4085

Bi - County Study
Financing Analysis Technical Report





Burnt Store Road - Veterans Parkway - Colonial Boulevard

Lee and Charlotte Counties

Project No. 4085

Presented by:
CRSPE, Inc.

August 2005

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INTRODUCTION

Travelers in Southwest Florida are faced with increasing traffic congestion and delays as the demands of a rapidly growing population put additional stress on existing roadways. In order to develop a plan to improve mobility for the traveling public, this bi-county study was initiated in October 2003. The study process included two phases; the first phase included data collection, existing conditions, and future travel demand. The second phase included an analysis of the conceptual alternatives. Throughout the study process, the general public, business leaders and elected officials were updated on the project's progress. Updates were also provided on the website throughout the course of the study. Local government agency coordination occurred primarily through a task force consisting of staff from the affected agencies. Project management and contract administration was conducted by the Lee County Department of Transportation (Lee DOT). The Charlotte County – Punta Gorda Metropolitan Planning Organization (MPO) assisted Lee County with project management in Charlotte County.

STUDY PURPOSE

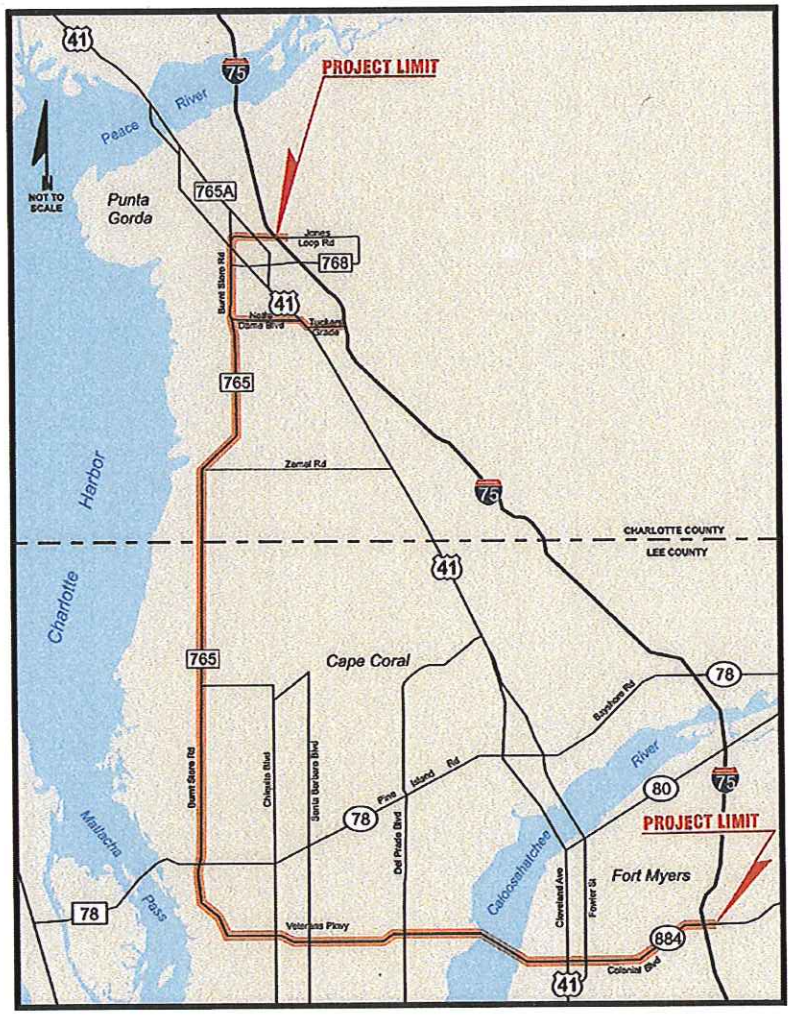
The study identifies mobility improvements to meet the long term 2030 travel needs along this transportation route. Preliminary estimates of right-of-way (ROW) and construction costs were developed as part of this study. At the conclusion of this study, Lee and Charlotte Counties will have information to choose feasible alternatives and develop a schedule for funding and implementing these improvements. Following these decisions, further engineering and design will be needed under separate contracts before the ROW and construction phases can be initiated.

Improvements identified for the corridor between Chiquita Boulevard and I-75 includes urban interchanges and/or express travel lanes. This report analyzes financing options for this portion of the corridor. This portion of the corridor lies entirely within Lee County, and, in this analysis a significant emphasis is placed on funding mechanisms within the reasonable control of Lee County.

PROJECT DESCRIPTION

The transportation corridor study runs along North Jones Loop Road from Interstate 75 (I-75) in Charlotte County westward beyond US 41, south along Burnt Store Road, then east along Veterans Parkway and Colonial Boulevard to I-75 in Lee County. A connection to Tuckers Grade was evaluated from Burnt Store Road to Tamiami Trail, in the vicinity of Notre Dame Boulevard. The study route travels through the cities of Punta Gorda, Cape Coral, and Fort Myers. These communities are also participating in this study. A Project Location Map is provided as Figure 1.

Figure 1: Project Location Map



During the corridor study, needed improvements to the existing roadway system were identified. These improvements include express lanes and new overpasses from Chiquita Boulevard in Cape Coral east to I-75. The purpose of this revenue analysis is to determine the overall financial viability of the proposed project, and to develop a financing plan to the degree necessary for an order of magnitude understanding of issues involved with financing the project. Cost projections and project timings have

been developed to the level necessary to develop this initial understanding, however, significant refinement of the revenue study will be necessary as more detailed information becomes available. The financing mechanisms identified are not necessarily the only vehicles available to the County. They are, however, financing mechanisms that are reasonably in the County's control and present a reasonable picture of the financing mechanisms likely to be used.

The overall findings indicate that the Bi-County Project is likely to be financially feasible. However, the project is far beyond any roadway project previously undertaken by the County. With a cost well over $500 million in 2004 dollars, which grows to $1.5 billion actually expended by the time construction is completed, the project is a major financial undertaking by any standard of measurement.

CONVENTIONAL FINANCING ALTERNATIVES

Historically in Lee County, funding for capital transportation improvements has come from five different sources. The sources have included County gasoline taxes, the County share of state gasoline taxes, including the County's share of federal gasoline taxes, impact fees (fees charged of development to offset the infrastructure needed to accommodate that development), and toll revenues. Of these revenue sources the County has bonded toll revenues, and a portion of gasoline tax revenues is used to retire existing debt for past roadway improvements[1]. Further, gasoline tax revenues as well as general fund revenues have been pledged in the past as revenue guarantees for County bonds.

Currently, the County's proposed 2006 – 2007 Capital Improvement Program estimates that there is approximately $470 million in needed County roadway improvements over the next 10 years. Approximately $32 million has already been expended on these projects. Currently approximately $1.7 million in gas taxes, $131.1 million in impact fees, $6.6 million in ad valorem taxes, $18.4 million from "other" sources, and $26.3 million from tolls, for a total of $184.1 million, has been identified to meet this need. Funding for the design of the Bi-County Corridor, and for construction of the portion of the corridor north of Pine Island Road are

[1] *Road Impact Fee Update Lee County, Florida* Duncan Associates, et al., July 2003

included in these amounts. However, funding for the construction of the corridor from Chiquita Boulevard north to I-75, the focus of this financing report, is not included.

The Lee County Metropolitan Planning Organization's Long Range Transportation Plan anticipates spending significant resources in Lee County, however, it also identifies over $300 million in needed but currently unfunded projects between 2004 and 2020. While the Bi-County corridor could technically be incorporated in the County's Capital Improvement Program and/or the Florida Department of Transportation's Work Program, the practical result of this action would be to raise the overall shortfall in transportation funding in Lee County to over $1 billion. There is clearly no practical way to fund the major portion of the Bi-County Corridor through the financing mechanisms the County has traditionally used.

While the use of tolls in Lee County has, to date, been specifically targeted at capital costs associated with major bridges in the County, the high cost of the Colonial Boulevard improvements make it a candidate for toll funding in the same manner that bridges in Lee County, also a high cost capital improvement, have utilized toll funding in the past.

While the current traditional revenue sources are unable to fully fund improvements to Colonial Boulevard, consideration could be given to increasing the rates associated with various funding sources. Currently, Lee County collects the maximum amount of gas tax allowed by existing legislation, therefore, any increases in gas tax funding would require approval from the state legislature prior to imposition. While legislative approval is not necessarily an insurmountable obstacle, the level of increase needed to the achieve necessary revenue (an immediate increase of 2 to 3 cents per gallon and an eventual increase of 10 cents per gallon or more) is not likely to be acceptable to the public to fund a single project.

Other revenue sources are also possible. Ad valorem taxes could be raised and dedicated as a funding source. With one mill generating approximately $61 million annually in Lee County, it is likely that the needed increase in millage would be no more than 0.2 mills. However, this places the burden of payment squarely on Lee County residents. With the large impact on the transportation system from seasonal visitors, this is not an equitable solution. The fact that the

County does have the ability to levy additional ad valorem taxes is however, a potential credit support for other bonding activities. The fact that ad valorem taxes are used as a credit support does not mean that additional ad valorem taxes would need to be imposed. Imposition of additional taxes would only occur in the event the county was in danger of being unable to make its bond payments.

Sales tax has also been proposed in Lee County as a mechanism for funding roadway infrastructure needs. However, the concept has repeatedly failed with voters. The most recent effort to impose an additional sales tax for infrastructure failed and received less than 20% of the vote.

All of these traditional taxes have a common element that could be viewed as a significant drawback. Gas tax, ad valorem tax, and sales tax are all collected on a countywide basis. As the Colonial/Veterans corridor is a roadway with regional significance, use of funds collected on a countywide basis can, to some extent, be justified. However, because of the very high cost of the project, an imbalance could exist, or at least be perceived to exist, between the areas where revenues are collected and spent.

Given these factors, some type of a toll financing solution is likely to be the most equitable in terms of who pays and who benefits. This will be the focus of this report. However, due to the regional nature of the roadway and the fact that the non-tolled lanes will also benefit by having traffic diverted to the tolled lanes, supporting or possibly supplementing toll revenues with a more traditional revenue mechanism could likely be justified.

TOLL COLLECTION METHODOLOGIES

Lee County is well-positioned to undertake toll collection on projects such as express lanes on the Colonial/Veterans corridor. The County currently operates a robust toll collection system on three toll bridges in the County. The three toll facilities are shown in Figure 2. The system includes an electronic toll collection (ETC) component, LeeWay, which currently handles

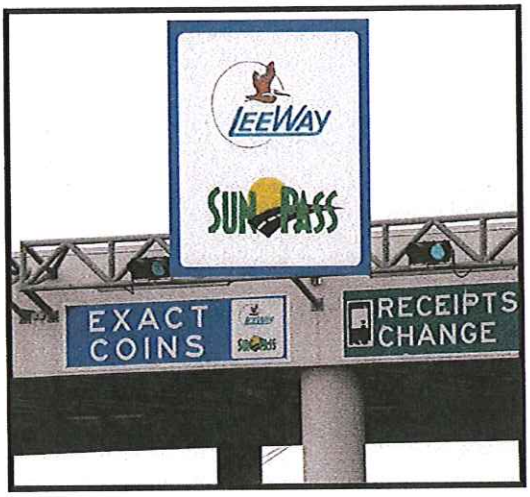
approximately 50 percent of the toll transactions. This percentage continues to increase every year. Also, during the peak periods of commuter traffic, the ETC percentage is even higher.

Figure 2: Lee County's Three Toll Facilities

Cape Coral Sanibel Midpoint

LeeWay provides its own customer service, including a fully staffed customer service center. LeeWay is also compatible with SunPass, the Florida Department of Transportation ETC system, and installation of a video violation enforcement system (VES) will occur within the next 12 months. Current and new users of the facilities are reminded of the compatibility by signs at the toll facilities as shown in Figure 3. LeeWay has anticipated the need for expansion of the toll collection system beyond the existing three bridges, and equipment and software selection for the past several years has been made anticipating this need. LeeWay is, therefore, well situated to undertake collection activities for the Bi-County Corridor.

Figure 3: Compatibility Signage at the Toll Facility



Currently, the toll collection industry as a whole uses one of three basic mechanisms for toll collection. The first, and by far the oldest system, is collection of cash from drivers on the roadway. The second uses information provided automatically by the vehicle to identify the vehicle. This is commonly referred to as automatic vehicle identification or AVI. AVI determines what toll the vehicle should be assessed, and how the driver has arranged to pay the toll. The third uses the vehicle's license

plate information to identify the vehicle and the registered owner for the purpose of collecting tolls through a billing format. These last two mechanisms are examples of Electronic Toll Collection (ETC). Collection of cash on the roadway itself can be accomplished either manually with an attended booth, as shown in Figure 4, or through the use of an unattended coin machine. Machine collection shown in Figure 5, is usually limited to coins, however, some machines do except bills, and/or credit cards. While Lee County accepts cash from drivers on all three of its current toll facilities, this mechanism is not recommended for the Bi-County Corridor. There are two primary reasons for this recommendation. First, collection of cash either by an attendant or using an unattended machine is relatively slow. Based on studies previously conducted in Lee County, an average throughput of approximately 400 vehicles per hour can be expected in a cash lane. This is far less than can be accommodated in any type of dedicated ETC lane which ranges from 1200 to 1800 vehicles per hour.

Figure 4: Manual Toll Collection at a Toll Booth

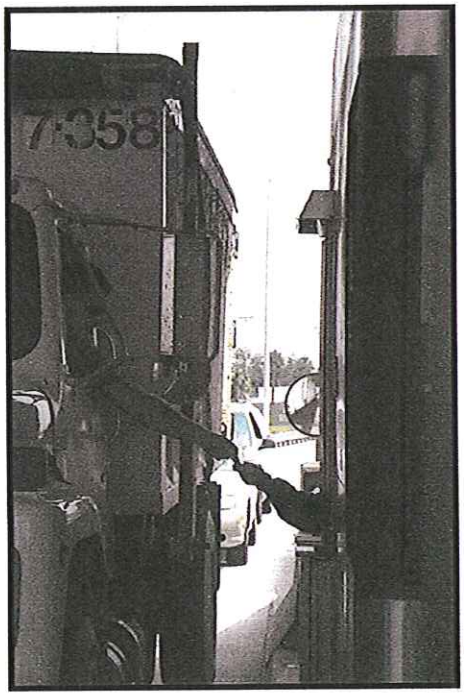


Figure 5: Machine Collection of Tolls

The second issue involved with cash collection in the lane involves the physical space required for facilities. This issue is compounded by the cash lane's relatively low throughput. Cash collection requires equipment, either a collection machine or an attended booth, to be placed on or adjacent to the roadway. This, of course, requires additional right-of-way compared to the

roadway alone. Coupled with the low throughput of the cash lane up to five collection lanes would be necessary to handle the vehicular flow associated with one travel lane.

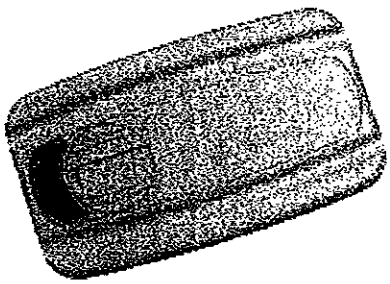
In addition to the actual collection lanes required, administrative support facilities are also required, particularly for attended operations. Coupled with the large number of collection lanes, the administrative facility, and the amount of roadway required on the approach and exit from the toll lanes themselves to allow merging to occur, significant additional right-of-way would be required for cash to be accepted in the lane. Given the reduced speed for toll collection, and the availability of good ETC alternatives, it is recommended that cash not be accepted for toll payments on the facility itself.

The second toll collection method occurs when information is provided automatically by the vehicle. While this is most commonly provided in today's toll systems by transponders using dedicated short-range radio communications, barcode stickers were once common and are still used in some toll facilities. However, barcodes shown in Figure 6, have several shortcomings compared to transponders, and have been replaced in Lee County with the LeeWay ETC system, which utilizes transponders. It is, therefore, highly likely that any ETC system used on the Bi-County Corridor will use transponders for vehicle identification. For this reason transponders are assumed for purposes of this analysis.

Figure 6: Barcode Stickers

Transponders, also known as tags, continue to evolve at a rapid pace. Totally self-contained and sealed units that had to be discarded once the battery was exhausted have already been replaced in Lee County by a unit with a replaceable battery, shown in Figure 7. Further, the County has already upgraded its system to accept the new eGo® tag from TransCore. This tag is approximately the size and thickness of a credit card, requires no batteries, and will likely sell for less than $10. The County is also considering an upgrade to the proposed seGo® transponder, which is similar to the eGo®

Figure 7: Current Transponder with Replaceable Battery



transponder, shown in Figure 8, except that it allows information to be written back from the toll facility to the transponder.

The development of inexpensive transponders, such as the eGo® transponder, allows transponders to be easily distributed, even to visitors to Lee County. TransCore has even developed a vending machine similar to an automatic teller machine to distribute eGo® tags. The low-cost and the easy distribution qualities of the new generation of transponders lend themselves well to toll collection by transponder on the corridor, particularly, given the already significant market penetration of LeeWay transponders in the Colonial/Veterans corridor, which includes the Midpoint Memorial Bridge, an existing toll facility.

Figure 8: eGo® Transponder

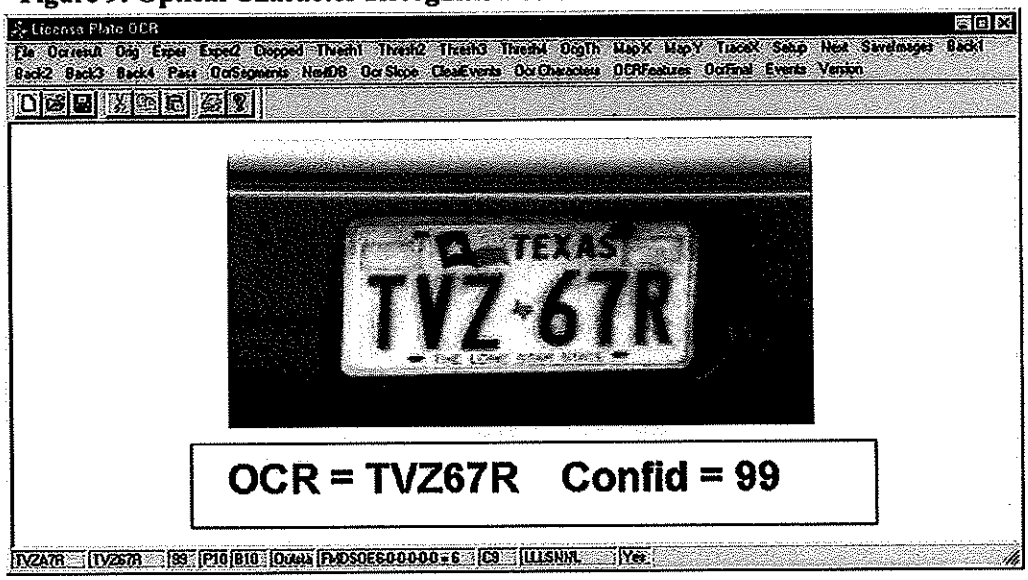
The most recent development in toll collection technology is identification of the vehicle using the vehicle's license plate. The mechanics of this are practically identical to violation enforcement system (VES) operation. With VES, license plate information is captured from the vehicle using specialized cameras and often specialized lighting. For open road operation, the camera lighting can be mounted on overhead gantries or side mounted along the roadway. Images are usually captured in one of several standard digital picture formats.

Processing of the digital image is accomplished either through optical character recognition software (OCR) or manually. Many systems use OCR first, shown in Figure 9, and then forward the image for manual processing if the license plate information cannot be established with a high degree of certainty.

Using the license plate information obtained, the appropriate Department of Motor Vehicles database is queried and the registered owner identified. For VES operation this information is used for appropriate enforcement activities. The specific action taken will depend on the

business rules of the toll authority which are usually based on the number of violations a particular vehicle observed over a given period of time.

Figure 9: Optical Character Recognition Software Screen



For violation enforcement, video enforcement technology has proven to be a viable tool. Further, it is proven to be reasonable to use the license plate information to search the database of a facility's registered ETC customers. If a match is found, the appropriate toll is charged to the customer's account and no enforcement action is taken. However, it is common that if a customer generates several instances of passing through a toll facility without the transponder reading over a short period of time, that customer is given notice advising them that their transponder is not functioning properly. They're usually advised to change the batteries and/or come to the toll facility's service center for assistance.

It is also possible to use the system described above in a video tolling capacity. In this instance, license plate images captured from vehicles are not used for violation enforcement, but rather for toll billing. While this system is not in use in the United States, it is in use in Canada, Australia, and will soon be in use in Israel. In all cases the video tolling is a supplement to a traditional transponder system. Customers using video tolling are either charged a surcharge compared to

those using transponders for tolls, or limited to a very small number of transactions within a given time period.

The Center for Urban Transportation Research at the University of South Florida has studied the cost associated with charging tolls using a video tolling system. Their findings, published in *The Feasibility of Open Road Tolling in Florida* indicate a cost of collection, excluding tolls, of between 36 and 64 cents per video billing trip. This cost includes backroom operating, invoicing and postage costs, but does not include any equipment costs. If a third party is contracted for the billing and collections, normal industry mark-ups would increase the cost of each invoice by 25% to 45 – 80 cents per video billing trip.[2]

Reports on the tolling system accuracy vary. While there is no doubt that a video system can act as an effective deterrent for violators, questions remain whether the current state of the art of video tolling is capable of capturing the very high percentage of vehicles necessary for a primary tolling mechanism. Further, collection issues, particularly for vehicles registered in another state, can be problematic. However, multi-jurisdictional tolling authorities such as EZpass and the video tolling performed on Highway 407 in Toronto, Canada are pioneering solutions to these issues.

Given the current state of technology, it is recommended that the Colonial Boulevard-Veterans Parkway corridor, if tolled, use a transponder only system. Given the high level of transponder market penetration, particularly in this area, and the rapidly advancing transponder technology, requiring a transponder on vehicles in the corridor that use the express lanes should not prove to be a hardship to drivers. It is, however, recommended that the County continue to monitor video tolling as it continues to evolve and evaluate the benefits of offering video tolling during the project's continuing development and design.

[2] Center for Urban Transportation research (CUTR), *The Feasibility of Open Road Tolling in Florida*, November 2001

TOLLING PLAN

Using ETC, particularly an ETC system based on the County's current LeeWay system, the marginal cost of adding toll collection points is relatively low. The location and number of toll collection points can, therefore, be established based on operational considerations and equitable distribution of costs.

Two basic toll collection plans are possible. The first is the simplest and it charges each vehicle a flat toll for use of the facility regardless of the distance traveled. This toll could remain constant through the day, or vary depending on time of day and/or facility congestion. The primary advantage of the system is its simplicity, which allows the toll customer to easily determine the toll that will be charged for the trip. It should be noted that toll collection points would still need to be established at each entrance or exit. For this reason, a reduction in the number of toll collection locations is not a significant benefit of this plan.

The primary disadvantages of the "one price" toll plan is that a perceived, and likely actual, inequity exists. Under this plan users are being charged the same toll regardless of distance traveled. In addition, this type of toll collection discourages shorter trips from using the facility. While this is, in some ways, advantageous, the lack of parallel facilities, particularly in Cape Coral, make it problematic.

It is recommended that tolls be collected for each segment of roadway traveled. This is basically equivalent to a toll being charged between each interchange. While the case could be made to vary the toll intersections based on the distance traveled, the complexity of the resulting toll system would likely negate any advantages that might be obtained. For this reason, with the exception of the Midpoint Memorial Bridge, it is recommended that all segments carry the same toll.

It is recommended that toll collection points be placed on the main travel lanes rather than at entrance and exit ramps. This allows the toll to be determined directly rather than requiring the system to calculate the number of roadway segments traveled based on the vehicle's entry and

exit point. Toll collection points can be established on a single truss system for both eastbound and westbound travel. Recommended toll collection points are shown in Figures 10 through 12.

Figure 10: Potential Toll Collection Locations

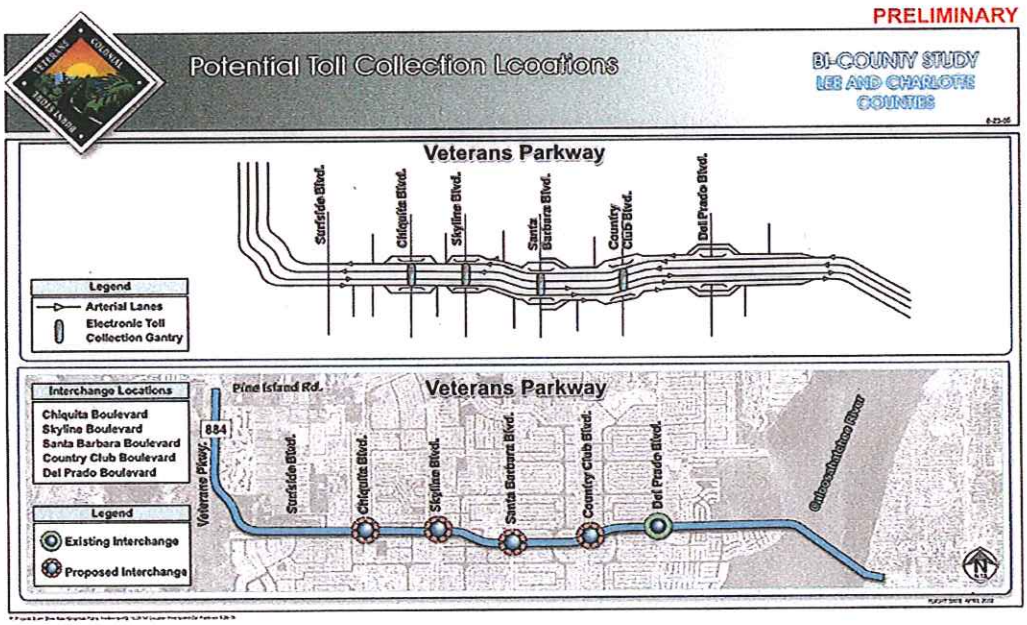


Figure 11: Potential Toll Collection Locations

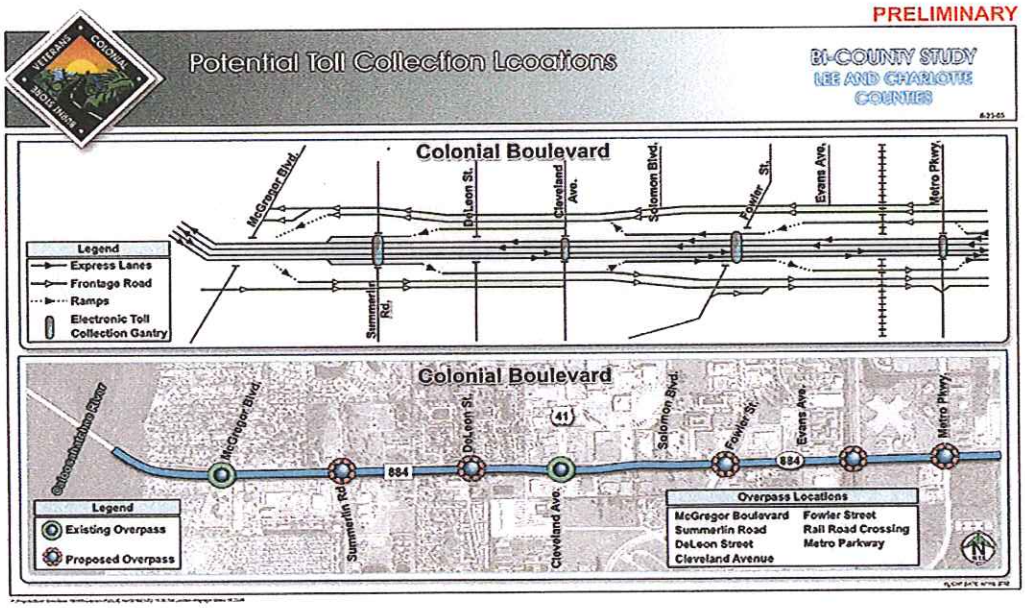
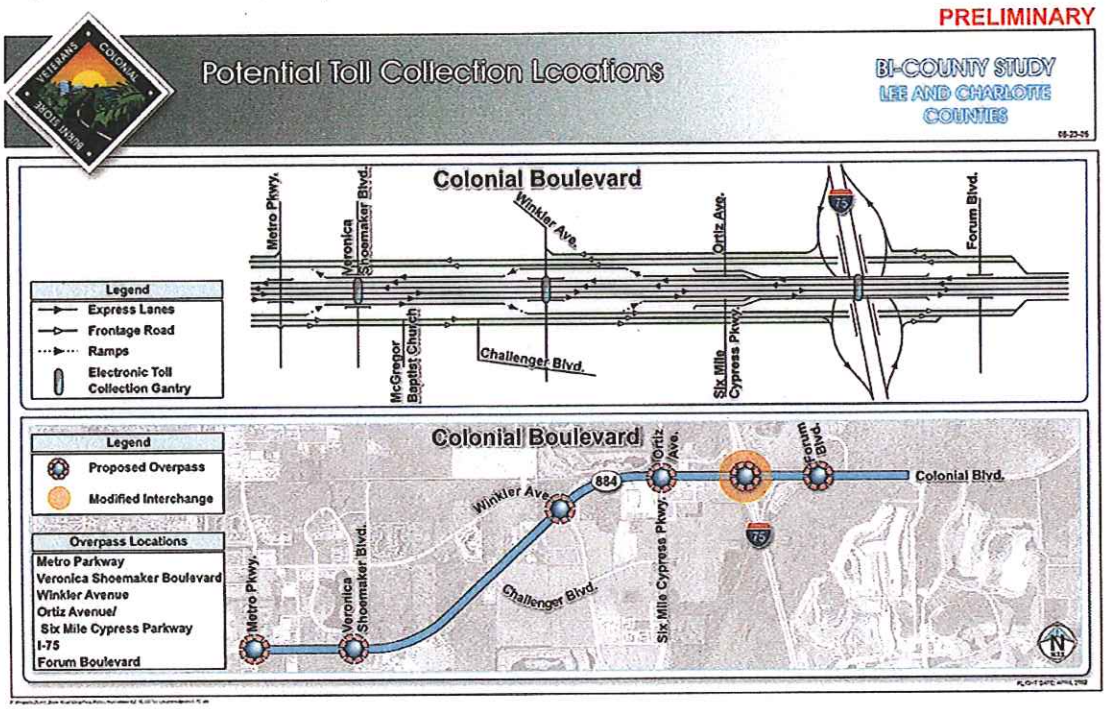


Figure 12: Potential Toll Collection Locations



While no specific surveys were performed as part of the Bi-County Corridor Study on acceptable tolls, focus groups indicated support for the tolling concept in general. Significant research on acceptable toll levels was, however, conducted in Lee County during the Queue Jump Study in 2002/2003. Peak period tolls of $.40, and shoulder period tolls of $.25 were developed as part of the Queue Jump Study, and are used, in 2004 dollars, as the toll rate for this Bi-County Study. Additionally during the Queue Jump Study, off-peak tolls were established at $.15 and weekend tolls were set at $.25.[3] Collection costs, while minimal if transponders are used, are taken into account in the project's revenue stream.

The Queue Jump Study developed tolls based on crossing one queue jump. As each collection point on the Bi-County Corridor is essentially equivalent to one queue jump, it is reasonable to base the toll collected at each collection point on the research conducted during the Queue Jump Study.

[3] *Value Priced Queue Jump Study*, CRSPE, Inc., et al., January 31, 2003

The Bi-County Corridor Study, however, assumes a higher percentage of vehicles on the express lanes than were assumed in the Queue Jump Study. For the Bi-County Corridor Study, the traffic using the express lanes varies depending on the location in the corridor. The percentage of express traffic east of the Caloosahatchee River varies from 20% to 70% of the total traffic. In the city of Cape Coral, the new urban interchanges are fully integrated into the existing roadway network i.e. no frontage roads. It is, therefore, assumed that 100% of the traffic on this portion of the corridor will be tolled. The higher percentage of vehicles in the express lanes modeled for the Bi-County Study is necessary for the efficient functioning of the overall corridor. Without this high level of express lane use, levels of service on the corridor will degenerate.

Based on previous research done in Lee County[4], traffic during peak periods is significantly less sensitive to toll increases than traffic during off-peak periods. Therefore, the $.40 toll for the peak hours, and the $.25 toll for the shoulder hours was directly retained from the Queue Jump Study. Due to the higher sensitivity of traffic to tolls in the off-peak periods, an off-peak toll of $.10 per collection point and a weekend toll of $.15 per collection point were established for use in the revenue projections for the Bi-County Corridor Study. Additionally, a reverse peak (the off-peak direction during a peak hour) toll of $.20 was also established.

If a driver with a toll discount program equivalent to the existing $.50 per trip program for the Midpoint Memorial Bridge, were to drive the entire corridor a total toll of $5.20 during the peak travel time would be imposed. This equates to a toll of 39.1 cents per mile. That same trip in the shoulder hours would cost $3.15 or 23.7 cents per mile and $1.90 during the off-peak hours or 14.3 cents per mile.

While these toll rates are significant, they certainly are not unprecedented. Tolls on the SR 91 express lanes in Orange County, California vary from a low of 11.0 cents per mile to a high of 77.75 cents per mile. During peak hours tolls vary from 33.5 cents per mile to 77.75 cents per mile. As seen, the tolls that may possibly be needed for the Bi-County Corridor are at least comparable, and usually lower, than the toll rates imposed on this highly successful facility.

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[4] *Toll Price-Traffic Demand Elasticity Analysis on Variable Priced Toll Bridges,* Chris R. Swenson, Alasdair Cain, Mark W. Burris ITE 2001 Annual Meeting

TOLL FINANCING

Traditional toll financing generally requires a project to generate sufficient toll revenue to allow the sale of bonds to fund the initial capital costs. The revenue stream must be sufficient to cover the project maintenance costs, as well as providing a "coverage ratio", which is defined as projected revenues divided by the cost to service the bond debt. Usually a ratio of 1.2 is required. Additionally, assumptions regarding growth in the traffic volume over time must be exceptionally conservative. Usually traffic volumes projected for the first few years of the facility's existence must be used to determine the revenue stream for the entire 20 to 30 year bonding period. Calculations performed for this analysis indicate that the Bi-County Corridor cannot be fully financed using traditional bond financing.

As tolls in the United States have almost exclusively been used as a funding source for roadway projects, the traditional approach to tolling has been to determine the toll revenue needed to finance the facility, and then determine if the traffic likely to use the facility at any given toll is sufficient to generate the needed revenue stream. As toll revenue bonds are repaid at fixed amounts per year over their lifetime, from a revenue standpoint no reason exists for adjusting toll rates due to inflationary changes in the value of money.

The Lee County Variable Pricing Program has shown that varying tolls by time of day is effective in reducing peak hour trips. As variable tolls are proposed for consideration for the Bi-County Corridor, the tolls, while providing revenue, also serve in a traffic demand role. It is, therefore, necessary that the changing value of money over time be taken into consideration in developing an overall toll structure for queue jumps. It is, therefore, assumed that the tolls, with the exception of the tolls on the Midpoint Memorial Bridge, will be indexed for the effects of inflation. Due to the critical nature of this requirement, language requiring indexing should be included in any enabling ordinances required for implementation of the Corridor.

For study purposes, the rate for use in indexing the toll to account for inflation was determined by reviewing the historical Consumer Price Index (CPI). Initially, the average rate over the last thirty years was developed, as a thirty year projection is proposed in the revenue analysis. The

average national inflation rate from 1972 to 2002 was 4.99%. This rate included much of the 1970's when the United States experienced an exceptionally high inflation rate. For this reason, 20 and 50 year rates were developed. The average inflation rate for the last 20 years was 3.18%, and 3.99% over the last 50 years. Over the last 20 years, inflation rates have been relatively low and relatively stable, and while this trend may continue, using this rate might be overly conservative. For this reason, the 50 year rate, rounded to 4.0% was chosen for toll indexing.

For actual implementation it would be possible, using electronic toll collection, to frequently implement changed rates and to implement rates that are not rounded to the nearest nickel, dime, or quarter as toll rates often are. However, considering the practicalities of public acceptance and understanding, it is recommended that tolls be evaluated every three to five years, and that rates be rounded to the nearest nickel. For purposes of revenue projection, rates were reviewed every five years, and were rounded to the nearest nickel. To minimize the erosion in revenue from such a relatively long review period, rates for the succeeding five years were based on an average projected inflated rate for those years. As an example, the rates for years six through ten are based on the average rate projected for each of those years based on projected changes in the CPI over that time.

To project inflation of construction costs over the next thirty years, the Engineering News Record's (ENR) historical construction cost index was used. The ENR construction cost index is updated monthly and is based on costs for construction materials and labor. The index has been kept since 1908 and is based on a 1913 value of 100.

To determine average increase in construction costs from 2004 through 2030, the ENR index for the past 30 years was examined. Based on an index of 2020 for 1974, and an index of 7115 for 2004, an average increase of 4.3% per year was calculated.

To determine the stability of the index, the periods from 1964 to 1994 and 1954 to 1984 were also examined. These indicated an average annual increase of 6.0% and 6.5% respectively. The reason for the variations in the 30 year periods is a period of low construction inflation from the mid 1980's until recently. For this period, construction inflation was less than 3%.

There are, however, significant indications that construction costs are again rapidly rising. Construction inflation over the past year topped 6%. Due to the relative instability of the Index, and the signs of renewed construction inflation, it is felt that a rate of 4.3% could yield an overly optimistic projection of future costs. A rate of 5% was, therefore, used in the analysis to project future construction costs.

One of the primary purposes of this portion of the Bi-County Corridor Study is to determine whether a feasible mechanism exists for financing the project. As previously discussed, due to the cost of the project, it is a practical certainty that toll financing will be needed. Further, without a toll mechanism, traffic growth would inevitably result in congestion in the express lanes. Studies of SR 91 in California have confirmed that capacity under congested conditions is much less than capacity on lanes that have been managed to maintain a reasonable level of service. In fact, the express lanes on SR 91, which flow at normal highway speeds, carry 33% more traffic in peak travel hours than the adjacent congested lanes. Therefore, to manage traffic on the facility, it is likely that a toll mechanism would be needed regardless of financing considerations. When this issue was discussed with focus group participants during the Bi County Corridor Study, the concept was understood and, generally, supported.

One of the first determinations made in this portion of the study was that traditional toll financing imposed at the time of the opening of the new facility would not be feasible. It is highly unlikely that sufficient traffic can be generated at any reasonable toll level for this type of traditional financing. For this reason, the history of tolling in Lee County was taken into consideration.

The County previously faced a significant financing issue for the Midpoint Memorial Bridge, which opened to traffic in 1997. As funding was being assembled for the Midpoint facility, it was recommended that tolls be raised on the Cape Coral Bridge in 1994 to develop a "down payment" for the Midpoint Memorial Bridge. This strategy was successful, and resulted in the toll for both bridges being maintained at one dollar rather than going up to $1.25 as originally planned upon the opening of the Midpoint Bridge in 1997. This same concept of a down payment, but on a larger scale, will likely play a part in the financing of the Bi-County Corridor.

A second element that is likely to play a major part in the financing of the Bi-County Corridor is the Transportation Infrastructure Financing and Innovation Act (TIFIA). TIFIA is a federally funded program that will provide credit support, or direct financing, for large infrastructure projects. The federal dollars that TIFIA provides represent "patient" capital with greater repayment flexibility than traditional bond financing. Further, lending criteria are not as strict as they are in private-sector bond financing.

TIFIA is not designed to replace other financing mechanisms. It is specifically designed to work with private-sector bond financing by enhancing the financial feasibility of the project. This enhancement reduces the financial risk associated with the project, thereby attracting private sector participation. For this reason, TIFIA does not undertake financing of the entire project, and TIFIA funds are limited to a maximum of 33% of a reasonable projection of the overall construction cost.

Three elements are therefore likely to go in to financing the Bi-County Corridor. These are a "down payment" from increased tolls on the Cape Coral and Midpoint Memorial Bridges, TIFIA financing, and traditional bond financing. Of these, it is likely that the "down payment" will be the most controversial.

It is clearly understood that, at the time of the 1994 toll increase for the Cape Coral Bridge, the Board of County Commissioners indicated that no additional toll increases would be enacted on either the Cape Coral or Midpoint Bridge for the foreseeable future. It needs to be understood that the Bi-County Corridor represents a significant and substantial improvement to the overall facility being funded through toll financing. In short, because of the significant improvements being undertaken, this is not a toll increase for the bridge itself, but rather for the corridor, which is a significantly larger project.

It should be noted that the potential change in the toll structure of the existing bridges to provide the "down payment" for the Bi-County Corridor could be made in many different ways. For study purposes, reasonable assumptions as to the form that increase could take were made. The existing toll structure, the higher toll structure to provide a "down payment" assumed for the

study, the resulting percentage change in tolls, and the assumed toll elasticities (the percentage change in trips dived by the percentage change in tolls) are shown in Tables one through four.

Table 1: Existing Toll Assumptions

Existing Toll Assumptions:

	Peak	Discount	Off Peak
ETC Full Price	$ 1.000	$ 0.500	$ 1.000
ETC Discount	$ 0.647	$ 0.397	$ 0.647
ETC Unlimited	$ 0.590	$ 0.590	$ 0.590
Cash	$ 1.000	$ 1.000	$ 1.000

Table 2: New Toll Assumptions

New Toll Assumptions:

	Peak	Discount	Off Peak
ETC Full Price	$ 1.500	$ 0.750	$ 1.500
ETC Discount	$ 0.800	$ 0.397	$ 0.800
ETC Unlimited	$ 0.750	$ 0.750	$ 0.750
Cash	$ 2.000	$ 2.000	$ 2.000

Table 3: Percent Change in Tolls

Percent Change in Tolls

	Peak	Discount	Off Peak
ETC Full Price	50.0%	50.0%	50.0%
ETC Discount	23.6%	0.0%	23.6%
ETC Unlimited	27.1%	27.1%	27.1%
Cash	100.0%	100.0%	100.0%

Table 4: Elasticity Assumptions

Elasticity Assumptions:

	Peak	Discount	Off Peak
ETC Full Price	5.0%	10.0%	20.0%
ETC Discount	5.0%	10.0%	20.0%
ETC Unlimited	5.0%	5.0%	5.0%
Cash	30.0%	30.0%	30.0%

In addition to providing additional revenue, the toll structure outlined above also helps maximize the efficiency of the existing facilities. The cash toll undergoes the largest increase. This increase introduces a significant difference between the toll price for a cash trip and the toll price

for an ETC trip. This should encourage a migration to ETC thereby increasing the capacity of the toll facility itself due to the inherent efficiency of ETC.

More importantly, the variance between peak and off-peak tolls is increased. Based on past experience in Lee County, this should discourage trip making during the peak travel times. Coupled with an increase in ETC usage, which increases the percentage of the travel population eligible for variable pricing, some immediate relief to peak hour traffic might be obtained.

It should also be noted that inflationary pressure has eroded the value of the toll collected since its inception in 1994. If the toll had been indexed to the Consumer Price Index, tolls would have increased approximately 32%. The tolls assumed above for the discount programs, which many of Lee County's commuters use are still, effectively, a lower toll than existed in 1994.

It has been assumed that the Bi-County Corridor will be self funding. The following revenues were, therefore, included in the traffic stream:

- Tolls generated within the corridor, or by the Cape Coral Bridge (which also benefits due to reduced traffic)
- Interest generated by funds collected but not immediately expended
- Proceeds from TIFIA Bonds
- Proceeds from Traditional Bonds

Detailed financial calculations, including costs and cash flow calculations, are contained in the Compact Disc (CD) Appendix issued with this report. The information presented within the report is a summary of those calculations.

Anticipated construction costs, in inflated dollars, are shown in Table 5.

Table 5: Anticipated Construction Costs, in Inflated Dollars

2020		
	Colonial Boulevard between McGregor and US 41	$214,100,000
	Veterans and Santa Barbara Interchange	$ 64,650,000
	Total	$278,750,000
2025		
	Colonial Boulevard from US 41 to Metro Pkwy	$346,500,000
	Veterans and Country Club Interchange	$ 82,500,000
	Veterans and Chiquita Interchange	$ 82,500,000
	Total	$511,500,000
2030		
	Colonial Boulevard from Metro to I-75	$735,900,000
	Veterans and Skyline Interchange	$105,300,000
	Total	$841,200,000
TOTAL EXPENDITURE		$1,631,450,000

Anticipated bonding in inflated dollars are shown in Table 6.

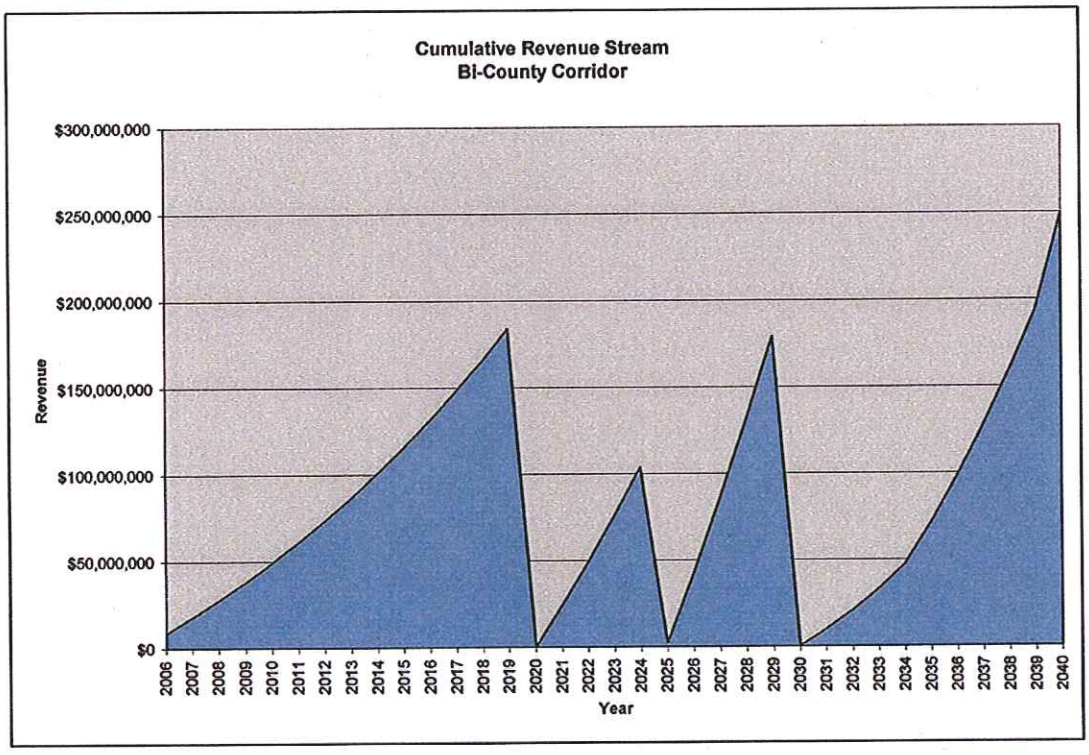
Table 6: Anticipated Bonding, in Inflated Dollars

2020	TIFIA	$62,500,000
2025	TIFIA	$365,000,000
2030	TIFIA	$110,000,000
	Traditional Bonds	$535,000,000
	Total 2030	$635,000,000
TOTAL BONDING		$1,062,500,000

Table 6 includes almost $600 million of what is essentially "pay-as-you-go" financing. While it would seem reasonable to consider additional bonding for these monies, it is not included in the study for several reasons. First, a significant percentage of this money is the "down payment" due to the project's initial issues with generating bond revenue. A second portion of this revenue is interest on monies collected but not immediately spent. A final portion is made up of the inherent additional revenue due to the bonding coverage requirements. While some additional bonding could be accomplished, the majority of the project's bonding capacity is utilized.

As the corridor is designed to be self-funding, the development of the overall revenue stream was predicated on the cumulative revenue dropping below $0. This was accomplished, and the revenue stream for the project is shown graphically in Figure 13.

Figure 13: Bi County Cumulative Revenue Stream



As shown, after the final construction expenditures in the year 2030, corridor revenues rapidly increase. This is due to the combination of higher tolls due to indexing to the CPI, and higher

traffic due to growth in the County. The surplus revenue continues to grow throughout the life of the project.

In the post construction phase of the project, assuming the revenue stream follows these assumptions, the County can make decisions regarding the potential for lower tolls, or the potential for using revenues from the Bi-County Corridor as initial funding for other toll financed projects.

RECOMMENDATIONS

Financing the Bi-County Corridor is likely to be the most controversial element of the entire project. Because of the magnitude of the undertaking, and the transportation and financial impact of this corridor on Lee and Charlotte Counties, development of the project financing deserves considerable study and effort. It is, however, likely that the effort expended in producing the financing plan for the corridor will provide benefits that exceed the costs many times over.

The financing analysis presented in this report was specifically oriented toward financing the corridor from Chiquita Boulevard in Cape Coral east to I-75. Further, this analysis concentrated on revenue sources that Lee County could reasonably expect to control. While FDOT approval will be needed for tolling state owned portions of the roadway, it is highly likely that the County could implement this plan with resources completely within its control. Knowing that a reasonably attainable financing plan exists for the project allows the County to move forward with the activities necessary to bring the project to fruition.

Other sources of revenue beyond those used in this analysis are available, and the best financing mechanism for the County may well include these other mechanisms. For this reason, once the County has firmly committed to proceeding with the Bi-County Corridor Project, it is recommended that the following activities be undertaken.

First, the public and other affected governmental entities need to become an integral part of developing the final financing mechanisms for the Corridor. It is recommended that the County

consider forming a Financing Task Force made up of elected representatives from Lee County and other local governments as well as at-large citizen representatives. The purpose of this task force would to be to identify financing mechanisms that should be considered for the Corridor and to focus the County's efforts toward those mechanisms.

Second, project plans should be widely publicized and a significant effort should be undertaken to educate the public on the plans and their impact on the Corridor and the County's transportation system as a whole. The education effort should include potential financing options. Once the project has been significantly publicized, it is recommended that surveys and focus groups targeted at project funding be undertaken. Development of this understanding of the public's desires and a willingness to support various financing mechanisms will be critical to the successful implementation of this project.

Third, specific financing needs that the federal and state government can address should be identified. It is possible that additional legislation will need to be enacted. Sufficient time exists prior to the beginning of construction to develop legislation and move it through the State Legislature or the Congress. An example of this type of effort might be to expand the funding limits of the Toll Facility Revolving Trust Fund (TFRTF) to allow it to play a more meaningful role in development of a project of this magnitude. This effort could also include specific federal legislation to finance this project as an example of special use lanes on an arterial facility. The type of project that the Bi-County Corridor Study represents has ramifications for many urban areas throughout the United States. If Lee County is interested in this type of funding it is important that it begin to work with its House and Senate representatives in the near future.

Fourth, if an alternative to increased tolls on the existing Midpoint Memorial Bridge cannot be found, it is important that the County move to enact the appropriate toll revisions. The sooner any change is enacted, the lower any increase will need to be.

It is, in fact, important that the County move quickly on all financing fronts. The time value of money will work against the County as inflation brings up the project costs. It is important that the time value of money be made to work for the County. For this to occur, it is necessaty to get

appropriate commitments in a timely manner for project financing from sources outside of the County.

CONCLUSIONS

The Bi-County Corridor project would be a significant undertaking for any transportation agency at any level of government. The fact that Lee County is moving forward on a project of this scale is a significant example of the increasing role that local government is taking in major transportation projects.

The goal of this portion of the Bi-County Corridor Study is to determine whether or not there is a reasonable scenario for financing a project of this scale in Lee County. Based on the findings in this portion of the report, it appears that the corridor will, in fact, be financially feasible. It is, however, a practical certainty that toll financing will be required to bring the project about.

Due to the fact that construction is not anticipated for more than a decade, it is not possible to say with absolute certainty what state and/or federal programs are likely to be available. Therefore, corridor financing was examined without considering potential monies from the state or federal government. The only exception to this is the TIFIA financing. While TIFIA financing is certainly advantageous to the project, it is likely that it could be replaced with traditional bond financing with relatively minor adjustments in toll rates if the program, or a successor, were unavailable.

Portions of the Bi-County Corridor are, however, on the state roadway system. Funding from the State should certainly be pursued. Further, an arterial corridor utilizing tolled express lanes is an innovative approach to solving transportation problems that many urban areas face. For this reason, federal funding, even project specific federal funding, should be pursued. Project development should consider the potential need to meet the National Environmental Protection Act (NEPA) requirements.

Focus groups already conducted for the Bi-County Corridor Study indicate solid support for the project even if toll funding is required. There is no doubt that pursuit of the Bi-County Corridor will require some significant decisions by the County to achieve a financially feasible project. These decisions may require additional fees to be imposed on County residents. However, the increasing understanding within the County of the role of tolls in transportation financing, coupled with the desire for a better transportation system create an environment where a project such as the Bi-County Corridor can be successful.