Flooded Out: Vanishing Environmental Reviews and the SBA's Disaster Loan Program

Mike Warner, CFM, PE
Executive Director
Lake County Stormwater Management Commission

1) Thank you for inviting me today and the opportunity to comment on public record regarding these important issues. I am Mike Warner, Director of the Lake County, Illinois, Stormwater Management Commission. Lake County has seen record setting increases in flooding over the last three years; the July 2017 flood set record high water levels on all nine river gages throughout the County, caused millions of dollars of damage and threatened the lives of many residents and visitors. In 2018, the Des Plaines River gage set a record by exceeding flood stage 6 times, which is more than triple the average, and in 2019, a new record rainfall was set for the month of May and flood stage has been topped 4 times already this year. The Illinois State Water Survey research shows this trend of higher rainfall and corresponding flood events is continuing in the region.

2) We recently released an impact study for public comment on the Upper Des Plaines River Watershed. The study was undertaken in response to the State of Wisconsin's waiver of environmental regulations for development within the Electronics and Information Technology Manufacturing Zone and the potential impacts of upstream development in Wisconsin to Lake County. The study conclusions found significant deficiencies for mitigation of floodplain, stormwater and wetland impacts within and outside the EITM zone that is worsening flooding impacts within the watershed. (See Appendix A, B)

3) The study describes four main conclusions:
   A. In the current Flood Insurance Study for the Upper Des Plaines River in Wisconsin, both the floodplain boundary mapping and published flood flows are grossly underestimating flood risk. This deficiency is creating an increased flood damage risk to existing and new businesses and residential buildings, within this watershed's 'actual' floodplain.

      Discussion: The Southeastern Wisconsin Regional Planning Commission (SEWRPC) is the agency that developed the floodplain study for the Des Plaines river. The methodology SEWRPC utilizes includes a statistical analysis of storm events, to predict floodplain flows and elevations. Our analysis found the storm event record was modified to remove the largest storm event, and doesn't include the most recent 6 of largest 10 storms of record. These omissions result in a significantly underestimated floodplain boundary, which is being further encroached and filled by new development. This underestimation will result in more businesses and homes being placed in the 'actual' floodplain, an allowance of 'actual' floodplain fill, and increased flood related damages in the future. Current Wisconsin floodplain flow has a deficiency of 45% measured at the border of Illinois, and with future development buildout and increasing rainfall trends, we estimate that deficiency to double to over 90%. The Wisconsin Department of Natural Resources provided the exact same type of comments to SEWRPC on a floodplain study just to the north, which in that case was adjusted and updated resulting in increases of floodplain flows ranging from 17% to 86%. The following is an excerpt from the Kinnickinnic Watershed Study *"In 2013, SEWRPC submitted the hydrologic analysis to the WDNR for review and approval. WDNR responded in January 2014 and requested that additional work be completed to extend the historical simulation period to include major flooding events that occurred in 2008, 2009 and 2010." "The overall impact of the updated floodplain mapping project was a*

significant increase in the computed peak flows for the one-percent event. The higher flows result in higher flood profiles and an increase in the computed flood risk in the watershed." (See Appendix C)

B. Through the development process in Wisconsin upstream of us, there is a deficit of stormwater storage being created by filling existing natural depressions, too large of a detention pond release rate, and uncompensated floodplain fill.

Discussion: Our study findings show the deficit at approximately 55,000 gallons of storage for every acre of land developed, when compared to Lake County standards. Unmitigated runoff from Wisconsin will increase flood damages to businesses and homes. Lake County is unique within Illinois in that it has more of a 'Wisconsin' glacial topography with a significant amount of natural depressional storage existing in the landscape. Ironically Lake County requires preservation of this natural depressional storage feature, while Wisconsin development sites are not required to compensate for natural storage. Our estimate of the depressional storage being lost in Des Plaines portion of the EITM Zone is approximately 156 acre-feet. The detention pond release rate is double that of Lake County, significantly reducing the surface runoff stored, which subsequently allows more impervious cover per acre of development. Additionally, the loss of floodplain storage does not require compensation because the Des Plaines River is not a Wisconsin established 'Flood Storage District' – *even though it meets the technical requirements to become one.* "[WDNR] will notify all municipalities that have flood storage areas [*in the floodplain*] and then provide separate Flood Storage District (FSD) maps that **must** be adopted into the floodplain zoning ordinance." See Appendix D

C. Wetlands are being lost within the Des Plaines River Watershed in Wisconsin due to development. Improper allowances are being utilized for wetland fill impacts for expanding roadways by the Wisconsin Department of Transportation. All of WisDot impacts are being mitigated outside of the Des Plaines watershed, which abrogates two Army Corps wetland regulatory tenets regarding 1 - mitigating in the same watershed as the impact site and 2 - the 'no net loss' principle, as this practice is resulting in a significant 'net loss' in the Des Plaines River watershed (See Appendix E). The private development wetland impacts have yet to be mitigated anywhere, and there is doubt the mitigation fee assessed, can compensate for the higher land value within this highly active development corridor, guaranteeing a loss of wetland function locally.

Discussion: Wetlands are a critical surface water resource, providing water quality, flood control and habitat functions. Over 38 acres of wetlands impacted by roadway expansions and EITM Zone development within the Des Plaines watershed have been filled without any mitigation in the watershed. Wisconsin DOT filled over 21 acres of wetlands during the I-94 improvements and mitigation for those are being provided outside of the Des Plaines River basin. The Mitigation for the 17+ acres of wetland impacted for Foxconn Phase 1 and the local roads within the EITM Zone is occurring through the Wisconsin Wetland Conservation Trust in-lieu fee program. The mitigation is proposed within the Upper Illinois River Basin, which includes the Des Plaines River and Fox River Watersheds. If the credits are created in the Fox River Watershed, the end result is net loss of wetlands within the Des Plaines Watershed, up to a total of more than 38 acres. We believe this mitigation practice has been ongoing which would result in higher numbers of wetland acreage lost in the Des Plaines Watershed, and will continue to research that information. There are also hundreds of wetland acres either in the future development area of the EITM Zone and within the Des Plaines

Watershed that can be anticipated to be impacted and potentially lost through the development process.

D. Inadequate soil erosion and sediment control practices are being utilized by both WisDot and private developers in the Des Plaines River Watershed. These unremedied violations of the Clean Water Act, fill waterways with sediment and are contributing to non-attainment of EPA water quality standards.

   Discussion: SMC has performed independent inspections of the roadwork and development site and documented significant soil erosion occurring. (See Appendix B). The large, mass graded construction area, coupled with insufficient soil erosion and sediment control measures have resulted in sediment being transported from the construction sites downstream as evidenced by an erosion control violation citation from the Wisconsin Department of Natural Resources (WDNR). The Des Plaines River just downstream of the state line is listed by the Illinois Environmental Protection Agency (IEPA) as impaired for Total Suspended Solids (TSS), sedimentation and siltation due in part, to land development activities. Sediment transport from construction sites in Wisconsin is contributing to Des Plaines river impairments in Illinois.

4) With every acre of new impervious surface and shovelful of dirt, all four of the issues raised in our conclusions are resulting in an increased flood risk to businesses and homes, aggravated flood damages and negative water quality impacts within the watershed. It is critical that these concerns are addressed as soon as possible, to compensate for future development that will occur.

5) Thank you for this opportunity to provide testimony.

APPENDIX A

EXECUTIVE SUMMARY

STORMWATER MANAGEMENT COMMISSION

Christopher B. Burke Engineering, Ltd.

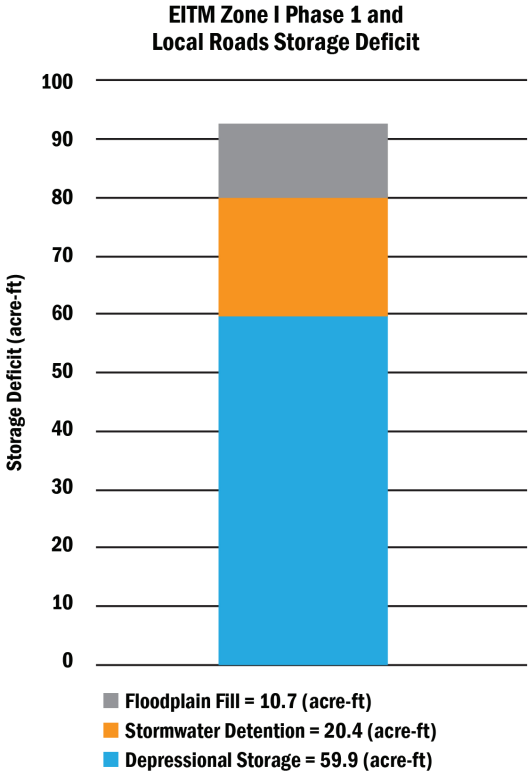
UPPER DES PLAINES RIVER IMPACT ANALYSIS

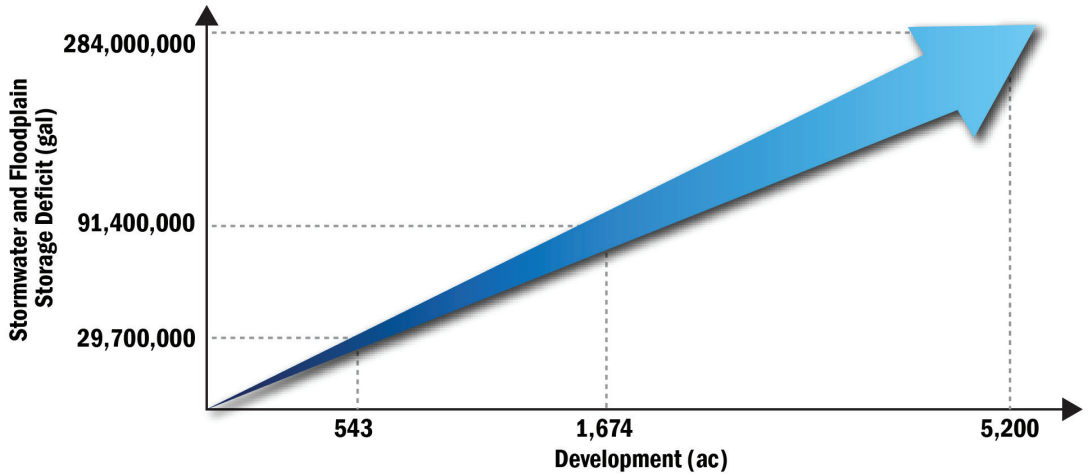
In July 2018, the Lake County Stormwater Management Commission (SMC) requested that Christopher B. Burke Engineering, Ltd. (CBBEL) complete a technical review of development related to the Electronics and Information Technology Manufacturing (EITM) Zone in Wisconsin, as it relates to the Des Plaines River Watershed. This development includes 3.3 square miles within the Des Plaines River Watershed, consisting of the Foxconn Development, local road improvements and reconstruction of Interstate 94. Included below are the main conclusions from the report, as well as recommendations related to each of those conclusions.

1. The current floodplain mapping of the Des Plaines River Watershed in Wisconsin underestimates the floodplain flows and elevations north of the Illinois-Wisconsin border. The floodplain mapping for the Watershed in Wisconsin is based on a 100-year (1% chance) flood flow that is significantly below historic flood events and the published flood flows in Illinois. The Wisconsin mapping is generated with historical rainfall data collected prior to 1994, which does not consider the five largest (and six of the largest 10) flood events on the Des Plaines River downstream in Illinois. The largest two recorded flood events have occurred in the past 14 years, both of which are larger than the 100-year (1% chance) flood event in the Wisconsin floodplain mapping.

   Recommendation: To accurately manage the floodplains within the Des Plaines River Watershed, a comprehensive and collaborative floodplain mapping update should be completed by the FEMA Cooperating Technical Partners designated for each state (Wisconsin Department of Natural Resources and Illinois State Water Survey, with Illinois Department of Natural Resources consultation) that spans the state boundary and actively involves all stakeholders.

2. Development of this corridor in Wisconsin has resulted in a deficit of stormwater storage because stormwater detention in Wisconsin is based on a higher release rate and lower rainfall depth than Lake County, Illinois. Due to the undulating glacial topography, a significant amount of natural depressional storage exists in the landscape, but is not being preserved throughout development. Additionally, the loss of floodplain storage from development activities is underestimated due to the outdated floodplain mapping and does not require compensatory storage because the Des Plaines River is not within an established Flood Storage District – even though it meets the technical requirements to become one. These factors combine for a stormwater and floodplain storage deficit for the Foxconn Phase 1 development and local roadway projects in the EITM Zone of 91 acre-ft, which equates to a deficit of approximately 54,600 gallons of stormwater storage for every acre of land developed.

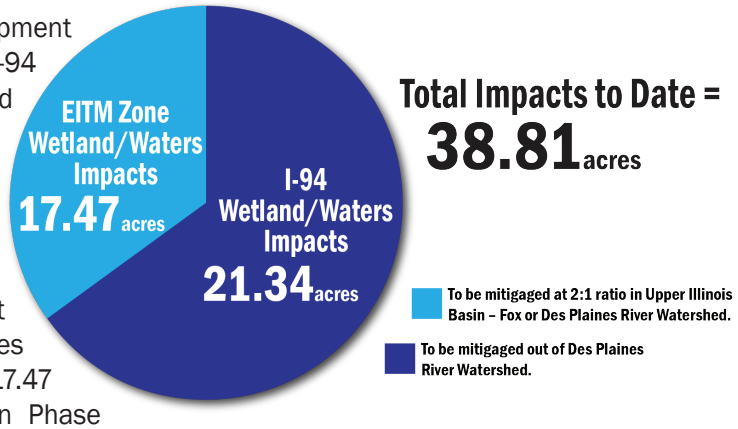




Given the scope of the currently proposed development, future land use mapping and development patterns in similar interstate highway corridors, the largely agricultural lands outside of the EITM Zone can reasonably be anticipated to follow similar development patterns. As the Foxconn Development, EITM Zone and commercial corridors develop, this deficit will grow and result in downstream impacts to the Watershed in Wisconsin and Illinois.

Recommendation: To stop this trend of stormwater storage deficit, the Des Plaines River Watershed should immediately be designated a Flood Storage District in Wisconsin and compensatory storage required for all fill within the floodplain on all projects. Existing depressional storage in the Watershed should be preserved or compensated for during land development and stormwater detention storage should be provided at a rate and volume equivalent to Lake County, IL.

3. The first phase of EITM Zone Development (Foxconn Phase 1), local roads and I-94 have filled 38.81 acres of wetlands and jurisdictional Waters of the US. The mitigation for 21.34 acres of impacts within the I-94 improvements are being provided per WisDOT procedures in the Rock River Watershed within the Mississippi River Basin, resulting in a net loss of wetlands within the Des Plaines River Watershed. Mitigation for the 17.47 acres of wetland impacted for Foxconn Phase 1 and the local roads within the EITM Zone is occurring through the Wisconsin Wetland Conservation Trust (WWCT) in-lieu fee (ILF) program. The mitigation is proposed at a 2:1 ratio within the Upper Illinois River Basin, which includes the Des Plaines River and Fox River Watersheds. If the credits are created in the Fox River Watershed or the purchase price of the purchased credits does not allow for creation of the full mitigation acreage, this would result in additional net loss of wetlands within the Watershed, up to 38.81 acres. In addition to the wetlands already impacted there are many wetland areas in the future development areas of the EITM Zone and within the Watershed that can be anticipated to be impacted by future phases of development.



Recommendation: To achieve the "no net loss" Watershed objective, mitigation for wetland impacts in the Des Plaines River Watershed should be replaced in the Watershed, including all impacts by WisDOT projects. Additionally, the WWCT ILF program wetland mitigation sites should also be chosen in the Watershed accordingly.

4. The large construction area, coupled with insufficient soil erosion and sediment control measures have resulted in sediment being transported from the construction sites downstream through the Des Plaines River as evidenced by a 2018 site inspection and citation from the Wisconsin Department of Natural Resources (WDNR). The Des Plaines River just downstream of the state line is listed by the Illinois Environmental Protection Agency (IEPA) as impaired for Total Suspended Solids (TSS), sedimentation and siltation due to land development activities. Sediment transport from construction sites in the headwaters of the Des Plaines River Watershed will exacerbate the impairments in downstream stream segments in Illinois.

   Recommendation: Further water quality degradation of the Des Plaines River can be prevented by requiring comprehensive soil erosion and sediment controls on all construction sites, implementing rigorous enforcement inspections to verify compliance, and issuing violations and utilizing available legal and financial tools as necessary to achieve compliance.

March 7, 2019

Appendix B

Wisconsin EITM Zone
Upper Des Plaines River Impact Analysis – Opening of Public Comment

Stormwater MANAGEMENT COMMISSION LAKE COUNTY, IL

PRESENTATION OUTLINE

- Summary of Material Reviewed
- Description of EITM Zone and Des Plaines River Watershed
- Existing Site Conditions and Depressional Storage
- Stormwater Detention Analysis
- Floodplain and SEWRPC Study Review
- Soil Erosion and Sediment Control
- Wetlands and Waters
- Recommendations

COMMONLY USED TERMS

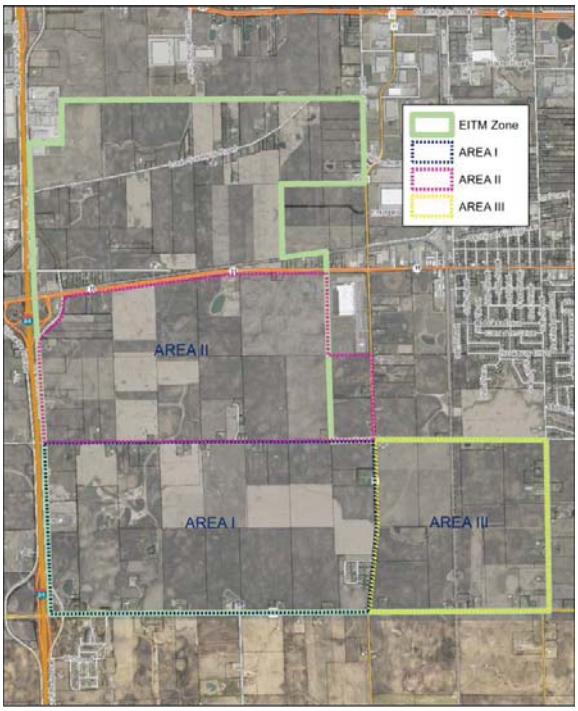
- Acre-ft: A measurement of water volume equivalent to 1 acre of land with 1 foot of water depth. 1 acre-foot = 326,000 gallons
- Cubic feet per Second (cfs): A volumetric flowrate measurement for water.
- 100-year storm event: A storm event with a 1% chance of occurring in any given year.
- SEWRPC: Southeastern Wisconsin Regional Planning Commission

MATERIAL REVIEWED

- Stormwater Permit Application Material to Wisconsin DNR
  - Stormwater Modeling and Calculations
  - Engineering Plans
- Conference calls with Wisconsin DNR, SEWRPC, Mount Pleasant, WisDOT
- Site Inspections of Foxconn and Roadway Developments
- Mount Pleasant, Racine County and Kenosha County Landuse Plans
- Local, state and federal regulations for stormwater, floodplain and wetlands
- Racine and Kenosha County aerial topographic mapping
- Des Plaines River Watershed Floodplain Modeling and Mapping
- SEWRPC June 2018 Evaluation of Proposed Stormwater Quantity Management for the Des Plaines River Watershed Portion of the Proposed Foxconn Development
- WisDOT I-94 Roadway Widening Plans and Stormwater Calculations
- Local Road Widening Plans and Stormwater Calculations
- Wetland permitting information
  - EITM Zone Jurisdictional Determinations (partial)
  - EITM Zone wetland permitting and mitigation documents
  - I-94 Jurisdictional Determinations, mitigation documents and permits
  - Local Roads mitigation documents

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

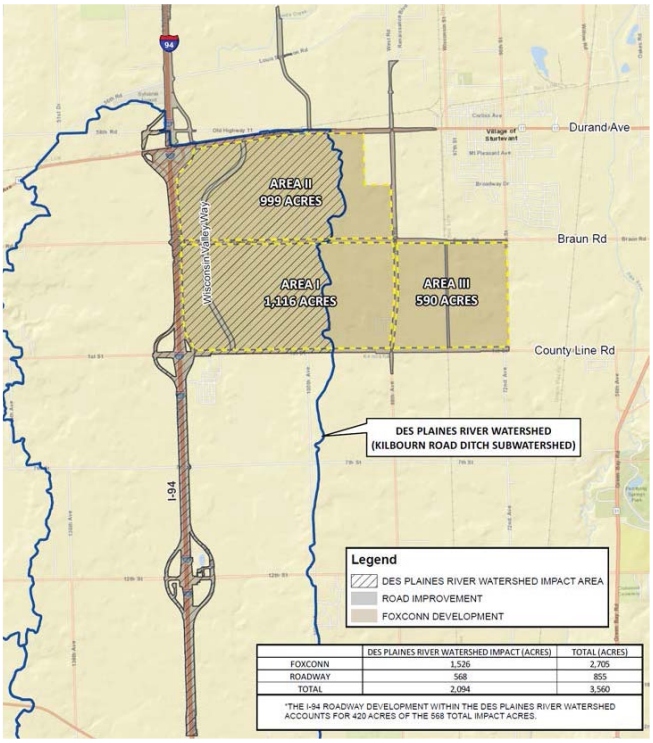
- EITM Zone and Related Development within Des Plaines River Watershed = 3.3 mi^2 (2,094 acres)
- Kilbourn Road Ditch Subwatershed ≈ 24 mi^2 (15,360 acres)
- Des Plaines River Watershed in Wisconsin ≈ 125 mi^2 (80,000 acres)
- Des Plaines River Watershed in Lake County ≈ 200 mi^2 (128,000 acres)

DES PLAINES RIVER WATERSHED

- Watersheds and water flow do not conform to political boundaries
- Downstream Counties:
  - Lake County
  - Cook County
  - DuPage County
  - Will County
- Total Drainage Area at Confluence with Kankakee River = 2,111 mi^2 (1,351,000 acres)

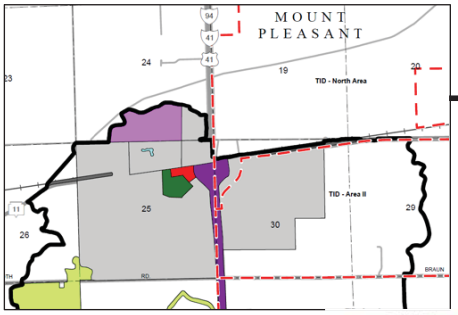
EITM ZONE AND SUPPORTING DEVELOPMENT

- EITM Zone and Supporing Development within Des Plaines River Watershed = 2,094 acres (3.3 mi²)
  - 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

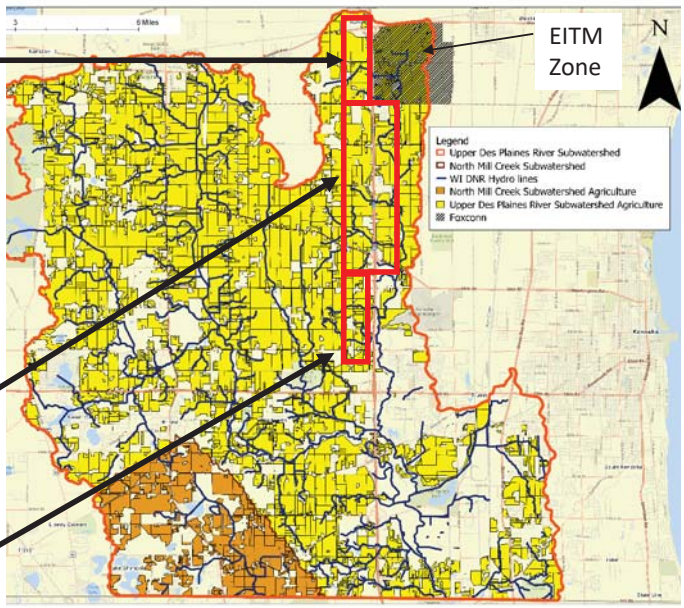


POTENTIAL DEVELOPMENT CORRIDOR

Des Plaines River Watershed = 57% agricultural (44,873 acres)
Kilbourn Road Ditch Subwatershed = 63% agricultural (9,537 acres)



SEWRPC Buildout Land Use

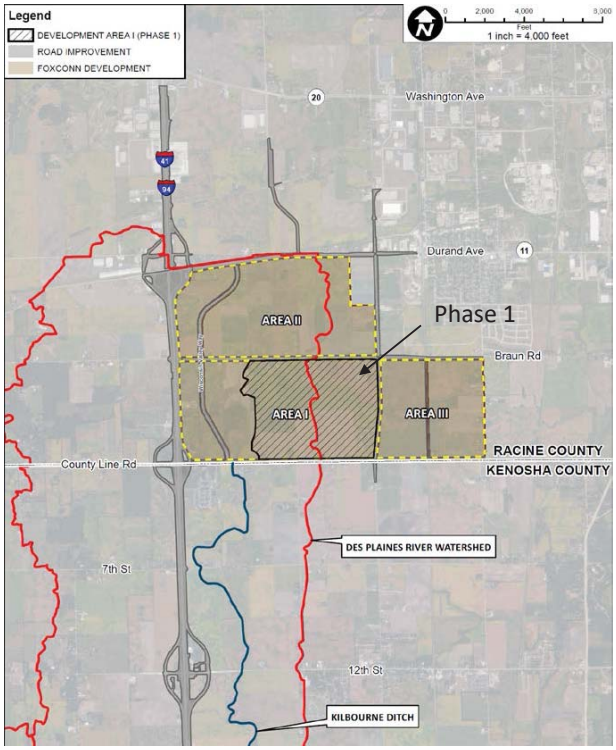


Total additional development potential within ½ mile of I-94 ≈ 5.5 mi² (3,520 acres)

Kenosha County 2035 Land Use Plan Map

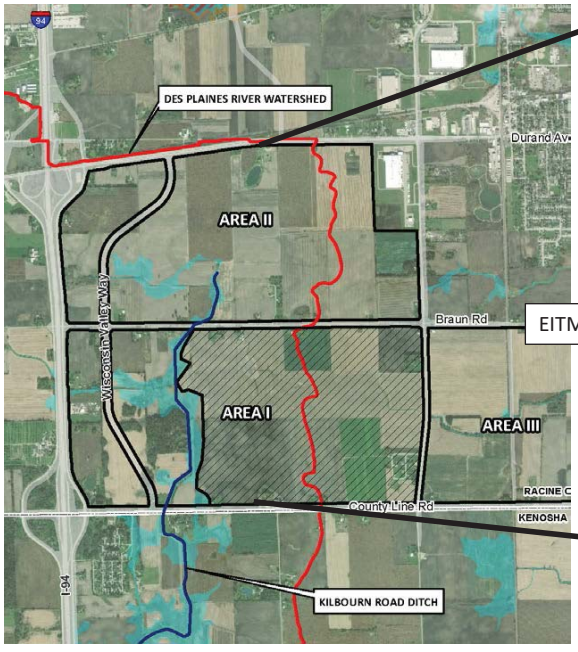
REVIEW OF FOXCONN DEVELOPMENT MATERIAL

- 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

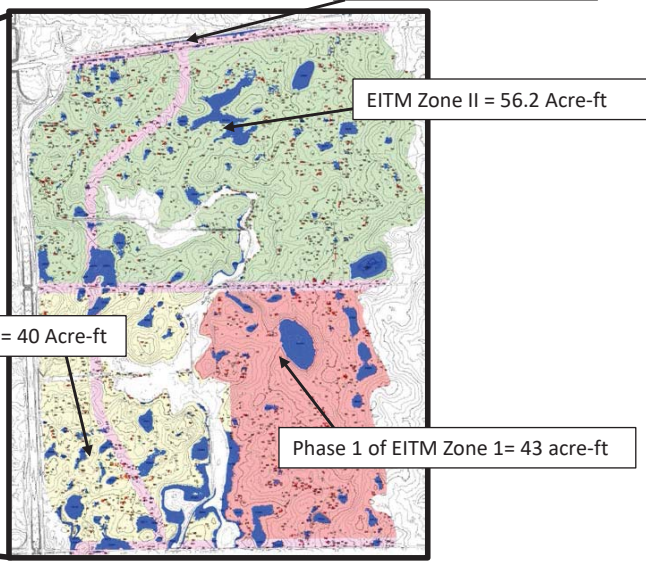


EXISTING DEPRESSIONAL STORAGE AREAS

Undulating Glacial Topography



Existing aerial with floodplain in blue

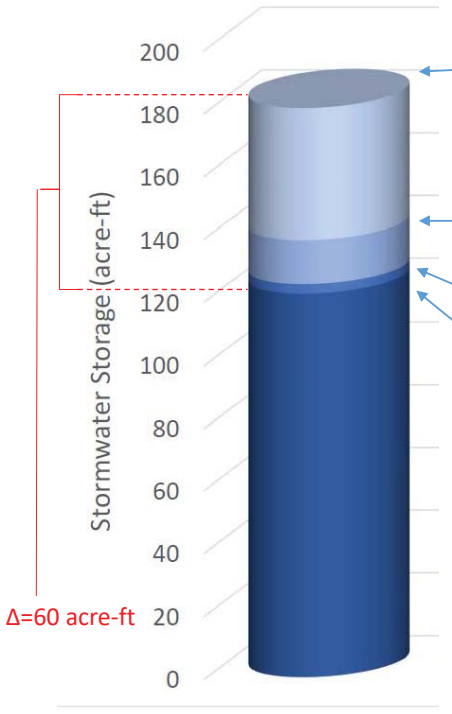


Total Existing Depressional Storage =156.1 acre-ft

Phase 1 and Local Roads =59.9 acre-ft

STORMWATER DETENTION AND DEPRESSIONAL STORAGE ANALYSIS

Foxconn Phase 1 Area in Des Plaines Watershed (395 acres)



Lake County SMC Total Storage Requirement
- Existing Depressional Storage (approximately 43 acre feet)
- Base Flood Elevation and Storage dependent on existing drain tiles
- **Total Volume = 182 acre-ft**

Lake County SMC 100-Year Detention Volume Requirement
- ISWS Bulletin 70 Lake County Rainfall = 6.50 inches
- Release Rate = 0.15 cfs/acre
- Curve Number reflects structurally compacted mass grading
- **Minimum Volume = 139 acre-ft**

Foxconn Phase 1 Stormwater Detention Design
- Atlas 14 Rainfall = 5.84 inches
- **100-Year Design Volume = 125 acre-ft**

SEWRPC 100-Year Detention Volume Requirement
- Atlas 14 Rainfall = 5.84 inches
- Release Rate = 0.3 cfs/acre
- **Minimum Volume = 122 acre-ft**

STORMWATER DETENTION AND DEPRESSIONAL STORAGE ANALYSIS

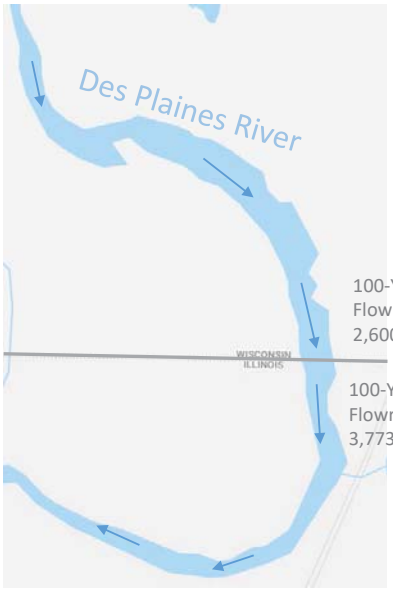
Foxconn Phase 1 Area and Local Roads in Des Plaines River Watershed

Development Phase	Stormwater Detention Deficit[1] (acre-ft)	Depressional Storage Deficit[2] (acre-ft)	Total Stormwater Detention and Depressional Storage Deficit (acre-ft)
Foxconn Phase 1 (395 acres)	17	43	60
Local Roads (148 acres)	3.4	16.9	20.3
TOTAL	**20.4**	**59.9**	**80.3**

[1] Difference in Mount Pleasant/SEWRPC detention requirements and Lake County requirements
[2] Quantification and compensation for Depressional Storage not required in Wisconsin

REVIEW OF DES PLAINES RIVER FLOODPLAIN IN WISCONSIN

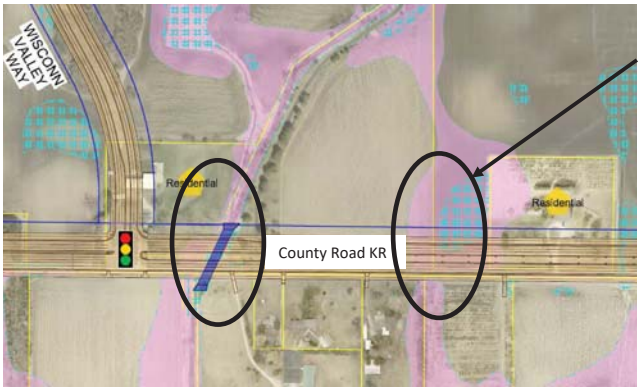
- FEMA published flood flows based on 2003 SEWRPC *"Comprehensive Plan for the Des Plaines River Watershed"*
- HSPF Hydrologic Model utilized Historical Rainfall data from 1940 – 1994
  - Largest rainfall event in series (August 1978) adjusted down
  - 3 of 5 largest 48-hour rainfall events occurred after 1994
  - Largest 10-day rainfall event in May 2004
- 5 largest measured floods at state line occurred after 1994
  - May 2004 = 3,500 cfs
  - July 2017 = 2,830 cfs
- Discrepancy in FEMA flood flows at State Line
  - Wisconsin 100-year flowrate = 2,600 cfs
  - Illinois 100-year flowrate =3,773 cfs
- U.S. Geological Survey Published Statistical Flowrate = 4,290 cfs
- FEMA flood flows and flood elevations in Wisconsin are underestimated for Des Plaines River
  - Flood map in Wisconsin does not represent actual 100-year floodplain based on recent rainfall
  - Difficult to assess downstream impacts from development for large storm events
  - Floodplain fill from development will be underestimated
  - Flood risk for structures near floodplain in Wisconsin is underestimated



Graphical Representation of Des Plaines River at State Line

FLOODPLAIN ENCROACHMENTS

- Chicago Collar Counties require compensatory storage for placement of fill in the floodplain
- In Wisconsin, compensatory storage is only required in a "Flood Storage District" – Des Plaines River is not a designated Flood Storage District
  - Floodplain mapping technical analysis meets requirement for Flood Storage District
  - 2003 SEWRPC Study completed prior to Flood Storage District designations
- Local Road Improvements require fill in Kilbourn Road Ditch Floodplain
  - New/Widened Culverts at Braun Road, County Highway KR, Wisconsin Valley Way
  - Total Floodplain Fill = 10.7 acre-ft without compensatory storage
  - Fill volume at the 100-year flood elevation is larger due to underestimated floodplain

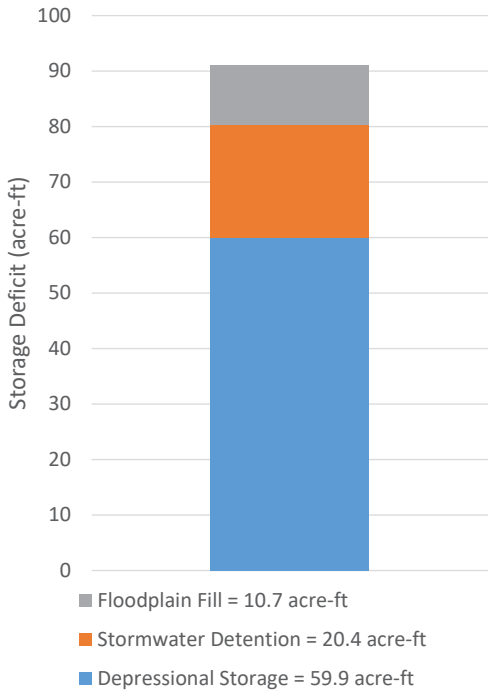


Floodplain Fill at County Highway KR due to roadway widening

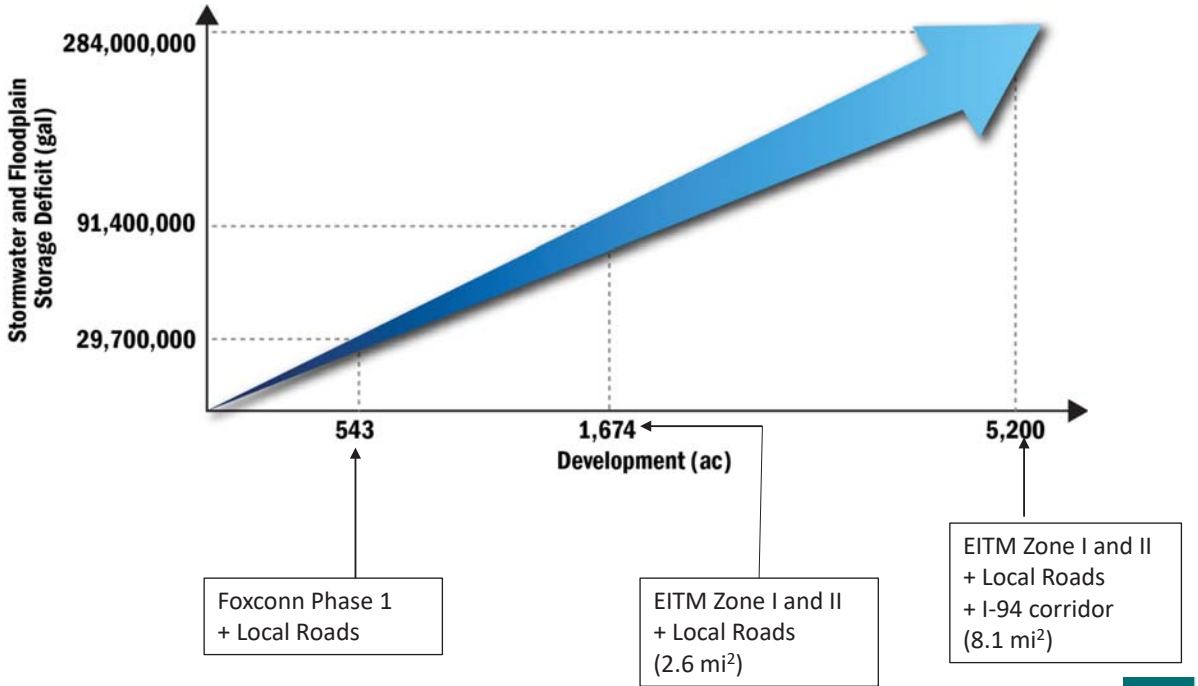
Exhibit of County KR Expansion with Kilbourn Road Ditch Floodplain shown in pink

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
- Equates to 54,600 gallon deficit for every acre of land developed

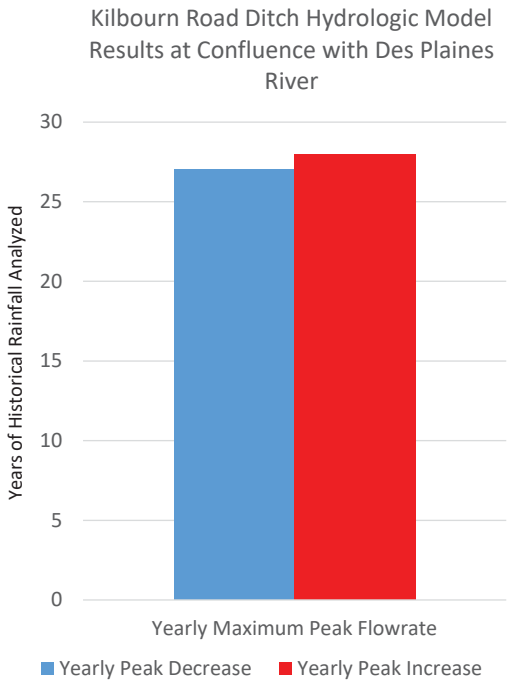


PROJECTING THE DEFICIT FORWARD



2017 SEWRPC EVALUATION OF EITM ZONE DEVELOPMENT

- 2018 SEWRPC Study evaluated EITM Zone effect on Kilbourn Road Ditch flood flows
  - Utilized HSPF Hydrologic Model from 2003 Watershed Study
  - Analyzed impacts to Kilbourn Road Ditch from development using 1940-1994 historic rainfall
  - Peak flowrate for each of 55 years statistically analyzed 2-year and 100-year return interval flood flows in headwaters of Kilbourn Road Ditch
  - CBBEL review of SEWRPC Analysis:
    - No large storm events analyzed
    - Volume of floodwater increases from development
    - Model output at downstream reach shows that yearly maximum peak flowrate would have increased in 28 of the 55 years analyzed (>50%)



SOIL EROSION AND SEDIMENT CONTROL

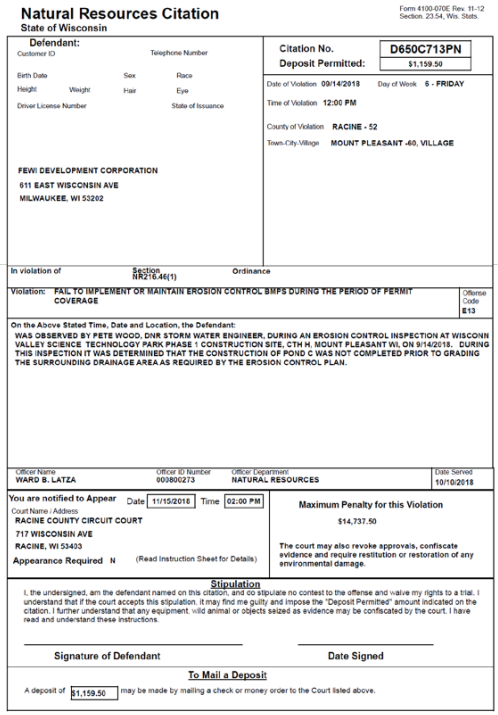
According to the Illinois Environmental Protection Agency (IEPA), the Des Plaines River in Illinois south of the state line is impaired for *"Sedimentation/Siltation, Total Suspended Solids (TSS)"* with a potential source listed as *"Site Clearance (Land Development or Redevelopment)"*

Foxconn Phase 1 Construction Site – September 6, 2018

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

SOIL EROSION AND SEDIMENT CONTROL

- Challenges
  - Large land area under construction
  - Linear roadways with waterway crossings
- Deficiencies
  - Site stabilization
  - Construction sequencing
  - Sediment basins
- WDNR Citation Issued September 14, 2018
  - Failure “to implement or maintain erosion control …during the period of permit coverage”



Natural Resources Citation
State of Wisconsin

Form 4100-070E Rev. 11-12
Section: 23.54, Wis. Stats.

Defendant:
Customer ID | Telephone Number
Birth Date | Sex | Race
Height | Weight | Hair | Eye
Driver License Number | State of Issuance

FEWI DEVELOPMENT CORPORATION
611 EAST WISCONSIN AVE
MILWAUKEE, WI 53202

Citation No. D650C713PN
Deposit Permitted: $1,159.50

Date of Violation 09/14/2018 Day of Week 6 - FRIDAY
Time of Violation 12:00 PM
County of Violation RACINE - 52
Town-City-Village MOUNT PLEASANT -60, VILLAGE

In violation of Section NR216.46(1) Ordinance

Violation: FAIL TO IMPLEMENT OR MAINTAIN EROSION CONTROL BMPS DURING THE PERIOD OF PERMIT COVERAGE
Offense Code E13

On the Above Stated Time, Date and Location, the Defendant:
WAS OBSERVED BY PETE WOOD, DNR STORM WATER ENGINEER, DURING AN EROSION CONTROL INSPECTION AT WISCONN VALLEY SCIENCE TECHNOLOGY PARK PHASE 1 CONSTRUCTION SITE, CTH H, MOUNT PLEASANT WI, ON 9/14/2018. DURING THIS INSPECTION IT WAS DETERMINED THAT THE CONSTRUCTION OF POND C WAS NOT COMPLETED PRIOR TO GRADING THE SURROUNDING DRAINAGE AREA AS REQUIRED BY THE EROSION CONTROL PLAN.

Officer Name: WARD B. LATZA | Officer ID Number: 003800273 | Officer Department: NATURAL RESOURCES | Date Served: 10/10/2018

You are notified to Appear Date 11/15/2018 Time 02:00 PM
Court Name / Address
RACINE COUNTY CIRCUIT COURT
717 WISCONSIN AVE
RACINE, WI 53403
Appearance Required N (Read Instruction Sheet for Details)

Maximum Penalty for this Violation
$14,737.50
The court may also revoke approvals, confiscate evidence and require restitution or restoration of any environmental damage.

Stipulation
I, the undersigned, am the defendant named on this citation, and do stipulate no contest to the offense and waive my rights to a trial. I understand that if the court accepts this stipulation, it may find me guilty and impose the "Deposit Permitted" amount indicated on the citation. I further understand that any equipment, wild animal or objects seized as evidence may be confiscated by the court. I have read and understand these instructions.

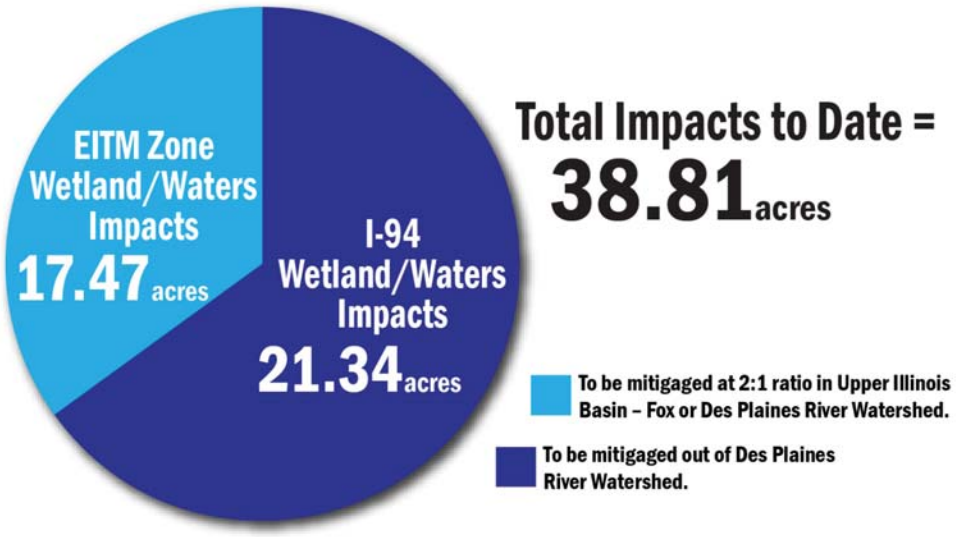
Signature of Defendant | Date Signed

To Mail a Deposit
A deposit of $1,159.50 may be made by mailing a check or money order to the Court listed above.

SUMMARY OF WETLAND IMPACTS AND MITIGATION

- Foxconn - Phase 1 and Local Roads Isolated Wetland impacts
  - **17.47 acres of impact within the Des Plaines River Watershed**
    - Phase 1 = 13.17 acres of impacts
    - Local Roads = 4.30 acres of impacts
- All wetlands within EITM site to be compensated via “fee in lieu” credit purchase at a 2:1 replacement ratio
  - Phase 1 wetland mitigation in Des Plaines River Watershed
    - 13.17 acres x 2 = 26.34 acres of mitigation purchased at a cost of **$61,000** per credit. Total cost approximately **$1,606,740**
  - Local Road wetland mitigation in Des Plaines River Watershed
    - Mitigation to be provided at 2:1 ratio
  - Mitigation sites are not yet determined
  - Two RFPs have been issued to create mitigation site(s)
  - Mitigation must be within state of Wisconsin per statute
  - No suitable sites submitted to date
- Phase 1 Mitigation cost following WDO standard fee amount
  - If purchased via LC standard, the total cost equals **$2,631,366**
    - **Difference of $1,024,626**
  - **Concern noted to WNDR: rising land value in DP Corridor may hinder mitigation locally.**
- I-94 Wetland/Waters Impacts (WisDOT)
  - 21.336 acres of impact (USACE and Isolated)
  - 21.575 acres of mitigation provided in WisDOT wetland mitigation banks **(all being mitigated out of Des Plaines River Watershed)**

WETLAND IMPACT OVERVIEW



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

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION UPPER DES PLAINES RIVER WATERSHED IMPACT STUDY Report, Executive Summary and PowerPoint can be viewed and downloaded at:

https://www.lakecountyil.gov/553/Stormwater-Management-Commission

PUBLIC COMMENT PERIOD IS OPEN UNTIL APRIL 8TH, 2019. PLEASE SEND YOUR COMMENTS TO: stormwater@lakecountyil.gov

APPENDIX C

2 HYDROLOGIC AND HYDRAULIC MODELING UPDATE

2.1 SEWRPC FLOODPLAIN MAPPING PROJECT SUMMARY

Updated hydrologic and hydraulic modeling for the Kinnickinnic River watershed was completed as part of a floodplain mapping project being conducted by the SEWRPC for the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) steering committee and the MMSD. SEWRPC made updates and refinements to the hydrologic and hydraulic models reflecting many physical changes in the watershed that occurred between 2008 and 2013.

In 2013, SEWRPC submitted the hydrologic analysis to the WDNR for review and approval. WDNR responded in January 2014 and requested that additional work be completed to extend the historical simulation period to include major flooding events that occurred in 2008, 2009 and 2010. When the historical record was extended to 2012 to include these additional events were included, the 1986 storm event, the largest on record, is no longer considered an outlier. The above changes resulted in a significant increase in flood flow estimates from earlier studies. For the 1% flood event, increases typically ranged from 20 to 50 percent. The majority of this increase was attributed to extending the simulation period to include recent large events, with a smaller amount attributable to eliminating the historical adjustment for the 1986 event. Some additional changes in peak flow (both increases and decreases were attributable to the changes made to the HEC-RAS model and updates made to hydrologic routing tables (F-tables).

The overall impact of the updated floodplain mapping project was a significant increase in the computed peak flows for the one-percent event. The higher flows result in higher flood profiles and an increase in the computed flood risk in the watershed. These results led to this project, which is intended to update previous work to address this increased flood risk in addition to the other objectives stated for this project. **Table 2-1** presents a comparison of the one-percent event flows between the 2005 Watercourse Phase 2 study and this Watercourse Plan Update.

2.2 HYDROLOGIC AND HYDRAULIC MODEL – 2016 FLOOD RISK CONDITIONS

This Watercourse System Management Plan Update uses the SEWRPC models that were updated for the MCAMLIS floodplain mapping project to define the 2016 estimated flood risk in the watershed. It should be understood that throughout this report, the term “2016 flood risk” refers to the existing channel hydraulics combined with hydrologic conditions generated from the 2020 land use dataset. The updated peak flow rates, flood profiles and floodplain mapping for the 2016 flood risk conditions were used to identify flood risk areas and to compute the estimated potential flood damage to structures.

The entire Kinnickinnic River watershed was represented with one U.S. Environmental Protection Agency Hydrologic Simulation Program – Fortran (HSPF) model. The model was used to compute continuous stream discharge over a 73-year period at various points within the watershed. The input files were based on year 2020

TABLE 2-1 COMPARISON OF FUTURE (2020) LAND USE CONDITIONS FLOW RESULTS FOR 1% ANNUAL PROBABILITY FLOOD EVENT

SUBWATERSHED	LOCATION	RIVER MILE	2005 PHASE 2 WMP (CFS)	2016 WMP UPD (BASED ON SEWRPC 2014 FLOWS) (CFS)	PERCENT DIFFERENCE (%)
Lyons Creek Park	West Forest Home Avenue	1.31	675	903	34%
	West Oklahoma Avenue	0.687	1,010	1,310	30%
	West Cleveland Avenue	0.08	1,400	1,730	24%
Wilson Creek Park	Drop Structure	5.25	862	1,010	17%
	South Howell Avenue	3.65	1,700	2,110	24%
	CP Line Railroad	2.56	2,850	3,930	38%
	Villa Mann Creek	1.79	3,150	4,420	40%
	Howard Avenue	1.27	3,150	4,550	44%
	West Morgan Ave	0.8375	3,190	4,550	43%
	West Lakefield Drive	0.4825	4,100	5,610	37%
	West Electric Avenue	0.9485	309	N/A	N/A
	UPRR Railroad	0.091	1,060	N/A	N/A
	Colony Drive	0.6425	241	303	26%
43rd Street Ditch	South 27th Street Tunnel	0.256	488	645	32%
	West Bolivar Avenue	0.3975	961	1,460	52%
Villa Mann Creek Tributary	South 60th Street Outfall	8.01	1,100	2,050	86%
	South 43rd Street	6.489	1,910	2,730	43%
Villa Mann Creek	West Forest Home Avenue	5.71	2,050	3,110	52%
Kinnickinnic River Mainstem	South 35th Street	5.44	2,570	3,730	45%
	Wilson Park Creek	5.126	6,350	8,940	41%
	South 27th Street	4.865	6,350	8,940	41%
	South 16th Street	3.555	6,650	8,940	34%
	South 6th Street	2.792	6,650	9,030	36%
	Interstate Highway 94	2.56	7,320	10,775	47%
	South 16th Street	3.46	6,650	9,030	36%
	South 6th Street	2.792	7,320	9,030	23%
	Interstate Highway 94	2.56	7,320	10,775	47%

APPENDIX D

Flood Storage Area Frequently Asked Questions

Wisconsin Department of Natural Resources Floodplain Program

Q. Why is this flood storage area information relevant?

In the process of developing new engineering studies for new floodplain maps and Flood Insurance Studies (FIS), the flood storage capacity was considered for some waterways in your community where detailed terrain data and significant flood storage exists.

Q. What is a flood storage area?

A **flood storage area** is part of the mapped floodplain that identifies the natural flood storage capacity of that area in a watershed. A computer model was used to calculate the amount of runoff expected to a mapped waterway within a watershed. The resulting volume of water is the basis for determining how much of the regional flood discharge the flood storage area is capable of holding back. This information is depicted on the FEMA floodplain map as the extent of the flood fringe areas. The Department of Natural Resources will provide additional maps showing where flood storage was considered within those flood fringe areas.

Q: What are the benefits of protecting flood storage areas?

By infiltrating runoff water and acting as holding basins, flood storage areas can reduce the amount and duration of flooding in the floodplain immediately downstream. Wetlands are a good example of natural flood storage areas. If a wetland is filled, it can no longer provide this natural function and an increase in flooding can be observed farther down in the watershed. Envision dropping a rock into a full glass of water; the water spills out into surrounding areas that would otherwise be dry. By including flood storage areas in the FIS, flood flows and floodplain elevations in lower reaches are reduced.

Q: How is the location of a flood storage area determined and documented?

Engineers experienced in preparing floodplain maps and flood insurance studies evaluate areas within the floodplain that could potentially provide a significant amount of flood water storage. Data are collected from these areas and entered into the computer model calculations that are used to prepare flood maps. By mapping and protecting the storage areas, the volume of flood waters can be reduced, thereby lowering flood elevations in the floodplain. For current updates of the flood insurance studies, flood storage areas are located where significant storage is provided by wetland areas mapped by the Wisconsin Wetland Inventory, permanent impoundments (lakes or reservoirs) or immediately adjacent areas.

Q: How would a municipality know if they have flood storage areas and, therefore, need to create a Flood Storage District in their zoning ordinance?

Before producing new floodplain maps, DNR will determine whether to include flood storage in the study. They will notify all municipalities that have flood storage areas and then provide separate Flood Storage District (FSD) maps that **must** be adopted into the floodplain zoning ordinance. The DNR provides a model floodplain ordinance on its website that includes language for the creation of Flood Storage Districts. This is located at: http://dnr.wi.gov/topic/floodplains/communities.html. Communities can choose to adopt the entire model ordinance or they can simply amend their existing ordinance to adopt the new Flood Storage District maps and language.

Q.: What is shown on the Flood Storage Maps?

The Flood Storage Maps show the flood storage areas and the floodway. Only the floodfringe is used to calculate the flood storage areas. Therefore, the flood storage areas do not extend beyond the floodfringe as shown on the Flood Insurance Rate Map.

Q. What can a community do with a Flood Storage District?

A FSD enables protection of these important storage areas from displacement by development. Developers with a proposal for work in a FSD must prove that the development will not increase the flood elevation level. Additionally, they must adhere to certain building standards that are specified in the community's ordinance.

Q: Do local governments have authority to require proof that a proposed development will not cause a flood elevation increase?

Yes. Local governments have statutory authority to protect floodplains. Wisconsin Administrative Code NR116, Wisconsin's Floodplain Management Program, sets minimum standards for development in mapped floodplains. These standards are adopted and administered through the local floodplain zoning ordinance.

Q: What should a municipality require of a developer whose proposal would result in flood storage loss?

The standards to be applied are contained in section 5.2 of the "Model Floodplain Ordinance with FP Storage Language Added, January 2012 DNR" http://dnr.wi.gov/topic/floodplains/communities.html.

Q: Does all proposed filling in the floodfringe require an engineering analysis to evaluate the impact on the regional flood elevation?

No. Only in areas designated as Flood Storage Districts in an adopted floodplain ordinance.

Q: What options are there for repairing or restoring existing homes that are newly identified in a FSD when they have been flooded previously?

Existing homes or other structures in a Flood Storage District retain all development rights and restrictions as existed before the adoption of the flood storage maps. If an addition to the existing structure or other development is proposed for the site, the equal cut and fill conditions must be followed.

Q: Under what circumstances is new development permitted in a FSD?

Proposed new development or additions in a FSD must meet the equal cut and fill condition. This ensures that any fill on the site which reduces flood storage capacity, is replaced on the site by an equal amount of new flood storage. Any change to the land **shall not** reduce the net volume of floodwater that can be stored. Excavation below the groundwater table is not considered to provide an equal volume of storage.

Q. How much time does a community have to adopt the FSD maps?

Communities can expect to receive a FSD notification letter shortly after receiving the Letter of Final Determination (6 months before FIRM adoption). It serves the community best to adopt the storage maps at the same time as the FIRMs since there is new language that needs to be added to the ordinance. Officially, communities have one year from the date of the FSD notification letter to adopt the storage maps but waiting will require the local floodplain ordinance to be amended twice.

Mitigation Bank Notices

2006-02759-MVM (Lincoln County, MN) Madsen Wetland Mitigation Bank

PUBLIC NOTICE: The sponsor is proposing to develop the Madsen Wetland Bank. The proposed bank site is approximately 76 acres in size, including upland buffer areas. The bank is for the Minnesota Local Government Road Wetland Replacement Program (LGRWRP).
Published: 7/3/2019

2019-00344-SRK (Douglas County, MN) Robert Johnson Wetland Mitigation Bank

PUBLIC NOTICE: The sponsor is proposing to develop the Robert Johnson Wetland Bank. The proposed bank site is approximately 21.3 acres in size, including upland buffer areas.
Published: 6/27/2019

2017-04161-DAS (Blue Earth County, MN) Church Farm Wetland Mitigation Bank

PUBLIC NOTICE: The sponsor is proposing to develop the Church Farm Wetland Mitigation Bank. The proposed bank site is approximately 122 acres in size, including upland buffer areas.

Each year, the public in Minnesota and Wisconsin undertake projects that affect the nation's aquatic resources. Often these projects require a Clean Water Act or Rivers and Harbors Act permit from the U.S. Army Corps of Engineers before work can proceed. The Corps reviews these projects to ensure environmental impacts to aquatic resources are avoided or minimized as much as possible. Consistent with the administration's goal of "no net loss of aquatic resources" a Corps permit may require a property owner to replace the loss of existing aquatic resource functions from a project through compensatory mitigation.

What Is Compensatory Mitigation?

Hover over highlighted text for the definition

Compensatory mitigation is the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purpose of offsetting impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. Compensatory mitigation may come from three sources: mitigation banks, in-lieu fee programs, and permittee responsible mitigation. Refer to the chart below for more information regarding these sources. In general, mitigation should be located within the same watershed as the impact site and should be located where it is most likely to successfully replace lost functions and services. The Corps considers the type and location options for mitigation in the following order although flexibility in approach can be exercised on a project-specific basis: mitigation bank credits, in-lieu fee program credits, permittee responsible mitigation under a watershed approach, permittee responsible mitigation through on-site and in-kind mitigation, and permittee responsible mitigation through off-site and/or out-of-kind mitigation.

Sources of Compensatory Mitigation	
Mitigation Bank	One or more sites where aquatic resources such as wetlands or streams are restored, established, enhanced and / or preserved for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.
In-lieu Fee Program	A program that involves the compensatory mitigation of aquatic and related terrestrial resources through funds paid to a government or non-governmental natural resource management organization.
Permittee-responsible Mitigation	Individual projects constructed by permittees to provide compensatory mitigation for activities authorized by Corps of Engineers' permits.

Contact Information

- Minnesota
- Wisconsin
- District Headquarters

Related Links

RIBITS (Regulatory In-lieu Fee and Bank Information Tracking System) link

Federal Mitigation Rule

2019 Wetland Banker Training

Credit Allocation and Numbers (PDF)

Prospectus (PDF)

Wetland Banking Overview (PDF)

Performance Standards and Credit Release Schedules (PDF)

Moving from Prospectus to Mitigation Plan (PDF)

Information for Permit Applicants by State

- Minnesota
- Wisconsin

Information for Bank Sponsors by State

- Minnesota
- Wisconsin