

# Innovative Stand-Alone Financing for Mid-Bay Bridge Across Choctawhatchee Bay

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Innovative stand-alone financing in the form of an \$81 million unrated, revenue bond project was a first of a kind for transportation and resulted in the successful completion of a 5876-m (19,265-ft) bridge for a Florida coastal community. The development of this project incorporates part of the suggestions of the Intramodal Surface Transportation Efficiency Act. The bridge is owned by a special authority and is being financed completely through the use of tolls backed by 5,000 vehicles a day. There is no full faith and credit backing of any state, federal, or local government. Partnerships were developed, with loan monies received from the Florida Toll Facilities Revolving Trust Fund, the Florida Department of Transportation, and the county. Partnering was done with property owners and the community. This major bridge was accomplished from conception through construction in 6 years. The bonds were unrated and were supported with a special unique insurance. They sold in less than 10 min, and offers were made for twice the amount needed, resulting in lower interest rates. The partnership approach, design, and financing contributed to the project speed and resulted in many unique features: A world record for span-by-span construction was set. Seven spans were completed in 7 days (952 ft of completed bridge in 1 week). A simplified post-tensioning design resulted in greater speed of construction. The bridge was built in 25 months, 5 months ahead of schedule, and opened on June 26, 1993. The bridge cost \$44/ft<sup>2</sup>. The project was selected as the top bridge project for 1993 by the Florida Department of Transportation.

The award was given by the Florida Transportation Builders Association.

**T**o meet today's transportation needs communities are often required to look for innovative funding solutions because state and federal funds are not sufficient to create all of the major facilities that are needed. An example of how one community achieved its 25-year dream for a 5876-m (19,265-ft) bridge without state or federal funding but by using innovative funding solutions is the story of the Mid-Bay Bridge across Choctawhatchee Bay in west Florida.

This major transportation facility was begun before the Intramodal Surface Transportation Efficiency Act (ISTEA) was put into place in 1990. However, it embraces some of the concepts and ideals developed in ISTEA and serves as a model of how communities can better take advantage of ISTEA for their future transportation needs.

## **MID-BAY BRIDGE AUTHORITY**

The community decided that it could accomplish this major bridge project by making it a local toll facility. In order to accomplish that they asked the Florida Legislature to create a special bridge authority. In 1986 the state of Florida Legislature created the Mid-Bay Bridge

Authority for the purpose of planning, constructing, operating, and maintaining a bridge crossing the Choctawhatchee Bay in Okaloosa County. The expanding local population, the travel demand generated by this expansion, and the need to establish an adequate hurricane evacuation route all contributed to the critical need for this facility. On October 13, 1986, five Okaloosa County citizens appointed by the governor were installed as authority members, and the authority held its first meeting to elect officers and begin this important project.

The membership of the authority included people from the community with many different backgrounds, and through the course of the project 15 people served as members with various terms of office. For example, members included an engineer, an attorney, a sheriff, a banker, a developer, a retired general, a hardware store owner, a fisherman/environmentalist, and other businessmen. All project decisions by the authority were in the best interest of the local community.

#### PROJECT DEVELOPMENT INCLUDING SEED MONEY

The project included the creation of a 5876-m (19,265-ft) bridge, 4572 m (15,000 ft) of connecting roadway to State Road 20 and US-98 from Niceville to Destin, and a toll facility, as seen in the location map of Figure 1. The most important first step was to locate the project and determine the financial and engineering feasibility for implementation of this project with bonds.

Engineering and financial analysis work had to be done, and seed money was needed to get the project started. A loan was obtained from a special trust fund administered by the Florida Department of Transportation (FDOT). The state of Florida created the Florida Toll Facilities Revolving Trust Fund to provide seed money to authorities, cities, counties, or any municipality creating a transportation facility that will be supported by a dedicated revenue stream such as toll revenues (or we could call these user fees). The maximum amount for which an applicant can apply is \$500,000 per year without a special legislative appropriation. With a special legislative appropriation this amount can be in the multimillions of dollars.

This loan money is required to be repaid to the Revolving Trust Fund within 7 to 12 years after it is borrowed. A 1993 change to the rules no longer requires funds to be repaid with interest; only the amount borrowed must be repaid.

The state of Florida has been very progressive in helping to advance transportation through seed money loans. Since the fund started 15 authorities and one county have used loans. Since 1986, \$89.6 million in

seed money has been used to create approximately \$1 billion in toll transportation facilities.

The authority applied for and received a \$500,000 loan enabling it to begin the project by hiring an engineering consultant and a traffic and revenue consultant. Feasibility studies were completed in 6 months, resulting in the establishment of an alignment, a draft environmental document, preliminary construction costs, and a financial analysis and workshop that included the authority and the public.

Only 5,000 vehicles per day could be counted on to pay a toll, and the bond size to finance this project would be in the magnitude of \$80 million. With this traffic volume, the facility would initially have two lanes (with shoulders) and could be expanded to four lanes once the traffic volumes warranted the expansion. The greatest challenge was to support the project on toll revenues only. There would need to be pioneering in bond financing, and multiple partnerships would need to be involved to make this a stand-alone success.

#### CREATING PARTNERSHIPS FOR INNOVATIVE FINANCING

For the project to be successful some additional loans were needed, resulting in a team partnership approach. FDOT agreed to sign a lease-purchase agreement, making it a project partner. FDOT agreed to handle toll operations and maintenance while providing loan funds for these operations in the early years of revenue shortfalls. The early years of operation are primarily the most challenging for a start-up facility because the project is just coming out of the construction period, when there have been no revenues for several years. As the revenues increase with time, operations and maintenance are funded by the toll revenues and FDOT is repaid for the loans.

Next, in order to sell the bonds coverages are required. In this case revenue bonds including both senior bonds and junior bonds would be sold, with coverage as follows:

- Senior bonds: 1.50 coverage, and
- Junior bonds: 1.10 coverage.

The early years of the financing showed a potential shortfall in meeting the full coverage amounts. For instance, in the senior bonds the 1.50 coverage meant that 50 percent more annual revenue was needed than was actually necessary to repay the bond debt. To help with coverage requirements in the early years the county became a partner. The county agreed to set aside a portion of its local-option gas tax as a loan to help achieve the required coverage levels. This was approximately

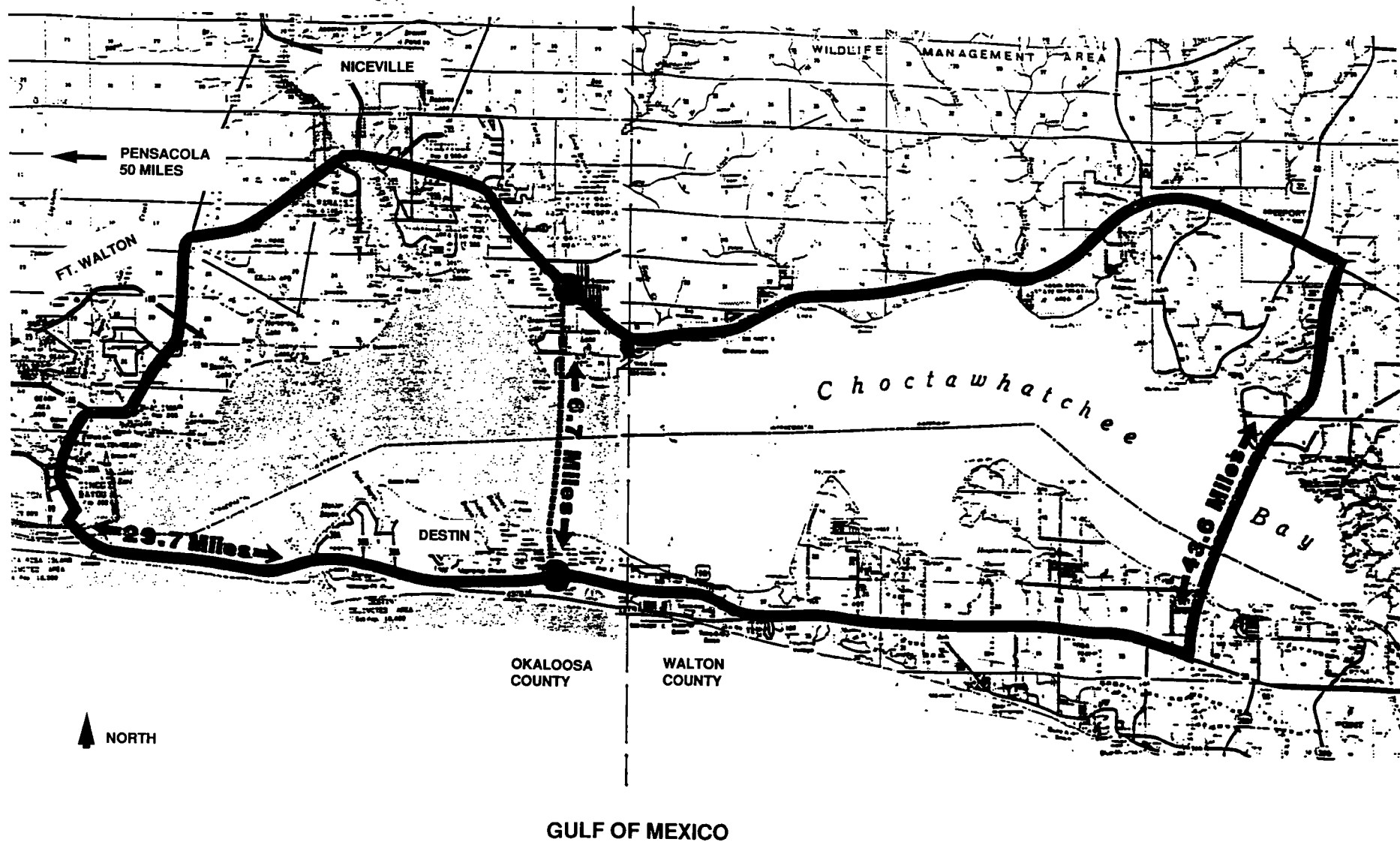


FIGURE 1 Mid-Bay Bridge Project location map (project alignment versus alternate routing).

\$1 million initially, and in each year for several years this amount is reduced as the coverage gets stronger. This was a loan and would not be spent unless the project needed to use the total coverage amount to help repay the debt.

It was also determined that this would be a revenue bond issue without full faith and credit obligation and backing by any government entity (state, federal, or county). Since government monies were obligated to other project needs and the state was already backing its own bonds, it was unrealistic to get government backing of the bond revenues.

Instead, these revenue bonds were created by using a force majeure insurance policy with Lloyds of London that would guarantee the completion of construction. The partnerships and special insurance were instrumental in putting together a financial scenario that could go to market.

These financial aspects were developed over time concurrently with the final design activities, permitting

right-of-way acquisition and other activities to bring the project to construction bids before selling the bonds and beginning construction.

#### IMPLEMENTATION OF DESIGN AND FINANCING

To implement the project following the feasibility studies and the development of a conceptual financing plan the authority obtained two additional loans from the trust fund, each for \$500,000. This brought the total amount borrowed from the trust fund to \$1.5 million. More was needed to get the project to construction, and the timing was not ideal for going to the state legislature for a trust fund appropriation greater than \$500,000. Therefore, the authority obtained a loan of \$800,000 from the county to be repaid with the bond sale. The right-of-way needed was secured in advance with the property owners, but the actual purchase was not made until the bond money was available. Throughout the

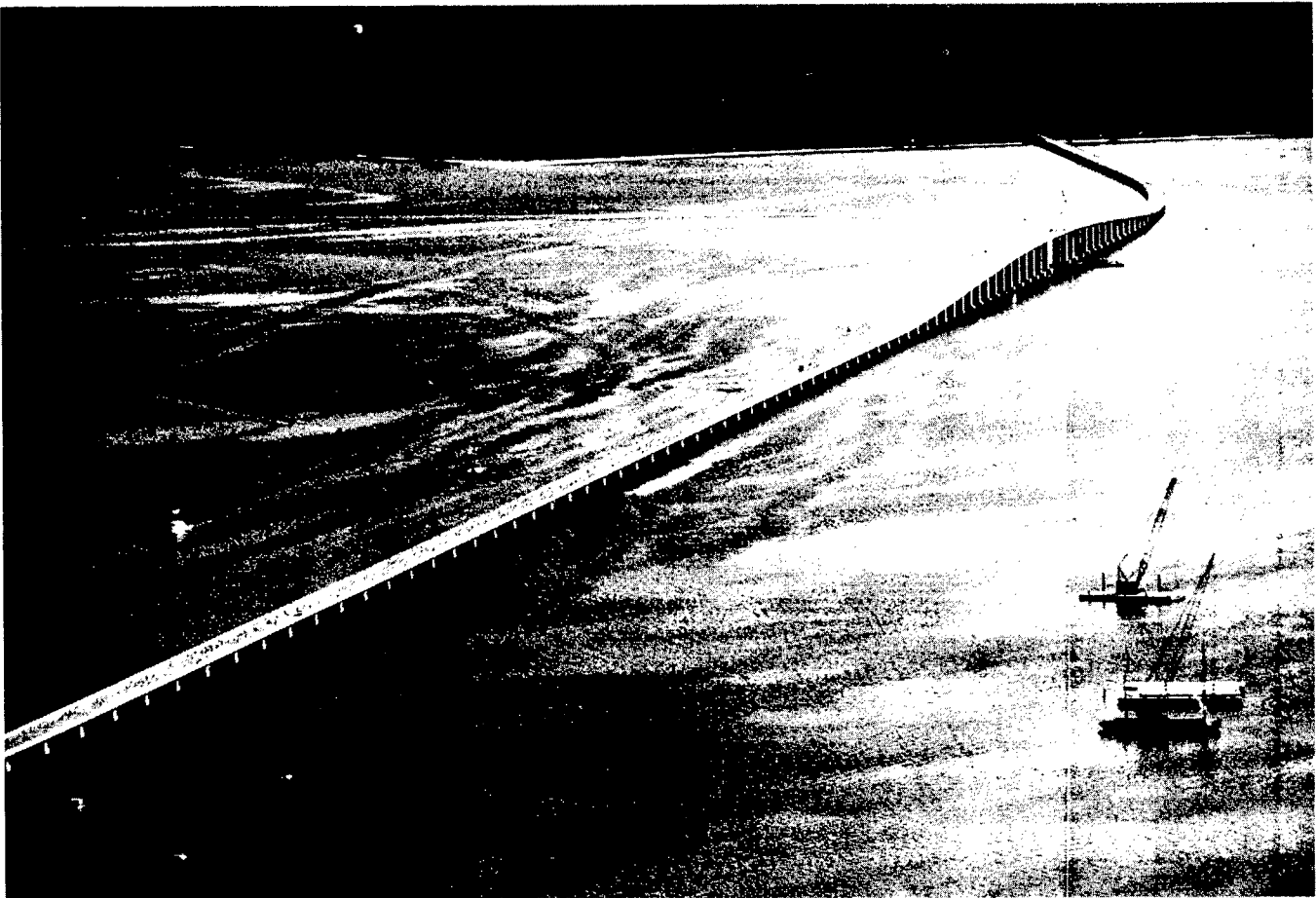


FIGURE 2 The 5876-m (19,265-ft) bridge was dedicated and opened to traffic on June 26, 1993, 5 months ahead of schedule. The day of dedication activities began with a run/walk across the bridge, with more than 5,000 participants (shown in this view).

implementation the authority met a minimum of once a month in a public forum (more than 50 public meetings) to make decisions that would give the community the facility that it wanted.

Once the design was completed and the contract documents were ready for construction bids, contractors were notified and were prequalified by a process tailored for the needs of this project. Thirteen major contractors (including general contractors, precasters, and pile drivers) were prequalified and construction bids were received. The low-bid contractor's price resulted in a bridge cost of \$44/ft<sup>2</sup>.

To sell the bonds after bids were received, potential investors were brought to the project site to meet the authority and research the area to help in evaluating their own financial rating for these unrated bonds.

In April 1991 the underwriters sold these unrated revenue bonds for this start-up and stand-alone toll facility. Within 10 min 25 buyers had made offers for \$150 million. The authority was able to negotiate lower interest rates because only \$81 million was needed to finance this project. On April 24, 1991, the bond clos-

ing was held and bonds were purchased by 18 buyers with interest rates lower than those for rated transportation bonds sold on the market on that same day. The toll rates are \$1.00 each way for pre-purchased trips and \$2.00 for nonpre-purchased trips.

Construction of the bridge began with special incentives in the contract for the contractor to complete the 30-month construction ahead of schedule. There was a \$5,000/day incentive for each day that construction was completed ahead of schedule and \$15,000 in liquidated damages for each day of construction past the scheduled completion date. Three payments of \$500,000 each were tied to achieving certain milestones in the CPM schedule.

The bridge itself was a precast, post-tensioned segmental box girder bridge comprising 141 spans with typical span lengths of 41.5 m (136 ft) and a main span over the Intracoastal Waterway of 68.6 m (225 ft). The completed bridge is shown in Figure 2. The substructure consisted of precast, post-tensioned box piers for the high-level portion and cast-in-place piers for the low-level portion, all of which was supported on concrete pile

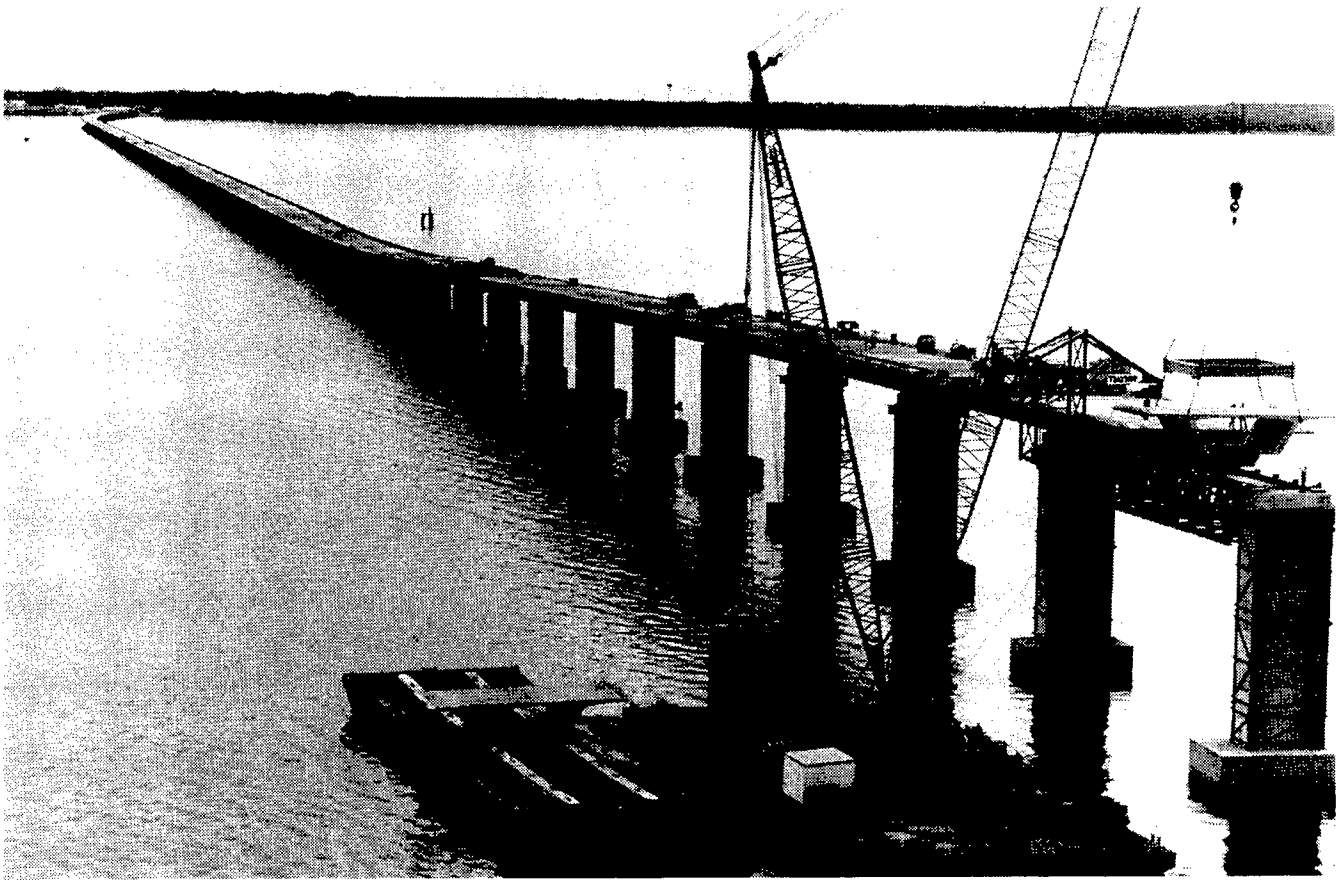


FIGURE 3 Typical 41.5-m (135-ft) spans were erected by span-by-span methods by using an assembly truss. The contractor was routinely able to erect four spans per week. During the week of September 20, 1992, the contractor was able to erect seven spans in 7 days [290 m (952 ft) of completed bridge in 1 week], a world record for span-by-span erection speed.

foundations. The bridge was built by the span-by-span method of construction, as shown in Figure 3. The contractor was typically able to place four spans per week. However, a world record for span-by-span erection was achieved when seven spans were completed in 7 days, for 290 m (952 ft) of completed bridge in 1 week.

In April 1993, when the construction was 4.5 months ahead of schedule and the interest rates on bonds were dropping significantly, the authority decided to refinance the bridge before the completion of construction. The construction costs were as expected and under budget, and the authority was able to obtain BBB and BBB- ratings on the senior and junior bonds, respectively. The new interest rates dropped by 2.02 and 2.85 percent, respectively. The interest rates for both the April 1991 and April 1993 bond sales were as follows:

	<i>Interest Rates (%)</i>	
	<i>April 1991</i>	<i>April 1993</i>
Senior lien bonds, \$56 million	8.09	6.07
Junior lien bonds, \$26 million	9.25	6.40

On June 26, 1993, the bridge opened 5 months ahead of schedule (it was built in 25 months). The bridge opened to traffic 6 years from the time that the consultants began the feasibility studies. The community achieved its dream and helped to create a new way for other community transportation projects to be financed.

#### **HOW MID-BAY BRIDGE'S SUCCESS HELPS FUTURE TRANSPORTATION**

The partnerships, special insurance, loans, no backings of governments, and construction incentives were all

part of this first-of-a-kind unrated revenue bond issue for an \$81 million stand-alone start-up toll facility. The revenues are only backed by the 5,000 vehicles per day that each pay by \$1.00 (preurchased) and \$2.00 tolls. This demonstrates how a transportation project can meet a significant challenge by using innovation. ISTEA expands on the options for innovation, allowing more opportunities for the use of federal and state monies and using small investments and loans to achieve major transportation projects. More facilities can be built with less money.

The Mid-Bay Bridge is resulting in the achievement of more stand-alone, unrated transportation projects. Our \$90 million Santa Rosa Bay Bridge in Santa Rosa County, Florida, will begin construction in 1995. It will be supported on 6,000 vehicles per day as a start-up, stand-alone facility building on the lessons learned from the Mid-Bay Bridge.

#### **ACKNOWLEDGMENTS**

The Mid-Bay Bridge Authority is the owner of the Mid-Bay Bridge Project and hired Figg Engineering Group as their engineers for design and management of the project. Figg Engineering Group managed eight subconsultants, provided the bridge design, and provided construction management and inspection. The authority's underwriters were Smith Barney and Harris Upham & Co., Inc., and the authority's attorneys were Stowell, Anton & Kraemer. The traffic and revenue analysis was accomplished by URS Coverdale & Colpitts. The contractor was Traylor Bros., with C. W. Roberts handling roadway construction. Michaels Building Corporation built the toll plaza. The members of the team, along with the partnerships with Okaloosa County and the FDOT, made this project successful.