



Mr. Wey has over 22 years of experience with providing comprehensive traffic engineering and transportation planning services to both public and private clients throughout the State of Florida. His responsibilities serving as project manager and lead engineer on various transportation planning projects/NEPA studies have included developing access management plans, conducting traffic impact and transportation corridor studies, developing design traffic memoranda, writing preliminary engineering reports and engaging in public involvement activities related to Project Development and Environment (PD&E) Studies, documenting environmental determinations, performing conceptual roadway design, transportation cost estimating, reviewing enhancement project phase submittals and conducting technical analyses in support of Interchange Modification Reports (IMRs) and Interchange Operational Analysis Reports (IOARs). Selected project experience includes:

Strategic Intermodal System (SIS) Continuing Services Consultant; Districtwide, FL

Owner: Florida Department of Transportation-District 7

Project Manager | Project Completion: 2021

On-call planning services and studies for all corridors and multimodal facilities identified on the Strategic Intermodal System. This effort includes the preparation of planning and traffic studies, preliminary engineering and design, review of Interchange Access Requests, assistance in SIS funding strategy and priorities for future work and assisting the District with getting new corridors identified as SIS facilities.

Responsible for:

- Conducting corridor studies to identify existing operational and highway safety deficiencies and their corresponding transportation system management (TSM) improvements;
- Developing traffic forecasts to identify future transportation needs of a SIS corridor and documentation in the form of Action and Master Plans remedial improvements;
- Preparing interchange access requests while employing innovative intersection and interchange design concepts such as Diverging Diamond Interchanges (DDIs), Continuous Flow Intersections (CFIs), displaced left turns, and Superstreets.

I-275 Pinellas Managed Lanes Study; Pinellas County, FL

Owner: Florida Department of Transportation-District 7

Project Manager and Senior Traffic Engineer | Project Completion: 2019

Engineering, alternative development, and cost estimation for the Project Development and Environmental (PD&E) study that evaluates the addition of lane continuity improvements and managed lanes to I-275 from south of 54th Ave South to north of 4th Street N in Pinellas County. These improvement have been developed as part of a regional master plan to add managed lanes to major highways throughout the Tampa Bay Region called TBNEXT.

Responsible for:

- Conducting stakeholder outreach and coordination with TBNEXT (formerly Tampa Bay Express – TBX) and Florida’s Turnpike Enterprise for planning, design and operation of tolled express lanes;
- Performing future operational analyses of tolled express lanes and general purpose lanes using microsimulation;
- Developing the preliminary engineering report and supporting engineering and environmental documents used in obtaining NEPA approval from FHWA.

Alt US 19-SR 595 Corridor Study II from Belleair Rd to Pinellas-Pasco County Line; Pinellas, FL

Owner: Florida Department of Transportation-District 7

Project Manager | Project Completion: 2019

A comprehensive study to evaluate travel related problems, needs and issues along the SR 595/Alt 19 corridor from Belleair Rd to the Pinellas/Pasco County line for FDOT District 7. This project involves a corridor study (pre-PD&E) to evaluate the need for multimodal transportation improvement along a congested regional transportation corridor. Tasked with identifying the cause and characteristics of the corridor’s transportation issues. This includes capacity issues, traffic operations, safety, access and egress, freight movements, transit, bicycles, and pedestrian movements. Also tasked with identifying both current US 19 corridor travel conditions and needs and forecasted travel characteristics and needs while also developing potential workable and implementable solutions for travel needs. Testing of alternatives for potential improvements may also be involved. Responsible for:

YEARS OF EXPERIENCE

22

EDUCATION

MS, Civil Engineering, 2000
University of South Florida
BS, Civil Engineering, 1997
University of South Florida

PROFESSIONAL REGISTRATION

Professional Engineer,
Florida, #59545

PUBLICATIONS

Development of Statistical Models to Estimate Crash Frequency at Urban, Four-Legged, Signalized Intersections in the State of Florida

TRAFFIC

ENGINEERING/TRANSPORTATION

PLANNING SKILLS

Traffic Impact Studies
Corridor Studies
Safety Studies
Signal Warrant Analyses
Level of Service Analyses
Traffic Simulation
IOAR/IMR
DRI Studies
Comprehensive Plan Amendments
LRE Cost Estimates
Access Management Studies
Conceptual Roadway Design
Public Involvement
Design Plans Reviews
Traffic Operations Studies
Streetscape/Road Diets
Study Management Plans

Continued

TRAFFIC

ENGINEERING/TRANSPORTATION

PLANNING SKILLS

ICE Process
Managed Lanes
Alternatives Analysis
Freight Studies
Travel Demand Management
Congestion Management
Design Traffic
Travel Demand Forecasting
Roundabout Studies
Traffic Counts
Transit Evaluations
Benefit-to-Cost Analyses
PD&E Studies
NEPA Studies
Hurricane Evacuation Studies

AWARDS/HONORS

Edward A. Mueller District 10
Transportation Engineer of the
Year Award, Florida Section of ITE,
2011

Robert L. Hill, J.R. Young
Transportation Engineer of the
Year, Florida Section of ITE, 2005

Tampa Bay ITE Young
Transportation Professional of the
Year, 2008

Tampa Bay ITE Special
Recognition Award, 2006

ITE International Consultants
Council Young Professionals
Award, 2008

HDR Pathfinders Leadership
Award, 2010

Outstanding Contribution, Tampa
Bay Applications Group, 2001

Tau Beta Pi, National Engineering
Scholastic Honor Society, 1998

Chi Epsilon, National Civil
Engineering Scholastic Honor
Society, 1997

- Initiating an innovative and comprehensive public involvement and stakeholder outreach program that includes: a user preference survey, a project advisory group (PAG), WIKIMapping of safety and operational deficiencies, public charrettes, a Vision and Corridor Alternatives Workshop, Google Earth public comment geo-location
- Development of context classifications, emerging themes, guiding principles, and corridor vision for land use and transportation integration and for a more pedestrian and bicycle friendly corridor

District-Wide Systems Planning Consultant; Bartow, FL

Owner: Florida Department of Transportation, District 1

Project Manager | Project Completion: 2012-2017

Task work order based contract to support District One's multimodal transportation planning program and to assist with the development of the District's freight program. Responsible for:

- Programming support for freight mobility projects, Bartow Municipal Airport Multimodal Improvement Alternatives Analysis, Lee and Collier County MPO Regional Freight Mobility presentation, FDOT-District One Freight Mobility and Trade (FM&T) Study, and Polk County Highway/Rail Crossing Feasibility Study.
- Evaluating corridors and individual sites on the State Highway System (SHS) relative to site access issues, roadway level of service, traffic operations and safety issues.

Districtwide Public Transportation Operations (PTO) | Tampa, FL | FDOT-District 7 | Project Manager / Senior Transportation Engineer

Project Manager and Senior Transportation Engineer responsible for supporting District Seven's multimodal transportation planning program. Studies under this contract have included: Regional Freight Mobility Study Update, 5310 Bus Inspections, Bus and Fixed Guideway Safety and Security Compliance Reviews, Hooker's Point Traffic Circulation Study and District rail support.

District-Wide Access Management Consultant, FDOT District 1. Project Manager and lead traffic engineer for a contract to provide traffic safety and operations studies and site access evaluations relative to Administrative Rule 14-97. Tasks include evaluating corridors and individual sites on the State Highway System (SHS) relative to site access issues, roadway level of service, traffic operations and safety issues.

General Engineering Consultant, FDOT District 7. Senior Traffic Engineer who acts as an extension of FDOT planning staff while serving as an "in-house" consultant and external advisor to the Intermodal Systems Development (ISD) Section of FDOT District Seven. Responsible for reviewing traffic impact studies affecting the State Roadway System, performing plans review in support of design project phase submittals and enhancement projects, developing constructing cost estimates in the FDOT's LRE System, reviewing corridor feasibility studies/area wide transportation plans/preliminary engineering reports and assisting with statewide research efforts spearheaded by FDOT Central Office. In addition, Mr. Wey was integral in preparing IOARs and reviewing Interchange Justification Reports (IJR) in support of access modifications to the Interstate System within the Tampa Bay area.

Florida Intrastate Highway System (FIHS)/Strategic Intermodal System (SIS) Districtwide Consultant, FDOT District 7. Traffic Engineer and Deputy Project Manager who provided professional transportation planning and engineering services to FDOT District Seven in Tampa on a districtwide basis for all corridors identified on the FIHS/SIS. This effort includes the preparation of planning and traffic studies, preliminary engineering and design, review of materials, assistance in FIHS/SIS funding strategy and priorities for future work and assisting the District with getting new corridors identified as FIHS/SIS facilities.

Districtwide Traffic Safety and Operations Studies, FDOT District 6. Traffic Engineer responsible for assisting staff with the completion of traffic safety and operational studies that include the development of crash diagrams and crash profiles, intersection capacity analyses, travel time and delay studies, signal warrant and left-turn signal phasing studies, and traffic simulation.

Districtwide PD&E Studies, FDOT District 7. PD&E Engineer for this multi-task contract. Services under this contract include serving as member of a FDOT District Seven appointed I-75 PD&E Study Traffic Committee. Under this contract, Mr. Wey provided technical guidance in developing and

Continued

All-Conference USA Honors
(University of South Florida Track & Field)

3.0+ GPA University of South Florida Varsity Athletic Club

President's Utilization Award, Kimley-Horn and Associates, 1996

Elected University of South Florida Student Senator College of Engineering, 2006

Sigma Chi National Fraternity

PROFESSIONAL ORGANIZATIONS

ITE Member Since 1996
USF Student Chapter of ITE 1996-1999

North Central Section of ITE (NCITE) 1999-2001

One of Four Founding Officers of Tampa Bay ITE (TBITE)

TBITE Executive Board 2002-2006
Co-Local Arrangements
Chairperson, FSITE Summer Meeting, St. Pete Beach 2005

Participant of the 2005 & 2006 FSITE/District 10 Executive Board Retreats

ITE District 10/ Florida Section Executive Board (2007-2013)

ITE District 10/ Florida Section President (2010) for 50th Anniversary Celebration

Florida Section of ITE Representative to ITE District 10, 2012

Hillsborough County MPO Livable Roadways Committee, 2005

Tampa Bay Applications Group ITE Transportation Planning Council

analyzing existing future traffic conditions of a critical interstate facility in the State of Florida. Additional services include updating the District's roadway costs per centerline mile tables on an annual basis, performing peer review of CORSIM analyses of the I-275/SR 60 interchange, cost estimating for enhancement projects, and preparing design traffic technical memoranda in support of State Environmental Impact Reports (SEIRs).

US 301 PD&E Study, Pasco County, FDOT District 7. Traffic Engineer and Deputy Project Manager on this 7.6 mile section of US 301 located in the eastern region of Pasco County. This PD&E Study documents environmental and engineering analyses related to the six-lane widening of US 301 from south of CR 54 (Eiland Boulevard) to US 98 Bypass (SR 533) that will assist the FDOT and Federal Highway Administration (FHWA) in reaching a decision on the location and conceptual design for improvements to US 301.

Regional Transit Corridor Evaluation: University of South Florida to Wesley Chapel Corridor, Tampa Bay Area Regional Transportation Authority. Project Engineer responsible for evaluating various transit options for the extension of premium transit service along Bruce B. Downs Boulevard (CR 581) between the USF area and the Wesley Chapel area of Pasco County. The major work efforts include development of a Purpose and Need statement, generation of capital and operations/maintenance cost estimates, estimates of 2035 transit ridership, identification of potential economic, social and environmental impacts, and the recommendation of a final Locally Preferred Alternative (LPA).

Lithia Pinecrest Road PD&E Study, Hillsborough County. Traffic engineer and Deputy Project Manager on this 11.0-mile section of Lithia Pinecrest Road, located in the eastern region of Hillsborough County. Lithia Pinecrest Road is currently a two-lane road used as a commuter artery, truck route, commercial corridor and scenic byway. As part of this study, a comprehensive public involvement effort was undertaken to effectively communicate the results of an evaluation of several options to widen Lithia Pinecrest Road to a four or six-lane divided roadway facility. The study effort included traffic counts, right-of-way survey data, public involvement, advanced notification and environmental field reviews. Environmental components of the project consisted of an evaluation of impacts related to land use, cultural features, wetlands, community services, archaeological and historical features, water quality, floodplains, natural and biological analysis, contamination and noise.

US 19 PD&E, Pasco County, from Pinellas County Line to Hernando County Line, FDOT District 7. Traffic engineer responsible for performing data collection efforts that include traffic counts and crash data, projecting future traffic using FDOT's RTA model to determine geometry to accommodate the future travel demand. Also performing a safety analysis as well as evaluating access management along the corridor.

Miscellaneous Professional Engineering Services General/Civil, Hillsborough County. Traffic engineer for this multi-task contract. Services under this contract include planning, program development, design and construction management for general and/or civil projects including road & transportation, stormwater, solid waste, parks, site work, environmental permitting, traffic analysis, landscaping, water/wastewater, project management system analysis, project management (design, construction, and schedules) and building/facility upgrades, improvement and repairs.

CR 581 (Bruce B. Downs Boulevard) PD&E Study/I-75/CR 581 Interchange Modification Report (IMR), FDOT District 7. Traffic Engineer responsible for analyzing existing and future design year 2030 traffic conditions in CORSIM, and documenting results of the traffic analysis in an Interchange Modification Report (IMR). Traffic control and lane geometric recommendations were also provided to enhance programmed interchange improvements.

I-75 PD&E Study from SR 78 (Bayshore Road) to CR 769 (Kings Highway), Lee and Charlotte Counties, FDOT District 1. Traffic Engineer responsible for assisting staff with the preliminary planning and design of the proposed widening of I-75 from a four-lane to a eight-lane roadway facility with an option to widen to ten lanes. The proposed improvements will be constructed within the existing right-of-way, with the possible exception of interchange improvements, bridge widening, and potential stormwater retention facilities. The proposed improvements include adding two 12-foot travel lanes in each direction, resulting in an eight-lane roadway section for the length of the project. In addition, the

LEADERSHIP TRAINING

2011 East Region HDR Career Skills Development Program

The Dale Carnegie Course

People Styles
Business Etiquette
Project Management
Leadership Module
Time Management

Carter & Burgess Practice Area Leadership

FDOT District 7, Big Wheels Toastmasters

TECHNICAL TRAINING

Timing Traffic Signals Using TAPAC, PASSER, TRANSYT and CORSIM

LRE Training

FDOT Quality/LOS Training

NHI Courses: Intersection Safety and Signalized Intersections

PTV VISSIM Training

future traffic condition of various design alternatives for the planned reconfiguration of the I-75/US 17 interchange was evaluated using traffic simulation.

SR 408 Widening from Oxalis Drive to Chickasaw Trail, Orlando, Orlando-Orange County Expressway Authority. Traffic Engineer responsible for analyzing the future traffic operations of several alternate interchange ramp designs using CORSIM simulation. This project involves the widening of a 1.5-mile stretch of the SR 408 expressway from Oxalis Drive to Chickasaw Trail. The Orlando-Orange County Expressway Authority project will ease congestion on the east side of SR 408 and give motorists and local residents enhanced service to the Expressway from the addition of on and off ramps at Chickasaw Trail.

I-75/Pembroke Road PD&E and IJR Studies, Pembroke Pines, FDOT District 4. Traffic Engineer responsible for preparing a Methodology Letter of Understanding (MLOU) in support of the Preliminary Interchange Justification Report (PIJR) documenting the evaluation of need for additional interstate access. Approval of new access to I-75 is proposed at Pembroke Road in southwest Broward County, Florida. This proposed new interchange on I-75 is anticipated to provide an enhancement in regional access to the Pembroke Pines and Miramar areas of southwest Broward County, as well as alleviate existing and future traffic congestion at the nearby interchanges of I-75/Miramar Parkway and I-75/Pines Boulevard. The additional interstate access is being evaluated by the FDOT with respect to the transportation needs of the surrounding area of the proposed interchange.

SR 807 (Congress Avenue) PD&E Study, Lake Worth, FDOT District 4. Transportation Engineer responsible for assisting with the development of the Quality Assurance/Quality Control (QA/QC) Plan and completion of the Design Traffic Memorandum in support of the study to widen and rehabilitate SR 807 (Congress Avenue) from Lantana Road to 6th Avenue South in Palm Beach County, Florida. In this study, both four- and six-lane alternatives were considered along with special treatment and/or additional lanes at major intersections, bridge improvements, widening of the crossroads up to 1,000 feet in each direction where necessary to provide intersection operation at Level of Service (LOS) D or higher, drainage improvements, and the addition of bicycle lanes and sidewalks. The alternatives were considered on left, right, and best-fit alignments within the existing right-of-way.

I-75/Coconut Road Interchange Feasibility Study, Lee County, FL; Deputy Project Manager. The City of Bonita Springs commissioned Carter & Burgess, Inc. to conduct a transportation study to assess the benefits of providing new interstate access on I-75 at Coconut Road. The traffic analysis performed in this study utilizes the Florida Department of Transportation's (FDOT) Generalized Level of Service Tables to determine future horizon year 2030 and intermediate year 2015 traffic conditions on roadways in the southern Lee County/City of Bonita Springs study area.

US 27/SR 15 PD&E Study, Seminole County, Florida. Traffic Engineer responsible for providing a comprehensive assessment of crash patterns and evaluation of overall corridor safety. The FDOT, District Five Office, is proposing to widen and/or rehabilitate the existing four-lane, divided roadway to six general use lanes, by adding one lane in each direction. The six-laning construction will follow the existing SR 15/600 alignment through the project limits.

Burnt Store Road Hurricane Evacuation Study, Burnt Store Improvement Initiative. Deputy Project Manager responsible for providing traffic engineering and transportation planning services to evaluate hurricane evacuation on Burnt Store Road in Charlotte and Lee Counties, Florida. Several sub-regional roadway and traffic control improvements were recommended to reduce hurricane clearance times along a capacity constrained roadway facility. In addition, alternate analyses were undertaken to determine the feasibility of development density transfer to other areas of Charlotte County that are identified to be in coastal high hazard areas.

Eastern Financial Florida Credit Union, City of Clearwater. Project Manager responsible for determining traffic and parking impacts related to the conversion of an existing jewelry store to a credit union facility located adjacent to US Highway 19 in Pinellas County Florida.

Florida Gulf Coast University Hurricane Evacuation Study. Deputy Project Manager who was responsible for preparing a hurricane evacuation study was prepared for the Florida Gulf Coast University to evaluate the effectiveness of various roadway improvements of reducing hurricane evacuation clearance times in southern Lee County, Florida.

TRAFFIC ENGINEERING SOFTWARE

PROFICIENCY:

ArcGIS
Corel Draw/Adobe Acrobat
SAS/ SPSS
LIMDEP
LOSPLAN
LRE
ERC
CORSIM
HCS-2000
SYNCHRO
SIMTRAFFIC
SIGNAL 2000
NOSTOP
PASSER
TRANSYT 7-F
PETRA
TRAFFIX
SIDRA
ICE/SPICE
PROJECT EXPERIENCE:
FSUTMS (TRANPLAN)
VISSIM

Sistrunk Boulevard Streetscape Enhancement Project, Broward County. Traffic engineer responsible for conducting the study of existing and future traffic operating conditions, evaluating the need for transit service, on-street parking, access management and neighborhood traffic intrusion. As part of this project, the feasibility of implementing traffic circles was evaluated for several intersections located within the project limits.

Western Broward/Palm Beach Connector PD&E Study, FDOT District 4. Transportation Engineer that provided engineering and planning services to complete the PD&E study for the extension of University Drive. Public involvement and consensus building were primary challenges of the project, and assisted with the Public Involvement Plan, assessing community impacts of each proposed alternative, assisting with public involvement, completing traffic analyses for each proposed alternative and finalizing roadway design for the preferred alternative.

Wendy's Restaurant, City of Coral Springs. Traffic Engineer. Assisted staff with conducting a traffic impact study for the proposed fast-food restaurant development according to Broward County transportation concurrency standards.

Analysis of Modern Roundabout Alternatives, Manatee and Sarasota Counties. Traffic Engineer responsible for assessing the feasibility of implementing several modern roundabout design concepts at key intersection locations in Manatee and Sarasota Counties, Florida. A justification report was prepared for the FDOT, District One based on capacity analyses obtained from the traffic modeling software, SIDRA.

Bloomington Apartments and Lakewood Farms Apartments Traffic Impact Studies Brandon. Traffic Engineer responsible for conducting analyses in accordance with Hillsborough County's Concurrency Standards to assess traffic impacts for post development traffic conditions. Analyses were performed to identify the need for future intersection and link roadway improvements.

Causeway Boulevard/Falkenburg Road Intersection Improvements, Hillsborough County. Traffic Engineer responsible for performing traffic operations analysis to recommend intersection geometric, traffic control and safety improvements for both short and long-term study horizons.

Cincinnati-Northern Kentucky International Airport: I-275/KY 212 IMR Study, Covington, KY. Traffic Engineer responsible for analyzing existing and future traffic operations for key intersections within the vicinity of the Cincinnati-Northern Kentucky International Airport. Future intersections and freeway capacity analyses were performed using CORSIM to assess the need for roadway geometric and traffic control improvements. In addition, the feasibility of various interchange design alternatives required for construction phasing was explored.

I-275/SR 60 Florida Intrastate Highway System (FIHS) CORSIM Evaluation, FDOT District 7. Traffic Engineer responsible for the development of a comprehensive CORSIM micro-simulation model to evaluate future traffic operations on the primary interstates, freeways and expressways in the City of Tampa. The evaluation included the development of forecast traffic volumes, identification of freeway capacity deficiencies, and development of future geometric layout.

I-4/50th Street Interchange Operations Analysis, FDOT District 7. Traffic Engineer that performed traffic analyses to determine the impact of closing an adjacent interstate interchange. Analyzed the impacts of heavy vehicles on intersection capacity related to a proposed regional truck-signing plan. Recommendations were provided to achieve acceptable traffic operations for maintenance of traffic during staged construction.

I-75 PD&E Study from SR 951 to north of SR 78, Lee and Collier Counties, FDOT District 1. Traffic Engineer that analyzed the traffic operations of various design concepts (partial clover, standard diamond and a single point urban interchange) for I-75/Immokalee Road Interchange and provided key MOEs to identify the preferred design alternative.

FDOT District Seven Interstate Program Management: I-275/SR 60 West Staging Concepts, FDOT District 7. Traffic Engineer responsible for performing micro-simulation analyses to compare key Measures of Effectiveness (MOEs) between various freeway design alternatives. The design concepts analyzed were intended to reduce construction costs and increase salvageability of interim Tampa Interstate System (TIS) Links Stages I-IV improvements.

Lee Roy Selmon Crosstown Expressway Reversible Lanes/Meridian Avenue Corridor, Tampa Hillsborough Expressway Authority. Traffic Engineer responsible for using SYNCHRO to simulate future intersection traffic operations of the Meridian Avenue Corridor. Special emphasis was given to incorporate the effects of dynamic lane designation associated with reversible lanes in the traffic analysis. Future geometric layout requirements for the Meridian Avenue Corridor were identified in this project.

Lee Roy Selmon Crosstown Expressway/Crosstown Connector, FDOT District 7/ Tampa Hillsborough Expressway Authority. Traffic Engineer that analyzed several freeway geometric design configurations of the Crosstown Connector to determine operational deficiencies and the suitability of a truck-only route to/from the Port of Tampa. In addition, micro-simulation analyses were performed to evaluate potential impacts to traffic flow at the Florida Avenue/Meridian Street interchange ramps that are associated with a proposed closure of the Willow Street Toll Plaza.

PR-22 Buchannan Toll Plaza, Puerto Rico. Traffic Engineer responsible for developing a traffic model to simulate toll operations at a major freeway toll facility. Toll queue lengths and average service times obtained from the simulation were utilized to assess future toll collection needs.

Ramstein Air Base, Ramstein, Germany. Traffic Engineer responsible for performing traffic operations analyses of an Air Base campus to identify roadway capacity deficiencies and to suggest roadway geometric, traffic control and intersection safety improvements. A traffic simulation model was developed to provide a visual animation of internal traffic circulation on Base, as well as to model external gate operations. Recommended roadway improvements were prioritized based on traffic impact severity and cost associated to construct. The study was conducted and presented in a format consistent with the United States Air Force Base Comprehensive Transportation Plan.

FDOT, District Seven, General Planning Services Contract, FDOT District 7. Traffic Engineer responsible for reviewing Development of Regional Impact (DRI) studies to ensure conformance with FDOT guidelines and standard transportation engineering/planning practice. These studies included Sunlake Centre DRI, Cypress Creek DRI, Independence Parkway DRI, and New River DRI.

Treasure Coast Square Mall DRI Study, City of Stuart. Traffic Engineer whose responsibilities included the analysis of existing and future (with proposed development) traffic operations. Forecast traffic volumes were developed for the study area and traffic operations were analyzed to determine intersection and arterial roadway levels of service.