

RESOLUTION NO. 09-164

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, AUTHORIZING THE AWARD OF A CONTRACT TO CH2MHILL BASED ON THE ATTACHED SCOPE OF SERVICES TO PERFORM THE CITY'S 10 YEAR TRANSIT DEVELOPMENT PLAN (TDP) AS REQUIRED FOR COMPLIANCE WITH FLORIDA ADMINISTRATIVE CODE (FAC), 14-73, RELATIVE TO PUBLIC TRANSIT SERVICES, IN AN AMOUNT NOT TO EXCEED \$108,960.00; PROVIDING FOR BUDGET TRANSFERS; PROVIDING FOR AN EFFECTIVE DATE

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, AS FOLLOWS:

Section 1: That the City Manager is authorized to enter into an agreement with CH2MHill in accordance with the attached scope of services and pursuant to Key West Code of Ordinances section 2-797(2) in an amount not to exceed \$108,960.00 for the preparation of a ten year Transit Development Plan.

Section 2: That the City manager is authorized to execute required budget transfers to effectuate this resolution.

Section 3: That this Resolution shall go into effect immediately upon its passage and adoption and authentication by the signature of the presiding officer and the Clerk of the Commission.

Passed and adopted by the City Commission at a meeting held this 7th day of July, 2009.

Authenticated by the presiding officer and Clerk of the Commission on July 8, 2009.

Filed with the Clerk July 8, 2009.



MORGAN MCPHERSON, MAYOR

ATTEST:



CHERYL SMITH, CITY CLERK



Executive Summary

TO: Jim Scholl, City Manager

FROM: E. David Fernandez, Assistant City Manager - Operations *EDF*

DATE: June 22, 2009

SUBJECT: Resolution - Award & Authorize / 10 Year Transit Development Plan
(TDP 2010-2019 - Key West Department of Transportation)

ACTION STATEMENT:

This resolution is a request for approval and authorization to award CH2MHill a contract based on the attached Scope of Services to perform the City's 10 Year Transit Development Plan (TDP) as required for compliance with Florida Administrative Code (FAC), 14-73, relative to public transit services, as the second lowest, responsive price quote received by the City.

BACKGROUND:

Prior to 2008, all public transit agencies maintained a 5-Year Transit Development Plan (TDP) as an operating guide for said services. The Plan looks at the transit systems goals, objectives, funding requirements in the operating and capital areas; and provides key indicators that assist with achieving identified goals in order to remain on target and current with these tasks during the period of time covered by each 5 Year Plan. TDP documents are required to be updated on an annual basis, with a major update required mid cycle on all Plans. In 2007 the FAC regulations revised the requirement of the TDP from a 5 Year Plan to a 10 Year Plan, which is where we are today. Unfortunately due to miscommunications between our District 6, FDOT, office staff and KWDoT representatives, the City understood our TDP was not due until the summer of 2010 - which turned out to not be the case and which we only learned by accident two (2) weeks ago. See email copy provided as attachment herein.

JUSTIFICATION / PURPOSE:

The Center for Urban Transportation and Research (CUTR) has been doing work for the City for the last 15 years. They were responsible for the last 5 Year Transit Development Plan. At this time, the City needs a fresh approach to our Transit Development Plan – Master Update and requires a firm with the understanding of actual level of service that the City can offer based on current budgets. The local Florida as well as the nationwide experience that CH2M HILL can bring to this project will provide the City of Key West with the latest technology, innovations and planning methods associated with a Transit Development Plan.

As noted above, the minor annual TDP updates are traditionally prepared and performed in-house by KWDoT staff; however, major Plan updates absolutely require assistance by experts in the field, as does this 10 Year Plan today. Once the work is performed by the consultant, it is submitted to the City and FDOT for review and comments, prior to final

adoption and approval by both agencies governing boards. The TDP document is crucial in identifying and determining the agency's eligibility for grant funding which includes capital and operating assistance, at the Federal and State levels. In summary if you have not identified funding requirements in your TDP document the odds that you will be successful at soliciting said funds are slim to none. The TDP planning process, community involvement and multiple agency involvement / participation is critical to assist with identifying all concerns and/or issues to assure they are adequately represented in the 10 Year TDP.

It is absolutely essential that the commission, manager's and other staff members of the City, as well as representatives from Monroe County, the City of Marathon, and the public (including but not limited to a transit advisory committee), participate in this process to provide as much information and feedback as possible in preparation of the Plan.

To that end I will be submitting a request to the City Manager's Office in the very near future asking that individuals be identified from all areas referenced above to serve on the transit advisory committee. We welcome that opportunity as it should present a good deal of information sharing throughout the community as well as provide a great deal of education in the area of public transit to all persons involved.

In summary as to purpose and justification - three price quotes were solicited and received as follows:

CUTR / USF	\$100,000.00
CH2M Hill	\$108,960.00
Chen & Associates	\$116,250.00

OPTIONS / ADVANTAGES / DISADVANTAGES:

Option 1): Would see the City approve the resolution awarding and authorizing CH2M HILL to perform the required 10 Year TDP at a cost of \$108,960, as an emergency task order and purchase requirement, noting three (3) price quotes were received and that CH2M HILL is the second lowest, responsive price received by the City based on the Scope of Services to be performed.

The advantage of Option 1 is that the City would get a fresh approach to its TDP and continues to be eligible for grant assistance without any loss of funding or other added problems that very well may result from non-compliance status with FDOT or FTA. Other reasons include:

- CH2MHill has a local office with staff knowledgeable of the existing Key West Transit System. Understanding firsthand the opportunities and constraints associated with potential improvements will allow CH2MHill to prepare a Transit Development Plan – Master Update which is efficient and cost effective.
- The experience, availability and depth of staff allow CH2MHill to mobilize immediately to address the tasks associated with this project.

- CH2MHill also has extensive experience applying for and receiving Grant Funding for Projects. CH2MHill fully understands the budget constraints faced by the City of Key West and obtaining grant funding from outside sources will be critical to initiate many of the recommended transit system improvements which may be identified in the Transit Development Plan – Master Update.
- CH2MHill has a local staff which can be immediately responsive to “spur of the moment” meeting requests by project stakeholders.
- CH2MHill not only provides expertise in Transportation Planning, Traffic Modeling and Public Involvement, but provides a vast array of services that will be invaluable to the City of Key West for their Transit Development Plan – Master Update.
- Their Value Engineering and Construction Estimating experience for transit system improvements such as bus transfer stations will ensure that budget estimates are accurate and reflect the latest trends in construction costs.
- CH2MHill offers this scope of work under a valid contract pursuant to City Purchasing Code.

Option 2): Would be that the City not approve the TDP at this time which will jeopardize State and Federal funding in place as well as future grant programs used in public transit services.

There are no advantages to Option 2 at this time. The disadvantage would be a loss of revenue assistance via various grant programs for public transit services.

Option 3): The City could approve the resolution awarding and authorizing the Center for Urban Transportation and Research (CUTR) to perform its TDP at a cost of \$100,000 as an emergency task order and purchase requirement. CUTR does not have a state, local or city contract for this work to be awarded under.

The disadvantage to Option 3 would be that the City would receive an updated master plan prepared by the same firm which developed the current master plan and recommendations for system improvements. This engagement would not meet City Purchasing Code since CUTR does not have a contract with the City and we have not been able to locate a local or state contract for piggy back.

FISCAL IMPACT:

Option 1): This option has a financial or fiscal impact of \$108,960.00. There is \$30,000.00, budgeted this FY period; so we would require a budget transfer of \$20,000.00, at this time to allow for one-half of the total cost to be paid between now and September 30, 2009.

KWDoT has identified the funds that we recommend be used for the transfer to complete the issuing of a partial purchase order for the TDP to CH2M HILL, in the amount of \$50,000.00, with the balance of \$58,960.00, intended to be carried forward and approved in the FY 2010 cycle.

Also as information attached is the State of Florida (DOT) 5 Year Work Program Budget Sheet which outlines the FDOT project funding commitments for annual, recurring grant programs available to the City with regard to operating assistance. The period of allocation shown on the attached covers budget cycles 2010 through 2014. Please note this is operating assistance only and does not include the capital programs that very well may also be affected as a result of not complying with the TDP requirement by December 1, 2009.

Funds and accounts recommended for transfer required would be 411-4402-544-.46 in the amount of \$6,000.00, reducing the line item for exterior bus wraps and 411-4402-544.63, reducing the exterior painting on buses by \$14,000.00. This would delay exterior refurbishment of two (2) vehicles that were budgeted this FY period into next fiscal year period.

Option 2): Would be to not approve the resolution recommended at this time which would result in the City's inability to complete the required task or TDP, meet grant compliance with FDOT regulations; all of which jeopardizes grant funding immediately and in the future.

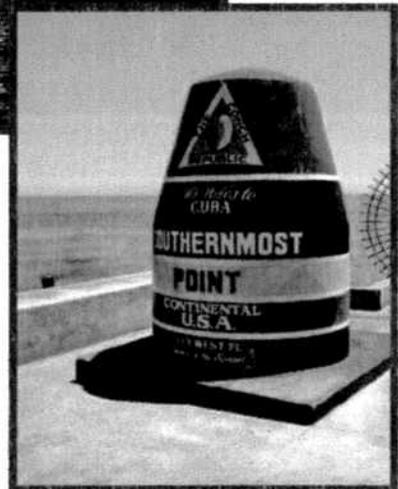
Referring to the attached FDOT five (5) year budget sheet, the City's fiscal impact would be a loss of approximately \$568,000.00 / in 2010, and slightly more thereafter each year as noted on the attached budget sheet from FDOT.

Option 3): This option has a financial or fiscal impact of \$100,000.00. There is \$30,000.00, budgeted this FY period; so we would require a budget transfer of \$20,000.00, at this time to allow for one-half of the total cost to be paid between now and September 30, 2009. KWDoT has identified the funds that we recommend be used for the transfer to complete the issuing of a partial purchase order for the TDP to CUTR, in the amount of \$50,000.00, with the balance of \$50,000.00, intended to be carried forward and approved in the FY 2010 cycle.

RECOMMENDATION:

It is recommended that the City approve, authorize and award a contract for the City's TDP to CH2M HILL in the amount of \$108,960.00, based on the scope of services provided herein.

Ten-Year Transit Development Plan
City of Key West, Florida
Key West Department of Transportation (KWDoT)
FY 2010 - 2019



Prepared by



CH2MHILL

June 19, 2009

**Ten-Year Transit Development Plan
Major Plan Update
City of Key West, Florida
Key West Department of Transportation
FY 2010 - 2019**

Project Study Purpose

“The City of Key West is one of the world's most remarkable urban environments. Its historic streetscapes, unique culture, and beautiful environment are a magnet for residents and visitors.” – Key West Planning Department web page.

The Key West Department of Transportation (KWDoT) provides various mobility services to provide a safe, dependable and timely choice mode of travel by means of a public transportation system in the City of Key West and adjoining communities and business areas for both visitors and residents of the City of Key West, Florida.

KWDoT maintains a Transit Development Plan to guide, plan, implement and maintain services to local and visiting customers. The TDP serves as a strategic business plan to assess performance, needs, issues and opportunities. The TDP also fulfills state requirements to be eligible for partnerships and grant funding.

The specific purpose of this major TDP Update study is to produce a Fiscal Year (FY) 2010 – 2019 Transit Development Plan (TDP) Major Update as required by the Florida Administrative Code: Rule 14-73.001 of the Florida Department of Transportation (FDOT) in order to remain eligible for State block grants as set forth in Section 341.052, F.S.

Project Background

CH2M HILL, has been asked by the City of Key West to provide a scope of work and fee estimate to assist in the preparation of the Regional Ten-Year TDP for the Key West Transit service area. This scope of work defines the tasks CH2M HILL will complete on behalf of the City and in cooperation with the Key West Department of Transportation.

A Project Advisory Review Committee (ARC) will be formed from the onset of this project to ensure coordination of activities, review of products, schedule management, and general project oversight. It is anticipated that core members of the ARC will be KWDoT staff, the Key West Planning Department, the CH2M HILL team, and FDOT District Six representatives.

Task 1: Project Management and Administration

Purpose / Approach:

This task will focus on project coordination and management activities. CH2M HILL will be responsible for reporting overall progress, issues and actions to maintain project production, schedule and budget to the assigned KWDoT project manager.

Task 1 Activities Include:

- 1) Progress meetings/teleconferences will occur at least once a month throughout the duration of this project (as described in schedule section of this scope of work)
- 2) Coordination of project activities with KWDoT staff as well as communication and update support with FDOT District 6
- 3) Management of the study to address schedule requirements and compliance with FDOT TDP procedures throughout the process ensuring the completion and delivery of the final TDP.
- 4) Support KWDoT in the development of a TDP Advisory Review Committee (ARC) that will meet (a minimum of 3 times) to assist in providing input and review of certain TDP activities and products. CH2M HILL will provide meeting agendas and materials.
- 5) Preparation of invoices and associated progress report defining percent of work completed to date by task.

Task 1 Deliverables: Periodic progress reports; ARC meeting agendas and presentations; and coordination meetings/teleconferences.

Task II - Base Data and Analysis

Purpose / Approach:

The purpose of this is to document existing base data and conduct analyses that provide an understanding of the environment in which the transit system is operating. The information compiled in this task will provide the factual basis upon which several other TDP elements are

developed. Data will be collected by the CH2M HILL team with assistance from KWDoT and other local parties.

Task 2 Activities Include:

- 1) Collection of demographic and socioeconomic data that will provide an historical background and description of the area. Data will be displayed in tabular format and/or GIS maps as appropriate, supported with descriptive narrative of the demographic and socio-economic characteristics. U.S. Census data, along with interim population projections since the 2000 Census, will be used as the primary data source, supplemented with data available from the American Community Survey, the Longitudinal Employer-Household Dynamics (LEHD), the Bureau of Economics and Business Research (BEBR) of the University of Florida, and other local sources. Data (and maps as appropriate) to be compiled will include but not necessarily be limited to the following:
 - a. physical description of area
 - b. population and population density
 - c. age and income distribution
 - d. household data
 - e. vehicle availability
 - f. work commute times/patterns
 - g. employment status
 - h. tourist and visitor level
 - i. race/minority population
 - j. educational attainment
 - k. trip generators and attractors

- 2) The CH2M HILL team will conduct a land-use and transportation system analysis and provide maps as appropriate of various land use/urban design characteristics in the KWDoT service area to include:
 - a. land use patterns and trends
 - b. roadway conditions/levels of service
 - c. transit integration with the roadway network
 - d. pedestrian and transit amenities
 - e. transit supportive policies related to urban design
 - f. public parking availability

- 3) The CH2M HILL team will conduct a GIS-based analysis to identify transit dependent markets in the Key West region and evaluate how well existing fixed route transit service serves those areas based on census block group data. This analysis will display the fixed route service area and identify areas that are not served or under-served based on demographic data such as population density, low-income households, youth and elderly population, and vehicle availability. This analysis will provide recommendations on areas where transit service would be beneficial and provide a relative measure of priority.
- 4) The CH2M HILL team will be provided local and regional comprehensive and transportation plans or programs, for analyses, that may be related to current public transit services or future service development and implementation.
- 5) The CH2M HILL team will be provided transit system data to include service performance, costs, revenues, customer satisfaction indicators, grants and any pending service proposals by KWDoT.

Task 2 Deliverables: Base data analysis will be documented and prepared for inclusion in various chapters of the TDP.

Task III. Public Involvement Process

Purpose / Approach:

The TDP will be developed utilizing input from community stakeholders, various agencies and interest groups, operator management and employees and the general public. The Florida Department of Transportation requires a comprehensive public involvement process during the development and adoption of the TDP.

The CH2M HILL team will design and coordinate with KWDoT staff the implementation of a Public Involvement Plan (PIP) specific for this TDP study. A draft PIP will be submitted to FDOT District 6 for approval before proceeding with defined outreach activities. The PIP may include the activities listed below and those identified in Task VIII related to presentations to the various boards and committees. It is anticipated that KWDoT will be responsible for coordinating the communications activities prepared by the CH2M HILL team (meeting notices, media notifications, newsletter articles, website content, legal advertisements, etc.) including the provision of any facilities / meeting room needs.

Task 3 Activities Include:

- 1) ***Community Discussion Group*** – Up to three (3) discussion group meetings will be held with relevant interest groups as determined by KWDoT. It is suggested these discussion groups involve local businesses, community associations, social service agencies, local government planning departments, economic development interests, tourist industry representatives and education representatives. CH2M HILL will facilitate these meeting and seek to document perceptions, suggestions and strategic opportunities for Public Transportation improvements.
- 2) ***Public Workshops*** - Two public workshops will be held during the PIP process to provide an opportunity for all citizens to participate in the development and finalization of the TDP. These workshops will be an opportunity for citizens to first review information about the transit system and then provide input/feedback to the TDP goals, objectives, strategies, services, and projects. CH2M HILL will conduct and facilitate a presentation during the workshops. The CH2M HILL team and the local parties will coordinate a brief survey instrument designed to gather additional public input at the workshops. The public workshop logistics (location, facilities,

public notices, etc.) will be coordinated and provided by KWDOT. The details of the workshops will be included in the documentation of the PIP activities.

- 3) **Customer Input** – The CH2M HILL team will develop a customer outreach and participation methodology with KWDOT. This effort may include customer surveys, public notices, on-line surveys etc. KWDOT will be responsible for providing or conducting any on-board customer surveys.
- 4) **Leadership Vision** - The CH2M HILL team will assess opinions, perceptions, and attitudes of key local officials and community leaders regarding current and potential transit services. The CH2M HILL team will assess political leaders' views on funding and transit projects. Policy issues of greatest local concern will be identified and discussed. Appropriate officials and community leaders will be selected with assistance from the local parties. It is proposed that the CH2M HILL team conduct approximately eight (8) interviews. It is anticipated that interviews will be conducted with Local Government Leaders and representatives of key community stakeholders to identify the issues, perceptions, and opportunities related to public transportation in the Key West area. CH2M HILL will attempt to schedule face-to-face interviews together with other project related meetings. If that is not possible, telephone interviews will be requested.
- 5) **Employee Input** - The CH2M HILL team will develop, provide oversight management, and analyze a written survey of the transit provider employees who regularly interface with customers to obtain their views of the existing services, customer needs, and opportunities. KWDOT conduct and collect this survey information.
- 6) **Advisory Review Committee (ARC)** - The CH2M HILL team will manage and coordinate the development and meeting session of a ARC
- 7) **Regional Workforce Coordination** - CH2M HILL will support KWDOT in coordinating efforts with the South Florida Workforce
- 8) **CTC / Local Coordinating Board** – CH2M HILL will support KWDOT in coordinating with the Monroe County CTC

Deliverable: Technical Memorandum No. 1 will include a ridership profile and a summary of current mobility needs resulting from the base data analysis of demographic, economic, and land use/transportation contained in Task I. The memorandum will incorporate GIS maps, charts, and descriptive narrative. As required in the new TDP rule, public involvement must be conducted throughout the course of the project so Technical Memorandum 1 will include a description of the PIP that will be submitted to FDOT for approval. The results of subsequent PIP activities will be communicated to project management as they occur and will be included in the draft TDP. CH2M

HILL will distribute the Technical Memorandum electronically for review. Black and white hard copies will also be available for project coordination meetings.

Task IV. Existing Services and Performance Evaluation

Purpose / Approach:

This task will include a performance evaluation of existing public transportation services and is a key element of the TDP in setting the foundation for strategic issues to follow in subsequent tasks. The documentation and analysis of a wide variety of operating and financial measures identifies areas where the agency is performing well and provides a focus on areas that may require management's attention. The base data collected for the performance evaluation can be used as a tool to provide an assessment of the agency's condition during the public outreach activities. This can then guide the formulation of goals, objectives and strategies designed to enhance service performance. The performance evaluation reveals existing conditions and trends for the situation appraisal and also influences the development of service alternatives.

Task 4 Activities Include:

- 1) The CH2M HILL team will develop a summary of existing public transportation services operating in the urbanized area with information provided by KWDoT. Basic descriptions of services will be documented including: hours of operation, annual ridership, modes operated, trip types, fleet size, span of service, governance, and regional connectivity.
- 2) The CH2M HILL team will conduct a performance review of the existing fixed-route transit and demand response service. The performance analysis consists of two components: a trend analysis and a peer comparison. The National Transit Database (NTD) and possibly Annual Operating Reports (AORs) will be utilized for data requirements. The most recent five years of NTD data available and more recent data supplied by the agency (if available) will be utilized for the trend analysis. The peer comparison will compare both transit provider services with other systems in Florida and the United States and utilize the most recent NTD data available. Operating and financial performance will be reported in the peer and trend study by using NTD data.

- a. Table 1 shows an example of the operating and financial performance measures that could be examined in the fixed-route performance review. For the demand response review, some of these measures are not reported by the NTD and therefore will not be used.
- b. The performance review will be used to help assess the urbanized area's current stated goals and objectives for transit service and formulate new goals and objectives.

Deliverable: Technical Memorandum No. 2 will include the results of Tasks III. CH2M HILL will distribute the Technical Memorandum electronically for review by the Project Management Coordination Committee. Black and white hard copies will also be available for Committee meetings.

Table 1 -- Performance Evaluation Indicators and Measures

Operational Measures	Financial Measures
<p>General Service Area Population Service Area Population Density Passenger Trips Passenger Miles Average Passenger Trip Length Vehicle Miles Revenue Miles Revenue Hours Route Miles</p> <p>Vehicle Vehicles Available in Maximum Service Vehicles Operated in Maximum Service Revenue Miles per Vehicles in Max. Service Average Age of Fleet (in yrs.)</p> <p>Labor Total Employee FTEs Revenue Hours per Employee FTE Passenger Trips per Employee FTE</p> <p>Service Vehicle Miles Per Capita Passenger Trips per Capita Passenger Trips per Vehicles in Max. Service Passenger Trips per Revenue Mile Passenger Trips per Revenue Hour</p>	<p>Expense and Revenue Operating Expenses Maintenance Expenses Local Revenue Passenger Fare Revenue Local Contribution Other Non-Fare Revenue Average Fare</p> <p>Efficiency Operating Expense per Capita Operating Expense per Passenger Trip Operating Expense per Revenue Mile Operating Expense per Revenue Hour Maintenance Expense per Revenue Hour Maintenance Expense per Vehicle Farebox Recovery</p>

Task V. Situation Appraisal

Purpose / Approach:

The situation appraisal can be viewed as an assessment process that continues the theme of strategic planning by analyzing the strengths and weaknesses of a transit organization as well as external barriers and opportunities that impact the delivery of transit services.

In accordance with the FDOT TDP rule, this task will address the following factors relative to the influence and impact of public transit on the Key West service area:

- 1) The effects of land use, state and local transportation plans, other governmental actions and policies, socioeconomic trends, organizational issues, and technology on the transit system.
- 2) An estimation of the community's demand for transit service using the planning tools provided by the Florida Department of Transportation, or a Department approved transit demand estimation technique with supporting demographic, land use, transportation, and transit data. The result of the transit demand estimation process shall be a ten-year projection of transit ridership.
- 3) An assessment of the extent to which the land use and urban design patterns in the provider's service area support or hinder the efficient provision of transit service, including any efforts being undertaken by the provider or local land use authorities to foster a more transit-friendly operating environment.

Task 5 Activities Include:

- 1) The CH2M HILL team will review the effects of the following as they relate to the transit system in the Key West service area:
 - a. assessment of institutional and governance issues
 - b. local, state and regional plans and actions
 - c. land use/growth management policies and programs
 - d. organizational issues
 - e. existing and proposed ITS technologies

- 2) The CH2M HILL team will conduct an assessment of the extent to which land use and urban design patterns in the urbanized area support or hinder the efficient provision of transit service, including any specific efforts by local land use authorities to foster transit development.
- 3) As required by FDOT, the CH2M HILL team will estimate the demand for transit in the Key West urbanized area using the Department approved T-BEST 3.0 software. T-BEST estimates demand at the stop level using current and projected demographics, land use, transportation and transit data inputs. The result of this analysis will be a projection of transit ridership in two increments: a five year projection and a ten year projection. This analysis will determine system level demand estimates and will not yield route-specific service design or scheduling recommendations. In addition, the CH2M HILL team will evaluate potential demand based upon historical ridership trends, peer comparisons, service level changes, and mobility needs.

Deliverable: Technical Memorandum No. 3 will document activities of this task in the form of a draft chapter for the final TDP product

Task VI. Identify Goals, Objectives, and Policies

Purpose / Approach:

In cooperation with KWDoT, the CH2M HILL team will help develop pertinent goals, objectives, and strategies to comply with the requirement that the TDP present the transit provider's vision, mission, goals, and objectives.

This effort will be consistent with community goals, stakeholder input and outreach activities of the Public Involvement Plan.

It is recognized that analysis and findings from other tasks of the TDP will help define and refine the goals, objectives and strategies.

Task 6 Activities Include:

- 1) The CH2M HILL team will review local plans and documents, including the Florida Transportation Plan, the MPO long-range transportation plan, other county and local government comprehensive plans, previous transit plans, and the Transportation Disadvantaged Service Plan. CH2M HILL will identify and recommend community goals and objectives for the Key West region relating to existing transit services and mobility improvements over a ten-year plan horizon.
- 2) The CH2M HILL team will review the results of Task II, particularly the interviews with local officials, community leaders, current customers and the general public, to gain a better understanding of community goals and objectives related to transit and overall mobility.
- 3) The CH2M HILL team will present draft goals and objectives to the ARC for further discussion and refinement.
- 4) The CH2M HILL team will develop measurable objectives and action oriented strategies for consideration by KWDoT.

Deliverable: Technical Memorandum No. 4 will include the draft goals, measurable objectives, and strategies developed in association with the situation analysis conducted in Task V. The CH2M HILL team will distribute the Technical Memorandum electronically for review by the Committee. Black and white hard copies will also be available for ARC review.

Task VII. Development and Analysis of Strategic Initiatives: Needs, Opportunities, and Alternatives

Purpose / Approach:

The CH2M HILL team will review and analyze needs, opportunities, and alternatives strategies and actions for transit operation in the Key West Region to develop strategic initiatives for the system. These will include a prioritized set of alternatives that may include new or improved services, passenger amenities, technology, public outreach/communication, capital acquisition etc. These alternatives will be developed in conjunction with previous tasks and consistent with Goals, Objectives and Strategies. Initiatives or alternatives under consideration will be identified and analyzed at this stage based on various factors, including projected benefits, costs, and potential revenue sources.

Task 7 Activities Include:

- 1) CH2M HILL will conduct a “system-wide” service planning analysis to provide service development concepts and to facilitate the development of priorities for service improvements
- 2) Associated with service improvements, CH2M HILL will provide an analysis of capital and facility needs.
- 3) CH2M HILL, in collaboration with KWDOT, will prioritize system improvements by detailing fixed route total service hours by year over ten years.
- 4) Service improvements will be presented to the ARC and in a Public workshop for comments and refinement.

Deliverable: Technical Memorandum 5 will present the analysis and draft service improvement priorities developed in this task.

Task VIII. Ten-Year Implementation Program

Purpose / Approach:

This task complies with TDP requirements to define an implementation plan that provides prioritized and staged improvements along with the identification of policies and strategies for achieving the KWDoT's goals and objectives

Task 8 Activities Include:

The CH2M HILL team will prepare a ten-year implementation program (based on strategic initiatives and alternatives outlined in the last task) and a ten-year capital and operating plan.

- A. The ten-year plan will contain proposed new and enhanced service, which will be outlined and described including vehicle requirements, performance monitoring, and cost information. More detail will be provided in the first five years compared to the last five years.

- B. The capital and operating plan will provide detailed descriptions of various federal, state, and local funding sources available to transit systems in Florida. Existing operating and capital funding for the Key West region will be identified and a historical summary of operating budgets will be provided. The ten-year financial plan will include a detailed list of projects and services identified in previous TDP tasks and estimate the capital and operating costs of these projects by recommended fiscal year of implementation and the anticipated revenues by source. Since the entire context of the TDP is "strategic," the financial plan will have prioritized projects and services that assume available funding. A list of recommendations for which no funding source is identified will also be provided along with potential sources of additional funding.

- C. The identification of strategies and action to relate the implementation plan to goals and objectives of the TDP

Deliverable: Technical Memorandum 6 will include a staged ten-year capital and operating plan incorporating the strategic initiatives developed in Task VII.

Task IX. Draft and Final Ten-Year Transit Development Plan

Purpose / Approach:

This task simply compiles work products of the previous tasks and refines a TDP document to serve as a source reference to KWDot and the Key West community in general. This document will be provided to FDOT for review and approval of compliance with TDP requirements and eligibility for Block Grant Funding.

Task 9 activities include:

- 1) The CH2M HILL team will prepare a draft TDP for presentation to the ARC and the KWDoT designated Policy Board.
 - a. **Deliverable:** The CH2M HILL team will submit twenty-five (25) copies of the Draft TDP for review, comment, and acceptance.
- 2) Following presentation and review, the CH2M HILL team will incorporate comments received into the final TDP document.
- 3) The final TDP will be submitted for adoption by KWDoT.
 - a. **Deliverable:** Twenty-five (25) copies of the final TDP will be prepared by CH2M HILL.

Task X. Community Telephone Survey (Optional)

Purpose / Approach:

Conduct a random telephone survey that provides general public opinion, perceptions and attitudes toward public transportation. This is a valid statistically valid “polling” tool to help define community vision, understanding, awareness and interests of important transportation issues.

Project Schedule

Tech Memo 1 – within 60 days of NTP
Tech Memo 2 – within 90 days of NTP
Tech Memo 3 – within 90 days of NTP
Tech Memo 4 – within 120 days of NTP
Tech Memo 5 – within 120 days of NTP
Draft TDP – within 120 days of NTP
Final TDP – within 180 days of NTP
FDOT Review Process Period – through December 2009

It is anticipated that the contract period will begin with a Notice-To- Proceed effective July 1, 2009

Project Budget

Total Cost of Services: \$108,960
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This will be a fixed price, lump sum contract and payment invoices will be based upon percent complete by task.

Note:

CH2M HILL is submitting this Scope and Fee with the understanding that by performing these services, CH2M HILL is not precluded from proposing on or performing any Planning, Design, Permitting, Construction or Construction Management Services that may result from the recommendations listed in the Final Key West Transit Development Plan – Major Update 2010-2019.

Signature Approvals

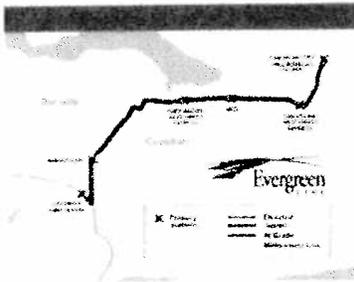
City of Key West

Key West Department of Transportation

Authorized Signer
CH2M HILL



CH2MHILL



Transportation Transit

Client

BC Ministry of Transportation and
Infrastructure

Location

Greater Vancouver,
British Columbia

Evergreen Line Rapid Transit Project – Owner's Engineer Services

With the announcement of the \$14B BC Provincial Transit Plan (PTP) in January 2008, the Province committed to providing improved choice for commuters through major transit investments. The long-anticipated Evergreen Line project represents the first new rapid transit commitment from the PTP to go to implementation. It will be a critical piece of infrastructure for the Region's northeast sector and an important part of improving travel choice in the Region—its success will be a key milestone in the Province's implementation of the PTP.

The CH2M HILL team was selected by the BC Ministry of Transportation and Infrastructure (BC MoT) to provide the Evergreen Line project with Owner's Engineer services. Our team includes CH2M HILL as the prime, with subconsultants VIA Architecture, Halcrow Consulting Inc., and Golder Associates Ltd. The project is being delivered out of the Vancouver, British Columbia office, with Ian Rokeby serving as the Lead Consultant and Project Manager. Key members of the CH2M HILL-led team were involved in previous transit planning and preliminary design work in the corridor and offered the established alternative project delivery expertise necessary to support a major infrastructure project of this type.

The Evergreen Line is anticipated to be delivered using some form of public-private partnership (P3) model. CH2M HILL's experience with P3 project development and procurement will be applied to realize this objective.

The Evergreen Line will be integrated with the existing Millennium Line along the region's Northeast Corridor, from Lougheed Town Centre to Douglas College in Coquitlam via Port Moody, for a total 11-km alignment. SkyTrain-compatible, Advanced Light Rail Transit (ALRT) technology will be used. Though the number and location of potential stations have not yet been determined, it will include a 2-km bored-tunnel, as well as elevated and at-grade segments.

Services will also include: project definition, business case preparation, Reference Concept design, procurement planning, and request for qualification (RFQ) and request for proposal (RFP) documents.

The Evergreen Line Owner's Engineer contract spans an initial 3 years, with an option to extend to a further 2 years. Total construction value is \$1.4B (expected initial contract value is approximately \$25M). The Evergreen Line is expected to be in operation by 2014.



CH2MHILL

Transportation Transit & Rail

Client

Regional Transportation
Commission of Southern Nevada

Location

Las Vegas, Nevada, USA

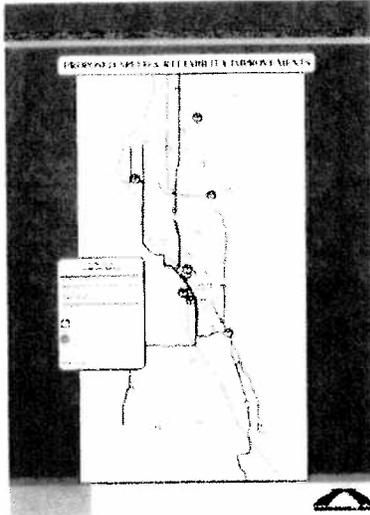
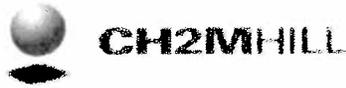
Las Vegas Valley Long-Range Transit Plan

CH2M HILL helped develop a long-range transit plan for the Las Vegas metropolitan area that will serve as a "transit plan blueprint" through the build-out year of 2025 and will identify key transit corridors and appropriate modes based on land use plans by entities.

The intent of this Plan is to initiate the future prioritization and programming of the Regional Transportation Commission's (RTC's) transit development program. It is anticipated that the best five to 10 corridors would progress through the Federal Transit Administration (FTA) New Starts process requiring an Alternatives Analysis/Draft Environmental Assessment (AA/EA) process. This process will require a rigorous investigation of a reasonable range of alternatives.

The process began with an assessment of existing comprehensive plans from each city and Clark County, followed by individual meetings with each of these entities and NDOT to validate and augment the information gleaned from the Plans. Criteria used to evaluate each corridor was generated and weighted at a working session attended by representatives from the RTC and each of the entities. Input from these representatives guided the development of the final Plan. Development of evaluation criteria and supporting attributes was completed at a workshop, facilitated by use of a Decision Science software (Criterium Decision Plus). This software provides a "brainstorming" capability, whereby decision criteria and supporting attributes can be entered, in a group setting, onto a blank canvas. This method facilitates a structured decision process.

It was a goal of this study to use the best available data that were easily and freely obtainable from public sources. The primary sources of data were the Clark County Geographic Information Systems Management Office which provided GIS data for streets, jurisdictional boundaries, census units, parcels, land use; and data provided by the RTC, such as GIS and related tabular data for transit routes and facilities, and data from the regional travel demand model (population and employment by Traffic Analysis Zone, 2002 and 2025). For selected evaluation attributes, a GIS-based overlay analysis was performed to measure attribute values within a 250-foot, 1/4-mile, and 1/2-mile corridors around each alternative route.



Transportation Transit & Rail

Client
City of Seattle

Location
Seattle, Washington, USA

Seattle Transit Improvement Project

CH2M HILL is assisting the City of Seattle with implementing transit and BRT enhancements that have been funded through the Bridging-the-Gap program. Through a partnership between the Seattle Department of Transportation and King County Metro known as the Speed and Reliability Partnership, transit service on seven corridors throughout the City of Seattle are eligible for street design elements that improve transit travel times throughout the day. The goal of the Speed and Reliability partnership program is for the City of Seattle to achieve at least a 10 percent improvement in transit travel time through the implementation of roadway improvements and/or transit priority treatments, in exchange for an increase in transit service hours from King County.

CH2M HILL facilitated a workshop involving King County Metro and several departments within SDOT. The workshop culminated in the development of a "catalog" of eight improvement types that could be utilized on any of the seven corridors in combinations to best improve transit service along the corridor. CH2M HILL has also determined travel time benefit and savings associated with the level of transit improvements, to reducing travel times for these routes as they serve the downtown neighborhoods.

Three of the seven corridors were identified by King County as Rapid Ride Corridors, requiring elements of bus rapid transit. On these corridors, dedicated bus lanes and/or business access transit (BAT) lanes were recommended, in conjunction with transit signal priority and transit queue jumps were appropriate.

For each corridor, conceptual designs for the project improvements and opinions of cost were developed.



Transportation Transit & Rail

Client
Sound Transit

Location
Renton, Washington, USA

Renton BRT/HOV Direct Access Project, Renton, WA

The Renton BRT/HOV Project was a \$75 million investment in infrastructure in the Renton area. The primary objective of this investment was to improve transit speed and reliability for Sound Transit Regional Express Bus Rapid Transit (BRT) operations serving the City of Renton and the region. Sound Transit Regional Express bus service operates between transit centers for various cities in a three-county area (Pierce, King, and Snohomish). The Express bus routes through Renton will stop at the Downtown Renton Transit Center and at the Boeing Park-and-Ride Lot.

The initial concept for these investments consisted of a pair of BRT/HOV Direct Access interchanges between the I-405 median HOV lanes and the local street system in Renton. BRT/HOV direct access interchanges would allow transit and other HOV traffic to avoid delays from weaving across congested general purpose traffic lanes while accessing the City of Renton. Other options for improving transit speed and reliability included local street BRT/HOV solutions, such as intersection queue bypass lanes; transit signal priority treatments, arterial BRT/HOV lanes, and other transit enhancement measures.

Personnel Assigned to Project: Tim Bevan, Project Manager (CH2M HILL)



Transportation Transit & Rail

Client
City of Shoreline

Location
Shoreline, Washington, USA



Visualization Prior to Project

Aurora Avenue North Multimodal Corridor Project

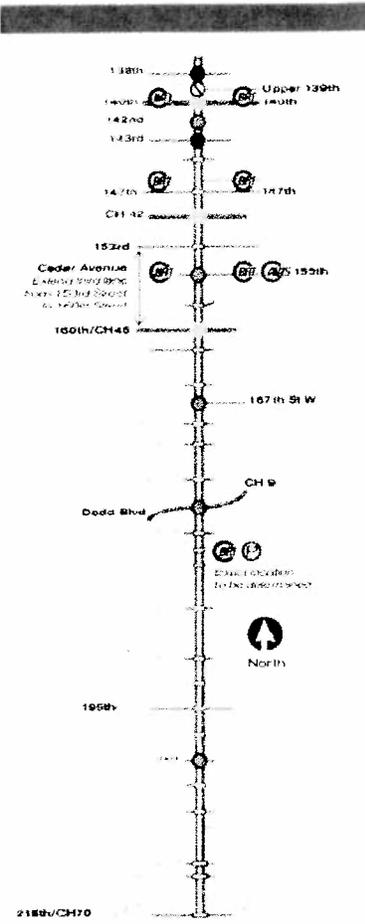
CH2M HILL assisted the City of Shoreline in the development of a new roadway design for a 3-mile stretch of SR 99 within the city (also known as Aurora Avenue North). This project incorporates Bus Rapid Transit (BRT) features to support regional BRT operations.

CH2M HILL pioneered the use of “context-sensitive” design practice to arrive at a design that reflects community values and concerns. Context-sensitive design is an interdisciplinary approach to developing a transportation project that takes into consideration the traditional parameters of traffic capacity and geometric standards and the entire range of issues and impacts related to community stakeholders. In addition to heightened environmental awareness, the design process considered the needs of all roadway users—pedestrians, transit, freight trucks, and bicyclists—and helped to create a multimodal facility.

CH2M HILL worked with WSDOT, King County Metro Transit, the Washington State Department of Fish and Wildlife, Department of Ecology and others, along with the Shoreline Citizens’ Advisory Task Force, to identify design issues and options for the Shoreline Aurora corridor.

Various transit options were evaluated to improve transit speed and reliability for the corridor. The overall corridor project considered infrastructure improvements to support regional plans for BRT implementation for this corridor. The project transit options that were considered included center exclusive bus lanes, right-side exclusive and shared use lanes, and transit queue bypass lanes at intersections. Each of these options were evaluated using VISSIM simulation software. Ultimately the option that was selected were outside Business Access and Transit lanes. These were supplemented by Transit Signal Priority at intersections, enhanced bus zones/shelters, and improved pedestrian access to bus zones.

Personnel Assigned to Project: Tim Bevan, Project Manager (CH2M HILL)



Cedar Avenue BRT Corridor Transitway Preliminary Engineering

Project Description:

CH2M HILL, working as part of a consultant team, conducted preliminary engineering on a 7 mile corridor of Cedar Avenue through the cities of Apple Valley and Lakeville, Minnesota. Both cities are part of the south suburban metropolitan area surrounding Minneapolis and St. Paul.

The study included implementation of Dakota County's transit vision for BRT from Lakeville north through Apple Valley. Along with the BRT, capacity improvements for the corridor were also considered. These include intersection/access enhancements and grade separation at key intersections. Preliminary engineering activities included the development of a phased implementation program for the preferred alternative to minimize disruption while building new transit access points in support of ridership growth.

Improvements outlined as part of the Cedar Avenue Transitway BRT corridor include:

- Expanded bus service and new station-to-station service
- Four transit stations built by 2012, two with park and ride lots
- Increased connections to the Hiawatha LRT, Central LRT, and Northstar Commuter Rail transitways
- Improved pedestrian and bicycle connections to local community activity nodes

CH2M HILL is completing the following tasks for this study:

- Participating on the Project Management Team
- Leading the traffic analysis team, which includes completing the traffic operations and safety analyses
- Developing grade-separated interchange and at-grade intersection concept designs, with special consideration of BRT
- Coordinating operational issues with the corridor's major transit provider
- Input to the NEPA Environmental Assessment
- Participating in the public involvement workshops, meetings and open houses

Transportation Ports and Maritime

Client
Dakota County

Location
Dakota County, MN

For 60 years (including nearly 30 years in Florida), CH2M HILL has provided innovative technologies combined with responsive, professional engineering services to meet the needs of public agencies and private industry. CH2M HILL delivers a full range of services that satisfy client needs for progressive engineering/design, consulting, program management, construction management, and operations. As the largest employee-owned consulting firm in the United States, our employees are driven by a strong commitment to clients, high staff motivation, and low staff turnover. The benefit to our clients of this committed, motivated staff is proven time and again – more than 80 percent of our workload consists of repeat business for satisfied customers. CH2M HILL's ability to provide appropriate technical solutions on transportation projects throughout Florida is directly applicable to the services required for assignments under this contract.

This section provides brief descriptions of numerous recent projects in a wide variety of technical disciplines that are relevant to the City of Key West's needs, including bus maintenance facilities, NEPA document preparation, roadway and bridge design, transit and intermodal facilities and planning, environmental studies, and key support services.

Bus and Transit Facilities

Bus Maintenance Facility Design

CH2M HILL is one of only a few firms in the nation with a dedicated group of technical experts who specialize in vehicle maintenance facility studies and designs. This group includes senior engineers and planners whose expertise has been proven on projects as far away as Honolulu, Hawaii. Several example projects are described below.

Pearl City Bus Maintenance Facility Honolulu, Hawaii

This project required careful coordination with existing transit users and the development of a facility to be expanded in phases. Site planning was a particular concern in the relationship to sensitive adjacent uses. The City and County of Honolulu proposed construction of a new 250-bus operating and maintenance garage for Oahu Transit Services (OTS), to replace their existing facility, which had become overcrowded. The new facility was to contain vehicle maintenance and service facilities, as well as central paint and body shops for the entire OTS system. The facility was to be programmed to accommodate both standard length and articulated buses. Final construction cost of the facility was \$33+ million and was within 1 percent of the engineer's estimate.



CH2M HILL, as a subconsultant to a local architect, was retained to develop a program for the new facility, building and site layouts, conceptual plans, and preliminary cost estimates.

The project was developed in two distinct phases. The first phase was to develop the necessary criteria for the facility and establish the programming and phasing for the project, in addition to finalizing the required environmental documentation for the selected site.

The second phase was the final design. Services included industrial layout of bus maintenance and servicing facilities, equipment design and selection, and coordination of utility and structural requirements with other members of the design team. Construction-phase responsibilities included shop drawing review, review of contractor as-equal requests, and consultation and advice to the client.

Site and building plans were developed to take advantage of the island's trade winds by orienting buildings and bay doors to provide additional cooling to maintenance bays and shops. Maintenance spaces were provided with a maximum of day-lighting and translucent material to provide as much natural light to work spaces as possible.

A major consideration in the site planning was the minimization of noise and light impacts to nearby residences from the night-time servicing operations. The facility was sited so that operations and administration structures would blend into the existing light industrial and residential neighborhood, while bus access and egress was located on the opposite side of the site. In addition, the bus servicing circulation pattern was arranged to keep bus wash spray upwind of the fueling islands, while still affording protection to the service crew from the usual direction of wind-blown rain.

Bus Storage and Maintenance Facility Breckenridge, Colorado.

The Town of Breckenridge proposed to locate a bus storage and maintenance facility on the site of their existing Department of Public Works operations. The project required that an initial master planning effort be conducted for the entire site, developing a long term footprint for all of the departments and operations utilizing the site. This effort was undertaken to assure that all future development, including the bus storage and maintenance facility, would not impinge on current operations.

During the development of the Master Plan a clear understanding of site operations for all the agencies and departments served at the existing Public Works site was developed in order to accurately forecast future space needs. The eventual site plan called for the new transit maintenance and operations functions to encapsulate the existing maintenance bays to maximize the efficiency of the maintenance operation, while minimizing the capital cost of the project. The two operations will share infrastructure such as fluid dispensing capabilities, centralized parts storage, and employee facilities.

The bus maintenance portion of the building will contain 4 maintenance bays (one of which is a drive-thru), a wash bay, a fabrication shop with a 5 ton overhead crane that also services two of the maintenance bays, In-ground and parallelogram lifts, component painting capabilities, and a welding shop with a down draft welding platen. Due to the climate and elevation of the facility the primary heating source for the maintenance building is an efficient and effective in-floor radiant heating system. Operations and administrative offices are also included in the facility. The building is planned such that a drive-thru paint booth,

drive thru bus washer, and future maintenance bays can be added as the fleet grows, without adversely impacting other site operations.

Estimated construction value of the project is \$4.75M and will serve a proposed fleet of 30 buses. The maintenance portion of the bus facility totals 18,175 square feet, with an additional building of 8,960 square feet of heated bus storage space. The bus storage area is also planned to be expanded as the fleet grows.

CH2M HILL work included analyzing existing operations; programming functions and space planning for the Town future fleet expansion; site planning; site and building layouts; equipment selection and shop layouts; engineering of specialty systems; cost estimates for alternatives; design criteria; preliminary and final design documents; and construction phase services.



Bus Facility/Park-and-Ride Planning and Design

Cypress Park & Ride Bus Facility Harris County, Texas

The Cypress Park & Ride project included site grading, pavement design, pavement markings, and drainage for a 1,600-vehicle facility on a 23-acre site in northwest Harris County, Texas, in the Suburbs of Houston. It also included plans for a bus platform canopy and utility/mechanical building. The project involved the preparation of PS&E for realignment of Skinner Road from US 290 to Jarvis Road including utility coordination, traffic control, roadway design, and storm sewer design.

West Side Transit Facility/Park-and-Ride Albuquerque, New Mexico

The West Side Transit Facility consists of an operating garage for 125 buses and 35 paratransit vans, and a park-and-ride facility for 160 cars. CH2M HILL is completing facility programming, site planning, final design, and construction of this facility to serve the fastest growing segment of Albuquerque. The first phase of the project has been bid and is currently under construction. Overall cost estimate for the full facility is \$37,000,000. The engineer's estimate for the first phase of the project was \$16.8M and the winning bid was \$16.2M.

NEPA Documentation

CH2M HILL has proven capabilities gained in well over 1,000 environmental impact statements, assessments, and studies. We have the experience, organizational resources, and regulatory expertise to satisfy regulatory requirements at the federal, state, and local level, and can call on the capabilities of a full staff of environmental scientists, planners, hydrologists, biologists, water quality experts, oceanographers, and engineers as needed to

meet project requirements. Our extensive experience in preparing National Environmental Policy Act (NEPA) documentation includes for both public agencies and private sector clients. With a staff whose experience addressing the many aspects of NEPA documents, we are able to facilitate timely technical studies, environmental analyses, documentation, and the coordination necessary to produce draft (public review) and final (response to comments) copies of NEPA documents.

NEPA Document and DRI Application Preparation

I-4 Environmental Impact Statement (EIS) and PD&E Study FDOT District Five, Florida

CH2M HILL worked with the Federal Highway Administration (FHWA), in consultation with the Florida Department of Transportation (FDOT), to prepare an Environmental Impact Statement (EIS) for proposed improvements to I-4 through Orange, Seminole and Volusia counties. Proposed improvements include widening the segment of I-4 from the Beeline Expressway Interchange in Orange County to just east of the SR 472 Interchange in Volusia County, a distance of approximately 43 miles. Six general use lanes plus two high-occupancy vehicle (HOV) lanes are planned.

Environmental Impact Statement(EIS)/Development of Regional Impact (DRI) for Proposed New Runway Miami International Airport, Florida

The Dade County Aviation Department contracted CH2M HILL to prepare an EIS meeting requirements of the FAA for an air carrier runway at Miami International Airport. The contract called for CH2M HILL to prepare an Environmental Report and Development of Regional Impact for an Application for Development Approval to meet state requirements for the new runway, as well as a series of development impact studies to support approval of proposed improvements at MIA and other airports in Dade County. CH2M HILL prepared draft environmental documents for the new northside parallel runway. The analyses addressed potential impacts of the air carrier runway expansion on noise, air quality, water quality, biotic communities, wetlands, floodplains, and protected species, as well as all other environmental impact categories required under FAA Order 5050.4A.

The Application for Development Approval was prepared in accordance with the requirements set forth in Chapter 380.06, Florida Statutes and Development of Regional Impact Guidelines, established by the South Florida Regional Planning Council. It provided a comprehensive view of the impacts that development at the airport would have on air quality, water quality, biotic communities, wetlands, floodplains, wildlife communities, public infrastructure, offsite transportation system, and the local economy. The documents prepared by CH2M HILL were reviewed and accepted by FAA, state, regional, and local reviewing agencies. CH2M HILL coordinated the public information program, provided results of the document findings to interested agencies and organizations, and completed the final environmental documents. Because the analysis in the draft EIS was thorough and comprehensive, comments were minor and were easily addressed.

**North Road Relocation and Environmental Assessment
Naples Airport Authority
Naples, Florida**

The North Road Realignment project, completed for the Naples Airport Authority, received the *2000 Outstanding Airport Project Award* from the FDOT Aviation office. The FAA and the Naples Airport Authority (NAA) identified the need to realign North Road, which runs along the perimeter of the Naples Municipal Airport (located in Collier County), out of the Runway Safety Area (RSA). The existing North Road penetrated both the RSA and the ROFA of Runway 5. The proposed realignment was based on displacing the landing threshold of Runway 5, by 290 feet to the northeast of its present location. This alignment required adjustments to both ends of Runway 5/23. Protection of mangrove and other wetland habitats was essential to preserve the County's commercial and recreational fisheries, maintain water quality, protect shoreline integrity, and provide habitat for many valuable and protected species. The project involved the preparation of a preliminary engineering report, environmental assessment, and other environmental documents. The project resulted in an approved Finding of No Significant Impact (FONSI). The funding was provided by the Florida Department of Transportation (FDOT) through its Aviation Grants Program, the FAA, and the NAA.

**I-4/Osceola Parkway Interchange Environmental Documents
Walt Disney Imagineering**

CH2M HILL prepared the environmental documents and managed the development of the Preliminary Engineering Plans for the Osceola Parkway/Interstate 4 (I-4) Interchange to meet Florida Department of Transportation (FDOT), Federal Highway Administration (FHWA), and National Environmental Policy Act (NEPA) requirements. The proposed interchange incorporates about 2.4 miles of I-4 and 1.8 miles of Osceola Parkway in Orange and Osceola Counties. The purpose of the project was to reduce traffic impacts at the US 192 and SR 536 interchanges and offer improved traffic distributions on this segment of I-4. The interchange was planned to accommodate the I-4 Master Plan which identified future expansion of I-4 to include general use lanes, high occupancy vehicle lanes and a collector-distributor roadway system. Following the FDOT PD&E Study criteria, interchange alternative concepts were developed and analyzed. This analysis included environmental impacts, social impacts, and preliminary project costs.

CH2M HILL prepared construction plans for this three-level interchange within the client's 1-year schedule. The design included 2.5 miles of resurfacing and auxiliary lane improvements to I-4, 1.8 miles of new westbound roadway for Osceola Parkway and the interchange. The interchange is a complex three-level facility with approximately 7 miles of ramp and collector-distributor roadways with four braided ramps. The design included a total of nine structure and two tie-back walls. Design efforts included drainage design and permitting, lighting and signalization, signing and pavement markings, and traffic control plans. The project was constructed with post-design services provided by CH2M HILL. This effort included shop drawing reviews, requests for additional information and attendance at weekly construction meetings. These services were provided to respond quickly to design-related issues and field conditions to meet the client's 2-year construction schedule.

Roadway and Bridge Studies and Design

The process of planning, study, design, and construction involved in roadway and bridge projects represents a core competency for CH2M HILL. Exhibit B-1 compares several recent Florida roadway projects completed by CH2M HILL that involve some of the service areas contemplated by the City.

EXHIBIT B-1
Florida Roadway
Experience Summary

Project	Roadway Design	Structural Design	Drainage/Permitting	Utility Coordination	Signing & Pavement Marking	Traffic/Noise	Survey/Mapping	Geotechnical	Environmental	Public Involvement
Collier Blvd. (U.S. 41 to Davis Blvd.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Collier Boulevard Design (Golden Gate Blvd. to Immokalee Rd.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Immokalee Road Widening	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vanderbilt Beach Road Widening	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pine Ridge Road Widening	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U.S. 41 (SR 45) Improvement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SR 15A Design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
I-4 Design/Build	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U.S. 441 Design/Build	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
I-95 Design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CH2M HILL's previous Florida experience compares favorably with the services required for future City of Key West transportation projects.

TB042006001TPA

Long-Range Transportation Planning

Osceola Parkway/I-4 Interchange Planning, Design, and Permitting Walt Disney Imagineering Lake Buena Vista, Florida

The Osceola Parkway/I-4 interchange extends from US 192 to SR 536 in Orange and Osceola counties and along Osceola Parkway from Victory Way to the International Drive extension. CH2M HILL, as prime, provided project management for this multi-disciplinary project. We also were responsible for the drainage and utility design, permitting, and maintenance of traffic. The design incorporates a semi-directional interchange design with a single signal on Osceola Parkway, 10 structures, and two tieback walls. Significant retained earth walls were used to minimize right-of-way impacts and environmental impacts and to maximize areas used for water treatment facilities. The design accommodated future improvements to I-4 identified by the I-4 Multi-Modal Master Plan by including the development of portions of the future Collector-Distributor roadways and minimizing the need for reconstruction. Extensive coordination was required between the client, FDOT, and FHWA for the roadway improvements, and Reedy Creek Improvement District, South Florida Water Management District, and USACE for the permitting and mitigation efforts.

Traffic Engineering, Data Collection, and Modeling

District-Wide Design Traffic PD&E, Design, and Traffic Operations FDOT District Five, Florida

CH2M HILL provided services to the Florida Department of Transportation, District Five, as a District-Wide Traffic Consultant. Work performed under this contract included the preparation of numerous technical memorandums, preparation of 18kip ESAL forecasts, and assisting in the preparation and instruction of the FDOT's procedure on project traffic forecasts. The work performed included all components of the Department's MUTS manual, specific safety studies, complex intersection evaluations, and various individual and traffic signal timing plans.

Evaluation and Demonstration of Traffic Forecasting Model Charlotte County, Florida

CH2M HILL is currently performing tasks that include review of the current forecasting model and making short- and long-term recommendations to improve model performance in Charlotte County. Work products will include a technical evaluation of the model, estimated time and costs to "update" the model based on recommendations, and meetings/presentations to FDOT and Charlotte County staff.

Intersection Improvements and Traffic Analysis Hillsborough County, Florida

CH2M HILL is providing the Hillsborough County Department of Public Works with general engineering services on a task-order basis for miscellaneous public works projects throughout the County. Numerous capacity and safety analyses and design projects have been completed over the past several years, including the Madison Avenue/U.S. 41 Intersection, Madison Avenue/78th Street Intersection, Handy Road/SR 597 Intersection, Casey Road/Ehrlich Road Intersection, Lumsden Road/Lithia-Pinecrest Road Intersection, Bell Shoals Road Improvements, and the Lithia-Pinecrest Road Heavy Truck Safety Study. CH2M HILL services have included geotechnical studies, surveying/mapping, traffic engineering and analysis, transportation planning, data collection, signal design and modifications, signage and pavement marking, permits, hydraulics/hydrology, drainage design, environmental studies, utilities, pavement design, maintenance of traffic, and contract document preparation.

PD&E and Corridor Studies

Vanderbilt Beach Road Corridor Extension Study Collier County, Florida

CH2M HILL is providing a comprehensive analysis to determine the type, design, and location of proposed future improvements to Vanderbilt Beach Road from Collier Boulevard to DeSoto Boulevard, a distance of approximately 10 miles. As part of the study, CH2M HILL developed and analyzed various typical sections and roadway geometry; and evaluated drainage and utility adjustment requirements, site constraints, preliminary environmental and right-of-way requirements for a six-lane urban divided section with bike lanes, sidewalks, and stormwater management facilities.

Bell Shoals Road PD&E Study Hillsborough County, Florida

CH2M HILL completed a PD&E study for Bell Shoals Road from Boyette Road to Bloomingdale Avenue in eastern Hillsborough County. Elements of the study included a preliminary engineering report, environmental assessment report, traffic studies, wetland evaluation, protected species & habitat assessment, cultural resource assessment, contamination screening evaluation, roadway/bridge/pond geotechnical assessments, pond siting report, topographic mapping, preliminary engineering, right-of-way mapping, cost estimates, Alternatives Analysis, and 30% plans. The existing roadway is typically a two-lane highway with a bridge crossing the Alafia River. Proposed improvements included widening 3 miles of the existing two-lane rural roadway to a four-lane divided roadway. Geotechnical services provided the documentation necessary for the County to reach a decision on the type, design, and specific location of needed improvements.

Collier Boulevard Alignment Study Collier County, Florida

CH2M HILL conducted a comprehensive analysis to determine the type, design, and location of proposed future improvements to Collier Boulevard (CR 951) from U.S. 41 to Immokalee Road, a distance of approximately 15 miles. As part of the study, CH2M HILL developed and analyzed various typical sections and roadway geometry; and evaluated drainage and utility adjustment requirements, site constraints, preliminary environmental, and right-of-way requirements for a six-lane urban divided section with bike lanes, sidewalks, and stormwater management facilities.

I-4 PD&E Study and Environmental Impact Statement (EIS) FDOT District Five, Florida

CH2M HILL worked with the Federal Highway Administration (FHWA), in consultation with the Florida Department of Transportation (FDOT), to prepare an Environmental Impact Statement (EIS) for proposed improvements to I-4 through Orange, Seminole and Volusia counties. Proposed improvements include widening the segment of I-4 from the Beeline Expressway Interchange in Orange County to just east of the SR 472 Interchange in Volusia County, a distance of approximately 43 miles. Six general use lanes plus two high-occupancy vehicle (HOV) lanes are planned. Commonly referred to as the I-4 PD&E Study, the project evaluated the need for interchange modification to enhance mobility on I-4 in the primary commuter-shed of the Orlando Metropolitan area. The improvements will serve the developed business districts of Orlando, Maitland, Altamonte Springs, and Lake Mary. Elements of study include an EIS, noise impact study, socioeconomic analyses, an air quality study, CSE, and a location hydraulics report. The project also entails extensive coordination with FDOT, FHWA, FTA (Federal Transportation Authority), and other government agencies; public involvement activities; and preparation of environmental documents.

Roadway Design and Construction Plans

Collier Boulevard Design (Golden Gate Boulevard to Immokalee Road) Collier County, Florida

CH2M HILL provided construction plans and specifications for a 3-mile roadway capacity improvement of Collier Boulevard from Golden Gate Boulevard to Immokalee Road, and a 7-mile roadway capacity improvement project from U.S. 41 to Davis Boulevard. The projects involved widening existing two-lane and four-lane roadways to six-lane facilities, including major intersections. Project elements include roadway design, drainage, utility coordination, permitting, retaining wall and culvert design, signing and pavement marking, surveying, geotechnical, preparation of specifications, maintenance of traffic, lighting, signalization, and environmental services. Construction is expected to be completed in 2008.

U.S. 41 (SR 45) Improvements Dunnellon, Florida

CH2M HILL provided design services, preparation of roadway construction plans, and post-design services for improvements to U.S. 41 (SR 45) from south of Powell Road to north of 111th Place Lane. The project, which is approximately 1.4 miles long, converted the existing two-lane/three-lane minor arterial that is a significant distributor of local traffic to a four-lane, divided, typical section. Elements of the project included roadway design; drainage design and permitting; signalization plans; geotechnical efforts; signing and pavement markings; utility relocation coordination; traffic control; design surveys; right-of-way mapping and legal descriptions; and cost estimates.

Immokalee Road Widening Collier County, Florida

CH2M HILL provided comprehensive design and environmental permitting services, including right-of-way acquisition, signalization, and major drainage improvements, to convert an 8.1-mile section of Immokalee Road (CR 846) from a two-lane rural roadway to a six-lane divided arterial. The project is bordered by the Cocohatchee Canal on the north and by limited existing improvement opportunities on the south, creating several design and logistics challenges. Project management challenges included coordination with five concurrent projects within the project limits, and an aggressive project schedule that required 100-percent right-of-way document submittal at the 30-percent stage to expedite right-of-way acquisition (approximately 70 acres). The project also involved 30 acres of wetland mitigation.

Bridge Design

CR 39 Bridge Replacement Study and Design Hillsborough County, Florida

For the CR 39 Bridge over the Alafia River, CH2M HILL completed the PD&E study and design for replacement of the existing pre-stressed concrete slab bridge with a Type III AASHTO beam bridge. The project included widening the approaches and typical section to provide standard shoulders, sidewalks, guardrail, barrier wall, as well as roadway approach

reconstruction along the existing super-elevated curve. Services included alternatives analysis, engineering/environmental report preparation, scour analysis, hydraulic reports, bridge design, construction plans, estimates, geometric design, temporary bridge design, floodplain mitigation, drainage design, roadside ditch design, permitting, MOT, utility adjustments, and signing and pavement markings.

Dave Rawls Boulevard Flyover Bridge Jacksonville, Florida

The Dave Rawls Flyover Bridge in Jacksonville is an excellent example of state-of-the art engineering analysis creating an appropriate structural solution to satisfy the constraints of a tight curved alignment and poor soil conditions. This 670-foot-long composite steel plate girder structure was constructed with minimal impacts to traffic and provided an aesthetic and cost-effective design solution. This bridge was constructed for the Jacksonville Port Authority, one of the top two-automobile importers in the U.S. It carries about 30 percent of the terminal's total annual car imports, greatly improving port and tenant operations and automobile processing efficiency. The bridge's alignment features a 310-foot radius curve, which is a fairly tight curve by highway design standards. The tight radius design was desired by the Port as it resulted in a landing location for the bridge on the automobile processing site that maximized the leasable property area on the 75-acre site.

Right-of-Way Analysis

Right-of-way analysis is part of virtually every roadway project undertaken by CH2M HILL. Our transportation engineers and planners carefully consider the right-of-way requirements of project alternatives based on their impact on area residents, project costs, and schedules. We work carefully with our clients to help them select the alternative that best-balances these various right-of-way concerns while still effectively addressing the project requirements.

In some projects, right-of-way constraints present interesting challenges. For example, the Lithia Pinecrest Road/Lumsden Road Intersection Improvement project for Hillsborough County included provisions for making significant interim improvements to a five-legged intersection while taking no additional right-of-way. CH2M HILL's decades of experience in dealing with such challenges help us to deliver creative solutions to our clients that address such constraints and also meet project needs. Another example of CH2M HILL's ability to address right-of-way challenges was the Immokalee Road Widening in Collier County, where 100-percent complete right-of-way documents were required by the 30-percent stage of design, in order to begin acquisition of 70 acres of right-of-way necessary for the project. CH2M HILL completed this task successfully, enabling the project to proceed on schedule.

Access Management

Access Management for Collier County Roadway Projects Collier County, Florida

As part of its work on a series of roadway widening projects and corridor studies for Collier County, Florida, CH2M HILL has consistently applied access management techniques in the development of roadway designs. Access management has been a key component of projects such as the Vanderbilt Beach Road Corridor Extension Study, the Collier Boulevard

Design, and the Immokalee Road Widening. Extensive public involvement in these projects and others helps to identify access-related concerns, which are then addressed through the study and design process.

Intermodal and Transit Facility Studies

Our expert intermodal team has designed some of the largest intermodal systems in the world. This team applies in-house modeling tools to optimize operations and capacity. CH2M HILL has developed a rail master plan to improve terminals and rail facilities and expand the container operations business for the Port Authority of New York – New Jersey. Our team’s experience with the layout of container and bulk cargo terminals with on-terminal intermodal facilities is very broad and includes:

- Sea-Land Terminal Expansion at Port Elizabeth for the Port Authority of New York and New Jersey
- Centerm-Vanterm Terminals at the Port of Vancouver, British Columbia
- Deltaport Terminal at the Port of Vancouver, British Columbia
- APL Terminal 5 at the Port of Seattle, Washington
- APL Pier 300 at the Port of Los Angeles, California
- Pusan Newport Terminal at Pusan, Korea
- Pacific Resources Inc. Bulk Coal Terminal at Kalama, Washington
- Bulk Multi-Product Terminal in Charleston, South Carolina
- Coal Export Terminal at the Port of Anchorage, Alaska

In Florida, we have taken part in major intermodal studies, such as those described below.

Intermodal Planning and Design

Florida Multimodal Trade Corridor Assessment Study – Phase I Florida Department of Transportation (FDOT)

CH2M HILL participated in the Florida Multimodal Trade Corridor Assessment Study, which identified high-volume multimodal trunk-route trade corridors and began to highlight needed improvements to the intermodal facilities and services located within each corridor.

One of the major tasks of Phase I efforts was to suggest overall strategies and short- and long-term objectives that might be pursued to better approach linking transportation and economic development in capturing and holding trade opportunities for the benefit of Florida and its regional economies. Other tasks for Phase I included the following:

- Begin a potential systems-based and multimodal approach for planning and programming resource needs for a yet-to-be fully defined Florida SIS. Part of this process was to identify major trade corridors and highlight improvements to intermodal facilities and services within those corridors in preparation for designating the statewide SIS.
- Examine existing movements of trade, commerce, and cruise patrons and how these movements might be enhanced or facilitated within and between the identified corridor regions.

- Study the origins and destination of key trade commodities and passenger movements on Florida's strategic passenger and freight networks.

Florida Freight Network and Modal Linkages System Study – Phase II

Florida Department of Transportation

The primary purpose of the Florida Freight Network and Modal Linkages System Study – Phase II was to build upon earlier freight studies to further define and assess Florida's freight network and modal linkages system. This study considered all modes of transportation including roadways, airports, seaports, railroads, and multimodal centers and key connectors that handle significant volumes of freight. The multiple objectives of the study were to:

- Expand public outreach and to obtain input from affected stakeholders
- Develop freight-related criteria and threshold levels to assist in defining the Florida freight network
- Validate the results of the Florida Multimodal Trade Corridor Assessment Study-Phase I by applying the criteria and thresholds to the eight trade corridors identified in that study
- Provide data and information for use in designating the Florida Department's proposed Strategic Intermodal System (SIS)

The study team of CH2M HILL, Wilbur Smith Associates, Nick Serianni, and EarthTech focused on the eight trade corridors identified in the Phase I study, collected and validated data and information from existing modal plans, and integrated prior research undertaken by the Florida's Freight Stakeholders Task Force and other freight studies.

Assessment of Intermodal Connectivity in the Atlantic Commerce Corridor

Florida Department of Transportation and the Ports of Miami, Everglades, and Palm Beach

Florida is the fourth largest container-handling state in the United States, with its southern seaports handling an important share of the international goods flowing through the state to and from global markets. The key to Florida's continued competitiveness in global markets and positive national economic impact is intermodal capacity and connectivity. The Florida Department of Transportation (FDOT), in conjunction with the ports of Miami, Everglades, and Palm Beach retained CH2M HILL to explore ways to develop intermodal facilities that meet capacity expansion needs, while preparing the way for a regional approach to the intermodal transport of goods and helping Florida compete in the international arena. This three-part study examined current and projected freight transportation patterns, including international and domestic movements by highway and rail along Florida's Atlantic Coast I-95 corridor.

Transit Planning and Design

CH2M HILL is committed to providing a full range of transit services – efficiently and cost-effectively – to meet and exceed our clients' expectations. Our proven track record and the resourcefulness and expertise of our staff ensure that our transportation clients achieve the best value on their projects. We have worked on thousands of transportation projects across the United States and overseas, ranging in size from small rehabilitation efforts to large-scale transit corridor studies to design and construction of major transportation systems and

related infrastructure, including light rail, commuter rail, Bus/HOV, and feet maintenance facilities. CH2M HILL provides a full spectrum of services to transit clients, including:

- Program/Project Management
- Feasibility Studies
- Alternatives Analysis
- Environmental Services
- Value Engineering
- Facility Design
- Design-Build
- Construction Management.

A few example projects are described below.

**Las Vegas Valley Long-Range Transit Plan
Regional Transportation Commission of Southern Nevada
Las Vegas, Nevada**

The Regional Transportation Commission of Southern Nevada (RTC) selected CH2M HILL to create a full transit plan for the RTC's Las Vegas metropolitan area. The contract includes identifying appropriate transit modes for the Valley at build-out, recommending transit extensions, and developing an optimum transit plan without consideration of fiscal constraints at build-out. The Plan includes the characterization and prioritization of over 80 transportation corridors, based on the relative suitability of these corridors for development of various modes of transit, including local bus, Bus Rapid Transit (BRT), and rail. The heart of information management on this project is a combination of GIS and supporting decision science software. Much of the GIS analyses used thematic overlays to capture corridor characteristics, such as population, employment, land use, and right-of-way availability. Environmental assessment included potential noise/vibration impacts to sensitive receptors and potential impacts to parks and recreation areas.

**Gold Line Major Investment Study
Regional Transportation District, Colorado**

CH2M HILL prepared the Gold Line Major Investment Study for the Goden-Denver corridor, including public involvement, project initiation, purpose and need, alternatives screening, detailed evaluation, and development of a Locally Preferred Alternative (LPA). The recommended LPA consisted of a 10.8-mile LRT line on a railroad right of way at an estimated cost of \$280 million, along with highway improvements, TSM improvements, and bike/pedestrian facilities for an additional \$40 million.

Environmental Studies

CH2M HILL employs hundreds of environmental scientists, planners, engineers, and other technical specialists skilled in environmental planning, permitting, wetland delineation, threatened and endangered species assessments, data collection, site investigation and management, and other environmental disciplines to help our clients complete their projects

while being good stewards of Florida's fragile environment. Several example projects related to the City's requirements are described below.

Comprehensive Plan Amendment Preparation

Comprehensive Plan/Ordinance Assessment Sarasota Bay National Estuary Program Sarasota, Florida

CH2M HILL performed an assessment of the comprehensive plans for the governments of Sarasota County, the City of Sarasota, the Town of Longboat Key, and Manatee County in support of the Sarasota Bay National Estuary Program. The research focused on land development policies and water conservation practices within the jurisdictions of these local governments, and their current land development codes/regulations in regard to water conservation and landscaping practices for new residential developments. The research also assessed the different land development policies included in the respective local government comprehensive plans. One goal of the assessment was to determine what types of policies were in effect and to promote consistency of these policies throughout the region's governments.

Pratt & Whitney Land Planning and Engineering Services Palm Beach County, Florida

CH2M HILL provided land planning and engineering services for the creation of the Pratt & Whitney Business Park from an existing industrial complex. Activities included evaluation of alternative scenarios, comprehensive plan amendments, unified land development code amendments, zoning map amendments, and platting for a 120-acre business park. Pratt & Whitney's West Palm Beach facilities were constructed in the 1950s to provide a sea-level rocket and jet engine test facility. Land development regulations in Florida have changed significantly since that time, and as a result it was a challenge to take this old facility and redesign it to meet today's regulations. For example, Palm Beach County had included in its Comprehensive Plan, policies to protect this major employer from incompatible land uses. These policies had the unfortunate effect of making it difficult, if not impossible, to subdivide the property and sell the empty buildings, which would have had positive results of increased employment and economic diversity. Changes were proposed to and adopted by Palm Beach County to allow the property's subdivision to go forward, while protecting the core business activities of Pratt & Whitney.

Port Manatee Master Plan Port Manatee, Florida

Port Manatee is a 1,098-acre site located at the southern end of Tampa Bay on Florida's West Coast. Port facilities include over 900,000 square feet of warehouse and office space and more than 5,200 feet of berthing space. CH2M HILL updated the Port's Strategic Plan; General Development Plan; Renewal, Replacement and Capital Improvements Plan; and a Chapter 163 Master Plan. The plan update provided a 20-year development plan including the creation of a new basin, expansion of an existing basin, and the creation of 13,800 feet of additional berthing space. Tasks included public involvement, consultant coordination, and preparation

of amendments to Manatee County Comprehensive Plan. As part of the planning effort, the Master Plan recommended the inclusion of a Port Manatee Planning District in the Manatee County Comprehensive Plan. The purpose of this district is to protect the Port from incompatible land uses and to preserve the Port's intermodal transportation facilities. In addition, the plan recommended the adoption of a Port Manatee Protection Overlay Zoning District to provide access design standards to protect the Port's high speed road access, thereby preventing traffic congestion that is seen at many other Ports.

Environmental Data Collection

As part of many transportation projects, extensive environmental data collection is conducted in support of permitting and planning phases. CH2M HILL employs hundreds of qualified scientists with extensive expertise in environmental monitoring and data collection to ensure that project data needs are met.

Noise Data Collection

Noise Monitoring Study

City of Farmington Hills, Michigan

CH2M HILL worked with the City of Farmington Hills, Michigan from June 2000 through February 2001, to prepare a noise impact analysis for the residential community located east of I-275 between 8 Mile and 9 ½ Mile Roads area. The impact analysis included facilitation of several community meetings for the City of Farmington Hills to explain the technical components of the noise impact analysis, as well to understand the residents' noise concerns. CH2M HILL also participated in several meetings between the City and the Michigan Department of Transportation to discuss the noise impact analysis. In addition, CH2M HILL collected onsite noise data and prepared a noise impact analysis report to meet the needs of the City and area residents. This report was presented to the Michigan Transportation Commission for consideration, and was specifically prepared to meet applicable federal and state requirements and to address elements requested by residents.

Key Support Services

GIS Mapping and Graphics Production

CH2M HILL utilizes GIS—Geographic Information Systems—as an excellent tool to help analyze and solve complex infrastructure problems. GIS is a powerful storage, management, manipulation, analysis, and display system for spatially referenced data. By analyzing this information from a range of perspectives, users develop new information to help make better decisions and more effectively solve problems. Since most planning decisions involve spatial issues, GIS is the logical tool for analysis and display.

CH2M HILL has provided GIS services for nearly 20 years to a wide range of clients. The firm's GIS professionals are continuously developing efficient, automated GIS procedures and applications to support clients. We have demonstrated the usefulness of GIS in many applications, particularly master planning. In these cases GIS can serve as an integral part of projects requiring management of large volumes of data, routine process automation, engineering model interfaces, and special analytical tools applications.

CH2M HILL applies GIS in four significant ways:

- Repository GIS can be used for the collection, maintenance, and distribution of information about geographic entities. This application of GIS, for example, might include general information about water and sewer pipes, other utilities or drainage patterns.
- Management GIS applies to the management of geographic entities and is traditionally referred to as an AM/FM (Automated Mapping/Facility Management) system.
- Analysis GIS is linked to the analysis and modeling of geographic entities through hydraulic modeling programs.
- Visualization GIS is a tool that allows display and communication of geographic information.

Public Involvement

Most CH2M HILL transportation projects involve significant levels of public involvement. Examples already cited in this document include roadway design and studies for Collier County, roadway improvements for Hillsborough County, and NEPA document preparation for interstate highway projects and the Miami International Airport proposed new runway.

Experience in Public Involvement

For more than 30 years, CH2M HILL has been committed to involving the public in project decision-making and to incorporating environmental and economic analysis into project development. Public involvement at CH2M HILL is not complicated; it is basically a matter of careful listening and clear communication. We can support the client's communication strategies throughout the project by developing the forums and formats that are most conducive to meaningful, cooperative planning. Effective forums allow municipalities to communicate with people, not just "talk at them." At each stage of project development, CH2M HILL can provide the most appropriate public involvement and communication strategies and tools to ensure project success.

Information Materials

Quality information materials are the key to providing clear, accurate information to the community. CH2M HILL specializes in preparing materials that are meaningful and appropriate for the audience and that communicate complex technical issues in language and images that are easily understood by the general public. With full, in-house capabilities for desktop publishing, graphic design, and printing, we can provide you with materials for general or targeted mailings, presentations at public forums, or for use through local media.

Public Presentations

Presenting information at public forums and meetings is often an intimidating task. CH2M HILL can help your public interactions be more effective by developing and implementing meeting formats that meet your goals and promote meaningful communication. In addition, we can help you prepare for meetings and provide facilitation for internal or public workshops and group discussions.

Economics, Grants, and Funding Assistance

Decision makers in government often need information on urban and regional economic activities; determination of costs of service and rate design for utilities; development of financial plans, population, employment, and land use trends; and potential trade-off among economic, environmental, and other goals. CH2M HILL economists offer public and private clients a wide range of management services, including capital improvements financing, rate-making, and related services. We regularly analyze problems associated with capital requirements, cost determinations, and rate structures for water, wastewater, solid waste, storm water drainage, and other utilities. In addition, we have developed a variety of computer programs covering cost-of-service, load research, and rate design.

Obtaining funding is critical to the development of public facilities. CH2M HILL has worked with many governments on projects funded by state and federal agencies, and we consistently have success in obtaining funding support for our clients. With this experience, CH2M HILL can evaluate the sources of funding available to implement the City's transportation projects, and help the City plan to meet the financial needs associated with these projects.

Cost Estimating

CH2M HILL employs more than 140 professional cost engineers and estimators. Cost estimating staff are experienced, trained and qualified professionals who have been hired for the specific purpose of providing construction cost estimates. To remain current and qualified, cost estimating staff regularly spend 50 percent or more of their time completing construction cost estimating work. Many of the cost estimators spend their remaining time supporting projects during the construction phase as Construction Managers. This combination of construction field experience and understanding the project design are essential to preparing reliable cost estimates.

The Association for the Advancement of Cost Engineering (AACE International) has developed definitions for five levels of estimating accuracy commonly used by professional cost estimators. The five levels of cost estimates are defined as *Class 1* through *Class 5*, the

Class 5 as being the lowest level of accuracy to the Class 1 as being the highest deterministic level of an estimate. CH2M HILL has incorporated AACE International's definitions and expected levels of accuracy into our Standards of Practice and Guidelines for cost estimating. In addition, the American Society for Testing and Materials (ASTM) E 180496, *Standard for Performing and Reporting Cost Analysis During the Design Phase of a Project*, is also closely followed.

Construction Engineering Inspection and Services During Construction

CH2M HILL has provided CEI and services during construction for many transportation projects in Florida, not to mention our work on water and wastewater utility and solid waste facility infrastructure. CH2M HILL Constructors, Inc. (CCI) is part of the CH2M HILL family of companies, and exists primarily to help our clients build their visions. The following projects are just two recent examples of CEI and services during construction on transportation projects.

Miscellaneous CEI Services Contract Collier County, Florida

CH2M HILL has received several miscellaneous task orders for the Collier County Facilities Department to facilitate the construction of the 3-Story Vanderbilt Beach Road Parking Structure (\$7M); the 6-Story County Courthouse Parking Garage (\$15M); and the New County Jail Addition and Renovation (\$30M). This \$210,000 project began in July 2005 and is currently ongoing.

I-4 Design-Build (US 98 to Memorial Boulevard) Florida Department of Transportation

CH2M HILL provided services during construction for a \$60 million design-build project that involved the widening of a 3.5-mile section of I-4 near Lakeland in Polk County, Florida. The project, which began in August 2002 and concluded in April 2006, involved the addition of one travel lane in each direction, improving the facility from four lanes to six. In addition, the project included the replacement of six bridges.

R. Thomas Ross, P.E.

Education

B.S., Civil Engineering, University of Central Florida

Professional Registrations

Professional Engineer: Florida

Distinguishing Qualifications

- More than 18 years of extensive transportation planning, traffic operations and design experience, including projects involving Environmental Impact Statements (EIS) and Interchange Justification Reports (IJR)
- Specializes in travel demand forecasting, project traffic reports, interchange justification/modification reports, preliminary engineering, PD&E studies, traffic operations analysis, master planning, access management, traffic signal design, signal timing, signing and pavement marking plans and intelligent transportation systems

Relevant Experience

Project Manager; I-75 SIMR; FDOT District One; Lee County, Florida. Managing review of the current access conditions to identify deficiencies and the development of an SIMR (System Interchange Modification Report) for I-75 from Colonial Boulevard to SR 78 to identify needed capacity and interchange operational improvements. I-75 is an SIS facility which requires a high level of access control to support long-distance travel for people and freight. This project includes two project phases with interim and ultimate improvements. This project required coordination with multiple independent projects and consultants. The draft document is currently under review by FHWA. This project is scheduled for completion before the end of 2008.

Project Manager; SR 82 CAMP; FDOT District One; Lee, Hardee, and Hendry Counties, Florida. Project manager for CH2M HILL, which was a subconsultant on this project that included an evaluation of existing conditions, identification of major access points and current travel patterns for the existing two-lane facility from I-75 to SR 29. Analyzed existing level of service conditions and crash history to identify existing deficiencies. Provided recommendations for short-term improvements to address existing deficiencies until the roadway is widened to a four-lane divided facility.

Project Manager; General Transportation Planning Consultant; FDOT District One; Florida. Managing this contract that includes a wide range of services including project traffic reports, FSUTMS modeling, a transportation systems management study for a

R. Thomas Ross, P.E.

Strategic Intermodal System (SIS) connector facility, development of a systems interchange modification report, and project report reviews.

Project Manager; General Planning Consultant for FIHS; FDOT District One, Florida. Managed this project from 2004 to 2007. This contract has been awarded six contract extensions (three for additional time and three to increase the monetary threshold). Services provided include FSUTMS modeling and model review, development of project traffic reports, Highlands County LRTP update, operational improvement studies, planning software updates and internet portal development.

Project Manager; US 27 Corridor Access Management Plan (CAMP); FDOT District One; Highlands County, Florida. Managing review of the current access conditions to identify deficiencies and development of an access management plan to guide future development along the corridor of this existing four-lane divided arterial from SR 70 to US 98. This is an SIS facility which requires a high level of access control to support long-distance travel for people and freight. US 27 is the main north/south corridor within the central part of the state. The project includes coordination with local government officials and other stakeholders along the corridor and includes a public information meeting, a public hearing, and multiple presentations to local governing boards. The project is scheduled for completion in the spring of 2008.

Project Manager; University Parkway TSM Study; FDOT District One; Sarasota and Manatee Counties, Florida. Managed the review of the current operational conditions to identify deficiencies and the development of TSM (transportation systems management) improvements along this multi-lane divided facility from US 41 to I-75. This is an SIS connector facility providing access between the Sarasota-Bradenton Airport and I-75. The project included coordination with local government officials and other stakeholders along the corridor. The project was completed in 2007.

Project Manager; Downtown Orlando Traffic Circulation and Access Study; Orange County, Florida. Managed traffic study for the central business district in Orlando, Florida, to identify traffic circulation improvements and access modifications to I-4. Services provided include data collection, evaluation of existing conditions, development of traffic projections, development of a traffic simulation model, operational analyses and evaluation of eight network alternatives.

Tom also served as project manager for the I-95/Old St. Augustine Road Interchange in Duval County and the Northwest Palm Bay Transportation Study for FDOT District Five in Brevard County. He was a traffic engineer for the following studies:

- I-4 Systems Access Modification Report; FDOT District Five; Osceola, Orange, Seminole, and Volusia Counties, Florida.
- SR 528 SIOAR; FDOT District Five; Orange and Brevard Counties, Florida.
- SR 528 Bee Line West PD&E Study; Orange County, Florida.
- Orlando International Airport Master Plan Update; Orange County, Florida.
- Transportation Planning Continuing Services; Collier County Transportation Planning Department; Collier County, Florida.



Stephanie Eiler

Principal Project Manager

Northeast Region Transit Lead

Education

B.S., Liberal Arts, Hillsdale College

Professional Registrations

Certified Planner: American Institute of Certified Planners (6476)

Relevant Experience

Stephanie Eiler is a principal transportation planner and project manager with over 20 years of management, technical and public involvement experience on major transportation planning and engineering studies. Her projects typically include management of multi-firm consulting teams, coordination with multiple jurisdictions, and extensive community involvement. Stephanie's experience includes LRT, BRT and commuter rail transit planning, multimodal system analysis addressing the linkage between transportation and land use and reflection of community values, and comprehensive transportation plans.

Representative Projects

CH2M HILL Projects

Technical Corridor Manager: West LRT Corridor Alternatives Analysis, City of Edmonton, Alberta, Canada; 2008-present. CH2M HILL is leading three concurrent corridor studies to expand the City of Edmonton's light rail transit system. Working as part of the three-corridor management team, Ms. Eiler leads the Lewis Estates to Downtown (West) study, where she is responsible for the identification, evaluation and selection of alternatives in a CH2M HILL-designed, phased study process. The study process incorporates structured internal city stakeholder review and external public consultation along with the technical analysis.

Transit Lead: I-494/I-35W Interchange Bus Rapid Transit Facility, Minnesota Department of Transportation, Minneapolis, MN. CH2M HILL is developing concept plans for a major bus facility at one of the Twin Cities busiest suburban highway interchanges. Ms. Eiler coordinates the communication of technical and operational issues between multiple transit service providers, the Minnesota Department of Transportation, and the two suburbs which bracket the project area.

Transit Lead; Cedar Avenue Bus Rapid Transit (BRT) Preliminary Engineering; Dakota County, Minnesota; 2007-2008. Ms. Eiler served on the Project Management Team for the Twin Cities region's proposed first BRT corridor. She coordinated transit issues with transit operators and other members of the project team, addressing bus service, roadway capacity, and community impact issues on this congested principal arterial serving several southern suburbs of Minneapolis.

Stephanie Eiler

Project Manager; Anoka County 2030 Transportation Plan; Anoka County Highway Department; Minnesota; 2007-present. CH2M HILL is assisting the Anoka County Highway Department with development of their multimodal 2030 Transportation Plan. Ms. Eiler's responsibilities include developing the Plan in accordance with the region's metropolitan planning organization, the Metropolitan Council. The 2030 Plan addresses transit and non-motorized vehicle facilities as well as roadway capacity for this large, growing metropolitan county north of Minneapolis and St. Paul.

Transportation Team Transit Planner, Masdar City, Abu Dhabi Future Energy Company; Abu Dhabi, United Arab Emirates; 2008. CH2M HILL serves as the client's program manager on the Masdar Initiative, the world's first fully sustainable green city. Ms. Eiler served as transit planner on the CH2M HILL transportation team, which solicited, evaluated, recommended and is now managing the delivery of a Personal Rapid Transit system. The PRT system for internal city circulation is a visionary, never-before-accomplished implementation as the primary transportation mode for people and goods in this planned net-zero-carbon city of 40,000 residents.

Gold Line Quality Manager; Gold Line AA/DEIS; Denver Regional Transit District; Denver, Colorado; 2008-present. Ms. Eiler serves as Quality Manager for the CH2M HILL-led consulting team. Her responsibilities include assuring that the quality procedures of the client and CH2M HILL are followed by the Alternatives Analysis team and the Basic Engineering team in preparing the project for implementation as Electric Multiple Unit commuter rail service. The Gold Line is part of the RTD's FasTracks Program to expand transit service throughout the Denver metropolitan area.

Representative Projects Prior to CH2M HILL

Project Manager; Southwest Corridor Alternatives Analysis; Hennepin County Regional Railroad Authority; Minnesota; 2005-2007. Managed an FTA New Starts-consistent AA continuing a multiyear effort by Hennepin County and the cities of Minneapolis, St. Louis Park, Hopkins, Minnetonka, and Eden Prairie to determine a preferred transit alternative within the Southwest Corridor. Developed and evaluated eleven modal and alignment options, including cost effectiveness indices. Modes evaluated included improved bus service, bus rapid transit, and light rail transit (preferred alternative at the conclusion of the study). Study products included technical reports, presentations and display materials describing conceptual engineering, travel demand forecasting, transit operations, capital and operations costing and environmental screening, and a detailed description of the evaluation process used to screen down to the preferred alternative.

Deputy Project Manager; Suburban Transit Access Route (STAR); Metra; Chicago, Illinois; 2006-2007. Participated in managing the STAR Line alternatives analysis for Chicago's commuter rail operator. The STAR Line represents a unique, non-radial approach to improving suburban-to-suburban mobility in a major metropolitan area. The study team assists Metra in fulfilling the technical planning requirements of the FTA New Starts program for the STAR line, with support and active involvement of multiple cities, counties, and government associations within this suburban area 40 miles west of Chicago.

Stephanie Eiler

Deputy Project Manager; Minneapolis Intermodal Station Study; Hennepin County Regional Railroad Authority; Hennepin County, Minnesota; 2005-2006. Local representative of the consultant management team on this study of capacity requirements to accommodate multiple rail transit connections adjacent to downtown Minneapolis. The study involved a multi-agency effort among stakeholders potentially involved in using the terminal station facility, part of the Northstar Commuter Rail project scheduled to begin service in late 2009.

Deputy Project Manager; Georgia 400/Northern SubArea Study; GRTA; Atlanta, Georgia; 2002. Coordinated the development, review and delivery of project deliverables from prime and subconsultant technical task leads. Partnered with PM to address transit, bus shoulder lane, land use and environmental issues relevant to the growth of a multi-county and city area north of the City of Atlanta. This \$7M planning study was initiated by the Georgia Regional Transportation Authority.

Project Manager; Transport 2020 Alternatives Analysis; City of Madison, Wisconsin DOT and Dane County WI; Dane County/Greater Madison, Wisconsin; 2000-2002. Managed the alternatives analysis (AA) of potential commuter rail, light rail, streetcar, and bus transit investments for greater Madison, Wisconsin. The study focused on transportation benefits, land use and economic development impacts, and the financial ramifications of implementation.

Project Manager; Dan Patch Commuter Rail Feasibility Study; Dakota County Regional Railroad Authority; Dakota County, Minnesota; 2001-2002. Managed the identification, evaluation, and presentation of technical and community issues surrounding the restoration of commuter rail service between Minneapolis and the southern free-standing community of Northfield, Minnesota. Also served as project manager for location studies and site development of a transit hub in northern Dakota County, a separate effort for the same client.

Deputy Project Manager; Transit Alternatives Evaluation; Southeast Michigan Council of Governments; Detroit, Michigan; 2001-2002. Coordinated the evaluation of transit alternatives linking downtown Detroit to Detroit Metropolitan Airport. This alternatives analysis involved coordination with multiple transportation providers within the corridor, including the Airport and local legislative representatives.

Technical Manager; I-71 Corridor Major Investment Study (MIS); Ohio-Kentucky-Indiana Council of Governments; Ohio/Kentucky; 1993-1996. Managed the LRT alignment, station planning, and conceptual engineering work on this \$4 million multimodal corridor study in metropolitan Cincinnati and northern Kentucky. Co-led public involvement activities, a major component of the work, throughout the three-year duration of the study.

LRT Task Manager; Fort Washington Way Subcorridor MIS; City of Cincinnati; Cincinnati, Ohio; 1997-1998. Managed the coordination between I-71 recommendations for LRT and the design for the downtown freeway segment reconstruction of the combined I-71/I-75 freeway segment adjacent to downtown Cincinnati, Ohio.

Project Manager; MIS; Vermont Agency of Transportation; Burlington, Vermont; 1994-1995. Managed the alternatives analysis linking downtown Burlington and the University

Stephanie Eiler

of Vermont. Modal alternatives included traffic improvements, bus, and light rail transit options within the study corridor located in the heart of historic and topographically-constrained Burlington. Served as lead spokesperson for project throughout the public involvement program, including cable television coverage and rebroadcast of all project meetings.

Professional Memberships

Institute of Transportation Engineers

American Planning Association

Women's Transportation Seminar

University of Minnesota Center for Transportation Studies Economy Council;

Transportation Research Board Commuter Rail, Self-Propelled Rail Car Committees



Ed Granzow

Technical Director

Education

B.A., Social Ecology

Distinguishing Qualifications

- More than 32 years of experience in the development of travel demand models and demand modeling software
- Developed database and GIS interfaces to URBAN/SYS software suite to support integrated interfacing of travel demand models and other applications
- Developed and applied travel demand models for regional and corridor studies throughout the country

Relevant Experience

As Global Transportation/Traffic Modeling Technology Leader for CH2M HILL, Mr. Granzow brings more than 32 years of experience developing travel demand models and demand modeling software. Currently, Mr. Granzow is leading or providing senior technical support to a number of projects throughout the United States. These projects include: 11th Street Bridge, Washington DC (senior technical advisor); Elgin-O'Hare West Bypass study in Chicago (senior technical advisor); Corridor System Management Plan Studies in Los Angeles (senior technical advisor); Highway-2-Highway Corridor Study in Anchorage (senior technical advisor) and Joplin MO West Bypass Feasibility Study (task manager). In addition, he was responsible for developing database and GIS interfaces to the URBAN/SYS software suite to support integrated interfacing of travel demand models and other applications. Mr. Granzow has served as a member of the Institute of Transportation Engineers, the National Research Council/Transportation Research Board, and the Urban Regional Information Systems Association.

For CH2M HILL, Mr. Granzow is currently managing travel demand forecasting for the Transportation Business Group and is involved in a number of in-house and project efforts throughout the U.S. Mr. Granzow is the manager of the company's Community of Practice in Transportation/Traffic Modeling and responsible for coordinating knowledge management activities and development of best practices in the discipline. Representative of project efforts are leading recalibration and revalidation of area travel models in Anchorage, Alaska; development of future transit patronage forecasts and related software and methodology for the Lake County Transportation Improvement Program in the Chicago, Illinois area; expansion of CH2M HILL's current capabilities in both internet-based use of transportation forecasting and analysis tools, development of new software capabilities to better link geographic information systems to travel demand forecasting, and acting as manager of transportation forecasting and modeling.

Representative Projects

Traffic/Transportation Modeling, Lake County Transportation Improvement Program, Chicago, IL. Supported travel demand forecasting for projects throughout the U.S. These include development of future transit patronage forecasts and related software and

Ed Granzow

methodology for the Lake County Transportation Improvement Program area, including capabilities in both web-based use of transportation forecasting and analysis tools, and development of new software capabilities to better link GIS to travel demand forecasting.

Task Manager, Travel Forecasting Model Update, Anchorage Long -Range Transportation Plan, AK. Developing new operational tools and statistical models. Includes update of travel demand model and identifying additional enhancements for TransCAD based models. Developing new, flexible model interface to simplify model operation and extend range of applications.

Traffic Modeler, Alternatives Analysis ("Mini Study"), I-5/I-710 Interchange, Los Angeles, CA. Project combined project traffic modeling and operational analysis in the I-710 corridor. CH2M HILL conducted detailed alternatives analysis studies (traffic and design) to support the ongoing planning efforts in the I-710 corridor. To support EIR/EIS and supplement Metro's MCS for the I-710 freeway from Long Beach to East Los Angeles, the study was designed to address local issues about planned improvements in the corridor, especially at the I-5/I-710 freeway interchange. Project scope included traffic analysis and design drawings to support the alternatives analysis in the north part of the I-710 corridor. Traffic analysis included developing updates to the regional model (from SCAG) to evaluate a variety of options. Traffic operations analysis was conducted using modeling results to evaluate and improve alternatives.

Task Manager, Traffic Analysis, I-25 New Pueblo Freeway Project, Pueblo, CO. Managed traffic forecast development for freeway corridor alternatives analysis in southern Colorado. This included converting travel forecasting procedures and software from the current MINUTP environment to the TransCAD software package; verifying results from the new model; updating base year model assumptions and inputs; supervising the preparation of horizon year traffic forecasts for input into the alternatives screening process, and developing model updates and revisions to support input to CORSIM traffic simulation modeling.

Technical Advisor, Gateway Program, Vancouver, BC, Canada. Provided expertise on issues related to traffic forecasting for the \$3 billion program of highway transportation improvements, collectively known as the Gateway Program, focused on three major urban corridors.

Consultant, County of Santa Clara Center for Urban Analysis. For nearly 15 years, served as advisor and consultant to the Center for Urban Analysis in implementing travel demand forecasting models. Consultant for the original design and development of the county's subregional travel demand model; involved in numerous studies and projects concerned with use of the model and enhancing its capabilities. This work has included improving modal choice modeling; developing a methodology and software enhancements to incorporate a generalized intersection delay into travel assignment; providing advisory services in developing high-occupancy vehicle usage estimates and assignments; and supporting GIS interfaces.

Pramod Choudhary, P.E., PTOE

Education

M.S., Transportation Engineering, University of Central Florida
B.S., Civil Engineering, Birla Institute of Technology, India

Professional Registrations

Professional Engineer: Florida

Distinguishing Qualifications

- More than 15 years of experience in the areas of transportation planning and traffic operations, including PD&E studies for FDOT interchange justification reports (IJR)
- Expertise in CORSIM, TRAF-NETSIM, VISSIM, SYNCHRO, TRANSYT-7F, AAP, PASSER II, SIGNAL, HCS, SIDRA, and ARTPLAN

Relevant Experience

Mr. Choudhary has more than 15 years of experience in the areas of transportation planning and traffic operations and management. He has managed a wide range of projects ranging from countywide bicycle and pedestrian plans, to complex corridor studies including numerous transportation planning, traffic operations, and safety studies in Florida, Georgia, Puerto Rico, and the Bahamas. He has utilized such traffic analysis tools as CORSIM, TRAF-NETSIM, VISSIM, SYNCHRO, TRANSYT-7F, AAP, PASSER II, SIGNAL, HCS, and SIDRA for the evaluation of existing conditions and the development and evaluation of improvement alternatives for existing and future conditions.

Project Manager; University Parkway Transportation System Management (TSM) Study; FDOT District One; Sarasota and Manatee Counties, Florida. Responsible for managing development and evaluation of TSM alternatives for University Parkway (CR 610) from Tamiami Trail (US 41) to I-75. The 7.2-mile study segment included 16 signalized intersections operating within two signal systems. Existing traffic congestion, anticipated future traffic demand, and status of University Parkway as a Strategic Intermodal System (SIS) connector necessitated identification of viable TSM alternatives to improve existing and future traffic operations. Using HCS, Synchro, SimTraffic and CORSIM, conducted detailed traffic analyses to evaluate alternatives. Produced conceptual plans for the corridor and intersection improvements and prepared planning level cost estimates for alternatives.

Project Manager; Traffic Engineering Support Services; Collier County Transportation Planning Department; Collier County, Florida. Responsible for managing CH2M HILL's role in serving as an extension of County staff, performing reviews of Traffic Impact Reports and DRIs; development of design traffic for roadway widening projects; operational

Pramod Choudhary, P.E., PTOE

analysis and development of improvement alternatives; assistance with travel demand forecasting; Level of Service (LOS) Analysis; review of traffic operations and safety; developing guidelines for traffic impact studies; training consultants and county staff; and providing general support for traffic engineering services as they relate to development and growth.

Project Manager; US 1/I-95 Interchange Simulation Study; FDOT District Two.

Responsible for conducting CORSIM simulation of the existing weaving problems on I-95 due to closely spaced on- and off-ramps and the improvements anticipated as a result of interchange reconfiguration.

Project Manager; High Crash Segments and Spots Safety Study; FDOT District Two.

Responsible for conducting the evaluation of high crash segments and spots in District Two.

Project Engineer; Western Beltway Part C PD&E Study; Orlando-Orange County

Expressway Authority, Florida. Responsible for developing the CORSIM simulation model for the evaluation of two major interchanges in the location design concept.

Project Engineer; PD&E Study for the Northern Extension of Florida's Turnpike;

Florida's Turnpike Enterprise; Marion and Levy Counties, Florida. Responsible for coordinating the update of the 1994 PD&E study for the extension of the Florida's Turnpike from its existing terminus at Wildwood on I-75 to US 19 at Lebanon Station. The update included the segment from US 41 to US 19 that had to be rerouted out of the Goethe State Forest. Also provided transportation engineering support for the project and coordinated the public hearing effort including the drafting of more than 100 letters in response to public comments.

Project Manager; SR 7/US 441 Multi-Modal Corridor Study; Broward County MPO;

Florida. Conducted a multi-modal corridor study as part the Countywide Congestion Management Systems. The study corridor was evaluated to determine the existing operating conditions and the traffic impact resulting from the growth along the corridor. The study proposed low-cost highway, transit, and signal system improvement alternatives to mitigate the congestion and non-compliance of access management standards

Project Engineer; US 1 Corridor Study and Traffic Calming; Town of Juno Beach, Florida.

Evaluated study corridor to determine existing operating conditions and need for future widening. Also, assessed the speeding problems along the corridor and addressed access management standards. The feasibility of using traffic calming concepts was also investigated

Project Manager; I-75/SR 222 Interchange Traffic Operations Study; FDOT District Two.

Evaluated adequacy of planned modifications to the interchange to accommodate the increase in traffic due to the proposed large-scale developments in the vicinity of the interchange.

Project Manager; Monroe County Traffic Report Guidelines; Monroe County, Florida.

Prepared a Traffic Report Guidelines Manual for assisting consulting traffic engineers in adequately addressing the concurrency requirements set forth by Monroe County. Also, assisted Monroe County in the Development Review Process by reviewing Traffic Impact Reports prepared by real estate developers.

Ashfaq A. Khan, P.E.

Education

M.S., Civil Engineering, University of Idaho
B.S., Civil Engineering, Osmania University, India

Professional Registrations

Professional Engineer: Florida

Distinguishing Qualifications

- Seventeen years of experience in the transportation engineering field
- Expertise in CORSIM simulation, SYNCHRO, HCS, and CUBE FSUTMS
- Expertise in traffic studies, ITS, signal warrant analysis, intersection composite studies, design traffic reports, IJR, IMR, and ESAL reports

Relevant Experience

Project Engineer; Districtwide Systems Planning for the Florida Intrastate Highway System (FIHS); FDOT District One. Worked on the PD&E Project Traffic Report for 8 miles of US 27 (between I-4 and US 192) in Polk County. Participated on several other assignments under this contract, which include:

- PD&E Project Traffic Report for 41 miles of I-75 in Lee, Charlotte, and Sarasota counties
- Long Range Transportation Plan (highway element) for Highlands County
- Florida Northern Arterial Study, an evaluation of a potential reliever facility for SR 60A in Bartow
- Immokalee Road/I-75 Preliminary Improvement Report
- Daniels Parkway/I-75 Preliminary Improvement Report
- Central Sarasota Parkway/I-75 Re-analysis of IMR Traffic
- PD&E Design Traffic for I-75 from River Road to SR 72 (Clark Road)

Project Engineer; PD&E Design Traffic Reports; Districtwide Design Traffic for PD&E, Design, and Transportation Modeling Support, and Limited-Access Analysis Contracts; FDOT District Five. Responsible for completing PD&E Design Traffic Reports for SR 500, SR 436, SR 434, CR 484, I-95, SR 507, and US 1. Included extensive use of FSUTMS-based OUATS, BATS, VCUATS and OATS planning models. Extensively used the FDOT LOS Manual and related spreadsheets of ART-PLAN, ART-TAB, RMUL-TAB, UMUL-TAB, U2LN-TAB, R2LN-TAB, and FREE-TAB. Used the HCM concepts and procedures on several projects and extensively used the HCS modules related to signalized and

Ashfaq A. Khan, P.E.

unsignalized intersections, freeways, ramps, and weave sections for determining the LOS along arterials, intersections, and freeways.

Project Engineer; Interchange Justification Reports (IJR). Responsible for completing IJR Reports for I-95/Pineda Causeway interchange in Brevard County and Turnpike/Becker Road interchange in St. Lucie County.

Signalization/Lighting Task Manager; SR 54 (West of Flint Street to West of US 301) Design; FDOT District Seven; Zephyrhills, Florida. Responsible for leading signalization and lighting elements of the project that involved the design of a 2-mile section of SR 54 in Pasco County, including preparation of construction plans, estimates, and specifications that included RRR/safety improvements; milling and resurfacing; cross-slope correction; roadway; signing and pavement markings; signal replacement; lighting; utility relocation; drainage design; design variance analysis; geotechnical investigation; SUE; and traffic control plans. Project also included upgrading of pedestrian ramps for ADA compliance; replacement of curb and gutter; construction of paved shoulders; regrading of roadside ditches within existing ROW; replacement of side drains; and reconstruction of turnouts.

Signalization/Lighting Task Manager; SR 54 (East of 2nd Street to West of US 301) Design; FDOT District Seven; Zephyrhills, Florida. Responsible for leading signalization and lighting elements of the project that involved the design of a 1-mile section and included preparing construction plans, estimates, and specifications; ornamental lighting; landscaping; irrigation; utility relocations; and traffic control plans. This project also required close coordination with the City of Zephyrhills for providing streetscape, landscaping, and lighting elements that are consistent with the adjoining section.

Project Engineer; Equivalent Single Axle Load (ESAL) Reports; FDOT District Five. Responsible for completion of several ESAL Reports as part of the Districtwide Design Traffic for PD&E and Design contract.

Senior Project Engineer; SR 15A Design; FDOT District Five; Volusia County, Florida. Responsible for preparing the signalization and signing and pavement marking plans for the design of a 2.25-mile section of SR 15A from Green's Dairy Road to SR 15 (US 17) near DeLand, Florida.

Senior Project Engineer; US 441 Design/Build Project; FDOT District One; Okeechobee County, Florida. Responsible for preparing the signalization and signing and pavement marking plans for a \$12.7-million project involving the design/build reconstruction of a two-lane roadway to a four-lane urban roadway from CSX Railroad Crossing No. 628062 to north of Cemetery Road.

Mark S. Callahan, P.E.

Act), and is the subject of a governor-appointed task force to provide a process to protect the sensitive environmental attributes in the area. The Wekiva Parkway has received high-level political and community exposure. The project involves an extensive consensus building and public involvement program, including direct mailing of project information to more than 8,000 property owners in the study corridor and separate public meetings and hearings for the three counties involved.

Project Manager; I-4 Interchange Justification Report (IJR); FDOT District Five; Orange and Osceola Counties, Florida. Responsible for the development of a "systems-level" interchange justification report that included assessments of a 21-mile segment of I-4. The project involved approval request for three new interchanges and modifications to two existing interchanges in Orange and Osceola counties, Florida.

Project Manager; SR 528 PD&E Study; FDOT District Five; Orange and Brevard Counties, Florida. Managed a team, including eight subconsultants, on a study of proposed improvements from SR 520 to the Port Canaveral Terminal B interchange, a 26-mile segment. Improvement of this four-lane limited access facility involve complex environmental issues such as noise studies, listed species surveys, freshwater wetlands in the St. Johns River floodplain, seagrass analyses in the Indian River lagoon system, and public lands. Specifically, the study was designed to identify improvement needs, while evaluating such factors as the need for widening from four lanes to six lanes, bridge considerations, interchange issues, accommodations for a multi-use trail, and minimization of right-of-way impacts.

Project Manager; SR 429/SR 414 Maitland Boulevard Extension; Orlando-Orange County Expressway Authority; Orlando, Florida. Served as the project manager to expedite PD&E services, including preliminary design and preparation of all required engineering and environmental documents, for an 11.6-mile toll expressway. The project involved a four-lane (expandable to six lanes) facility on a new alignment. CH2M HILL evaluated alignment, interchanges, treatment/compensation ponds, and all environmental documents to expedite the final design advertisements. The project had an extensive public involvement and information program, including project advisory and environmental advisory groups. The overall goal was effective coordination on roadway/structure design and project impacts with multiple city, county, and state agencies, as well as utility providers, railroads, businesses, and landowners.

Project Manager; Seminole Expressway/SR 417 PD&E Study; Florida's Turnpike Enterprise; Seminole County, Florida. Currently serves as project manager for this eight-lane PD&E study. Lake Jesup water quality, public involvement with the Friends of Lake Jesup, previous permit coordination, and interchange improvements at Aloma Avenue are the key project issues.

Project Manager; SR 415 PD&E Study; FDOT District Five; Seminole and Volusia Counties, Florida. Managed the PD&E-level engineering, environmental, and public involvement services for proposed improvements to SR 415 from SR 46 to SR 44, a 28-mile segment in Seminole and Volusia counties. Project issues for this study included establishing project need via the traffic analysis and collision history, determining drainage/environmental requirements with associated right-of-way needs, assessing permitting issues and environmental constraints, and determining any bridge considerations/cost issues for final design.



Don Ulrich

Value Engineering Specialist

Education

M.S., Urban and Regional Planning, University of Oregon

B.S., Economics, University of Oregon

Professional Registrations

Certified Value Specialist

Distinguishing Qualifications

- Strong project leadership in public process, planning, environmental management, construction management, and cost control. Proven, successful public process background having personally managed more than \$120 million (consulting fees) in projects with high-visibility public involvement programs including transportation, telecommunications, hazardous waste, water development, water resources, natural gas pipelines, coal mines, and power plant siting.
- Cost Savings. Value management team leader on more than 300 assignments, with a project worth of more than \$20 billion. Implemented savings on these studies have totaled \$5 billion. Projects have included all forms of infrastructure, as well as review of operations systems, maintenance, project delivery, procurement, and customer service. Additional work in integration of business cultures, business process improvement (BPI), management audits, and project risk assessment.
- Business Process Improvement. Demonstrated ability in dealing with change management and conflict by serving as the program manager for the integration of 29 TCI telecommunication franchises into the MediaOne [Miami] region, including system upgrades, construction priorities, development of organizational structure, marketing plans, and customer service plans, public affairs, and human resources. Upgrade included provision of a 750-MHz design for three lines of service: telephony, high-speed data, and digital video. Also served as a Fellow to Mayor Hickenlooper in Denver, Colorado, for Accountability and Reform, promoting better-faster-more accountable public service.
- Knowledge of public process and implementation. Has led some of the most controversial projects in the Rocky Mountain west, requiring effective stakeholder management and public involvement programs to build consensus among diverse groups.
- Currently managing the \$800 million Gold Line Commuter Rail project for Denver RTD, which has been selected as a recipient of the first annual Federal Transit Administration (FTA) Outstanding Achievement Award for Excellence in Environmental Document Preparation.

Don Ulrich

Relevant Experience

Mr. Ulrich is a senior program manager and construction management consultant for CH2M HILL. His experience includes major infrastructure programs for transportation, environmental projects, telecommunications projects, and water resources projects. He also has extensive experience in value management, project management oversight, and management consulting. A summary of his experience is presented below. He has experience in New Starts funding, innovative financing for local match monies, and capital and operational cost estimating for large transit projects. He has used value planning to improve FTA's Cost Effectiveness Index (CEI) to assist clients qualify for New Starts funding.

Representative Projects

Project Manager, Gold Line AA/DEIS, Denver RTD, Colorado. Mr. Ulrich serves as the project manager for this ongoing AA/DEIS as part of the Regional Transportation District's (RTD) FasTracks Program. This project involves the evaluation of 20 build alternatives on four corridors serving the link between Denver Union Station and Wheat Ridge, Colorado, a distance of 11 miles. The alternatives included light rail transit (LRT), EMU, DMU, and modern Streetcar as well as Transportation Management alternatives. The scope of work includes:

- All New Starts deliverables
- Alternative Analysis
- DEIS
- Basic Engineering (10 percent design)
- Public Involvement
- Fulfillment of SAFETEA-LU requirements
- DBE Mentor Protégé program

This is one of the first major AA/DEIS projects being completed under SAFETEA-LU.

Technical Lead, Las Vegas Long-Range Transit Plan, Nevada. Mr. Ulrich served as the technical lead on the development of this long-range transit plan for the Regional Transportation Commission (RTC) in Las Vegas. The plan involved the evaluation of 80 corridors to determine the best transit solution for each. Because of the high number of data, a combination of GIS and Decision Science (Decision Plus) was used to characterize the applicability of each corridor for transit. The decision criteria included demographic, land use, right-of-way availability (surrogate for constructibility), and environmental data. The corridors were ranked for each criterion and in a composite of all data. As a result of this evaluation, the corridors were ranked in four categories including: 1) those suitable for a major investment (fixed guideway transit or guided bus rapid transit); 2) BRT; 3) enhanced bus service; and 4) local bus service. Park and ride, intermodal facilities, and maintenance facilities requirements were identified and capital and operational cost estimates were prepared. The entire long-range program is estimated at more than \$4 billion.

Project Manager, Downtown-Natomas-Airport AA/DEIS, Sacramento Regional Transit. Mr. Ulrich served as the project manager for the environmental impact statement for the DNA project. This project involved the evaluation of 10 build alternatives and 52 design options on three corridors serving the link between downtown Sacramento and the Airport. The alternatives included light rail transit (LRT), Bus Rapid Transit (BRT), and Transportation Management alternatives. The major issues on the project included:

- Significant impacts on 4(f) and 6 (f) properties
- Impacts to a Wild and Scenic River (American River)
- Impacts to Threatened and Endangered Species
- Disproportionate impacts to minority and low-income persons
- Property acquisition
- Induced growth

For CH2M HILL, Mr. Ulrich was responsible for preparation of the DEIS, DEIR, and FEIR as well as participation in the evaluation of candidate alternatives for the Alternative Analysis. The construction value of the alternatives evaluated ranged from \$750 million to \$450 million. FTA was the lead agency for this assignment.

Project Manager, AA/DEIS, US 36 Denver to Boulder Corridor, Colorado Department of Transportation/Regional Transit District. Mr. Ulrich currently serves as the deputy project manager for this project. This project involves the evaluation of five build "Packages" on two corridors serving the link between downtown Denver and Boulder, Colorado, a distance of approximately 28 miles. The alternatives included General Purpose Highway Widening, Arterial Widening, light rail transit (LRT), Commuter Rail, and Bus Rapid Transit (BRT) as well as Transportation Management alternatives. As of this writing (February 2007), the major issues on the project included:

- Impacts on 4(f) and 6 (f) properties
- Impacts to Threatened and Endangered Species
- Disproportionate impacts to minority and low-income persons
- Property acquisition
- Cumulative effects and induced growth

For CH2M HILL, Mr. Ulrich is responsible for preparation of the DEIS as well as participation in the evaluation of candidate alternatives for the Alternative Analysis and public involvement. The construction value of the alternatives evaluated ranges from \$1 billion to \$1.5 billion. The lead agency role for this assignment is split between FHWA and FTA.

World Trade Center Recovery: Program Re-Baselining, Lower Manhattan Construction Command Center (LMCCC). Mr. Ulrich served as the lead facilitator for a series of project risk assessments and value analysis of the \$15 billion recovery program for the WTC site. The project involves the construction of the Memorial, Museum, Visitors Center, Vehicle Security Center, Performing Arts Center, Cortlandt Transit Station, Parking Structure, and new surface transportation. The project is complicated due to numerous stakeholders from the public and private sectors, difficult site logistics, stringent security requirements,

Don Ulrich

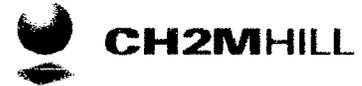
complicate project interfaces and the need to construct over two active public transit systems (PATH and MTA). The site is considered the Number 1 terrorist target in the United States.

The purpose of the workshop was to identify critical project interfaces, prepare a risk adjusted schedule (90 percent level of confidence), develop scenarios for schedule optimization, review project governance and estimate the financial impact of the risk adjusted baseline schedule and recovery scenarios. The recommendations for the study are currently confidential and cannot be communicated outside of the LMCCC and other involved stakeholders.

Project Manager, Southwest Corridor DEIS/FEIS, Denver RTD, Colorado. Mr. Ulrich served as the project manager for the Draft (DEIS) and Final Environmental Impact Statement (FEIS) for RTD's (Denver) Southwest Corridor Light Rail Project. This project included 8.7 miles of new double track paralleling an existing freight corridor from the existing I-25/Broadway station to Mineral Avenue in the City of Littleton. The project was estimated to cost \$170 million. CH2M HILL's responsibilities included all environmental work, participation in public involvement and coordination with the design team.

The EIS was completed over an accelerated 18 month schedule, with the DEIS completed in 12 months and the FEIS completed between months 12 and 18. At the time, comparable EISs were being completed in 30 months in other areas in the Country. The schedule was accelerated by working closely with all project stakeholders and through an effective public involvement program. Additionally, the design firm and CH2M HILL met frequently and held internal workshops to assure communication of technical information to both parties. This avoided miscommunication of project concepts and improved the understanding of engineering issues on the part of the environmental consultant.

The document included a purpose and need; description of affected environment; alternatives considered; transportation impacts; environmental consequences and financial feasibility. The project was completed for approximately \$100,000 under budget.



Joe Biedenbach

Senior Technologist- Vehicle Maintenance Facilities

Education

B.S., Business Management, Ball State University

B.S., Civil Engineering, Purdue University

Distinguishing Qualifications

- More than 32 years of professional experience
- More than 24 years of experience planning and designing more than 135 vehicle maintenance and operating facilities
- Responsible for coordinating maintenance facility studies and developing conceptual layouts, operational concepts, equipment selection, specification, and design coordination for detailed design projects
- Prior fleet operations and management experience (transit general manager)

Relevant Experience

Mr. Joe Biedenbach is a senior technologist with CH2M HILL's Transportation Business Group in Boise, Idaho. He is responsible for coordinating maintenance facility studies and developing programs, conceptual layouts, operational concepts, equipment selection, specification, and design coordination for detailed design projects. His experience as a former transit general manager also includes fleet operations and management experience.

Representative Projects

Subconsultant Project Manager; Eastern Service Center Master Plan; Arapahoe County, Colorado. Subconsultant Project Manager for the refinement of an existing Master Plan for combining Fleet Maintenance and Road and Bridge Public works operations onto a single site. The proposed site is being developed to serve the expanding population of the County. The work scope includes refinement of preliminary programming numbers and developing site and building concepts and cost estimates to support the County's budgeting process. The new program and plans will be used by the County staff and Board of Commissioners to fund the design and construction of the new facilities. Once funding is approved, the project will move into the design phases.

Subconsultant Project Manager; School Bus Operations and Maintenance Facility; Central Unified School District; Fresno, California. Subconsultant project manager for the design and construction of a new bus operations and maintenance facility to serve the Central Unified School District (CUSD) in Fresno. The project will service and maintain the School District's proposed fleet of 160 buses and is anticipated to be operational in late 2006. Estimated construction value of the project is \$3.5 million. Work includes analyzing existing operations; programming functions and space planning for future fleet expansion; building and shop layouts; equipment selection; construction cost estimates; design criteria; design coordination; and preliminary and final design documents.

Joe Biedenbach

Project Manager; Compressed Natural Gas (CNG) Bus Maintenance Facility; Merced County; Merced, California. Managing master planning, design, and construction of an expanded County maintenance shop to accommodate CNG bus maintenance. The facility is being expanded to serve the expanding Merced County bus fleet and the incorporation of alternatively fueled (CNG) buses into the fleet. Estimated construction value of the project is \$1.35 million. Work during the Master Planning Study included analyzing existing operations; programming functions and space planning for Merced's future fleet expansion to 75 buses; site planning; and alternative site and building layouts. Work during the design and construction phase of the project includes; equipment selection and shop layouts; construction cost estimates for alternatives; design criteria; design coordination with other disciplines; preliminary and final design documents; and construction phase services.

Project Manager; Bus Storage and Maintenance Facility, Town of Breckenridge; Breckenridge, Colorado. Subconsultant project manager for the master planning, design and construction of a new bus storage and maintenance facility on an existing Public Works site to serve the Town of Breckenridge's expanding transit operations. The project developed an initial Master Plan for all the agencies and departments served at the existing Public Works site to develop a clear understanding of site operations in order to propose a transit facility that will be able to expand in the future, without impairing other operations on the site. Estimated construction value of the project is \$4.75 million and will serve a proposed fleet of 30 buses. Work includes analyzing existing operations; programming functions and space planning for the Town future fleet expansion; site planning; site and building layouts; equipment selection and shop layouts; cost estimates for alternatives; design criteria; preliminary and final design documents; and construction phase services.

Project Manager; Bus Operations and Maintenance Facility; City of Visalia; Visalia, California. Managing design and construction of a new bus operations and maintenance facility to serve the City of Visalia and Visalia City Coach (VCC). The project will service and maintain Visalia's proposed fleet of 60 buses. Estimated construction value of the project is \$4.35 million. Work includes analyzing existing operations; programming functions and space planning for VCC's future fleet expansion; site planning; site and building layouts; equipment selection and shop layouts; construction cost estimates for alternatives; design criteria and preliminary and final design documents.

Industrial Engineer; Army Aviation Support Facility, Colorado Army National Guard; Aurora, Colorado. Industrial Engineer for the 120,889-square-foot helicopter maintenance facility which will provide space for the maintenance and operation of seven Chinook and sixteen Black Hawk Helicopters. The structure will accommodate four CH-47 Aircraft and seven UH-60 Aircraft at a single. Adjacent to the hangar floor will be Allied Shops including; engine, prop and rotor, structural, welding, electrical, painting, battery and avionics shops as well as tech supply and lubricant storage. Production control, maintenance supervisors, and Quality Control along with other equipment, parts, maintenance, and storage rooms to support the operation will be located adjacent to the hangar envelope.

Project Manager; Webster Groves Service Center, Master Plan and Design; City of Webster Groves, Missouri. Project manager for the development of master plan alternatives for the expansion and renovation of the Service Center for the City of Webster Groves which

Joe Biedenbach

serves the City's Streets and Parks Departments. The first phase of the project involves the development of a series of alternative improvement scenarios to expand the maintenance and storage capacities of the existing Service Center. The facility sits on a 4.8 acre site bounded on two sides by Deer Creek and portions of the site sit in the 100-year floodplain. Following the selection of the preferred building and site concept plans, CH2M HILL has designed and the improvements selected which include both additional building construction and site improvements. Construction is expected to be completed by late 2006.

Project Manager; Public Works and Parks Maintenance Center Master Plan; City of Wheat Ridge; Wheat Ridge, Colorado. Managed development of a Master Plan for combining Parks and Public works operations onto a single site. The existing site, occupied by the Department of Public Works will be expanded and renovated to include the Parks Departments. The first phase of the project involves the development of a series of alternative improvement scenarios to expand the maintenance and storage capacities of the existing Maintenance Center. The facility sits on a 3.5 acre site bounded by residential areas, with minimum additional area available for purchase. Project included visiting and cataloging activities of the Parks and Public Works activities, scattered throughout the City of Wheat Ridge and developing alternative plans for their consolidation.

Project Manager; Maintenance and Operations Facilities Planning and Design; City of St. George; St. George, Utah. CH2M HILL project manager, as a subconsultant to a local architect contracted on a open-end service agreement to provide planning and design services to the City of St. George. The first tasks include developing a 20-year plan for the expansion of maintenance facilities that serve the City's Department of Public Works and Transit Service provider SUNTRAN. Additional tasks have been awarded to develop an alternative site analysis for the transit operation; prepare an Alternative Site Analysis of the existing SUNTRAN operating site; and, preparation of a Environmental Assessment for the construction of a new operations facility for SUNTRAN.

Industrial Engineer; West Valley Operations Facility; City of Phoenix, Public Transit Department; Phoenix, Arizona. Industrial engineer for operations and equipment responsible for the development of bridging documents for the issuance of design-build request for proposals for a new 250 bus operating and maintenance facility to serve the rapidly growing West Valley in Phoenix. Responsibilities include the initial programming and development of staffing and operations requirements for the new facility. Assisted Phoenix Public Transit in reviewing and evaluating proposals and representing the City with the selected design-build team. Provides over-the-shoulder reviews of design submissions and assists the City with evaluating design alternatives and substitution proposals.



Andrew Freitas

Senior Project Manager- Vehicle Maintenance Facilities

Education

B.S., Civil Engineering, Lafayette College

Professional Registrations

Professional Engineer: HI, AZ, PA

Distinguishing Qualifications

- Over 34 years of project management experience in transportation and vehicle facilities projects
- Expertise in vehicle facility projects requiring alternative fuels fueling capabilities, facility conversions, and leak detection and monitoring systems
- Managed the design of complex vehicle maintenance facility and alternative fuels projects in Arizona, California, Hawaii, Maryland, New Jersey, New Mexico, and New York

Relevant Experience

Mr. Freitas is a project manager responsible for managing all aspects of the planning, design, and construction of bus maintenance and other related facilities. He is experienced in all phases of project implementation including programming, needs assessment, conceptual layouts, schematic design and design development, detailed final design, cost estimating, and construction support services.

Mr. Freitas also has significant experience in the integration of alternative fuels into vehicle maintenance facilities. These fuels include CNG and LNG, as well as hydrogen. Specific expertise includes alternative fuels programming including gas detection system layout and protocol requirements, code review and analysis, coordination with authorities having jurisdiction such as fire marshals, and analysis of the financial impacts of alternative fuels on maintenance operations.

Representative Projects

East Valley Bus Operations and Maintenance Facility, Tempe, Arizona, City of Tempe Public Work Department. CH2M HILL project manager for the design-bid-build procurement of a 250-bus operations and maintenance facility located at Rio Salado Parkway and 52nd Street in the City of Tempe. The project consists of the development of about 25 acres to provide bus dispatching, maintenance, and diesel, gasoline, LNG fueling capabilities as well as electric vehicle charging. Services to be provided include participation in facility programming, site and building design charrettes, Peer and VE reviews, as well as design management and construction support services for the structural, mechanical, electrical, and security technical disciplines.

Phoenix West Valley Operations Center, Phoenix, Arizona, City of Phoenix Public Transit Department. CH2M HILL project manager responsible for the preparation of the technical portions of the bridging documents required for the design/build procurement of a 250-bus operations and maintenance facility for the City of Phoenix Public Transit Department. The

Andrew Freitas

project consists of the development of about 25 acres to provide bus dispatching, maintenance, and diesel and LNG fueling capabilities. Pre-construction services include preliminary facility programming, site investigations including traffic and geotechnical studies, and the preparation of design criteria and D-B contractor performance requirements. Construction services include review of D-B contractor design submittals for conformance to programming and performance requirements and period on-site quality reviews during actual construction.

King County Metro Transit Operations Communications Center Relocation Study, Seattle, Washington, King County Metro Transit Division. Task Manager for the preparation of a feasibility study for the relocation of the existing transit communications center. The center provides monitoring and coordination of the County's bus system both at ground level and in the transit tunnel running under portions of the downtown area. The relocated facility would also accommodate the control of the new light rail system. The study was prepared in conjunction with the upgrading of Metro's Atlantic/Central bus base. The study included the determine of facility space and building requirements, identification and evaluation of candidate relocation sites, development of relocation alternatives, development of budget construction and project costs, and an economic analysis to compare proposed alternatives both on initial as well as life-cycle costs. The study required the coordination of several technical disciplines including architecture, structural, mechanical, and electrical engineering, as wells as telecommunications and SCADA disciplines.

Bus Maintenance and Operations Facility, Santa Ana, California, Orange County Transportation Authority. CH2M HILL project manager responsible for programming, schematic site and building layouts, equipment design, and design coordination with other engineering disciplines for a new, 126,000-square-foot facility for a fleet of 250 LNG-fueled vehicles on a 20 acre site. In addition to normal operating functions such as fueling, servicing, and running repair, the facility will house a paint and body shop and OCTA's systemwide central engine and transmission repair facility and revenue processing facility.

Cerone Bus Maintenance Facility Modifications, San Jose, California, Valley Transit Authority (VTA). Initial subconsultant project manager for the renovation of the existing Cerone facility to accommodate 750 buses in the O&R division and 300 buses in the operating division. Tasks completed include developing of project design requirements and consolidation of construction phasing from five to three phases. Unique project features include the integration of hydrogen fuel into the facility in the form of hydrogen fuel cell, zero emissions buses.

Garden Grove and Anaheim Base LNG Facility Modifications, Orange County, California, Orange County Transportation Authority. Project manager responsible for the programming and design of modifications of two existing maintenance facilities to accommodate LNG-fueled buses. The modifications included the specification and construction of an LNG fueling station consisting of underground storage tanks, vacuum jacketed piping, and dispensers. Building modifications included enhanced ventilation and the installation of a gas monitoring system in the maintenance, fuel and vacuum, brake check, and steam cleaning facilities. The design was based on a detailed code analysis that

Andrew Freitas

required in-depth knowledge of NFPA, Uniform Building Code and Fire Code requirements, and Cal/OSHA regulations also prepared as part of the project scope.

Santa Monica Big Blue Bus Facilities Renovation Project, Santa Monica, California, City of Santa Monica. Provided maintenance facility consultation for the expansion of the vehicle maintenance and administration facility that serves the City's 200-bus Big Blue Bus Line. The \$30-million, 3-year construction program includes complete remodeling of an existing 28,000-sq.-ft. facility and design and construction of a new 84,000-sq.-ft. maintenance building with bus lifts and overhead cranes; a fueling facility with alternative fuel capability, including liquefied natural gas (LNG); a bus wash facility; a parking garage; and a 15,000-sq.-ft. office building. The scope of services includes program management and construction management, as well as coordination between the City, designers, contractors, and facilities personnel to keep the facility functions operational during construction.

North Division LNG Code Requirements Study, Phoenix, Arizona, City of Phoenix Public Transit Department. Project manager responsible for the development of a detailed code requirement study to be used as the basis of design for the modification of an existing bus maintenance facility to accommodate LNG-fueled buses. The code analysis required in-depth knowledge of NFPA, Uniform Building Code and Fire Code requirements. The analysis addressed the fueling and maintenance functions at the City's North Division maintenance garage.

South Division Alternative Fuels Master Plan, Phoenix, Arizona, City of Phoenix Public Transit Department. Project manager responsible for the development of a master plan for the modification of the City's major maintenance facility to accommodate alternatively fueled buses. The work included identification of code and regulatory requirements, development of a conceptual LNG fueling station layout, development of phasing requirements as well as a detailed project cost estimate for funding purposes.

Halawa Corporate Yard, Honolulu, Hawaii, City and County of Honolulu. Subconsultant project manager responsible for the programming, schematic design, design development, and detailed final design for the relocation of the City and County corporate yards to the Halawa area of the City of Honolulu. The included the preparation of a needs assessment and conceptual design for the relocation of the corporate yard functions. The first phase of detailed design includes developing vehicle maintenance facilities and repair shops on an unoccupied portion of the site for the Police Department, Automotive Equipment Services Road Division, and DPW Heavy Equipment Repair Shop. The site also includes DPW construction equipment vehicle storage, construction material storage, and lay-down areas. The second phase of detailed design involves relocating the remaining existing corporate yard functions to the site currently housing an Oahu Transit System maintenance and operations facility.. The facility will be renovated for use by the DPW as part of the second phase of the work.

Phase I Construction Services, Pearl City Bus Facility, Honolulu, Hawaii, City and County of Honolulu Department of Transportation Services. Subconsultant project manager responsible for the detailed design and construction services of a 250-bus operating garage, central training, and central paint and body shop facility. At full build-out, the facility includes a total of approximately 135,000 square feet of building area on a 21-acre site. The central training component is programmed to accommodate the needs of a

Andrew Freitas

650-bus fleet. The central paint and body function is programmed to accommodate a 650-bus fleet as well as a 150-vehicle paratransit fleet and approximately 100 nonrevenue support vehicles. Because of phasing requirements, the central training and the central paint and body functions will be deferred to a second phase of construction. Services provided include consultation to other members of the design team, as well as detailed design and specification for shop equipment such as vehicle hoists, fluid reels, aboveground fluid tanks, and interior vehicle cleaning systems. Also provided cost estimates for the equipment items.

Pearl City Bus Facility, Honolulu, Hawaii, City and County of Honolulu Department of Transportation Services. Subconsultant project manager responsible for the programming and conceptual design of a 135,000-square-foot facility housing a 250-bus operating garage, central training, and central paint and body shop located on a 21-acre site. The central training component is programmed to accommodate the needs of a 650-bus fleet. The central paint and body function is programmed to accommodate a 650-bus fleet as well as a 150-vehicle paratransit fleet and approximately 100 non-revenue support vehicles. Services provided included user interviews, space programming, detailed programming, conceptual layouts of buildings, site layouts, cost estimating, and the preparation of a final report. The report was also used as part of the Environmental Assessment documentation.

From: Filer, Carl [Carl.Filer@dot.state.fl.us]
Sent: Friday, May 29, 2009 2:15 PM
To: Myra Wittenberg
Cc: gregg; Carolyn Haia
Subject: RE: TDPs are Due

Attachments: Letter to Carl L Filer - Requestfor Extension of Time Submittal for the MDT 2009 TDP (2010-2019) MajorUpdate.pdf

The requirement for a late filed TDP is stated in the last E-Mail below, but I will restate it here for your convenience.

“Late filed TDPs will be accepted if extenuating circumstances beyond the provider’s control exist and the District Office is able to complete its review and approval process by the last business day of December.”

MDT also requested an extension and I have attached their request for informational purposes only.

Thanks.

From: Myra Wittenberg [mailto:mwittenb@keywestcity.com]
Sent: Friday, May 29, 2009 1:50 PM
To: Filer, Carl
Cc: gregg; Carolyn Haia
Subject: RE: TDPs are Due
Importance: High

Carl

Based on this new information - with no budget requested or accounted for in the current FY period for the TDP due to misunderstanding / miscommunication - I will try to see what I can do at my end to accomplish the task of getting CUTR under contract as soon as possible.

Should we be successful in accomplishing this timely so as to allow the TDP be completed by not later than December 1, 2009, what is required of Key West to receive approval from FDOT to submit it as a "late submittal"?

Myra

From: Filer, Carl [mailto:Carl.Filer@dot.state.fl.us]
Sent: Friday, May 29, 2009 12:18 PM
To: Myra Wittenberg
Cc: gregg; Carolyn Haia
Subject: RE: TDPs are Due

Myra, your TDP major update is due on September 1, 2009. I have provided the TDP due dates for the entire State. As I mentioned in the attached E-Mail, the Department does not have any funding available for this TDP effort, however if the City desires, you could request to use some of your block funding for the TDP major update.

Thanks.

From: Myra Wittenberg [mailto:mwittenb@keywestcity.com]
Sent: Friday, May 29, 2009 11:42 AM

To: Filer, Carl
Cc: gregg; Carolyn Haia
Subject: FW: TDPs are Due
Importance: High

Carl

FYI the discussion that Ed and I have had for sometime now based on the date and last major update of the City of Key West TDP which is 2005-2010 - we both understood we were due for a new 10-Year TDP September 1, 2010. See below email between Ed and I.

The City did not budget any funding this FY for a TDP to be prepared and submitted by September 1, 2009 or by December 1, 2009, if approved as a late submittal.

To accomplish that I will have to go to the city manager, request a budget amendment and go to the commission to get approval - that will take a minimum of 30-45 days and Rob Gregg has confirmed CUTR would need a contract commitment by early June 2009, in order to even hope to meet the November / December 1st 2009 date to complete the TDP - if we in fact verify it is due 2009.

Please check this out and check out any potential funding assistance from FDOT or other source - and get back to me ASAP.

Thank you.
 Myra

From: Carson, Ed [mailto:Edward.Carson@dot.state.fl.us]
Sent: Tuesday, September 23, 2008 2:25 PM
To: Myra Wittenberg
Cc: Filer, Carl
Subject: RE: TDPs are Due

Myra: The last major update was done by KWDOT in 2005. It covered the period from 2005 to 2010. KWDOT should do a minor update this year. A major update will be due in 2010 covering 10 years. EdC

Ed Carson, Transit Programs Administrator
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 6 - PUBLIC TRANSPORTATION OFFICE
1000 NW 111th AVENUE - ROOM 6114
MIAMI FL 33172-5800
THE ADAM LEIGH CANN BUILDING
TEL: 305/470-5255 FAX: 305/470-5179
E-MAIL: Edward.Carson@dot.state.fl.us

From: Myra Wittenberg [mailto:mwittenb@keywestcity.com]
Sent: Tuesday, September 23, 2008 10:18 AM
To: Carson, Ed
Subject: RE: TDPs are Due

Ed

As best I recall, this year is a minor update for Key West, City, and I have worked on it from time to time so I should be able to submit by September 30, 2008.

Will that be acceptable?

Myra

From: Carson, Ed [mailto:Edward.Carson@dot.state.fl.us]
Sent: Tuesday, September 23, 2008 9:56 AM
To: Greist, Doug (MDT); Myra Wittenberg
Cc: Fain, Lynne S. (MDT); Clodfelter, David (MDT); Margaret Cook; Filer, Carl
Subject: TDPs are Due

Doug & Myra: Just a reminder that the TDP's are due. See excerpt from Rule 14-73, FAC below. EdC.

Ed Carson, Transit Programs Administrator
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 6 - PUBLIC TRANSPORTATION OFFICE
1000 NW 111th AVENUE - ROOM 6114
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E-MAIL: Edward.Carson@dot.state.fl.us

14-73(5)(b) The Department will accept TDPs for review at any time. Provider adopted TDPs must be submitted to the Department by September 1. Late filed TDPs will be accepted if extenuating circumstances beyond the provider's control exist and the District Office is able to complete its review and approval process by the last business day of December. Within 60 days of receiving an adopted TDP or annual update the Department will notify the provider as to whether or not the TDP or annual update is in compliance with the requirements of this rule, and, if not in compliance, a list of deficiencies. Within 30 days of any resubmitted TDP or annual update the Department will notify the provider as to whether or not the resubmission is in compliance with the requirements of this rule.

DESCRIPTION
 TYPE OF WORK
 PROJECT LENGTH
 ITEM NO
 2010
 2011
 2012
 2013
 2014

CITY OF KEY WEST DOT FTA SECTION 5311
 OPERATING/ADMIN ASSISTANCE
 OPERATIONS
 4179161
 827

CITY OF KEY WEST DOT FTA SECTION 5311
 OPERATING/ADMIN ASSISTANCE
 OPERATIONS
 4204551
 868

CITY OF KEY WEST DOT FTA SECTION 5311
 OPERATING/ADMIN ASSISTANCE
 OPERATIONS
 4222801
 911

CITY OF KEY WEST DOT FTA SECTION 5311
 OPERATING FOR FIXED ROUTE
 OPERATIONS
 4236271
 957

CITY OF KEY WEST DOT FTA SECTION 5311
 OPERATING FOR FIXED ROUTE
 OPERATIONS
 4257321
 1,005

CITY OF KEY WEST DOT STATE TRANSIT BLOCK GRANT
 OPERATING FOR FIXED ROUTE
 OPERATIONS
 4177311
 345

CITY OF KEY WEST DOT STATE TRANSIT BLOCK GRANT
 OPERATING FOR FIXED ROUTE
 OPERATIONS
 4202391
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CITY OF KEY WEST DOT STATE TRANSIT BLOCK GRANT
 OPERATING FOR FIXED ROUTE
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F.A.C.

14-73.001 Public Transit.

- (1) Purpose. This rule sets forth requirements for the recipients of the Department's public transit grant funds.
- (2) Definitions.
- (a) "Department" means the Florida Department of Transportation.
- (b) "District Office" means any of the seven geographically defined districts as set forth in Section 20.23(4)(a), F.S.
- (c) "Provider" means a transit agency or a community transportation coordinator as set forth in Section 341.052, F.S.
- (3) Transit Development Plans (TDPs). TDPs are required for grant program recipients in Section 341.052, F.S. A TDP shall be the provider's planning, development, and operational guidance document, based on a ten-year planning horizon and covers the year for which funding is sought and the nine subsequent years. A TDP or an annual update shall be used in developing the Department's five-year Work Program, the Transportation Improvement Program, and the Department's Program and Resource Plan. A TDP shall be adopted by a provider's governing body. Technical assistance in preparing TDPs is available from the Department. TDPs shall be updated every five years and include all elements described below.
- (a) Public Involvement Process. The TDP preparation process shall include opportunities for public involvement as outlined in a TDP public involvement plan, approved by the Department, or the local Metropolitan Planning Organization's (MPO) Public Involvement Plan, approved by both the Federal Transit Administration and the Federal Highway Administration. The provider is authorized to establish time limits for

receipt of comments. The TDP shall include a description of the process used and the public involvement activities undertaken. As required by Section 341.052, F.S., comments must be solicited from regional workforce boards established under Chapter 445, F.S. The Department, the regional workforce board, and the MPO shall be advised of all public meetings where the TDP is to be presented or discussed, and shall be given an opportunity to review and comment on the TDP during the development of the mission, goals, objectives, alternatives, and ten-year implementation program.

(b) Situation Appraisal. The TDP is a strategic planning document and will include an appraisal of factors within and outside the provider that affect the provision of transit service. At a minimum the situation appraisal shall include:

1. The effects of land use, state and local transportation plans, other governmental actions and policies, socioeconomic trends, organizational issues, and technology on the transit system.
2. An estimation of the community's demand for transit service using the planning tools provided by the Department, or a Department approved transit demand estimation technique with supporting demographic, land use, transportation, and transit data. The result of the transit demand estimation process shall be a ten-year annual projection of transit ridership.
3. An assessment of the extent to which the land use and urban design patterns in the provider's service area support or hinder the efficient provision of transit service, including any efforts being undertaken by the provider or local land use authorities to foster a more transit-friendly operating environment.

(c) Provider's Mission and Goals. The TDP shall contain the provider's vision, mission, goals, and objectives, taking into consideration the findings of the situation appraisal.

(d) Alternative Courses of Action. The TDP shall develop and evaluate alternative strategies and actions for achieving the provider's goals and objectives, including the benefits and costs of each alternative. Financial alternatives, including options for new or dedicated revenue sources, shall be examined.

(e) Ten-Year Implementation Program. The TDP shall identify policies and strategies for achieving the provider's goals and objectives and present a ten-year program for their implementation. The ten-year program shall include: maps indicating areas to be served and the type and level of service to be provided, a monitoring program to track performance measures, a ten-year financial plan listing operating and capital expenses, a capital acquisition or construction schedule, and anticipated revenues by source. The implementation program shall include a detailed list of projects or services needed to meet the goals and objectives in the TDP, including projects for which funding may not have been identified.

(f) Relationship to Other Plans. The TDP shall be consistent with the the Florida Transportation Plan, the local government comprehensive plans, the MPO long-range transportation plan, and regional transportation goals and objectives. The TDP shall discuss the relationship between the ten-year implementation program and other local plans.

(4) Annual Update. Annual updates shall be in the form of a progress report on the ten-year implementation program, and shall include:

- (a) Past year's accomplishments compared to the original implementation program;
- (b) Analysis of any discrepancies between the plan and its implementation for the past year and steps that will be taken to attain original goals and objectives;
- (c) Any revisions to the implementation program for the coming year;
- (d) Revised implementation program for the tenth year;
- (e) Added recommendations for the new tenth year of the updated plan;
- (f) A revised financial plan; and
- (g) A revised list of projects or services needed to meet the goals and objectives, including projects for which funding may not have been identified.

(5) Plan Submission and Approval.

(a) To be approved by the Department, a TDP must meet all applicable deadlines and address all requirements of this rule, including a public involvement plan that included opportunities for review and comment by interested agencies, and citizens or passengers during the development of the provider's mission, goals, and objectives during the development of alternatives and during the development of the ten-year implementation program.

(b) The Department will accept TDPs for review at any time. Provider adopted TDPs must be submitted to the Department by September 1. Late filed TDPs will be accepted if extenuating circumstances beyond the provider's control exist and the District Office is able to complete its review and approval process by the last business day of December. Within 60 days of receiving an adopted TDP or annual update the Department will notify the provider as to whether or not the TDP or annual update is in

compliance with the requirements of this rule, and, if not in compliance, a list of deficiencies. Within 30 days of any resubmitted TDP or annual update the Department will notify the provider as to whether or not the resubmission is in compliance with the requirements of this rule.

(6) Grant Administration. Public transit funds will be considered on the basis of public transit needs as identified in TDPs. The Department is authorized to fund up to such percentages as are designated for each type of public transportation project by Chapter 341, F.S., for the respective state and federal projects described therein. The Department shall, within statutory parameters, determine the level of funding participation for each project.

(a) State funding participation in public transit projects and services shall require a duly executed agreement, unless otherwise required by law.

(b) Eligibility to receive state public transit grants from the Department is limited to those providers specifically designated by law to receive such grants, and determined by statutory budgeting and programming requirements.

(c) Written requests for appropriated public transit grant funds by a provider are to be addressed to the District Office in which district the provider operates public transit service. The request shall include at a minimum the name and address of the provider, level of funding being requested, type of funding or program participation requested, and use to be made of the requested funds. Where a deadline for applications has been established, applications received after the deadline shall be returned. Deadlines for each program application may be obtained from the District Office.

(d) Federal funds for which the Department is the primary recipient may involve special application procedures or submittal format, imposed by the federal grantor agency as a condition of receiving federal funds. The provider will be notified by the District Office of special application requirements at the time of submission of a written request for funding if the District Office has not previously distributed such information to the provider.

(e) The Department will award public transit grant funds after July 1 of each state fiscal year, but will not award funds until a provider's TDP has been found to be in compliance with this rule.

(f) Annual updates and approved TDPs shall be on file at the appropriate District Office by the last business day of December of the state fiscal year for which funding is sought. If a provider's annual report has not been submitted by the last day of December in the fiscal year for which funding is sought, the provider will not receive any state public transit grant funds in that state fiscal year, and funds previously allocated for the provider will be allocated among the remaining providers. If a provider's TDP has not been submitted and found in compliance by the last business day of December of the state fiscal year the annual or five year update was due, the provider will not receive any public transit grant funds in that state fiscal year, and funds previously allocated for the provider will be allocated among the remaining providers.

Specific Authority 334.044(2), 341.041(12)(b) FS. Law Implemented 311.07, 311.09, 332.003 - 332.007, 339.135, 339.155, 341.041, 341.051, 341.052, 341.071- 341.053, 341.302, 341.303 FS. History - New 9-24-75, Formerly 14-73.01, Amended 12-8-92, 2-20-07.