

**DRAINAGE INVESTIGATION
FOR
PAN AM BOULEVARD AT YORK ROAD**

**ELGIN O'HARE – WEST BYPASS
P-91-443-06**

Prepared For:

Illinois Department of Transportation
201 West Center Court
Schaumburg, IL 60196-1096

Prepared By:

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CBBEL Project No. 07-0404

March 2012



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TECHNICAL MEMORANDUM

Prepared By: Chinliang R. Wang, PE – CBBEL
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Subject: Elgin O'Hare West Bypass
Pan Am Boulevard at York Road

Project Number: P-91-443-06

Date: March 28, 2012

The purpose of this memorandum is to summarize the results of a flooding analysis at the intersection of Pan Am Boulevard and York Road in Elk Grove Village, Illinois. Heavy rains produce flooding on Pan Am Boulevard between Delta Lane and York Road as shown on Exhibit 1. Discussions with Elk Grove Village Staff revealed that roadway flooding has reached levels above the low entry elevations of buildings on the south side of Pan Am Boulevard.

A. Existing Conditions

Willow Creek North Tributary (Tributary) is located south of Pan Am Boulevard and flows from west to east until it passes through a culvert under York Road. The problem area north of the Tributary is located within the Zone A regulatory floodplain according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 0303 dated December 16, 2004. As part of the Elgin O'Hare – West Bypass project, a steady state HEC-RAS model was developed to determine peak water surface elevations (WSEL) in the Tributary. The HEC-RAS model includes the York Road and Thorndale Avenue improvements completed by the DuPage County Division of Transportation. Although the problem area along Pan Am Boulevard is shown to be in the floodplain on the FIRM map, the current HEC-RAS hydraulic model indicates a lower flood elevation. The 100-year WSEL in the Tributary is approximately 656.9 feet. According to DuPage County 2-foot topography, the elevation of Pan Am Boulevard at the flooding area is approximately 660 feet. This is approximately 3 feet above the 100-year WSEL in the Tributary.

According to the Elk Grove Village storm sewer atlas, there are no existing storm sewer inlets within the flooding area on Pan Am Boulevard. It is also unclear whether an overland flow path exists from the flooding area to the Tributary. The nearest storm sewer line runs from north to south on Delta Lane and outlets into the Tributary immediately west of the flood area. The sewer begins as a 15" RCP at Devon Avenue and increases to a 36" RCP at the outlet. A rational method calculation was performed for the approximately 26 acres of area tributary to the storm sewer system and determined a peak runoff rate of approximately 68 cfs for the 10-year storm event.



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B. Recommendations

The results of the investigation indicate that flooding of Pan Am Boulevard is likely due to a lack of storm sewer and/or overland drainage from the flood area. The flood area is located within mapped Zone A floodplain, however the peak 100-year WSEL in the Tributary as determined by the steady state HEC-RAS model is below the pavement elevation of Pan Am Boulevard.

The construction of the Elgin O-Hare – West Bypass project will not encroach on the concerned area and will not cause adverse impacts to the local drainage. Therefore, the Elk Grove Village is responsible reviewing and improving drainage systems associated with Pan AM Boulevard.

C. References

Town of Elk Grove Village Storm Sewer Atlas (November 13, 2008)
CBBEL Hydraulic Report – West Bypass over Willow Creek (February 2011)
DuPage County 2-foot topography (2006)

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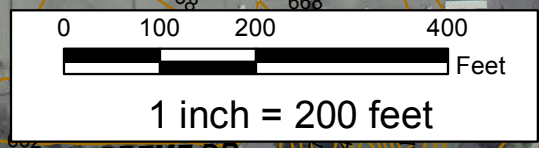
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TAB 2



Flooding Area

Willow Creek North Tributary



DSGN.	MJB	CHKD.
DATE		12/21/11
EXHIBIT 1		

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CLIENT	IDOT	PROJECT NO.	07-0404
TITLE	Pan Am Boulevard and York Road Site Map		