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RAJESH CHINDALUR, P.E., PTOE
TRAFFIC/TRANSPORTATION ENGINEER

Professional Engineer Florida # 77285

Professional Engineer Texas # 99303

Professional Traffic Operations Engineer # 3566

AREAS OF SPECIALIZATION

Traffic Operations and Engineering • Pavement Management • Project Management • Signal Design • Transportation Engineering • Transportation Planning and Modeling • Intelligent Transportation Systems (ITS) • Construction Management • Systems Analysis • Operations Research

SUMMARY OF EXPERIENCE

Mr. Chindalur has over 16 years experience in transportation planning and engineering including pavement management, transportation planning, traffic operations and signalization. Mr. Chindalur is an expert in using several software programs such as PAVER, Infrastructure Management System IV (IMSIV), CUBE, Cube Voyager, FSUTMS, TRANPLAN, SYNCHRO/SimTraffic, Traffix, Passer II, Passer III, CORSIM, GIS ArcView, HCS, AutoCAD, MicroStation, ProjectWise, SIGNCAD, Statistical Analysis Software (SAS), and Oracle.

EDUCATION

Bachelor of Science, Civil Engineering, 1994, *Bangalore University, India*

Masters of Civil Engineering, 2003, University of Texas at Arlington, Texas

WORK EXPERIENCE

Chindalur Traffic Solutions, Inc., Jacksonville, Florida
President/Senior Traffic Engineer (June 2014 – Current)

King Engineering Associates, Inc., Jacksonville, Florida
Transportation Planning Dept. Manager (July 2013 – May 2014)
Project Manager (July 2006 – June 2013)
Senior Project Engineer (July 2005 – June 2006)
Project Engineer (August 2004 – June 2005)

Advanced Consulting Engineers/Lone Star Infrastructure, Austin, Texas
Traffic/Transportation Engineer (March 2003 – August 2004)

Jacobs Civil Engineering, Dallas, Texas
Engineering Intern (June 2002 – December 2002)

University of Texas at Arlington, Texas
Transportation Researcher (January 2001 – May 2002)



NOTEWORTHY PROJECTS

City of Fernandina Beach City-Wide Transportation Needs Study and Mobility Plan/Mobility Fee, City of Fernandina Beach, FL – Currently working on the data collection phases for the development of City's Mobility study. The study will include a detailed transportation related review and analysis culminating in a list of infrastructure (Multi-modal) projects and mobility fee necessary to maintain the adopted level of service. A complete streets approach is anticipated to be adopted addressing the needs of multiple modes of transportation in alleviating traffic congestion on certain corridors of the City. Some low cost improvements such as signal timing adjustments at signalized intersection and traffic calming measures were recommended during the initial phases of the mobility plan analysis.

Nassau County ENCPA and DSAP Review 2015 and 2016: Mr. Chindalur was responsible to provided review (behalf of Nassau County) of parameters and the results included in the amended East Nassau Community Planning Area (ENCPA) and two Detailed Specific Area Plans (DSAPs) traffic and transportation analysis. Verified the adequacy of the proposed project related transportation mitigation plans.

Comprehensive Plan Amendment Studies, St. Johns County, Florida: Currently working on traffic analysis in support of Comprehensive Plan Amendment of several residential, non-residential and mixed use developments in St. Johns County, Florida.

Traffic Signal Design and Modification: Provided design services for a traffic signal at the intersection of Collins Road and Planation Bay Drive intersection and traffic signal modification at the intersection of Kernan Boulevard and The District in Duval County, Florida. Currently working on design of traffic signal at the intersection of Normandy Boulevard and Adams Lake Boulevard in Duval County, Florida.

Minor Roadway Design: Provided design services for construction of a left turn lane on Kernan Boulevard at the District intersection for the proposed Coastal Cove Single Family Development.

Design and Traffic Operational Analysis: Provided design traffic analysis determining improvements for several intersections and residential and non-residential development access intersections in the Northeast Florida Region. Provided traffic operational analysis in determining roadway and intersection improvements on Baymeadows Road (between I-95 and Old-Baymeadows Road) to alleviate traffic impacts due to the proposed Baymeadows PUD.

Nassau County County-Wide Transportation Needs Study and Mobility Plan / Mobility Fee, Nassau County, FL – Project Engineer for the development and completion of the County's Mobility study based on Vehicle Miles Traveled. The study includes a detailed transportation related review and analysis culminating in a list of infrastructure projects and mobility fee necessary to maintain the adopted level of service in the 2035 Comprehensive Plan to the 2035 LRTP planning horizon.

Corridor Study – SR 200 (A1A), Nassau County, FL – Project Engineer responsible for the traffic study of the SR 200 (A1A) corridor to assess existing traffic conditions, estimate future traffic conditions and make recommendations for interim and long-term transportation improvements. Evaluated the effect of six proposed roadway projects in eastern Nassau County on SR 200 (A1A) for the year 2015 and year 2025 traffic conditions. The evaluation included the determination of the best combinations of proposed roadway projects that provided the most relief to SR 200 (A1A) in terms of congestion, delay and safety. Developed a benefit cost index for each of the project combinations and prioritized the projects.

Amelia Concourse Design Traffic Study, Nassau County, FL – Project Engineer responsible for providing design traffic analysis and study to determine the required geometry for the proposed construction of Amelia Concourse in Nassau County, Florida. Performed AM Peak hour, PM Peak hour and Daily Trip Generation Calculations of all the approved developments located on Amelia Concourse. Utilized The Nassau County 2015 extrapolated FSUTMS traffic-forecasting model to develop project traffic distribution on the roadways for Amelia Concourse Drive Projects. Estimated the percentage diversion of background traffic from SR 200 (A1A) and CR 107 due to the construction of proposed Amelia



Concourse using the Nassau County 2015 extrapolated FSUTMS traffic forecasting model. Established turning movements for both AM Peak hour and the PM Peak hours at each of the project driveways along Amelia Concourse to determine the required geometry for the proposed construction of Amelia Concourse.

Max Leggett Parkway Design Traffic Analysis and Traffic CEI Services, Jacksonville, FL – Project Engineer responsible for providing design traffic analysis for the widening of 2.5 miles of 2 lane minor arterial to a 4-lane divided arterial. Assisted the project manager in performing Construction Engineering and Inspection (CEI) services for the modification of two existing signals, installation of three new signals and underground fiber optic interconnection in accordance with FDOT Construction Inspection Quality Control Guidelines and the City of Jacksonville CEI requirements.

Design Traffic Analysis: The design traffic analysis performed for this roadway widening project also included access management analysis for several new/proposed mixed use developments (including residential, commercial, medical office and hospital uses) along the corridor. This helped in planning and providing access to future developments as a good access management practice preserving improved traffic flow along the corridor.

Wildwood Drive, St. Johns County, FL – Project Engineer responsible for providing design traffic analysis/study at 11 intersections along Wildwood Drive between SR 207 and US 1 (Dixie Highway) to address Collector Road Standards as was required as part of the "Comprehensive Evaluation Study and Preliminary Geometric Design" of the 3.2 mile long corridor of Wildwood Drive in St. Johns County. The scope of work included obtaining turning movement counts, perform turn lane warrant analysis, intersection capacity analysis and to determine the length of the warranted turn lanes at the study intersections. Use of video equipment: Captured turning movements at all 10 intersections on the same day using intelligent video equipment which helped to accelerate the analysis schedule. Minimum Right of Way Impacts: Recommended turn lanes, continuous turn lanes including center turn lanes to minimize the required right of way acquisition while achieving project goals

JTA Interchange Component Evaluation Study, Duval County, FL – Transportation Planner/Engineer responsible for assisting in the analysis and results of the Phase II and Phase III Better Jacksonville Plan (BJP) Interchange Component Evaluation study for the Jacksonville Transportation Authority. The study was to evaluate four corridors in southeast Duval County to determine the best combination of improvements at selected study intersections on the corridors to reduce congestion and delay in the PM peak design hour (K_{30}) for the horizon year 2025 traffic. Used Synchro 6/SimTraffic in the analysis to estimate delay and network speed.

MOT Traffic Analysis, State and Union Street Phase 2, Duval County, FL – Performed traffic analysis to determine the closing of two lanes on State and Union Streets between Clay Street and Liberty Street to expedite completion of construction of the street-scaping improvements on both streets would cause traffic on Union Street to back up onto I-95 and recommend a detour plan that would alleviate traffic congestion on State and Union Streets. Used Synchro/SimTraffic 6 to prepare capacity analysis and prepare a simulation of the corridors to project the backups due to lane closure and determined how much traffic must be diverted during the AM and PM peak hours to prevent the backups onto I-95 and the Mathews Bridge Expressway.

Signal Warrant Analysis, Several Locations, Northeast Florida, FL – Rajesh has performed Traffic Signal Warrant Analysis for several existing and proposed intersections in Northeast Florida. Used MUTCD guidelines in performing the signal warrant analysis.

CSX Pavement Management Program: Project Engineer provided consulting services in Pavement Management Program for CSX's 20 Intermodal Terminals. Used a proprietary software, Infrastructure Management System IV (IMSIV) to reduced field collected pavement condition data, provided budget analysis including Optimum and Custom budget analysis and recommended pavement sections and appropriate rehabilitative and restorative repair/construction work type that justifies and provides the maximum rate of return for their capital funds/investment. The optimum analysis of the IMSIV software was used to perform custom analysis that involved applying engineering judgment on the pavement conditions and selected pavement sections for rehabilitation/restoration that provided the maximum utilization of available capital funds/budgets and least disrupted the day-to-day terminal operations.



Developments of Regional Impact (DRIs), Florida: Project Engineer responsible for several DRI analyses. Development of Regional Impact is a large mixed use development which, because of its character, magnitude or location, would have a substantial effect upon the health, safety or welfare of citizens of more than one county.

- Ashford Mills DRI is a mixed land use planned development consists of about 1,520 acres of land which comprises of about 2,650 residential units, 250,000 square feet of commercial and 30,000 square feet of office space proposed to be built if two five year phases (impact/mitigation of \$ 45 million)
- SilverLeaf Plantation DRI consists of about 7,285 acres of land which comprises of about 10,700 residential units, 1,140,000 square feet of commercial, 300,000 square feet of office space and 330,000 square feet of light industrial development proposed to be built if three five year phases (impact/mitigation of \$ 150 million)
- Saratoga Springs consists of about 2,442 acres of land which comprises of about 4,250 residential units, 344,000 square feet of commercial, 387,000 square feet of office space, a 250 bed hospital and a 18 hole golf course development proposed to be built if two five year phases (impact/mitigation of \$ 60 million)
- Timucuan DRI consists of 6,070 acres of land which comprises of about 10,300 residential units, 800,000 square feet of commercial and 200,000 square feet of office space development proposed to be built if two five year phases (impact/mitigation of \$ 190 million)

Performed project Trip Generation using the ITE Trip Generation handbook. Determined Project traffic distribution using the JUATS and NERPM travel demand forecast model. Determined the study area and the links included. Performed link analysis and the intersection capacity analysis in the study area. Determined the improvements required for the links and intersections to operate under an acceptable LOS. Used HCS 2000 and Synchro to perform intersection capacity analysis. Calculated the project proportionate share for the traffic impacts on links and intersections for each phase of the project.

Downtown Jacksonville Pedestrian Mobility and Safety Enhancement Study, Duval County, FL - The City of Jacksonville has developed a Downtown Action Plan, which contains visions, objectives and action steps for a revitalized downtown in the City of Jacksonville, Florida. One of the main objectives of the Downtown Action Plan is to improve walkability by enhancing pedestrian mobility and safety and at the same time not dramatically impact automobile mobility of downtown patrons. Mr. Chindalur served as the Project Engineer on the pilot study identifying strategies for enhancing pedestrian mobility and safety along sections of Adams and Monroe Street. A few of the recommended strategies included reducing speeds of the automobile traffic and increase accessibility by converting one-way streets to two-way streets, installing traffic calming devices and several traffic operation changes for a more pedestrian friendly Downtown. The results of the pilot study showed that enhancing pedestrian mobility and safety could be achieved by not adversely reducing automobile mobility of Downtown Patrons. A series of traffic Measures of Effectiveness (MOEs) such as Total Delay, Stops, Network Average Speeds, Total Travel Time, Distance Travelled and Performance Index were used to measure and determine performance of roadway sections under various scenarios. The results of the pilot study showed that enhancing pedestrian mobility and safety could be achieved by not adversely reducing automobile mobility of Downtown Patrons. As such, the City of Jacksonville authorized an expanded study to identify strategies for enhancing pedestrian mobility and safety along Adams Street, Monroe Street, Pearl Street and Julia Street. The study also included the portions of Clay Street and Monroe Street to be closed due to the construction of the new County courthouse. The study included changing these existing one-way streets to two-way streets, recommendations to exclusive turn lanes, on-street parking, signalization and access to surface parking lots within the existing width of road. Several traffic calming strategies that could be implemented were identified to enhance pedestrian walkability.

Downtown Jacksonville DRI Notice of Proposed Change – 2007, Duval County, FL – Project Engineer responsible for providing extensive traffic analyses in 2007 to support modifications to the development order conditions for the Consolidated Downtown DRI. In this case, the development order phasing was reaching a phase milestone with rather significant or impossible transportation conditions looming before entering the next phase of entitlements. The 2007 NOPC has not been filed with the State yet, but was created to solve a couple of major issues. In addition to a phase extending objective, the 2007 NOPC was also designed to relate to the Transportation Concurrency Exception Area (TCEA) strategies adopted by City ordinance. The 2007 work examined the individual impact of the component DRI's that make up the now Consolidated Downtown DRI.



Downtown Jacksonville, Transportation Concurrency Exception Area (TCEA) – Transportation Analysis, Duval County, FL – Project Engineer responsible for a DRI type analysis of regionally significant roadways for the purpose of assessing the required regional roadway improvements associated with the proposed TCEA for City of Jacksonville. The project comprised of Southside Downtown DRI, Northside West Downtown DRI and Northside East Downtown DRI, which were analyzed separately. Performed project Trip Generation for the subject DRIs using the ITE Trip Generation handbook. Used the Northeast Regional Planning Model (NERPM 2000) to determine background traffic and project traffic distributions for the subject DRIs. Evaluated the future roadway conditions consistent with methodologies described in 2002 LOS handbook published by FDOT. Performed link analysis to determine the significant and adverse roadway links in the study area.

Cecil Commerce Center Concurrency Evaluation, Duval County, FL – Project Engineer responsible for assisting Jacksonville Economic Development Commission (JEDC) with their transportation related master planning efforts for Cecil Commerce Center. Based upon the desire by the City to entice development to Cecil, an alternate method to the City's standard traffic concurrency methods was deemed necessary. Specific objectives of an alternate approach were identified as certainty and predictability. Based on these objectives, the parameters used in the J. Turner Butler/SR 9A/Baymeadows Transportation Management Area was adopted to create a similar approach for Cecil. This approach considers an area-wide mobility measure as opposed to focusing exclusively on individual roadway links for concurrency determination. Also, the resulting transportation "fee" per trip is uniform for Cecil as opposed to widely variable which the City's existing system produces.

San Marco Riverwalk Traffic Impact Study, Duval County, FL – Project Engineer to analyze the traffic impacts of the project. Estimated the impact of this project on the Downtown Roadway network and intersections. This proposed project was the first to face the parameters outlined in the Downtown TCEA ordinance. As such, King and the JEDC worked extensively to quantify the benefits of the various TCEA strategies to the impacted roadway network. This King study served as the basis for the development of monitoring procedures developed by JEDC.

SH130 Toll Road, Travis County, TX – As a Traffic/Transportation Designer, Rajesh performed Freeway Analysis in the interim design (45 mile stretch) of the SH130 project. Included ramp junction, weaving section, signal warrant and intersection analysis for the opening day year 2007 and the horizon year 2025 traffic using HCM, HCS, MUTCD and Synchro for the analysis. Rajesh prepared submittals and schematics for the Traffic Analysis Reports. Rajesh also prepared and reviewed traffic control phasing plans, duct bank plans and prepared construction phase route detour plans for section 6 of SH130 project.

I-95 / Pecan Park Road Interchange Operational Analysis Report (IOAR), Duval County, FL – Project Engineer responsible for preparing Interchange Operational Analysis Report (IOAR) to investigate the improvements required at I-95/Pecan Park Road interchange in Duval County, Florida. The analysis involved forecasting future year (Design year) traffic volumes at the interchange, AM peak and PM peak intersection capacity analysis, and prepared micro simulation of the interchange, and recommend geometric improvements required for the interchange to operate at an acceptable LOS. Used FSUTMS (NERPM 2000) to forecast future year design volumes and used Synchro/SimTraffic 6 to perform intersection capacity analysis and prepare simulations.

ITS/Pricing Strategies for Managed Lanes, TxDOT, TX – Rajesh was responsible in determining factors influencing demand elasticity for managed lanes, for developing an optimization model evaluating pricing strategies that maximize utility of managed lanes and toll revenue (Congestion Management Tool). Rajesh also evaluated user behavior to determine an optimum toll for LBJ freeway in Dallas, TX. Rajesh further evaluated the Profile of Toll Road Users in the DFW Metroplex.

Analysis of Pedestrian Gap Acceptance, Arlington, TX – Determined the critical gap accepted and statistically compared the means of the gaps accepted by the male and female pedestrians, by investigating the gap acceptance characteristics of the two groups at a marked crosswalk connecting the Student parking lot and the University Building on Border Street.