EXECUTIVE SUMMARY

STORMWATER MANAGEMENT COMMISSION

Christopher B. Burke Engineering, Ltd.

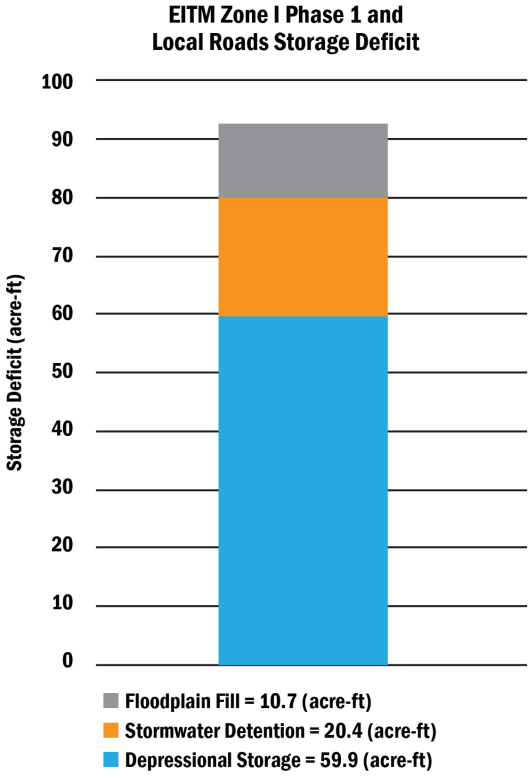
UPPER DES PLAINES RIVER IMPACT ANALYSIS

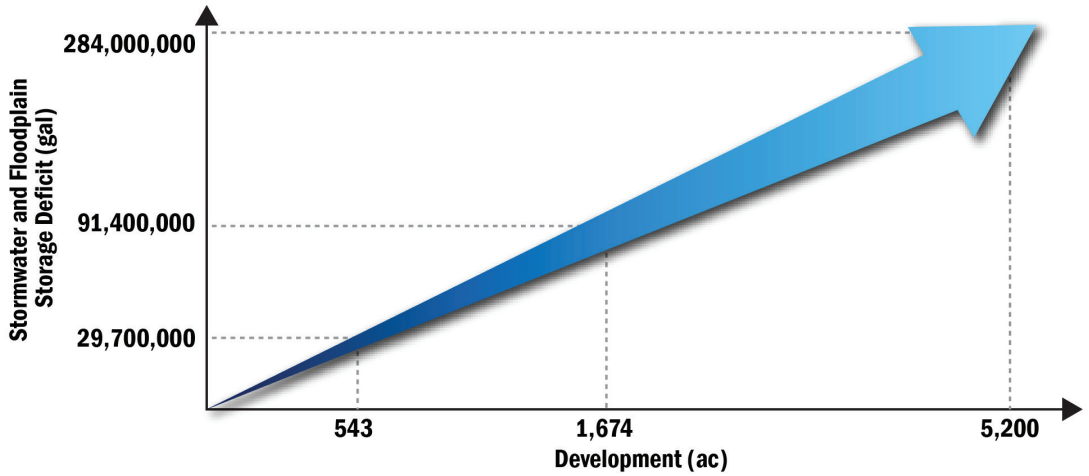
In July 2018, the Lake County Stormwater Management Commission (SMC) requested that Christopher B. Burke Engineering, Ltd. (CBBEL) complete a technical review of development related to the Electronics and Information Technology Manufacturing (EITM) Zone in Wisconsin, as it relates to the Des Plaines 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.

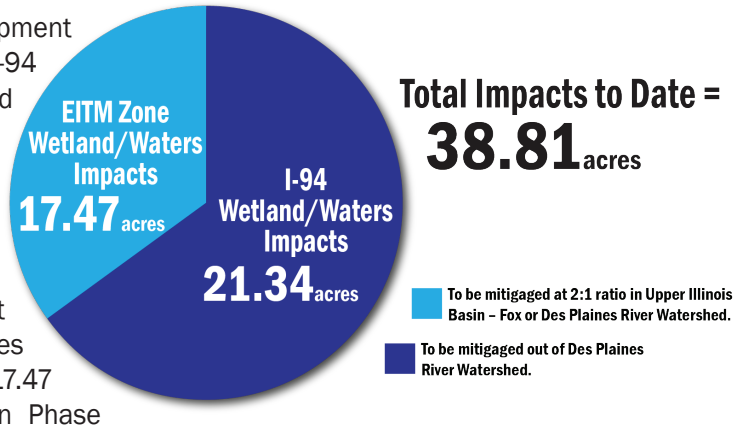




Given the scope of the currently proposed development, future land use mapping and development patterns in similar interstate highway corridors, the largely agricultural lands outside of the EITM Zone can reasonably be anticipated to follow similar development patterns. As the Foxconn Development, EITM 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.