

Task Work Order # 30
SCOPE OF SERVICES FOR
Fort Myers Beach Trolley Lane Feasibility Analysis

FDOT District One Districtwide Design Traffic Production & Analysis Contract
Financial Project ID: 202080 1 12 03

Consultant: GMB Engineers & Planners
Sub Consultant: Kittelson & Associates, Inc.

I. PURPOSE

The Florida Department of Transportation (FDOT) requires the professional services of GMB Engineers & Planners, Inc. (GMB) and its sub consultant Kittelson & Associates, Inc. (KAI) in conducting a Feasibility Analysis of incorporating a Trolley lane along SR 865 (San Carlos Boulevard) from Summerlin Road to the Matanzas Pass Bridge. This analysis will be done in continuation of the “Fort Myers Beach Trolley – Sketch Analysis Study, dated July 30, 2010” and the Fort Myers Beach Trolley Sketch Level Study Presentation presented to the Lee County MPO on November 3, 2011.

II. SERVICES TO BE PROVIDED

Based on discussions with LeeTran, Lee County and FDOT staff, the following alternatives will be looked into as part of the Feasibility Analysis.

1. Existing Conditions – No Build Alternative
2. Trolley using the Center Bi-directional turn lane – Build Alternative 1
3. Five-lane Option – Build Alternative 2
4. Six-Lane Option – Build Alternative 3
5. Road Diet Option in NB direction – Build Alternative 4, and
6. Road Diet Option in both NB and SB directions – Build Alternative 5

The description of each of these alternatives is provided below.

1. **No Build Alternative:** The No Build Alternative will assume the existing roadway and intersection geometry in the analysis with the continuation of Lee Tran’s existing trolley service utilizing existing general travel lanes.
2. **Trolley using the Center Bi-directional turn lane – Build Alternative 1:** Under this alternative, the bi-directional center turn lane would continue to operate as a turn lane (as under the existing conditions). In addition, the Trolley would also use this lane.
3. **Five-lane Option – Build Alternative 2:** Under this alternative, four lanes (two lanes in the northbound direction and two lanes in the southbound direction) would be provided for auto traffic and one southbound Trolley-only lane adjacent to the southbound travel lanes would be provided.

4. **Six-Lane Option – Build Alternative 3:** Under this alternative, four lanes (two lanes in the northbound direction and two lanes in the southbound direction) along with a bi-directional center turn lane would be provided for auto traffic. In addition a southbound Trolley-only lane adjacent to the southbound travel lanes would be provided.
5. **Road Diet Option in NB direction – Build Alternative 4:** Under this alternative, three lanes (one lane in the northbound direction and two lanes in the southbound direction) along with a bi-directional center turn lane would be provided for auto traffic. In addition a southbound Trolley-only lane adjacent to the southbound travel lanes would be provided.
6. **Road Diet Option in both NB and SB directions – Build Alternative 5:** Under this alternative, two lanes (one lane in the northbound direction and one lane in southbound direction) along with a bi-directional center lane would be provided for auto traffic. In addition two Trolley-only lanes will be provided (one adjacent to the southbound travel lane and one adjacent to the northbound travel lane).

The feasibility of accommodating the bicyclists including bike lanes will be considered under each of the Build alternatives.

Task 1: Assessing the Operational Issues

GMB will analyze the operational issues associated with each of the five Build alternatives and the No Build alternative under this task. GMB will follow below steps under this task.

- GMB will utilize the 8 hour turning movement counts (7 to 10 AM, 11 AM to 1 PM, and 3 to 6 PM) collected during January 2011 (provided by Lee County) for three signalized intersections along San Carlos Boulevard at Summerlin Road, Summerlin Square/White Water Court, and Pineridge Road in the analysis.
- GMB will collect four hour turning movement count (11 AM to 1 PM and 4 to 6 PM) at the signalized intersection of San Carlos Boulevard and Buttonwood Drive/Prescott Drive/San Carlos Drive. These counts will be converted to peak season conditions using seasonal factors available from Florida Traffic Information (FTI) DVD and Lee County.
- GMB will utilize the latest signal timings provided by Lee County in the analysis.
- The four (4) signalized intersections along San Carlos Boulevard between Summerlin Road and Matanzas Pass Bridge will be analyzed for the 2011 Midday and PM peak hour conditions using SYNCHRO and CORSIM for the existing conditions. Under the existing conditions, the CORSIM deck will be adjusted to reasonably replicate the queue back up (approximately 4,000') and the traffic flow characteristics observed in the field. The deck will be used to analyze all the Build and No Build Alternatives for the Mid-day and PM peak hour conditions. The Measures of Effectiveness (MOE's) from Synchro including LOS and V/C for each of the alternatives will be tabulated. The MOE's from CORSIM including the arterial travel time, arterial

speed, fuel emission, number of stops, fuel consumption, and total network delay for each of the alternatives will be tabulated. Also, using CORSIM, bus route statistics such as bus delay, transit fuel consumption, transit emissions, and bus travel time will be reported for all the alternatives.

- GMB will use the results from “the mode split change assessment” and “trolley capacity assessment” tasks to be completed by KAI as part of this study in coming up with the peak hour traffic volumes and number of buses per hour for analyzing the build alternatives.

Task 2: Assessing the Safety Issues

- GMB will collect and analyze crash data obtained from Lee County for the last 3 years along San Carlos Boulevard from Summerlin Road to the Matanzas Pass Bridge. The data collected shall include the number and type of crashes, crash locations, number of fatalities, and injuries. The crashes including the bus related crashes will be tabulated. The crash analysis will be used to evaluate the build alternatives’ impact on the safety along the corridor.
- GMB will assess the alternatives from the safety point of view and provide pros and cons for each of the five Build alternatives and the No Build Alternative.

Task 3: Cost Estimates

For each Build alternative, GMB will provide an opinion of probable design, right-of-way (ROW) and construction cost prepared using professionally accepted methods and standards. Cost estimates will be developed using the FDOT District 1 Long Range Estimate (LRE) figures associated with design, right-of-way and construction costs. In addition, all cost estimates utilized in, or resulting from, the analysis will be coordinated with Gena Batman from the District Estimates Office.

Task 4: Project Report and Presenting the Results to Lee County MPO

GMB will summarize the results from the above tasks and the work efforts performed by KAI in the form of a Draft Report and a Draft Power Point Presentation. The Draft Report and the Draft Power Point Presentation will be provided to FDOT staff for review and comments by December 7, 2011. Based on the FDOT staff review comments on the Draft Report and Presentation, a Final Power Point Presentation will be prepared and presented to the Lee County MPO on December 16, 2011. In addition, GMB will prepare a Final Report by December 23, 2011, based on comments from Lee County MPO and FDOT staff.

III. ESTIMATE OF FEES FOR SERVICES

The services outlined in this Scope of Services will be provided on an hourly not to exceed fee as outlined in the attached man-hour and fee worksheets.

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II. SERVICES TO BE PROVIDED

Task 1: Verify Change in Mode Split and Trolley Ridership

This task will include the following activities:

- KAI will review and summarize hourly and daily peak season trolley ridership data (to be provided by LeeTran).
- KAI will apply ridership elasticity factors (for travel time and headway) as well as the procedures of the *Bus Rapid Transit Practitioner's Guide* (which take into account the type of running way) to estimate peak season ridership increases associated with each alternative.
- KAI will compare the ridership increases calculated using elasticities and the Guide to those reported in the July 20, 2010, *Fort Myers Beach Trolley - Sketch Analysis* Final Report to verify the findings of the Sketch Analysis.
- KAI will recommend the change in mode split to be used in Task 2 and the operations analysis being conducted by GMB. KAI will equate the recommended change in mode split to change in trolley ridership.
- KAI will prepare text suitable for inclusion in the project report and presentation slides. These materials will document the recommended change in mode split and the associated change in trolley ridership.

Task 2: Assess Trolley Service Passenger Capacity

This task will include the following activities:

- With verified ridership changes (from Task 2) and trolley bus capacity data (provided by LeeTran) in hand, KAI will ascertain whether or not projected ridership increases associated with each alternative can be accommodated by the trolley given planned headways. This assessment will reflect the peak season and peak hour.
- If additional capacity is needed, KAI will determine how many additional trolley buses will be needed during the peak hour to accommodate peak season demand. KAI will adjust planned headways accordingly in support of Task 4.
- KAI will prepare text suitable for inclusion in the project report and presentation slides. These materials will document the results of this task including, if warranted, the number of additional trolley buses that will be needed to serve peak season demand.

Task 3: Prepare Planning-Level Cost Estimates and Assess Funding Opportunities

This task will include the following activities:

- KAI will develop *planning-level* capital cost estimates for the transit components of each alternative and support the cost estimation work being conducted by GMB. These capital cost estimates might include the cost of additional trolley buses (if warranted based on Task 2).
- KAI will develop *planning-level* operating cost estimates for each alternative. These estimates will rely on recent operating cost per revenue hour data (provided by LeeTran) and will reflect the number of trolley buses required to provide service as well as anticipated average bus speeds (which may vary with each alternative and will include dwell time assumptions). These estimates will reflect the peak season. KAI will coordinate with GMB to estimate average bus speeds.
- KAI will prepare a brief summary of applicable FTA capital grant programs (e.g., Very Small Starts) for which the project may be eligible. The summary will describe the grant programs' conditions of eligibility, the requirements for submitting applications, and the evaluation process. This summary will reflect the current structure and requirements of the applicable grant programs but will note that reauthorization of the federal transportation bill might result in substantial changes in 2012.
- KAI will prepare text suitable for inclusion in the project report and presentation slides. These materials will document the planning-level capital costs for each alternative, the planning-level operating costs for each alternative, and the information about the applicable FTA capital grant programs.

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