

Missouri River Bridge at Washington, MO

*Prepared by: Washington Bridge Committee
December 2009*



Missouri Highway 47 Bridge Committee

- Bob Zick – Chairman
- Steve Carey
- Dave Christensen – Cochran Engineering
- Scott Dieckhaus – Mo. State Representative
- Arden Engelage – Warren Co. Presiding Comm.
- Ray Frankenberg
- John Griesheimer – Mo. State Senate
- Bill Halmich – Washington Fire Chief
- Ed Hillhouse – Franklin Co. Presiding Comm.

Missouri Highway 47 Bridge Committee – Cont.

- Dick Hirschl
- Kevin Kriete – HDR Engineering, Inc.
- Darren Lamb – City of Wash. Planning Dept.
- Mike Marquart – Missouri Eagle LLC
- Terri McLain – Pres. St. John's Mercy Hospital
- Brian Nieves – Mo. State Representative
- Burt Schweissguth
- Mike Sutherland – Mo. State Representative
- Lori VanLeer – Supt. Wash. School District

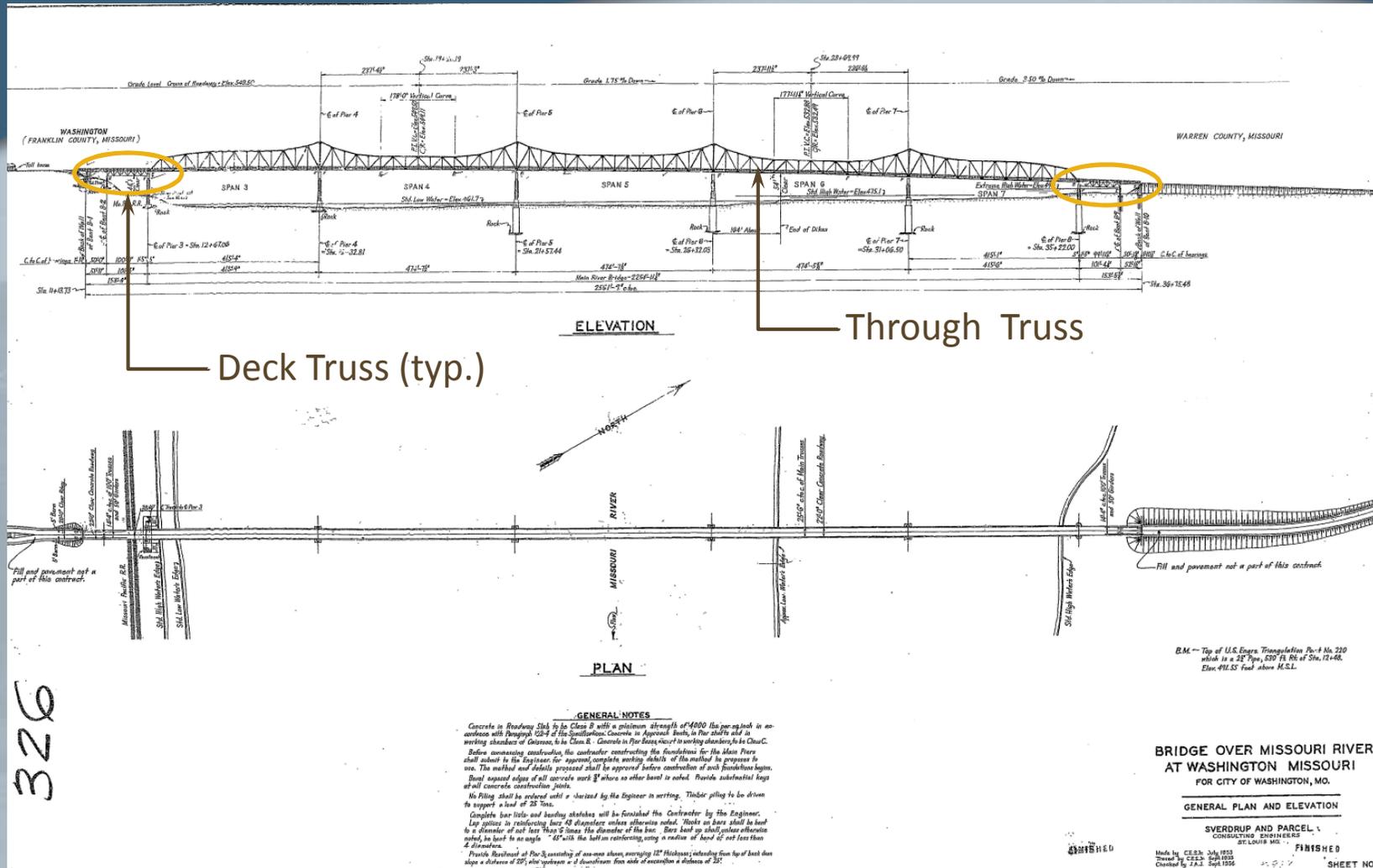
Original Bridge Construction

Bridge Built: 1934-36

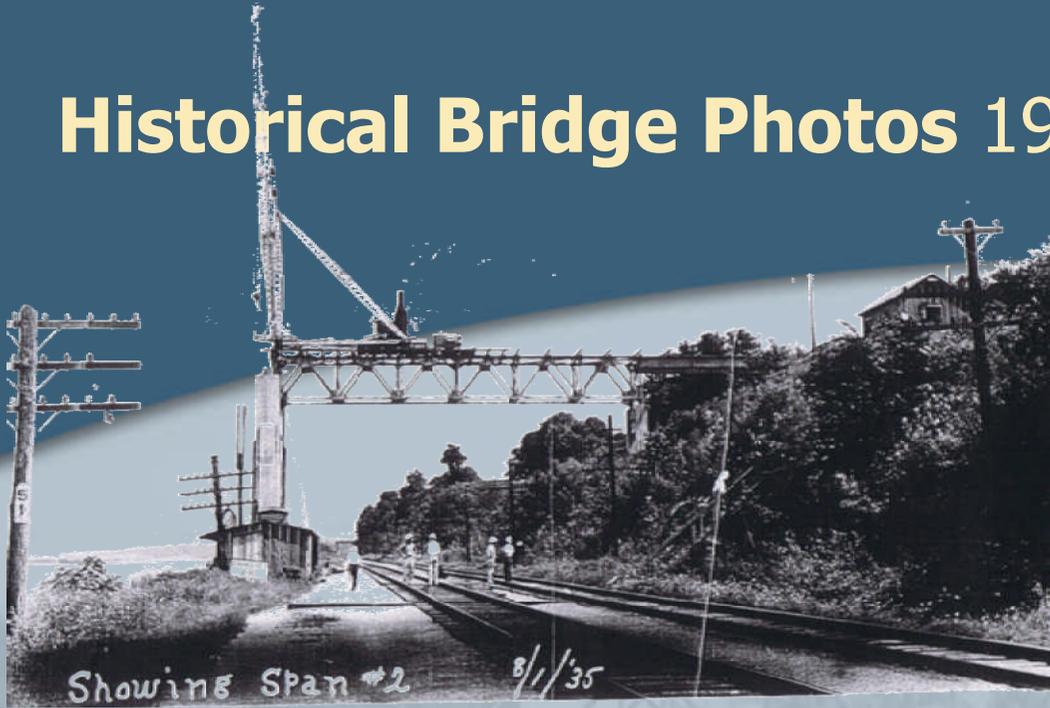
- Type: Truss Bridge
- Length: 2562 feet
- Width: 22' roadway (2-11' lanes)
- Cost: \$803,000
 - \$428,000 loan – repaid by tolls
 - \$175,000 grant
 - \$200,000 from State Highway Department



Existing Bridge – Plan and Elevation



Historical Bridge Photos 1935-1936



Removal of Toll House (1951)



WASHINGTON, MISSOURI BRIDGE

Across Missouri River on State Highway 47; A most scenic road through beautiful and varied country.



Excellent hard-surfaced road from Union, Mo. on Highway 50 to Warrenton, Mo. on Highway 40, connecting with Highway 100.

\$48,000 STRUCTURE OWNED BY CITY OF WASHINGTON

NEW TOLL SCHEDULE

Toll Receipts Will Make the Bridge Free

	One Way	Round Trip
Foot Passengers	\$.15	\$.25
Bicycle, Motorcycle, Horse & Rider	.15	.25
Horse-Drawn Vehicle	.35	.50
Automobile and Occupants	.45	.75
Motor Trucks, ½ ton or less	.45	.75
Motor Trucks, more than ½ ton	.70	1.10
Motor Tractor <small>With Trailer or Semi-Trailer</small>	.90	1.40
Auto Trailer	.30	.50
Bus with Driver	1.00	1.60
Passengers on Bus	.05	.10
Farm Tractor, without lugs	.70	1.10

\$5.00 SCRIP BOOKS ON SALE FOR \$3.50

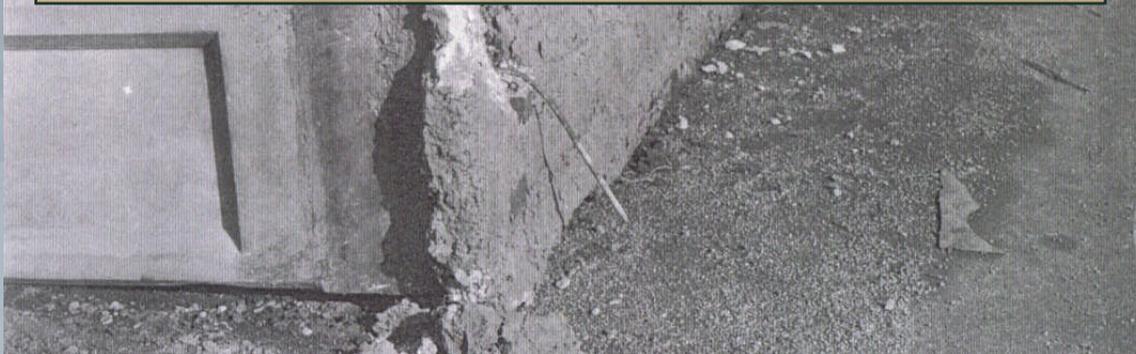
ON SALE AT TOLL HOUSE
SCRIP IS GOOD FOR THE PAYMENT OF ANY TOLL

10/06/2009

Removal of Toll House (1951)



Toll today would cost over \$3.75 (one way)



WASHINGTON, MISSOURI BRIDGE

Across Missouri River on State Highway 47; A most scenic road through beautiful and varied country.



Excellent hard surfaced road from Union, Mo. on Highway 50 to Warrenton, Mo. on Highway 40, connecting with Highway 100.

SARLON STRUCTURE OWNED BY CITY OF WASHINGTON

NEW TOLL SCHEDULE
Toll Receipts Will Make the Bridge Free

	One Way	Round Trip
Foot Passengers	\$.15	\$.25
Bicycle, Motorcycle, Horse & Rider	.15	.25
Horse-Drawn Vehicle	.35	.50
Automobile and Occupants	.45	.75
Motor Trucks, ½ ton or less	.45	.75
Motor Trucks, more than ½ ton	.70	1.10
Motor Tractor <small>With Trailer or Semi-Trailer</small>	.90	1.40
Auto Trailer	.30	.50
Bus with Driver	1.00	1.60
Passengers on Bus	.05	.10
Tractor, without lugs	.70	1.10

\$5.00 SCRIP BOOKS ON SALE FOR \$3.50
ON SALE AT TOLL HOUSE

SCRIP IS GOOD FOR THE PAYMENT OF ANY TOLL

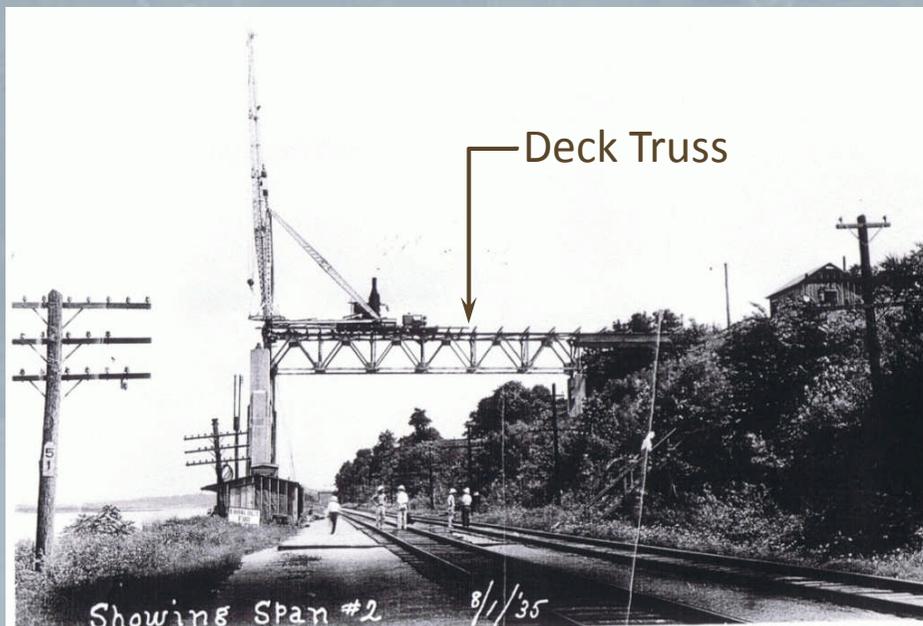
10/06/2009

Minneapolis Bridge Collapse 8/1/2007



Reasons for concern:

- Bridge designed by same firm
- Bridge designed/ built about the same time
- Bridge has similar design elements



St. Louis Post Dispatch 8/2/07

HDR

Bridge Investments

- Late 1990s Federal Earmark:
 - Approx. \$3 million (following flooding 1993 and 1995)
- 1998 Rehabilitation/ Deck Replacement:
 - Cost of approx. \$6 million
- MoDOT Allocation:
 - Budgeted \$3.5 million for 2009 rehabilitation work
- Actual 2009 Rehabilitation Project:
 - Cost = \$5 to \$6 million
 - Should add approximately 8-10 years to life
 - Buy time to design and build new bridge

Bridge Investments

- Late 1990s Federal F earmark:
 - Approx. \$3 million (following flooding 1993 and 1995)

- **Rehabilitation costs:**
\$12 million in the past 11 years

- MoDOT Allocation:
 - **Expected additional life span:**
8-10 years

- Actual 2009 Rehabilitation Project:
 - Cost = \$5 to \$6 million
 - Should add approximately 8-10 years to life
 - Buy time to design and build new bridge

Improvement Evaluation Criteria

- **Preservation** of the existing infrastructure will be achieved by managing and maintaining current roadway, bridge, transit and intermodal assets. HIGH PRIORITY CONDITION
- **Safety** and security will be achieved by decreasing the risk of personal injury and property damage on, in and around transportation facilities. HIGH PRIORITY CONDITION
- **Congestion Management** will be achieved by ensuring congestion of the region's roadways do not reach levels which compromise economic competitiveness. MEDIUM PRIORITY CONDITION
- **Access to Opportunity** will be achieved by addressing the complex mobility needs of persons living in low-income communities and persons with disabilities. MEDIUM PRIORITY CONDITION
- **Sustainable Development** will be achieved by coordinating transportation, land use, economic development, environmental quality and community aesthetics. HIGH PRIORITY CONDITION
- Efficient **Movement of Goods** will be achieved by improving freight within and through the region by rail, water, air and surface transportation modes. HIGH PRIORITY CONDITION

Preservation – Importance

- Major north/south route connecting I-44 and I-70 for eastern Missouri and Franklin and Warren Counties
- Crucial for access to St. John's Mercy Hospital; 45 minute additional travel time to next closest hospital
- Existing mutual aid agreements between emergency agencies
- Center of corridor for industrial and commercial growth

Preservation – Importance

- Washington School District on both sides of Missouri River
- St. Francis Borgia RHS and East Central College also draw students from across the River
- Connectivity to Washington Regional Airport

Preservation – Detour Routes

Truck route over 100 mile detour

Franklin Ave to Dutzow, Missouri - Google Maps

Page 1 of 2

Google maps

Directions to Dutzow, Missouri
62.7 mi – about 2 hours 9 mins

Save trees. Go green!
Download Google Maps on your phone at google.com/gmm



Boone Bridge
Chesterfield, MO

- 62.7 miles
- 2 hours 9 minutes

http://maps.google.com/maps?f=d&source=s_d&saddr=Franklin+Ave&daddr=Franklin+A... 9/28/2009

http://maps.google.com/maps?f=d&source=s_d&saddr=Franklin+Ave&daddr=Franklin+A... 9/28/2009

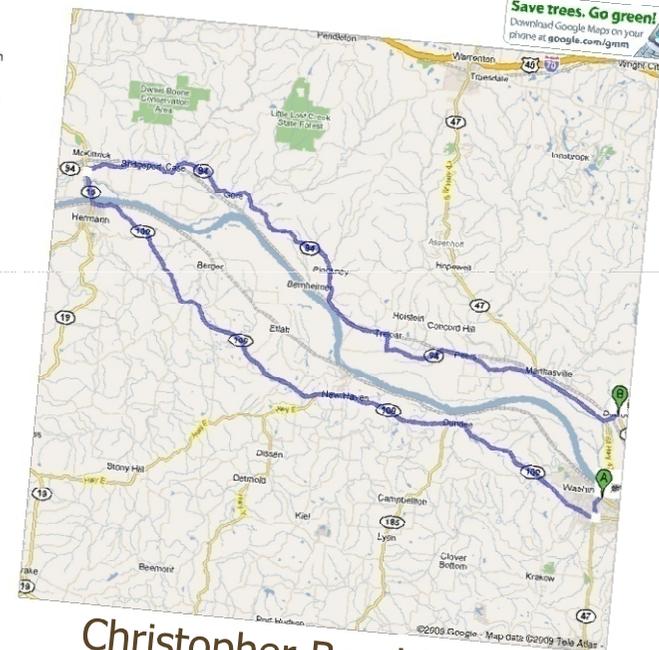
Franklin Ave to Dutzow, Missouri - Google Maps

Page 1 of 2

Google maps

Directions to Dutzow, Missouri
61.8 mi – about 2 hours 6 mins

Save trees. Go green!
Download Google Maps on your phone at google.com/gmm



Christopher Bond Bridge
Hermann, MO

- 61.8 miles
- 2 hours 6 minutes

http://maps.google.com/maps?f=d&source=s_d&saddr=38.552193,-91.002073&daddr=Fr... 9/28/2009

http://maps.google.com/maps?f=d&source=s_d&saddr=38.552193,-91.002073&daddr=Fr... 9/28/2009

Safety - Bridge Inspection 08/2007

- A Missouri Department of Transportation bridge inspection team is making an up-close examination of the Washington Bridge using a special boom, or "snooper," truck. The inspection had been scheduled for some time, according to city officials, but also comes on the heels of last week's collapse of a bridge in Minnesota. State officials said it may be two weeks before the findings of the inspection are released.

Washington Missourian 8/8/07



Safety - Inspection Findings 08/2007



Deterioration in primary support members



Major cause for concern;
pack rust in vertical
support member of deck
truss

Safety - Inspection Findings 08/2007, cont.



Deterioration in secondary members

Safety - MoDOT Temporary Repairs



Close-up of temporary vertical support

Safety – Rehabilitation Photos

Painting only the splash zones



Access platform full length below bridge



Deteriorated Rivets

Safety - Rehabilitation Photos cont'd



Repair to primary support member



Repair to secondary member



Previous repair at floor beam connection



Limited Rehabilitation – “Band Aid” Approach

- Painting only the splash zones - (8' above deck and only exterior face of below deck truss members)
- Repairing all primary support members
- Repairing as many secondary members as budget allows
- Expected life span 8 to 10 years
- Cost \$5.2 million

Safety – Sufficiency Rating

- Includes a multitude of factors: inspection results of the structural condition of the bridge, traffic volumes, number of lanes, road widths, clearances, and importance for national security and public use.

- **Based on a scale from 1 to 100**

< 50 High Priority

50 to 79.9 Medium Priority

>80 Low Priority

Safety – Sufficiency Rating

- Includes a multitude of factors: inspection results of the structural condition of the bridge, traffic volumes, number of lanes, road widths, clearances, and importance for

Washington Missouri River Bridge

Sufficiency Rating = 5.8

- Based on a scale from 1 to 100

< 50

High Priority

50 to 79.9

Medium Priority

>80

Low Priority

Congestion Management - Traffic

- Exiting traffic count (10,288) is nearing capacity for a two-lane roadway
- Projected traffic counts (15,900, design year 2033) will require a four-lane facility
- Route carries 8% truck traffic

Congestion Management - Traffic

Exiting traffic count (10,288) is nearing capacity for a two-lane roadway
New bridge should be 4-lanes or easily expandable to 4-lanes to meet future traffic demands

- Route carries 8% truck traffic

Sustainability – Economic Impact

- Impact of 1993 Flood
 - Length of closure = 7 weeks
 - Estimated economic impact = nearly \$6.25million (1993 dollars)
- Impact of Major Rehabilitation (requiring closure)
 - Estimated economic impact = nearly \$1.4 million/ week
- Impact of Bridge Failure
 - Estimated schedule to design and construct new bridge = 1 year (based on Minneapolis I-35 reconstruction)
 - Estimated economic impact = **OVER \$70 million**

Goal – Safe New Bridge

- Before the Next Rehabilitation (<10 years)
- 4 Lanes of Traffic (now or easily expandable)
- Bike and Pedestrian Accessible
- New Landmark for the Region
- Allow for Future Causeway Construction

Estimated Costs - Construction

- 2600 feet long
- 60'-8" deck width
 - 48' roadway width (min.)
 - 10' wide pedestrian/ bike path
 - Plus traffic barriers
- \$275/ ft² of bridge deck
- Additional 15% for roadway improvements
- Estimated Cost = \$55 million +/-
(including right-of-way and design)

Estimated Costs - Design

- Removal of Existing Bridge = \$1.5 million +/-
- Design Fee (3% of Construction Cost) = \$1.5 million +/-
 - Preliminary Design Fee (33% of Design Fee) = \$0.50 million +/-

Support – Federal Legislators



Senator Claire McCaskill

“Building a modern bridge would be valuable for Washington and Franklin County. Modern infrastructure enables people to get to work easily and provides for growth in commerce. Seeking funding for such a project from federal and Missouri transportation authorities is a worthy and valuable endeavor.”



U.S. Senator Christopher “Kit” Bond

“I’m pleased that funds I was able to secure are being used to do environmental and design work for a new Missouri Highway 47 Bridge. We’re buying some time with the rehabilitation of the bridge, but as the State Department of Transportation has indicated, it is the oldest in Missouri and will need to be replaced.”



Congressman Blaine Luetkemeyer

“It is my firm belief that replacing the Highway 47 Bridge is essential to preserving the safety of the thousands of people who use it each and every day. As a member of Congress, I am committed to working with local and state officials to ensure that a new bridge becomes a reality.”

Support – State/ Local Legislators

The following State/ Local Representatives have voiced their support for the new Missouri River Bridge

John Griesheimer – Mo. State Senate

Brian Nieves – Mo. State Representative

Mike Sutherland – Mo. State Representative

Scott Dieckhaus – Mo. State Representative

Ed Hillhouse – Franklin County Pres. Commissioner

Arden Engelage - Warren County Pres. Commissioner

Support – Local Municipalities/ Counties

The following local agencies have signed resolutions or letters in support of the new Missouri River Bridge

- Foristell
- Union
- Warrenton
- Marthasville
- Wright City
- St. Clair
- Washington
- Augusta
- Franklin County
- Warren County
- St. Charles County

Support – Community Organizations

Letters of support have been received from the following Civic Organizations

For More Information...



- Visit the City of Washington, MO Website:



<http://www.ci.washington.mo.us>



Color Palette