

Mr. M. NAJED KABAZI, P.E.
Senior Project Manager

REGISTRATION: Registered Professional Engineer in State of Texas No. 78797

EDUCATION: University of New Orleans Bachelor of Science in Civil Engineering, 1980

EXPERIENCE: 31 years experience in Civil Engineering

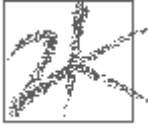
SUMMARY OF EXPERIENCE

Mr. Kabazi has 31 years of diversified civil engineering experience including airport and highway drainage design and analysis, structural design and analysis, municipal wastewater conveyance systems, water distribution systems, and highway/roadway design. He has particular expertise in the development of computer models for a varied array of water, wastewater and drainage systems utilizing programs such as HEC-1, HEC-2, HEC-RAS, HEC-HMS, HEC-UNET, HEC-DSS, ICPR, SWMM, KYPIPE and WINSTORM.

REPRESENTATIVE PROJECTS

- **US290/Hempstead Road Corridor.** Served as the lead H&H analyst. Performed the drainage impact analysis and developed a drainage mitigation plan for the proposed expansion of the existing 17.2 mile freeway section from Telge Rd. to Loop-610 and from Loop-610 to IH-10. The proposed project would include mainlane grade-separations, mainlane widening to between 8 and 14 lanes, frontage roads and new exit/entrance ramps. The study included the hydraulic design of all the major drainage structures in accordance with TxDot's design criteria. Additionally, the study included the development of detailed hydrologic and hydraulic models, to simulate and evaluate the performance of the existing and proposed drainage systems, utilizing HEC-1, HEC-2, HEC-RAS, and SWMM computer programs to demonstrated the effectiveness of the mitigation plan.

- **IH-45 South – Harris/Galveston Counties for Texas Department of Transportation.** Performed the drainage impact analysis and developed a drainage mitigation plan for the proposed expansion of the existing 19.2 mile freeway section from south of Beltway 8 to FM 1764. The proposed project would include mainlane grade-separations, mainlane widening to 10 lanes, frontage roads and new exit/entrance ramps. The study included the hydraulic design of all the major drainage structures in accordance with TxDot's design criteria. Additionally, the study included the development of detailed hydrologic and hydraulic models, to simulate and evaluate the performance of the existing and proposed



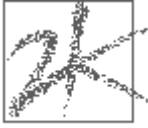
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- **White Oak Bayou Feasibility Study, Houston Texas.** Served as overall Quality Control coordinator and technical consultant for the project authorized under the 1996 WRDA Section 211(f). The White Oak Bayou watershed comprises of 110 square mile urban watershed. The study included the update of watershed hydrologic/hydraulic models to establish the without- project conditions as the hydrologic/hydraulic baseline, the analysis of individual hydraulic components such as channel modification, detention, and diversion/bypass channels, the development of alternative strategies toward an NED plan. The study utilizes a combination of the HEC-1, HEC-2, and HEC-UNET models as the primary hydrologic, routing, and hydraulic models. The HEC-UNET was used as the primary routing tool for the White Oak Bayou mainstem reach, which includes the majority of the detention, control structures, and diversion/bypass channels.

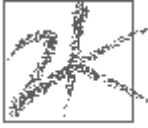
- **George Bush Intercontinental Airport – Runway 15R-33L Extension and Widening for the City of Houston DOA, Houston, Texas.** Served as lead engineer for the analysis and design of the drainage system which drains approximately 1,600 acres of airport's West Complex. The Study included the analysis to determine the hydrologic/hydraulic impacts realized due to the proposed airside improvements. The proposed airside drainage improvements were estimated to cost \$8.1 million consisted of closed storm sewer systems, channels and detention facilities. The study also included the evaluation of the projects impacts on Hood Bayou and ultimately Greens Bayou, which serve as the primary outfall of the proposed project area. HEC-1, HEC-2 and the EPA-SWMM computer models were used for the analysis.

- **Nasa Road 1 Bypass From Nasa Road 1 to IH-45 – For Texas Department of Transportation.** Served as senior engineer for the analysis and design of the drainage system. The project consisted of the construction of a four-lane highway from the existing Nasa Road 1 to IH-45. The project included the preliminary design of the drainage system consisting of roadside ditches, storm sewer and detention facilities designed to mitigate the impacts associated with the proposed improvements. For the study HEC-1, HEC-2 and SWMM computer models were used for the analysis.

- **US-59 From Mandeville Street to Smith Street – For Texas Department of Transportation, Houston Texas.** Served as senior engineer for the analysis and design of the drainage system for the proposed depressed section of the highway through a highly developed area of Houston. The project included the depression and widening of the existing roadway, which included a series of drainage aspects such as, storm sewer design, design of siphons, pump stations and detention facilities. The study involved the development of an extensive SWMM model of the off-site and on-site drainage systems, including pump stations and detention facilities, to convey runoff across and from the depressed section without having adverse impacts on the downstream systems.



- **Frostwood Subdivision Comprehensive Drainage Study – For City of Houston, Houston Texas.** Served as senior engineer for the analysis and design of the drainage system. The study consisted of the comprehensive analysis of the drainage system encompassing a total drainage area of approximately 2000 acres. The study was performed in three parts, the first was to identify and report on the existing drainage problem areas, the second was to develop measures to alleviate flooding in the worst areas in the short term, and the third is to develop a plan identifying capital improvement projects to improve the overall performance of the drainage system providing an increased level of flood protection. The study included the extensive utilization of the SWMM computer model as the primary tool to analyze the drainage systems. The SWMM models included the simulation of the storm sewers, drainage ditches, storm sewer inlets, and storage capacity of the system.
- **Northwest Sludge Transfer System- City of Houston, Houston Texas.** Served as project engineer for the analysis and preliminary design of a sludge transfer system to transfer waste activated sludge from four wastewater treatment plants to the City of Houston's 109th Street sludge processing plant. The project included approximately 126,000 linear feet of 8", 10", 14" and 16" sludge force mains and approximately 14,000 linear feet of 72" sanitary sewer in a tunnel. Also included are modifications to existing sludge pump stations at four wastewater treatment plants, pigging stations for cleaning of force mains and grit removal facilities at three of the wastewater treatment plants. The project included the transient analysis to evaluate the performance of the systems for various operational procedures utilizing the LIQT computer program.
- **Sugar Land Municipal Airport – City of Sugar Land –** Served as Project Engineer to develop a comprehensive drainage plan for the airport to meet the future needs based on a proposed airport development plan. The drainage study included the evaluations of the existing drainage systems to identify problem areas and to develop improvement alternatives to address the immediate needs. Additionally, the study included the development of a phased drainage plan to meet targeted levels of future development, which included the design and analysis of storm sewers, drainage ditches, and detention facilities to offset any impacts on the adjacent properties and Oyster Creek. A major component of the study was to develop of measures to route the Oyster Creek overflows through the airport property without affecting the existing drainage patterns. The study utilized a combination of the HEC-1, HEC-2, HY-8, and ICPR models as the primary hydrologic, routing, and hydraulic models.
- **Cutten Road Regional Detention Facility for Harris County Flood Control District, Houston Texas.** Served as Project Engineer for the design and analysis of the inflow/outflow structure for the Cutten Road regional basin. The project study included two phases: Phase I – was an update of the HEC-1 and HEC-2 to establish the hydraulic baseline conditions for the Upper Greens Bayou watershed. Phase II included the design and analysis of a phased construction of the inflow/outflow structure to the detention basin based on the ultimate usage relative to the projected development in the watershed upstream of the detention basin. HEC-1, HEC-2 and HEC-UNET were utilized in the analysis. The HEC-UNET was used to model detention basin and corresponding reach of Greens Bayou to optimize the design of the inflow/outflow structure.



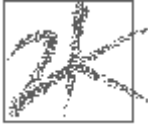
- **State Highway 35 – Beltway 8 to FM 518 for Texas Department of Transportation.** Served as Project Manager/Project Engineer for the analysis and design of mitigation plan for the drainage system associated with the expansion of SH 35. The project consists of the widening of the existing 4-lanes of traffic to 6-lanes urban section roadway with a continuous left hand turn lane. The study included the extensive utilization of the HEC-1, HEC-2 and EPA-SWMM computer models to evaluate and develop an effective drainage system design to mitigate any impacts that would be associated to the implementation of the proposed roadway.

- **IH-10 Katy Freeway Reconstruction Project for Texas Department of Transportation.** Performed the drainage mitigation study to address any impacts associated with the proposed expansion of three sections of the Katy Freeway. The proposed roadway would expand the existing 6-lane mainlanes and 4-lanes of frontage roads to include 10-lanes of mainlanes, 4-lanes of frontage roads, and 2-lanes for HOV traffic. The study included the analysis of the existing and proposed conditions drainage systems, including the major elements the mitigation plan to offset any impacts on the receiving streams and abutting properties. For the study HEC-1, HEC-2 and EPA-SWMM computer models were used for the analysis.

- **US 290 at Mueschke Road for Texas Department of Transportation.** Performed the drainage impact analysis and developed a drainage mitigation plan for the proposed extension of the existing freeway section over the Mueschke Road for approximately 1.2 miles. The proposed project would include a grade-separation at Mueschke Road while maintaining the at-grade frontage roads. The study included the hydraulic design of all the major drainage structures in accordance with TxDot's design criteria. Additionally, the study included the development of detailed hydrologic and hydraulic models, to simulate and evaluate the performance of the existing and proposed drainage systems, utilizing HEC-1, HEC-2, and EPA-SWMM computer programs to demonstrated the effectiveness of the mitigation plan.

- **IH-45 North –Montgomery County for Texas Department of Transportation.** Performed the drainage impact analysis and developed a drainage mitigation plan for the proposed expansion of the existing 3.1 mile freeway section from south of FM 2854 to north of Loop 336 North. The proposed project would include five mainlane grade-separations, frontage roads and new exit/entrance ramps. The study included the hydraulic design of all the major drainage structures in accordance with TxDot's design criteria. Additionally, the study included the development of detailed hydrologic and hydraulic models, to simulate and evaluate the performance of the existing and proposed drainage systems, utilizing HEC-1, HEC-2, and HEC-RAS computer programs to demonstrated the effectiveness of the mitigation plan.

- **Montgomery County Airport – West Area Drainage Improvements for Montgomery County, Texas.** Performed preliminary engineering analysis and design for the west area drainage improvements as part of the implementation of the 1994 drainage master plan for the airport. The study included the design of detention facility and channel network to alleviate the structural flooding of the



airport facilities on the west side of the airport. The study included the development of detailed hydrologic/hydraulic models to simulate various alternatives designed to evaluate and to demonstrate the effectiveness of the proposed systems to convey the runoff and to mitigate any impacts on the receiving streams. The EPA-SWMM computer program was used as the primary analysis tool for its ability to incorporate all the elements of the drainage network.

- **Montgomery County Airport – South Drainage Improvements for Montgomery County, Texas.** Performed preliminary engineering analysis and design for the south area drainage improvements as part of the implementation of the 1994 drainage master plan for the airport. The study included the development drainage plans for the interim and future development conditions as projected in the airport's 2002 Airport Master Plan Update. The study included preliminary design of detention facilities and channel networks that would be needed to safely convey the runoff without adversely impacting the receiving streams. The study included the development of detailed hydrologic/hydraulic models to simulate various alternatives designed to evaluate the proposed systems to convey the runoff and to demonstrate the effectiveness mitigation plan to offset any impacts on the receiving streams. The HEC-HMS, and EPA-SWMM computer programs were used as the primary analysis tools.
- **IH-45 North SH 105 to 0.4 Miles South of FM 2854 –Montgomery County for Texas Department of Transportation.** Performed the drainage impact analysis and developed a drainage mitigation plan for the proposed construction of the grade separation of the southbound frontage over the Burlington and Northern Railroad and FM 2854. The study included the determination of the hydrologic and hydraulic impacts associated with the increased impervious cover, and drainage improvements due to the proposed project, and the development of mitigation measures that would offset the impacts on Alligator Creek, as the outfall stream. Additionally, the study included the development of detailed hydrologic and hydraulic models, to simulate and evaluate the performance of the existing and proposed drainage systems, utilizing HEC-1, HEC-2, and EPA-SWMM computer programs to demonstrated the effectiveness of the mitigation plan.
- **Montgomery County – FM 1314: 2.6 Miles NW of Loop 494 to Loop 494, for Texas Department of Transportation.** Performed the drainage impact analysis and developed a drainage mitigation plan for the proposed roadway expansion from 2 to 4 lane rural section. The study included determination of the hydrologic and hydraulic impacts associated with the increased impervious cover, and drainage improvements, and the development of mitigation measures that would offset the impacts on outfall streams. Additionally, the study included the development of detailed hydrologic and hydraulic models, to simulate and evaluate the performance of the existing and proposed drainage systems, utilizing HEC-1, HEC-2, and EPA-SWMM computer programs to demonstrated the effectiveness of the mitigation plan.