Request for Proposals:
Willamette River Transit Bridge
Portland to Milwaukie Segment - South Corridor Project
Contract No: RH080396JB

Tri-County Metropolitan Transportation District of Oregon

Submitted by:
Rosales + Partners
in association with: Mayer/Reed and Schlaich Bergermann and Partner

April 3, 2008
Rosales + Partners specializes in the conceptual engineering and architecture of bridges, highway corridors, interchanges, streetscape elements, and other transportation facilities. From pedestrian bridges to twelve-lane landmark river crossings, the firm’s work encompasses projects large and small located both in the United States and abroad.

Since its inception, Rosales + Partners has been an unsurpassed resource for high quality transportation architecture and effective community participation. Its professional staff is skilled at working with community groups to resolve the controversies that often accompany major transportation projects.

The firm possesses a unique combination of architectural sensitivity, engineering understanding, and communication skills that allows it to create elegant and economical transportation solutions with strong community support. The firm aims to solve complex transportation problems while at the same time creating dramatic aesthetic statements in cities and communities around the world. The company was founded by Mr. Miguel Rosales, AIA in 1997 and currently has a technical staff of 10 professionals, that includes architects, landscape architects, lighting designers and urban designers. Rosales + Partners is a DBE/MBE certified firm located in Boston, Massachusetts.

Services
• Bridge and highway architecture
• Conceptual bridge engineering
• Transportation corridor design
• Interchange aesthetics and guidelines, streetscapes, and transportation related urban design
• Aesthetic lighting
• Management of community participation
• Implementation of design charrettes
• Visualizations, animations, renderings, and physical models of bridges and other transportation facilities

Significant Vehicular Bridges
• Puente Centenario, Panama Canal, Panama
• Woodrow Wilson Memorial Bridge Replacement, Washington, D.C.
• Central Artery/Tunnel Project, Boston, MA * 1-93 Leonard P. Zakim Bunker Hill Bridge Architectural Design Standards for Highways
• Martin Luther King, Jr. Parkway, Des Moines, Iowa
• George Washington Carver Bridge Architectural Design Standards for Highway
• I-70 Mississippi River Crossing, St. Louis, Missouri
• I-74 Mississippi River Crossing, Quad Cities Area between Iowa and Illinois
• I-71/75 Brent Spence Bridge over Ohio River, Cincinnati, Ohio
• Harbor Bridge, Corpus Christi, Texas
• East Locust St. Streetscape Improvements Project, Des Moines, Iowa
• Ohio River Bridges Project, Louisville, Kentucky
• I-265 East End Bridge
• I-64 Great Lawn Arch Bridge
• Restoration and Historic Rehabilitation of Longfellow Bridge, Boston, Massachusetts
• I-90 Dresbach Bridge over Mississippi River between Wisconsin and Minnesota

Awards
• 2006 Outstanding Civil Engineering Achievement Merit Award. American Society of Civil Engineers for the Liberty Bridge, Greenville, South Carolina.
• 2006 Federal Highway Administration Merit Award for Pedestrian Bridges over I-235, Des Moines, Iowa.
• 2005 International Footbridge Award in the aesthetics category (medium span), awarded in Venice, Italy for the Liberty Bridge, Greenville, South Carolina.
• 2005 Arthur G. Hayden Medal for a single recent outstanding achievement in bridge engineering demonstrating innovation in special use bridges for the Liberty Bridge, Greenville, South Carolina.
• 2005 American Segmental Bridge Institute Award of Excellence for Puente Centenario, Panama Canal, Panama.
• 2005 Bridge Prize for special purpose bridges from the National Steel Bridge Alliance for the Liberty Bridge, Greenville, South Carolina.
• 2004 ACEC Outstanding Civil Engineering Achievement for the Leonard P. Zakim Bunker Hill Bridge.
• 2003 AISC Prize Bridge Award for the Leonard P. Zakim Bunker Hill Bridge.
• 2002 Move Massachusetts Design Award as the Lead Architect and Urban Designer for the Leonard P. Zakim Bunker Hill Bridge in Boston.

* Contributions by Miguel Rosales as part of a consultant team, prior to the formation of Rosales + Partners

George Washington Carver, City of Des Moines, Iowa
Schlaich Bergermann and Partner is a civil and structural engineering firm established in 1980. Based in Stuttgart, Germany with branch offices in Berlin and New York, the firm employs 79 people. Schlaich Bergermann specializes in innovative engineering structures in a wide range of industries with a primary focus on bridge design. All of their projects share the fundamental goals of efficiency, beauty and ecology. They are well known for designing light, unique, and beautiful bridges and structures worldwide including innovative transit bridges.

The firm believes in working collaboratively and looking for the holistically correct solution with respect to the existing conditions. A primary foundation for all work is the thorough knowledge of all potential construction materials and the respective adjoining technologies. They pioneered the use of non-traditional materials like cast steel and granite in some of their pedestrian bridge designs. They work with architects, landscape architects, and artists in search of the best solution.

Mayer/Reed is an 18-person Portland based design firm providing landscape architecture, urban design and environmental graphics services for the environments in which we live, work and play. The firm’s work in creating places for human activity explores the social, cultural, ecological and historic context that shape these environments. Projects include waterfronts and urban water systems; trails, parks and recreation facilities; museums, outdoor exhibits and interpretive facilities; convention and exposition centers; corporate, medical and higher education campuses; office buildings, mixed-use housing and retail complexes; light-rail systems, roadways, and greenways.

Mayer/Reed’s multi-disciplinary approach and commitment to design excellence have resulted in a reputation for creative problem solving. Collaboration among partners and staff enables the firm to respond imaginatively to a client’s goals, from broad concepts through detailed design. Mayer/Reed is an Equal Employment Opportunity employer and is certified as a Woman Business Enterprise (WBE) in both Oregon and Washington.

**Significant Pedestrian Bridges**
- Pedestrian Bridge Bad Homburg v. d. Höhe
- Börstel Bridge Löhne
- Convertible Bridge over the Inner Harbor Duisburg Duisburg
- Bridge over Hoherenzollenring Bayreuth
- Bridge over the Weser River Minden
- Ripshorst Bridge, Oberhausen, Ripshorst

**Significant Vehicular / Transit Bridges**
- Worli Bandra Sea Link Mumbai
- Ting Kau Bridge Hong Kong
- Macao Taipa Crossing Macao
- Second Hooghly River Bridge Kolkata
- Humboldthafen Railroad Bridge Berlin
- Havel Railway Bridge Berlin-Spandau
- Neckarbridge, Stuttgart, Germany

**Significant Transportation and Urban Design Projects**
- Gibbs Street Pedestrian Bridge, ODOT and City of Portland’s Office of Transportation, current project
- I-5 and I-84 Downtown Interchange Study, ODOT and City of Portland’s Office of Transportation, complete 2007
- Vera Katz Eastbank Esplanade, Phases I and II, ODOT, Portland Development Commission and Portland Parks and Recreation, complete 2001

**Past / Current TriMet Projects**
- Interstate Max Light Rail Extension, TriMet, complete 2004
- Downtown Portland Transit Mall, TriMet, current project
Miguel Rosales has more than 20 years of experience in urban design and bridge architecture. He was the lead architect and urban designer for Boston’s Leonard P. Zakim Bridge over the Charles River and the Liberty Bridge in Greenville, South Carolina. Currently, Rosales is the lead architect on several major U.S. bridge projects including a new East End Bridge over the Ohio River in Louisville, Kentucky, a new pedestrian bridge over the Trinity River in Fort Worth, Texas, and four pedestrian bridges across the Belt Shore Parkway in New York City. Rosales holds a Diploma in Architecture from the Universidad Francisco Marroquin in Guatemala City and a Master of Science in Architecture Studies from the Massachusetts Institute of Technology in Cambridge, Massachusetts. He is president and principal designer of Rosales + Partners, a transportation design firm based in Boston, Massachusetts.

Focusing on bridge design, Rosales leads the design process from its original conceptual idea to details such as railings and lighting. His projects often take over a decade to complete due to their complexity and scale. A thorough understanding of both structure and design allows him to conceive bridges that are both innovative and visually outstanding. Working closely with the community and accepting their input on the design, he creates bridges that become sources of pride and symbols of the areas in which they are built.

**Professional Background**

Rosales + Partners, Boston, Massachusetts  
Principal, 1997 to Present

Wallace, Floyd, Associates, Inc., Boston MA  
Senior Architect / Urban Designer, 1988-1995

Stull & Lee Inc., Boston, Massachusetts  

Beacon Companies, Boston, Massachusetts  
Urban Design Consultant, 1987

**Education**

Master of Science in Architecture Studies  
Massachusetts Institute of Technology, 1987

Diploma in Architecture  
Universidad Francisco Marroquin, 1985

Program in Historic Preservation  
University of Florida, 1984

**Visiting Critic and Lecturer**

Universidad Francisco Marroquin  
Guatemala City, Guatemala

Swiss Federal Institute of Technology  
Zurich, Switzerland

Massachusetts Institute of Technology  
Cambridge, Massachusetts

**Registrations**

Guatemalan Society of Architects

Registered Architect, Massachusetts, Iowa, Illinois, Texas and New York

**Affiliations**

Boston Society of Architects AIA

Institute for Urban Design Fellow

**Publications and Awards**

Move Massachusetts Design Award for his role as the Lead Architect and Urban Designer for the Leonard P. Zakim Bunker Hill Bridge in Boston.

Individual Research Grant, National Endowment for the Arts

Publication on Infrastructure Design for the Future

Advanced Study & Research Scholarship, AIA/American Architecture Foundation

Research Grant, Massachusetts Institute of Technology

Bridges of Christian Menn, Switzerland

1993 P/A Young Architects Award Published in Progressive Architecture

AIA Urban Design Award of Excellence Plan for Charles River Crossing/Interchange, Central Artery/Tunnel Project, 1993

“Spanning the Charles” Structures, January 2000

“A Textbook Case of Community Participation: Des Moines, Iowa, bridge project designed with local issues in mind” Bridge Builder, February/March 1999

“Aesthetics in Bridge Engineering” ACEC/MA Insights, May/June 2000
Etty Padmodipoetro is an architect and urban designer with over 25 years of experience. Throughout her career, her main focus has always been on transportation and bridge related projects. She is currently involved in many projects around the country including, Longfellow Bridge Restoration, Boston, Massachusetts; Kennedy Interchange in Louisville, Kentucky and the I-74 Mississippi River Crossing in the Quad Cities. Prior to joining Rosales + Partners she played a major role in the design of new urban spaces created as a result of Boston’s Central Artery/Tunnel Project. On this largest highway project in the nation, she was responsible for the public outreach and urban design interface between various neighborhoods and the highway. Working closely with community groups, she helped develop parkland, buffer areas, development parcels, and integrate public arts as part of the mitigation of the expanded highway system.

Education
Bachelor of Environmental Design
University of Minnesota, 1979
Bachelor of Architecture
University of Minnesota, 1982
Loeb Fellowship
Harvard University, 2006

Affiliations
• American Institute of Architects
• Boston Society of Architects
• Urban Arts
• Women in the Building Trades
• Learning by Design Massachusetts

Awards
• Thesis Award from University of Minnesota, 1979
• Aga Kahn Traveling Scholarship, Harvard / MIT, 1981
• Boston Society of Architects Award for Vent Building 7
• Community Works - Community Service Award
• Women’s Transportation Seminar - Recognition of Service Award

Virginia Ferriday has seventeen years of experience as an urban designer and project manager of public projects. She has prepared development plans for urban neighborhoods and collaborated with engineering staff on the design of transportation projects. She has extensive experience with community participation. Transportation projects include Boston’s Central Artery/Tunnel Project, Boston’s Arborway Transit Restoration Project, Pittsburgh’s Stage II Light Rail Transit Project and the Sound Transit East Corridor light rail line in Seattle. Cities for which she has developed neighborhood plans include Washington DC; Cambridge MA; Houston TX; West Palm Beach FL; Quincy MA and Boston MA. As an Architect, Ms. Ferriday has designed large and small-scale residential projects. As an architectural historian and preservationist she has authored works on Northwest architecture and coordinated the City of Portland Historic Resource Inventory.

Education
Bachelor of Architecture
University of Pennsylvania, 1963
Master of Architecture in Urban Design
Harvard University, 1987

Affiliations
• Women’s Transportation Seminar: Current, Portland Chapter; Awards Committee
• Advanced Transportation Association: Current
• Architectural Heritage Center, Portland, OR: Current
• American Institute of Architects: Portland Chapter, 1984 –1985, Board
• State of Oregon Advisory Committee for Historic Preservation, 1981 -1985
• City of Portland Historical Landmarks Commission: 1977 – 1980, Chairman
• City of Portland Citizens’ Advisory Committee for Public Works, 1975 –1978

Awards/Publications
• Ceramics Monthly, “Artists and Architects,” June/July/August, 1988, review of exhibit at Urban Center, New York City, Author
• Last of the Handmade Buildings; Glazed Terra Cotta in Downtown Portland, Mark Publising Company, Portland, Oregon, 1984, Author
• Space, Style and Structure; Building in Northwest America, Oregon Historical Society, 1974

Local Architect and Urban Designer
Senior Urban Designer, Rosales + Partners

Project Coordinator
Vice President, Rosales + Partners

I-93 Zakim Bunker Hill Bridge, Boston, Massachusetts

174 Mississippi River Crossing, Quad Cities, Iowa and Illinois
Jörg Schlaich is an internationally recognized engineer with more than 42 years of experience in engineering innovative bridges, buildings, and other structures, as well as research and teaching in the field. He pioneered the "strut and tie" method of reinforced concrete analysis, which has become the accepted standard in the field. He and his firm have designed more than 30 unique pedestrian bridges, many of which have become landmarks in their communities. Jörg Schlaich sees it as the engineer's duty to create an aesthetic environment and to ensure honesty and rationality in structural form. He has written, "The engineer’s mission in the name of society and culture is to build well and to build beautifully." He is particularly concerned with pedestrian bridges, which often require long ramps to achieve vertical clearances while fitting into confined conditions. "We come into physical contact with these bridges, and are concerned if they are clumsy and heavy, so we must build them lighter and more transparent, and we must give them human dimensions."

**Affiliations**

- Ingenieurkammer Baden-Württemberg
- International Association for Bridge and Structural Engineering
- International Association for Shell and Spatial Structures
- Federation Internationale du Béton
- American Society of Civil Engineers
- American Concrete Institute
- National Academy of Engineering, Washington DC (Foreign Member)
- The Royal Academy of Engineering, London (Foreign Member)

**Honorary Doctorates / Awards**

- Hanover
- Stockholm
- Bratislava
- Zurich
- Freysinnet Medal FIP
- Gold Medal, Institute of Structural Engineers, London
- Award of Merit in Structural Engineering of IABSE
- José-Entrecanales-Ibarra-Preis, Madrid

Carol Mayer-Reed, FASLA, is partner-in-charge of landscape architecture and urban design at Mayer/Reed. The Portland based firm is recognized regionally and nationally for design excellence. Carol’s 30 years of experience represents a wide array of project types in both public and private sectors. Projects range from transportation corridors, waterfront and site master planning, to natural water systems, urban renewal, greenways, trails and parks, and recreation.

Carol is currently a Board Member of the Architecture Foundation of Oregon and a member of The Waterfront Center in Washington DC. She is appointed as a Peer Review team for the federal General Services Administration’s Excellence in Design Program. Carol has taught urban stormwater design classes at the University of Oregon School of Architecture & Allied Arts. She is currently appointed to the South Waterfront District Design Review Board.

**Affiliations**

- Fellow of the American Society of Landscape Architects
- Registered as a landscape architect in the states of Oregon, Washington, Idaho and Ohio.
- Member of the Council of Landscape Architectural Registration Boards (CLARB)

**Publications / Awards**

- 2007 Recognizing Excellence Award, the Villebois Development, Urban Land Institute of Oregon and Southwest Washington
- 2004 Best of Category (Gold Medal) of Landscape Architecture for the Eastbank Esplanade Phase II, the American Society of Landscape Architects (ASLA), Oregon Chapter
- 2003 Streetscape Renaissance Award for the Tall 51st Street Streetscape Project, the Oregon Downtown Development Association
- 2004 Award of Excellence for the Eastbank Esplanade Phase II, the American Society of Landscape Architects (ASLA), Oregon Chapter
- 2004 Best of Category (Gold Medal) of Landscape Architecture for the Eastbank Esplanade, Urban Land Institute of Oregon and Southwest Washington
- 2007 Recognizing Excellence Award, the Vera Katz Eastbank Esplanade, Urban Land Institute of Oregon and Southwest Washington

**Education**

Bachelor of Fine Arts
Ohio State University

Master in Landscape Architecture & Environmental Planning,
Utah State University

Carol Mayer-Reed, FASLA
Partner, Mayer/Reed

**Project Technical Advisor**

**Jörg Schlaich**

President, Schlaich Bergermann and Partners

**Project Landscape Architect**

**Carol Mayer-Reed**, FASLA

**Partner, Mayer/Reed**

**Education**

Studies in Architecture and Engineering,
University of Stuttgart, 1953-1955

Diplom-Ingenieur Bauingenieurwesen
Technical University of Berlin, 1959

Master of Science in Civil Engineering
Case Institute of Technology, 1961

Doctorate (Doctor-Ingenieur)
University of Stuttgart, 1963

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Liberty Bridge
Greenville, South Carolina

Type: Curved Suspension Bridge
Services: Conceptual, Preliminary, and Final Design, Construction Services and Community Participation
Cost: $4.5 Million
Completion Date: 2004
Client: City of Greenville, Mr. Knox White, Mayor
Phone: 864-467-4590

Total R+P Contract Amount: $450,000
Relationship to other Professional Service Provider: Prime Consultant

Greenville’s downtown is split by a wooded valley park containing the falls of the Reedy River. The Liberty Bridge is located just downstream from this group of waterfalls, replacing a 6-lane highway bridge that was demolished. The bridge has a curved clear span over the river that curves away from the falls, providing visitors with an aerial platform from which to view the cascading water. The link gently slopes into the ravine and is supported by twin inclined towers and a single suspension cable, allowing for unobstructed views. With a total length of approximately 380’ and a clear span over the river, the bridge appears to float over the landscape.

Lancaster Pedestrian Bridge
Fort Worth, Texas

Type: Steel Arch/ Concrete Stressed Ribbon
Services: Conceptual, Preliminary and Final Design, Community Participation and Physical Models
Cost: $1.6 Million (projected construction cost)
Completion Date: 2010
Client: City of Fort Worth, Mr. Randle Harwood, Trinity River Director
Phone: 817-392-6101

Total R+P Contract Amount: $250,000
Relationship to other Professional Service Provider: Sub-Consultant

The Lancaster pedestrian bridge will cross over the Trinity River in an area adjacent to downtown Fort Worth. The bridge has a graceful profile that enhances the serene and beautiful landscape. A steel arch with a span of 163’ supports the concrete stress ribbon segment over the river and complements the adjacent historic Lancaster vehicular bridge. This bridge will be the first of its kind in North America. Pedestrians and bicyclists crossing the bridge will experience the smooth, undulating bridge walking surface. The bridge will connect an existing park to a new trail that will terminate in downtown Fort Worth.
**Puente Centenario**
Outside Panama City, Panama

The Puerto Centenario is a slender cable-stayed bridge carrying six lanes of traffic across the Panama Canal. With a main span of 1,400', it is the longest span of its kind in Central and South America. A vertical navigational clearance of 250' allows large vessels to pass below and accommodates a future canal expansion. The 600' towers support a single plane of cables anchored along the median. The landmark bridge is visible from great distances and contrasts dramatically with the lush rainforest setting. Aesthetic lighting illuminates the towers at night, thus making the bridge the sole focal point in an otherwise dark natural setting. Designed throughout to appear modern, streamlined and elegant, the Puente Centenario is a fitting landmark for Panama and its people.

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**I-93 Zakim Bunker Hill Bridge**
Boston, Massachusetts

As part of the Central Artery/Tunnel Project, the Zakim bridge is the widest cable-stayed bridge in the world and the only asymmetrical cable-stayed bridge in the United States. The 1,475' structure features twin inverted Y-shaped towers and a 745' main span. The bridge carries ten lanes of traffic: eight interstate lanes passing through the towers and two local traffic lanes cantilevered off the east side, outside the towers. The towers recall the shape of the historic Bunker Hill Monument in neighboring Charlestown, while the bridge's overall form echoes the shape of the sailboats that navigate the inner Charles River Basin. The bridge is a striking addition to the Boston skyline and a new symbol of the city. *Contributions by Miguel Rosales as part of a consultant team, prior to the formation of Rosales + Partners*
I-265 Ohio River East End Bridge
Louisville, Kentucky

Type: Minimized Cable Stayed  
Services: Conceptual Design, Type Study Selection, Preliminary Design, Community Participation, Architectural Visualizations and Physical Models  
Cost: $230 Million (projected construction cost)  
Completion Date: 2014  
Client: Kentucky Transportation Cabinet, Mr. Matt Bullock – Ohio River Bridges Project  
Phone: 502-210-5400  
Total R+P Contract Amount: $750,000  
Relationship to other Professional Service Provider: Sub-Consultant

A new crossing of Interstate 265 over the Ohio River between Indiana and Kentucky will include an elegant and unusual cable stayed bridge. The East End Bridge will have a main span of 1,200’ with an overall length of 2,100’ over the river. The bridge deck is approximately 153’ wide and includes a 17’ pedestrian and bicycle trail. The bridge is very transparent because the stay cables next to the towers are omitted by introducing a variable depth box superstructure that takes the loads directly to the towers. The underside of the bridge is uncluttered and between opposing traffic decks a series of openings have been utilized to allow sunlight to reach the water and reduce the mass of the wide deck.

I-74 Mississippi River Crossing
Quad Cities, Iowa and Illinois

Type: Twin Steel Arches  
Services: Conceptual Design and Type Study Selection, Community Participation, Architectural Visualizations and Physical Models  
Cost: $190 Million (projected construction cost)  
Completion Date: 2015  
Client: Iowa Department of Transportation, Ms. Tamara Nicholson, Project Manager  
Phone: 515-239-1653  
Total R+P Contract Amount: $275,000  
Relationship to other Professional Service Provider: Sub-Consultant

A set of twin I-74 Steel Arches will replace an existing pair of suspension bridges that for decades have been the symbols of the region. The impressive arches will be 75’ higher than the existing bridges and visible from long range view points. The new crossing will have twin decks of 72’ in width and a main span of approximately 940’ over the navigation channel. A 14’ wide pedestrian and bicycle trail will be attached to the bridge and will become a link between trails along the river shorelines. The height of the arches will be 250’ over the river which will make them true landmarks along the Mississippi River.
The Neckar Rail Bridge in Stuttgart utilizes a series of sail-like steel elements which will be in tension and are attached to short reinforced concrete towers. There are two main spans over the river of 235' and 255' long. The bridge finishes at both ends with the short spans. The bridge is light and elegant with a distinctive profile over the water; its appearance is unique for a major railroad bridge.

Humboldthafen Railroad Bridge
Berlin, Germany

Situated at the very centre of Berlin near the Reichstag and the Chancellery, this bridge crosses the Humboldt Harbour Basin attached to the river Spree. In order to carry seven tracks in a curve and at varying distances in plan and still looking light and transparent from any position, four independent and compact concrete decks were chosen which are supported on steel arches. The joints of the tubes and their connections with the concrete deck and the piers are made for the first time in modern bridge engineering from cast steel. Since these joints are visible from any point of view, from aesthetics through weldability to durability, superior to directly welded tubes the bridge also contributes as an innovation to tubular and composite structures. Total length 625' and main span 195'.

Neckarbridge Bad Cannstatt II
Stuttgart, Germany

The Neckar Rail Bridge in Stuttgart utilizes a series of sail-like steel elements which will be in tension and are attached to short reinforced concrete towers. There are two main spans over the river of 235' and 255' long. The bridge finishes at both ends with the short spans. The bridge is light and elegant with a distinctive profile over the water, its appearance is unique for a major railroad bridge.