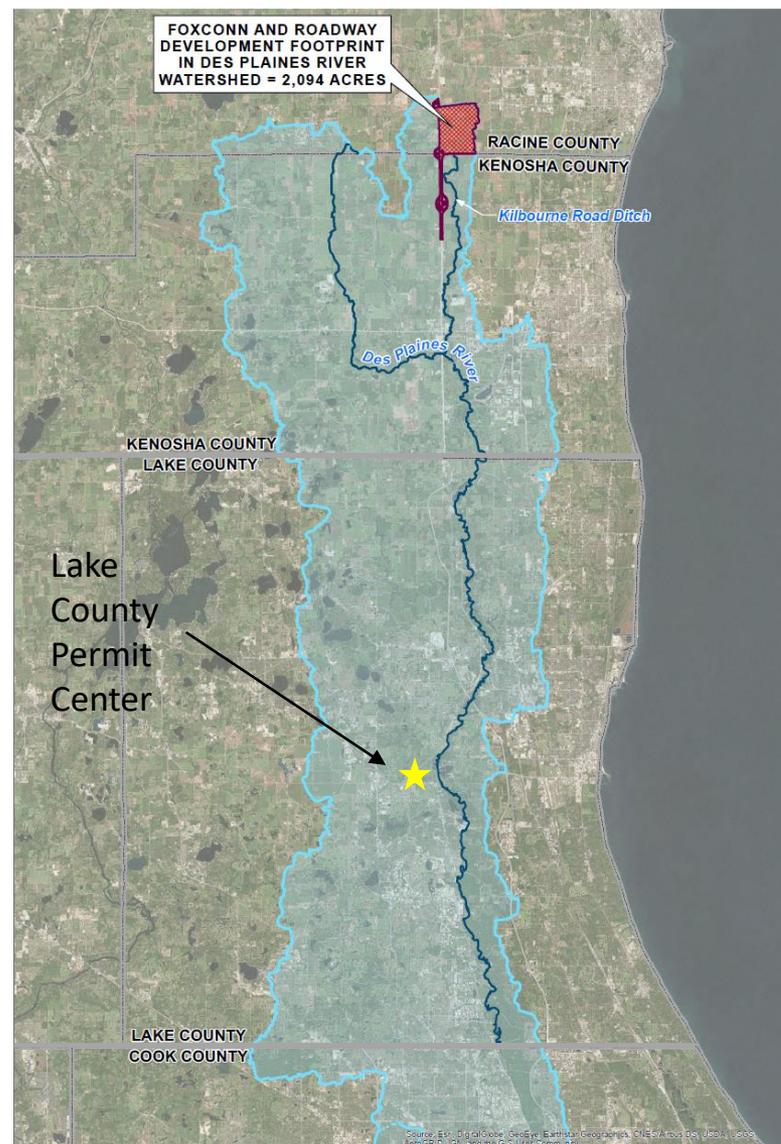
- 2017 Wisconsin Act 58 Exemptions Include:
  - State Environmental Impact Statement (EIS)
  - Department of Natural Resources (DNR) Wetland Permitting
    - Allows for fill of wetlands in EITM Zone
    - 2:1 fee-in-lieu mitigation required
    - Water Quality Certification waived
  - DNR Permitting for Stream Activities
    - Construction of Bridges and Culverts
    - Waived Restrictions for Placement of Fill in Navigable Streams
    - Enlargement of Waterways and Bank Protection
    - Straightening of Waterways



Wisconsin DNR EITM Zone Exhibit  
Total EITM Zone Size = 4,088 acres

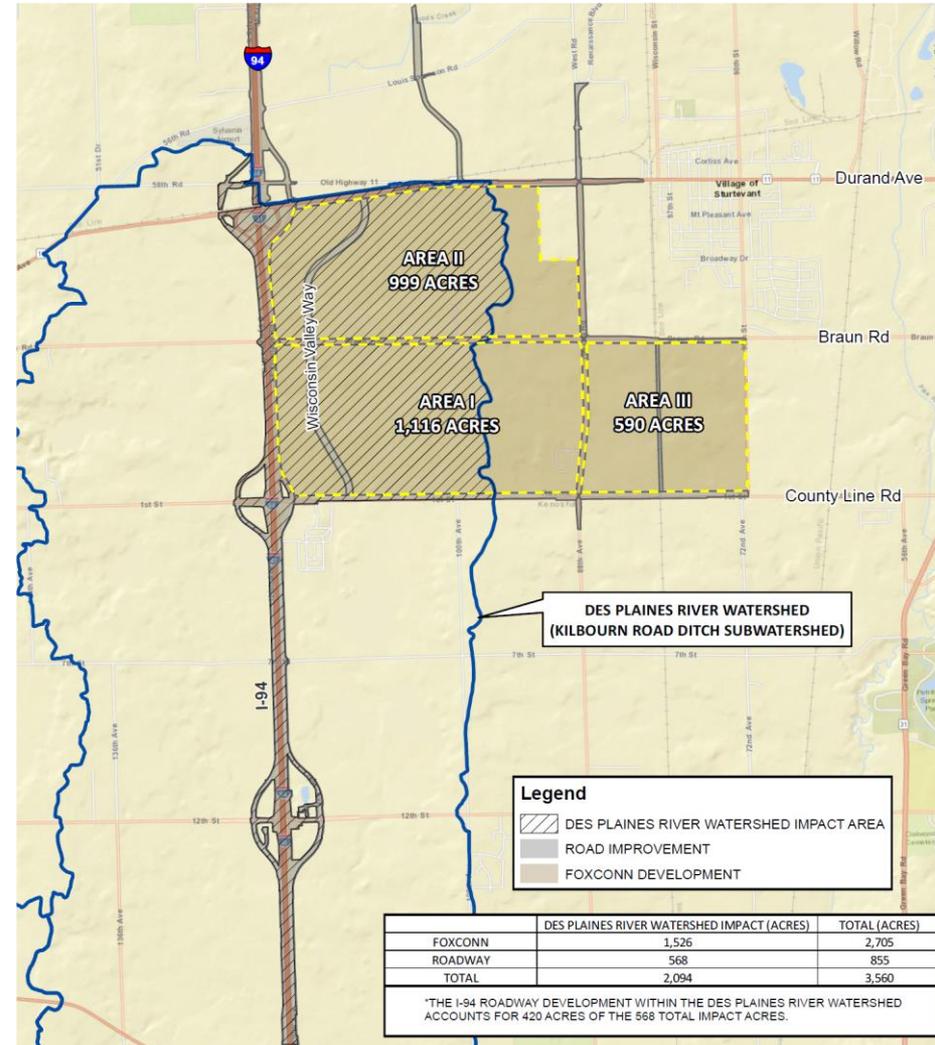
# LOCATION OF EITM ZONE & DES PLAINES RIVER WATERSHED

- EITM Zone and Related Development within Des Plaines River Watershed = 3.3 mi<sup>2</sup>
- Kilbourn Road Ditch Subwatershed ≈ 24 mi<sup>2</sup>
- Des Plaines River Watershed in Wisconsin ≈ 125 mi<sup>2</sup>
- Des Plaines River Watershed in Lake County ≈ 200 mi<sup>2</sup>



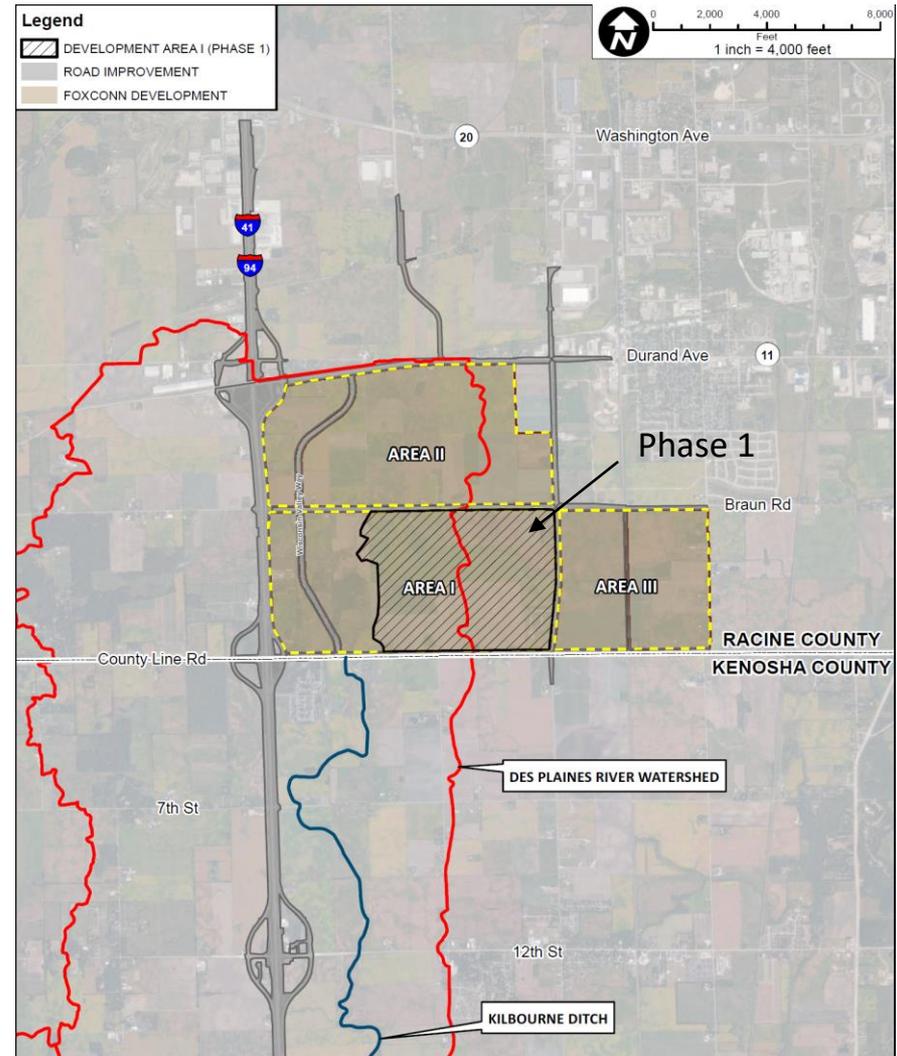
# EITM ZONE AND SUPPORTING DEVELOPMENT

- EITM Zone and Supporting Development within Des Plaines River Watershed = 2,094 acres (3.3 mi<sup>2</sup>)
  - EITM Zone Areas I and II (1,526 acres)
  - Local Roadway Improvements (148 acres)
    - Temporary WisDOT Jurisdiction
    - Right of Ways ≥ 200 ft wide
    - Expansion to 6 vehicle lane roadways
      - County Highway 11 (Durand)
      - Braun Road
      - County Highway KR (County Line Rd)
    - New Roadways – 4 vehicle lanes
      - Wisconsin Valley Way
  - I-94 Improvements (420 acres)
    - Addition of lanes
    - Frontage Road expansions
    - Bridge expansions
    - 6.7 linear miles of improvements



# REVIEW OF FOXCONN DEVELOPMENT MATERIAL

- Areas currently under construction
- Phase 1 within Area I
  - Size = 816 acres
    - Lake Michigan Watershed = 421 acres
    - Des Plaines Watershed = 395 acres
      - 2 Proposed detention basins
      - Avoids floodplain
      - 13.17 acres of wetland impact
- Local Roadway Improvements
  - Des Plaines River Watershed = 148 acres
    - Multiple detention basins
    - Kilbourn Road Ditch – 3 waterway crossings
    - 4.30 acres of wetland/waters impact
- I-94 Improvements
  - Des Plaines River Watershed = 420 acres
    - Multiple detention basins
    - 21.34 acres wetlands/waters impacts



# SOIL EROSION AND SEDIMENT CONTROL OVERVIEW

According to the Illinois Environmental Protection Agency (IEPA), the Des Plaines River in Illinois south of the state line is impaired for “Sedimentation/Siltation, Total Suspended Solids (TSS)” with a potential source listed as “Site Clearance (Land Development or Redevelopment)”



Foxconn Phase 1 Construction Site – September 6, 2018



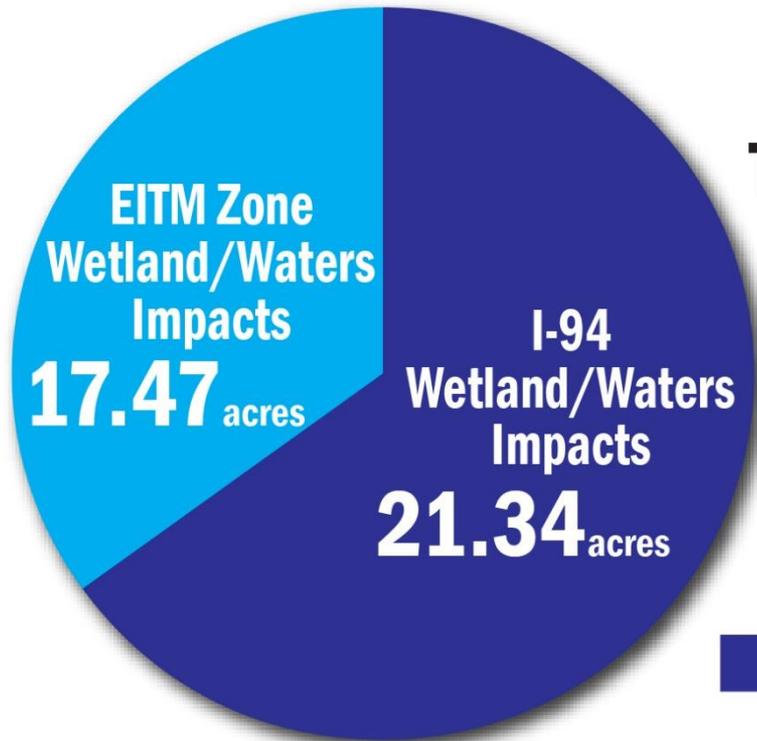
Confluence of Kilbourn Road Ditch and Des Plaines River - September 6, 2018

September 14, 2018 WDNR Citation

Christopher B. Burke Engineering, Ltd.



# WETLAND IMPACT OVERVIEW



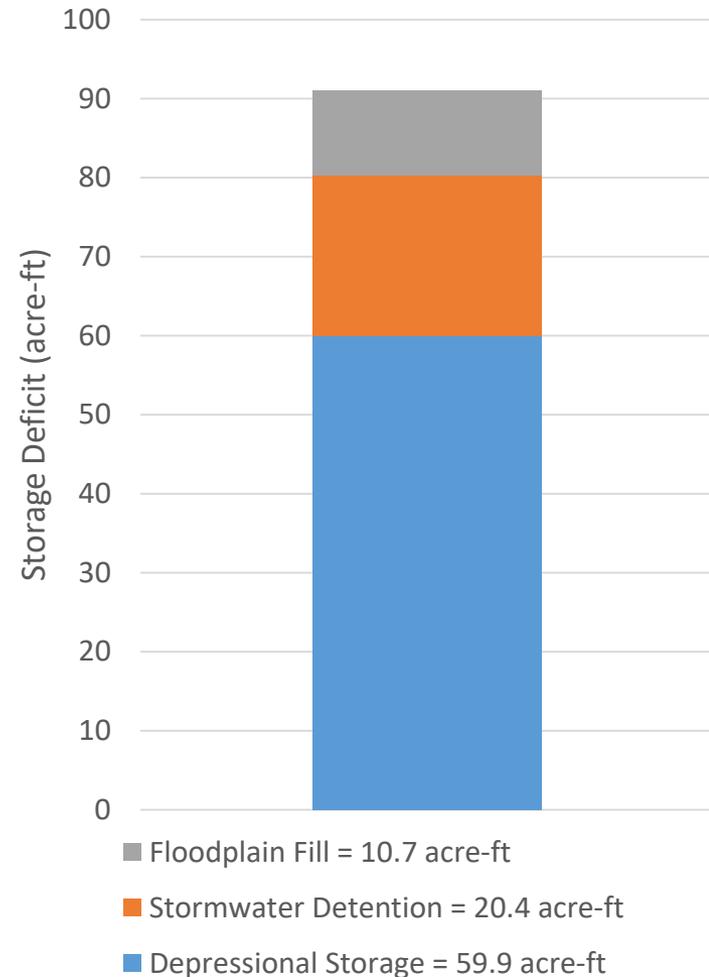
**Total Impacts to Date =  
38.81 acres**

 To be mitigaged at 2:1 ratio in Upper Illinois Basin - Fox or Des Plaines River Watershed.

 To be mitigaged out of Des Plaines River Watershed.

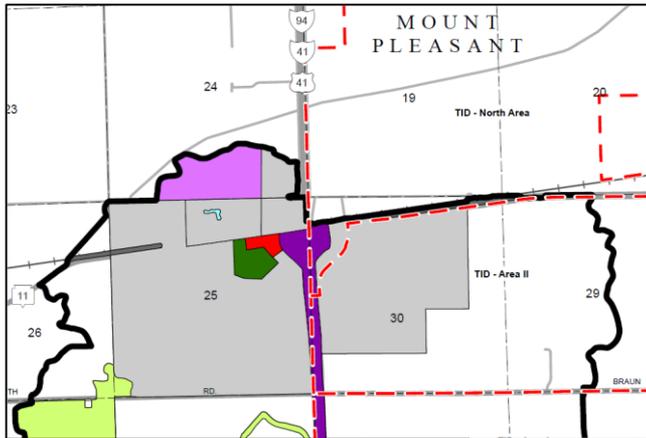
# TOTAL STORMWATER AND FLOODPLAIN STORAGE DEFECIT

- Deficit compares estimate of what would be required in Lake County, IL vs. Wisconsin requirements
- Summation of:
  - Stormwater detention deficit
  - Depressional storage deficit
  - Floodplain fill deficit
- Deficit = 91 acre-ft for 543 acres of Foxconn Phase 1 and Local Road Development in Des Plaines Watershed
- Equates to 54,600 gallon deficit for every acre of land developed

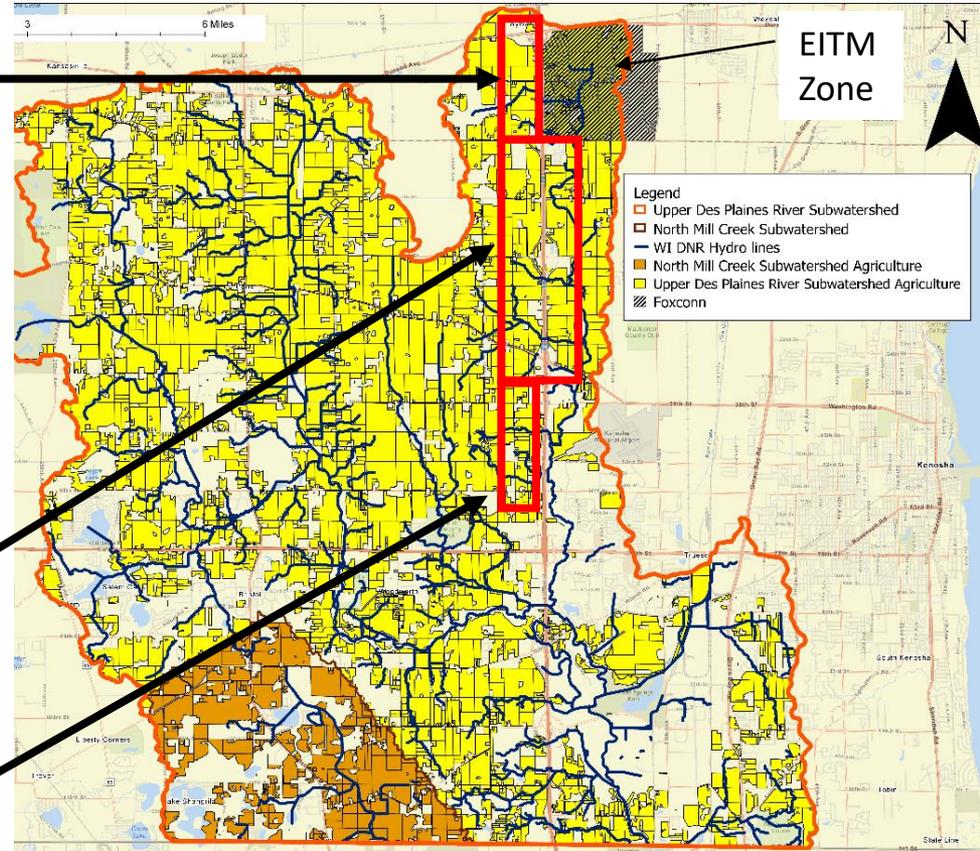


# POTENTIAL DEVELOPMENT CORRIDOR

Des Plaines River Watershed = 57% agricultural  
 Kilbourn Road Ditch Subwatershed = 63% agricultural



SEWRPC Buildout Land Use



EITM Zone

- Legend
- Upper Des Plaines River Subwatershed
  - North Mill Creek Subwatershed
  - WI DNR Hydro lines
  - North Mill Creek Subwatershed Agriculture
  - Upper Des Plaines River Subwatershed Agriculture
  - Foxconn

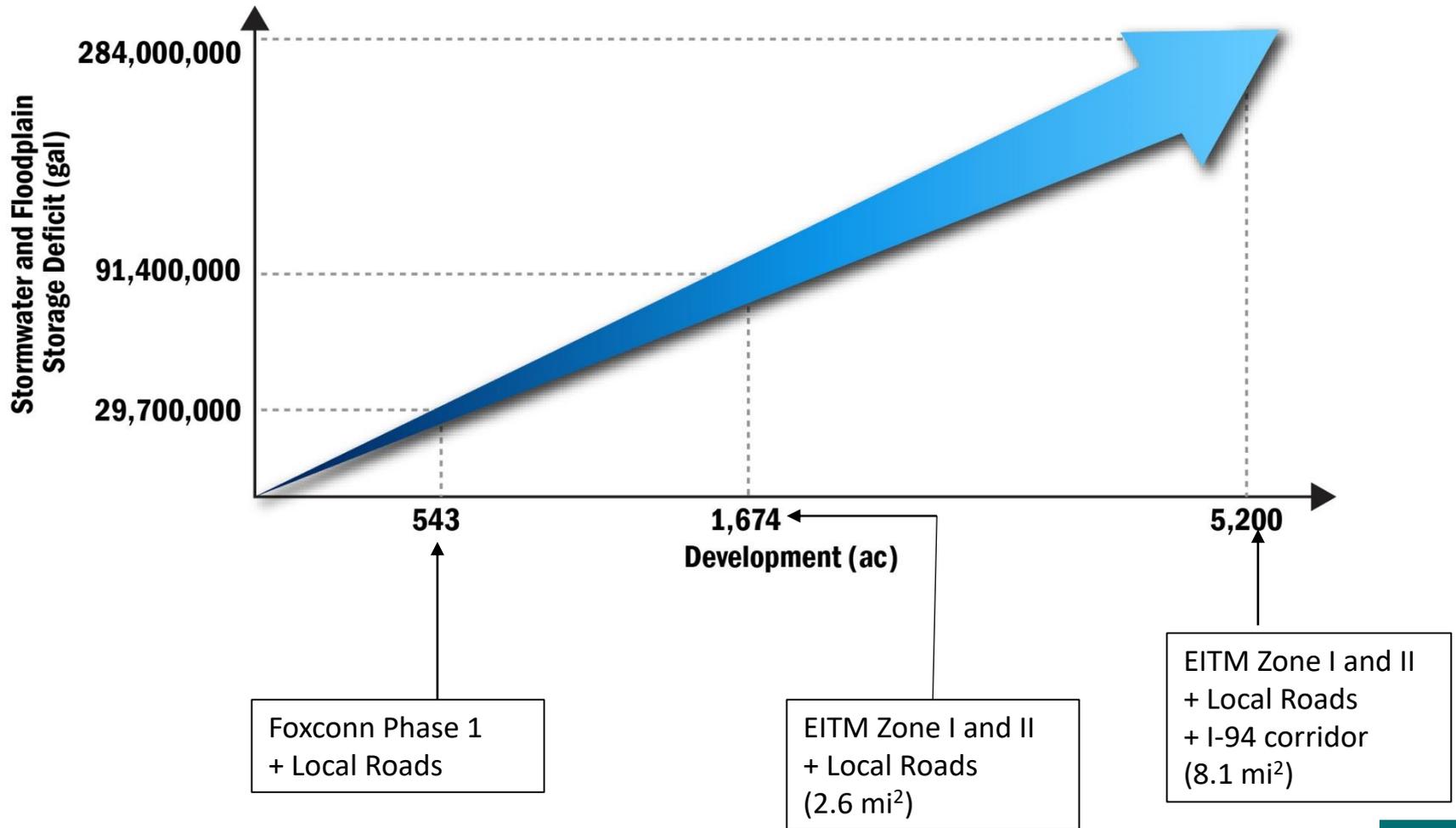
Total additional development potential within 1/2 mile of I-94 ≈ 5.5 mi<sup>2</sup> (3,520 acres)



Kenosha County 2035 Land Use Plan Map

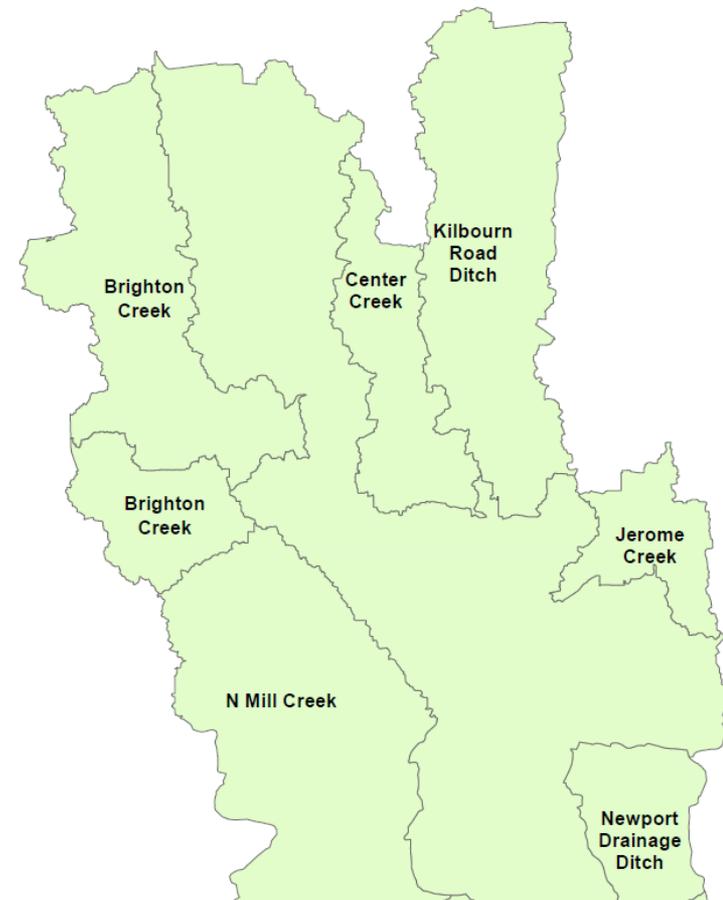


# PROJECTING THE DEFICIT FORWARD



# DES PLAINES RIVER H&H MODELING

- Goal is to perform “sensitivity analysis” of flood flows and flood profiles based on future development in Wisconsin
- FIS HEC-1 Hydrologic Model for Des Plaines River
  - Large Subbasins in Wisconsin Ranging from 1.6 – 13.6 Mi<sup>2</sup>
  - Wisconsin Subbasins CN range from 56 To 63
  - Significant channel storage and routing
  - 10 Day Duration Event
  - Rainfall Depth = 8.82 inches with areal correction
  - Illinois FIS Flowrate at State Line = 3,773 cfs
    - SEWRPC Wisconsin FIS Flowrate = 2,600 cfs
    - USGS Regression Analysis = 4,290 cfs
- FIS HEC-2 Hydraulic Model for Des Plaines River
  - Flowrates from HEC-1 Model

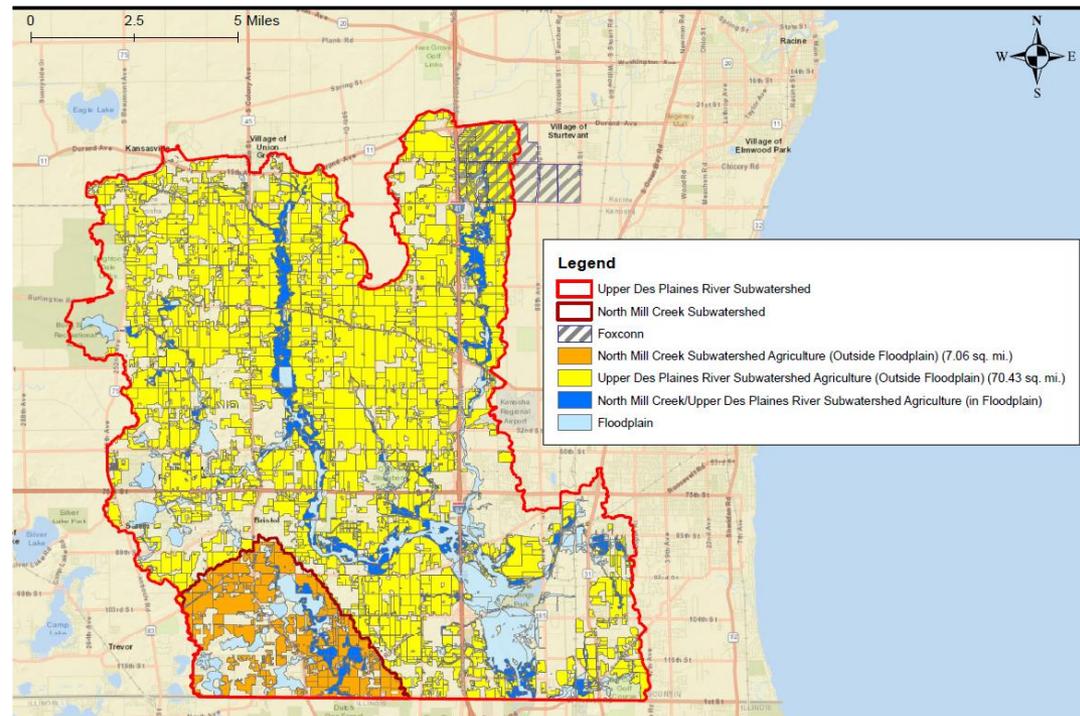


Wisconsin Subbasin Map from USACE

# DES PLAINES RIVER H&H MODELING

## • Future Full Watershed Development Scenarios

- Development of Ag Areas Outside of Floodplain Areas
- Commercial Development per Foxconn Parameters
  - CN = 94
  - Lag Time = 9 min
- Stormwater Management per Current SEWRPC Standards
  - 100-year release rate = 0.3 cfs/acre
  - 100-year 24-hour rainfall = 5.84 inches
- Step 1: Define Ag areas for development
- Step 2: Create Modified Existing HEC-1 Model with realistic CN (+/- 78)
  - Aggregate Future Development Areas
- Step 3: Create Proposed Conditions HEC-1 Model
  - Adjust CN, Lag for Commercial
  - Detention Basins (0.31 ac-ft/ac)
- Step 4: Enter Flowrates into HEC-2



# INPUT REQUESTED

1. What does “full build-out” condition look like in Wisconsin?
2. Other comments/questions on analysis?



# RECOMMENDATIONS

1. Complete comprehensive hydrologic and hydraulic re-study of Des Plaines River Watershed that spans the Illinois-Wisconsin border.
  - a) The study should be completed with the most current data and state-of-the-art modeling software and calibrated to recent large storm events.
  - b) This process should be led by each state's FEMA Cooperating Technical Partner (CTP) with extensive stakeholder involvement – Illinois State Water Survey and Wisconsin Department of Natural Resources.
  
2. The Des Plaines River should immediately be made a Flood Storage District in Wisconsin.
  - a) Hydraulically equivalent compensatory storage should be required for fill in the floodplain.
  - b) The compensatory storage requirement should apply to all projects where floodplain fill occurs, including all roadway projects (local and WisDOT).
  
3. The existing depressional storage on each site should be quantified and compensated for as part of the site development stormwater management plan.

# RECOMMENDATIONS

4. Future development within the Des Plaines River Watershed should be required to provide stormwater detention to meet a 0.15 cfs/acre release rate to be consistent with Lake County regulations.
5. Mitigation for fill of wetlands and Waters of the U.S. in the Des Plaines River Watershed should be provided within the Watershed.
  - a) No net loss of wetland/waters in the Des Plaines River Watershed.
  - b) Includes WisDOT projects and the WWCT ILF mitigation for impacts in the EITM Zone.
  - c) The cost per credit for ILF mitigation should be re-evaluated to ensure that the fee is appropriate to fund land cost, maintenance, monitoring and long-term stewardship.
6. To prevent further water quality degradation of the Des Plaines River from construction activities:
  - a) Require comprehensive soil erosion and sediment controls on all construction sites
  - b) Implement rigorous enforcement inspections to verify compliance
  - c) Issue violations and utilize available legal and financial tools as necessary to achieve compliance
  - d) These controls should apply to all public and private developments as well as linear projects such as roadways