SS Jolley Bridge Toll Feasibility Study
Phase 1 Scope of Work
February 6, 2007

The SS Jolley Bridge Toll Feasibility Study would be carried out in two phases. The first phase would be a preliminary feasibility study, aimed at: 1) estimating the traffic and revenue potential of the proposed SS Jolley Bridge improvement project under toll conditions, 2) identifying all potential revenue sources for the project other than tolls, and 3) providing public information and public presentations to help officials make informed decisions. If the decision is made to proceed with tolling, the second phase of the study would build upon the first phase to create a study that could be used to support debt financing. This scope of work covers Phase 1 only.

The purpose of Phase 1 will be to evaluate the estimated traffic and revenue potential of tolling the proposed SS Jolley Bridge improvement. The analysis will need to be detailed enough to be able to estimate the toll rates that might be charged to different types of toll customers (e.g., residents/non-residents, or other frequent user designations). As a result, it will be important to collect new data on the characteristics of bridge users.

Details of the proposed scope of work are provided below.

Task 1. Traffic Conditions Data Collection

This task involves collection of data on traffic conditions in the project vicinity:

- Obtain and review any previous studies and existing traffic data, especially seasonal traffic data and the mix of traffic.
- Conduct new traffic counts during the peak and off-peak season:
    - Automatic traffic counts at both the SS Jolley and Goodland Bridges, for a one-week period, with data summarized to 15-minute time periods.
    - Turning movement counts at the SR 951 and North Barfield Drive intersection, again summarized for 15-minute time periods. These counts will be taken for two hours in the morning peak and two hours in the evening peak.
- Conduct route reconnaissance and travel-time studies during different times of the day, and on a weekend day. This will be done during peak season and off-peak season.

Task 2: Origin-Destination and Stated Preference Surveys

We will do two types of surveys of users of the two bridges to Marco Island in two ways: origin-destination and stated preference. Origin-destination surveys will be used to validate the travel

model and to better understand the demographics and travel characteristics of SS Jolley Bridge users. Stated preference surveys will assess the willingness of people to pay different levels of toll, given certain travel conditions.

Origin-Destination Surveys

The primary means of survey data collection to obtain origin-destination information will be the mailback survey that will be distributed to intercepted drivers, but because we know that this survey method often produces very low response rates we propose to include some improvements to the method. First, the field workers will ask one question of the intercepted drivers, "What is the purpose of your trip?" Asking this question will provide data that can be used to weight the mailback survey responses to address differential rates of participation in the survey.

We will collect the data during both the peak (winter) and off-peak season. The expectation is that the survey will have a response rate of between 10 and 15 percent. For aggregate totals this will provide an approximate confidence interval of +/- 5% at a 95% confidence level. To increase participation, it is recommended that an incentive for returned surveys be offered. We will work with the County to establish an appropriate incentive for this particular survey.

For trucks, field workers will record the information provided on the side of the truck, so we can identify and contact the establishments where the truck is based.

A sampling plan using traffic counts by vehicle type and time of day and accounting for the practical limits of this type of survey will be developed to capture a statistically significant sample of vehicles. For planning purposes, we have assumed that four field workers plus a supervisor at each site will collect data from 7:30 AM to 5:30 PM on one weekday and each day from Friday to Sunday.

We will work with Collier County staff to design the survey and to identify participants for the survey. The following information will be collected to determine origin and destination patterns about residents and visitors to the City of Marco Island:

- Origin (address or closest intersection);
- Destination (address or closest intersection);
- Trip purpose;
- Frequency of trip;
- Vehicle type, i.e., car, pickup, three-axle truck, etc.;
- Which bridge used;
- Roadways used to access the bridges;
- Number of people (including driver) in the car;
- Number of vehicles available to the household;
- Number of workers in the household;

- Seasonal or year-round resident; and
- Annual household income.

Trucks will be surveyed with these questions:

- Truck type;
- Trailer type;
- Total number of axles;
- Commodities shipped and markets served;
- Origin information (address or closest intersection);
- Destination information (address or closest intersection);
- Where trip began;
- Where trip ended;
- Frequency of trip;
- Attitudinal information (sensitivity to factors such as travel time, reliability, costs, and time-of-day shifts);
- Which bridge used; and
- Roadways used to access the bridges.

Specific work tasks are:

- Survey planning. This will include:
    - Development of a draft survey plan
    - One meeting to review the survey design,
    - Up to three meetings to review field procedures with Collier County, Marco Island, and State officials
    - Finalizing the survey plan
    - Arranging for field employees and police protection
    - Printing survey forms
- Survey implementation. We will intercept vehicles that use the SS Jolley Bridge at intersection of SR 951 and North Barfield Dr.
- Data coding and analysis. We will code the survey responses and expand them to the full universe of trips using the bridges.

- Documentation. We will document the findings of the surveys in a technical memorandum that uses charts and maps to enhance readability. Comments on the draft will be incorporated into the final report.

Stated Preference Surveys

The objective is to collect value-of-time and willingness-to-pay information from the users of the SS Jolley and Goodland Bridges. The data will help us to perform an elasticity analysis to examine the relationship between the establishment of tolls on the Jolley Bridge and increased traffic volumes on the Goodland (CR 92) Bridge. The Stated Preference Surveys will be incorporated into the Origin and Destination Survey forms to maximize survey efficiency.

The stated-preference data will be collected by presenting survey respondents with several choices of hypothetical toll levels, travel times, and travel-time reliability levels for trips on the SS Jolley Bridge. The stated-preference data also will capture the interest in paying tolls to use the SS Jolley Bridge and the propensity to shift to the competing nontoll facility (Goodland Bridge). The stated-preference survey results are used to develop a model which can predict choices under a specific set of service attributes.

The stated-preference survey will be a sub-element of the larger origin-destination survey effort. The hypothetical choice experiments will pertain to the respondents' intercepted trips, so that respondents will be given experiments that are relevant to his or her travel. Data will be cross referenced so that a wide range of travel market segments is statistically represented in the sample, including:

- Year-round versus seasonal residents of Marco Island;
- Low-, medium-, and high-income travelers;
- Trip purpose (Home-Based Work, Home-Based Other, and Non-Home-Based); and

In order to ensure that the sample is representative of the population, sample weights will be developed using census data.

For the truck portion of the SP survey, we propose to re-contact by phone the companies that are identified in origin-destination survey to obtain the new stated-preference information. In the initial calls, we will seek to first locate the routing decision-makers for the relevant trips. These decision-makers may be within trucking companies or may be affiliated with the shipper, the receiver, or a third party. It may take multiple calls to contact these decision-makers, but once we do we will request that they complete a web-based or fax survey.

Specific work elements will be:

- Survey planning. This will be done in conjunction with Task 2 planning.
- Survey implementation:
- Data coding.

- Analysis of surveys and choice model building. We will build a choice model based on the responses of the SP survey.

- Documentation. We will document the findings in a technical memorandum. Comments on the draft will be incorporated into the final report.

Task 3 Traffic Model Development and Traffic/Revenue Estimates

As indicated in our response to the competitive proposal, we propose to use the Lee-Collier model simply to identify big-picture trends in growth and changes in traffic conditions, and leaves the critical toll/no-toll choice estimating to a spreadsheet-based model. CS will review the current base year 2000 Lee-Collier model and focus on three key areas for a model revalidation:

- Simulation of traffic counts from Subtask B.1 on the two bridges to Marco Island;

- Adjustment to match origin-destination trip distribution patterns identified in surveys; and

Origin and destination survey data will be used to enhance the model as appropriate by adjusting or replacing the synthetic trips that are in the model, thereby ensuring real world travel patterns to and from the Island are replicated. Other considerations during revalidation would include highway network coding (area types, facility types, lanes), zone centroid connector locations, friction factors, network speeds and capacities, special generators, airport trips, and procedures used to simulate external travel demand. Also during validation, travel-time estimates from the model will be compared against estimates from travel-time surveys of select corridors. Adjustments will be made as needed to reflect the actual travel times of using the SS Jolley Bridge versus the Goodland Bridge routing.

Any changes made to the base year model will be duplicated in the future year model. Future networks also will be reviewed for consistency with the Transportation Improvement Program (TIP) and the LRTP. The future year traffic forecasts on the two bridges (without tolls) will be used to estimate traffic growth on the bridges.

We will run a select link assignment on the bridge under toll free conditions and summarize trip distribution patterns for use within a market share spreadsheet model. The travel model would be used to determine distribution patterns, traffic growth, and travel times, while the spreadsheet model could be used to analyze toll rates and pricing structures for multiple periods of the day, during peak and off-peak seasonal conditions, and for different market segments.

Note that this approach is designed to maximize our control over the variables that are important to estimated traffic and revenue on the bridge. We are explicitly not revalidating the model to reflect conditions on other toll bridges in the region. We are also not planning to develop time of day capability in the Lee-Collier model. This should eliminate the need for extensive review of the model by the Lee-Collier model coordinating committee.

We will also conduct a limited review of socioeconomic data in the study area to identify any concerns we may have about over- or under-stating the traffic and revenue potential on the bridge. A far more extensive economic evaluation would be undertaken as part of Phase 2.

Using the travel model tools, CS will first analyze toll-free conditions at an assumed opening year (to be confirmed with Collier County), and at interim years generally five years apart. For example, if the new span is assumed to be completed by 2012, CS will analyze the years 2017, 2022, 2027 and the model horizon year of 2030. These intermediate forecast years will be used to produce the annual traffic and revenue stream needed to determine financial feasibility.

These toll free analyses would serve as benchmarks of upper limits of demand for the Jolley Bridge and likely the lower limits of demand for the Goodland Bridge for which to compare the toll-related volumes. The series of toll free runs also will provide us with the future traffic growth forecasted to occur between the mainland and Marco Island. This growth forecast is based upon the socioeconomics and travel patterns of the study area and specifically to and from Marco Island.

Tolling concepts will be developed and reviewed with Collier County for use in toll analysis. These concepts will include rate structures for categories that might include:

- Special rates to encourage use of electronic toll collection
- Resident rates or permits;
- Discounts for carpool/employer vanpools;
- Special rates for trucks;
- Time-of-day pricing; and
- Free charge for Collier Area Transit vehicles

CS will perform toll sensitivity analysis with these concepts where a range of toll rates will be tested and toll sensitivity curves developed to display the volume and revenue relationship to toll rate for the different categories. After discussion of the results from these tests with Collier County, traffic and revenue will be summarized in more detail for particular chosen toll rates and/or toll rate structures that meet the County's needs.

The forecasts will be annualized based on data on seasonal traffic patterns. A 35-year annual traffic and revenue stream will be estimated by interpolating between modeled years.

Projections of traffic and revenue on tolled facilities have come under increasing scrutiny as toll projects are becoming more common across the country. Therefore, it is important to understand and quantify the sensitivity of the model results to changes in the baseline conditions and the growth of various model components. We propose to evaluate and quantify the sensitivity of the traffic and toll revenue estimates in relationship to the underlying assumptions and modeling parameters. The SS Jolley Bridge, similar to other toll roads, will be sensitive to deviations in future growth, traffic make-up, and value of time assumptions.

CS suggests sensitivity analysis on the following variables:

- Changes in growth;
- Changes in traffic make-up; and
- Value of time.

Task 4: Engineering Analysis

This would be a limited task aimed at understanding how much it would cost to maintain the existing bridge to acceptable standards over the next 20 years. PBS&J will obtain available information from FDOT staff and estimate the flow of funds that would be needed. This task would also involve estimating the incremental cost of tolling the bridge over a toll-free bridge in terms of design, construction, maintenance and operations.

Task 5 – Funding Alternatives and Financial Feasibility Analysis

There are two elements to this effort: one is to estimate the financial feasibility of the proposed toll bridge, and the other is to identify non-toll sources of funding that might be used to build the bridge.

Financial Feasibility

The main tool in the financial analysis will be a cash flow model that shows the likely amount and timing of costs (capital, as well as operating), as well as the expected revenue stream. Using this information, along with reasonable assumptions related to financing terms, such as interest rates and debt service coverage ratio requirements we can evaluate in a preliminary fashion the extent to which tolls can pay for the capital cost of the project.

The financial model also can be used to test different scenarios of cost, inflation rates, toll policy, operating policy, and timing of construction. If the finance plan is to include other revenue sources, these can be included as well.

Funding Alternatives

We will evaluate currently available estimates of transportation resources from a variety of local, regional, statewide, and national sources, and use this information where appropriate. We will then forecast the anticipated revenue based on historical records and current data provided by the Florida DOT and MPO staff

CS staff will investigate the full range of alternative and innovative financing techniques beyond tolls - including, but not limited to, tax increment financing, State Infrastructure Bank, transit-oriented developments, public and private partnerships and impact fees. The alternative financing scenarios that are deemed appropriate by the MPO in cooperation with Florida DOT

will be analyzed in more detail. This analysis will be used to determine if any of the alternatives financing will be appropriate for the SS Jolley Bridge.

Should any of these alternative sources be recommended to fund projects along the SS Jolley Bridge, strategies to ensure the availability and commitment of these sources will be included in the recommendation. These strategies must include a plan of action describing the steps necessary to enact the sources, including building support and consensus among the legislature and the voters and determining the monetary impact of as well as identifying the list of projects that could potentially be funding through the proposed sources. The analysis will include past success or failure to secure similar funding sources.

Task 6: Public Relations, Attitude Research, and Outreach, and Early Sketch Level Analysis

An important part of this effort will be working with the community to gain consensus on the best approach to funding a new SS Jolley Bridge. The following efforts will be undertaken.

Public Relations

Public relations activities will keep the public informed of what is happening with the study. These activities will be provided for:

- Project newsletter. We have assumed two newsletters over the course of the study - one near the beginning, and one at the end.
- Project web pages. Our team will develop project web pages that would be linked to the Collier County website. The content of these web pages would be similar to the newsletter, and would be updated once during the study.
- Press releases. Three are planned - one at the outset of the study, one in advance of the outreach activities (see below), and one after the study is complete.

Public Meetings to Explain Findings

Public meetings will be used to present the findings of our study to the public, interested organizations, and transportation decision makers. The consultant team will present the findings at up to five venues, on three separate occasions:

- City of Marco Island City Council
- Marco Island Chamber of Commerce
- Collier MPO Board

In addition, consultant staff will attend two sets of meetings of the Collier County MPO's Technical Advisory Committee and Citizen's Advisory Committee. These meetings occur in the morning and afternoon of the same day.

The presentations will be made at regular meetings of these bodies, with the aim to get these bodies to support the recommendations of the study, so that the next phase of work can proceed (if needed).

As part of this work, we will develop a presentation with speaker notes that could be delivered by non-consultant staff. Consultant staff will also record comments, and publish a summary memorandum of the public meetings.

Early Sketch-level Analysis and Public Meeting on Marco Island

The City of Marco Island has requested a public meeting in March to discuss funding opportunities and initial assessments of toll bridge feasibility. This will be too early in the study to have findings based on the survey, modeling and engineering work in Tasks 2-4. However, we will be able to do a sketch-level analysis based on traffic counts and broad judgment about the diversionary effects of tolls and the amount of construction cost that those tolls might support.

We will present the results of this sketch-level analysis, plus the elements of Task 5 relating to alternative funding mechanisms at one public meeting on Marco Island in late March 2007.

Task 7: Meetings, Project management, Quality Control, Final Phase 1 Report, and Phase 2 Scoping

Meetings

We have assumed that CS staff will attend the following meetings in Collier County:

- Project initiation meeting
- Meeting to review findings
- One additional meeting, to be determined

This is in addition to the public meetings and focus groups described in Task 6 and local coordination meetings that may be needed for CRSPE to facilitate the survey work in Task 2.

Project Management and Quality Control

Project management activities include monthly progress reports and periodic phone conversations with Collier County staff. We will also develop and carry out a quality control plan in accordance with the one submitted in our competitive proposal. This will include

preparation of a project management plan, periodic internal meetings to review assumptions and findings, and review of documents.

Final Phase 1 Report

We will prepare a draft final report in time for the public meetings. We will incorporate two rounds of comments to create the final Phase 1 report.

Scoping for Phase 2 (if directed).

If Collier County decides to proceed with Phase 2 of the work, we will develop a scope and budget for Phase 2 of the work. We anticipate this work to include:

- Detailed evaluation of economic conditions driving traffic growth related to the bridge.
- Refinement of toll schedule and traffic and revenue forecasts.
- Additional sensitivity tests.
- Preliminary toll plaza design.
- Documentation and participation in rating agency meetings.