Columbia I-70 Bridges

TEAM – March 2016
Columbia I-70 Bridges

Bus Loop 70
Garth Ave
Rte 763 (Rangeline)
Project Need

• Voided slab bridges built in 1957
• Superstructures are in poor condition and deteriorating quickly
• Very difficult to rehabilitate
• Continual maintenance needs on deck
• Low level of service at BL-70 interchange
Design-Build Project

Set Price - $18 million

• Replace bridges
• Business Loop 70 Interchange
• MO Route 763 Interchange
• Any additional improvements
Design-Build Goals

• Deliver the project within the program budget of $18 million.
• Construct bridges on Interstate 70 at Business Loop 70 West, Garth Avenue and MO Route 763 that provide long-term service and will be compatible with future expansion.
• Minimize traffic impacts while maximizing capacity and mobility for the area.
• Maximize safety for the workers and commuters.
• Complete the project by October 1, 2016.
• Provide project team that reflects the diversity of the community.
- No point reduction for lane closures
- Weathering steel plate girder and wide flange bridges
- Mostly single span bridges with MSE walls
- Overall reduction in bridge area
- Slide-in construction of 3 bridges
- Completion date of Sept. 1, 2016
Garth Avenue / Providence Ramps

- Ramps lengthened for use during MOT operations
- Increased length provides superior merge and diverge operations
- Wider bridge for MOT operations useful for accommodating future widening
- Substructure built for slide-in will be left in place for future widening
Route 763 (Rangeline)

- Dual roundabout interchange
- Eliminate traffic signals
- Improved LOS A for interchange
- Safer connectivity for motorists and pedestrians
- Provide dedicated right-turn lanes at ramp terminals
- Substructure for slide-in will be left in place for future widening
Business Loop 70

- Dual roundabout Interchange
- Improved LOS for both roundabouts
- Reduced Delays (average of 14 seconds)
- Compatible with future I-70 widening
- Safer motorist and pedestrian connectivity
- EB off ramp utilizes parallel exit type
Smart Work Zone

- Utilizes CMS boards, Bluetooth sensors, portable cameras, and Radar traffic detectors
- Up-to-the-minute information to the traveling public
- Integrated with MoDOT’s permanent ITS infrastructure and Statewide Traveler Information Map
Public Information

- Weekly E-mails
- Joint Effort
- Web – Live Cameras – Early and Often
Garth Avenue and Rangeline - Phase 1

I-70 over Garth Avenue Phasing Typical Section

Stage 1 Construction

≈ 87'-6"

49'-8"

Stage 1 Traffic

66'-0"

3'-0"

12'-0"

12'-0"

12'-0"

4'-7½"

4'-7½"

12'-0"

Stage 1 Construction

2'-4½"

2'-4½"

Looking Upstation (East)
Garth Avenue and Rangeline - Phase 2

Winter 2015
Current Construction Status at Rangeline
Garth Avenue and Rangeline - Phase 3

I-70 over Garth Avenue Phasing Typical Section

Stage 3 Traffic
2' - 0"
Lane

Stage 3 Construction
37' - 8"

Stage 3 Traffic
21' - 0"
Const. Access
27' - 0"
Lane

N GARTH AVENUE

Closed road/bridge
Bridge construction
Traffic detour
Traffic on completed roadway
Traffic on existing roadway

MoDOT
PARSONS
April/May 2016
Garth Avenue and Rangeline - Phase 4

I-70 over Garth Avenue Phasing Typical Section

Stage 4 Construction

1'-0"

Stage 4 Traffic

1'-0"

Bridge Slide

11'-0"

11'-0"

11'-0"

11'-0"

11'-0"

1'-0"

Shldr.

Closed road/bridge
Bridge construction
Traffic detour
Traffic on completed roadway
Traffic on existing roadway

PHASE 4

N GARTH AVENUE

MoDOT
PARSONS

May / June 2016
Buisiness Loop 70 Interchange - South
Buisiness Loop 70 - Phase 3

45 DAY CLOSURE STARTING IN MID-JUNE
MSE Wall Construction @ West Abutment of WB Range Line Bridge

Completed MSE Wall and Temp Abutment
Slide plate at Temp Abutment of Range Line Bridge

Stainless Steel Slide Shoes and Beam Bolsters
Weathering Steel Girders @ WB Range Line bridge

WB Range Line Bridge deck pour
MSE Wall and Structural Steel Piles at WB Garth Bridge
Weathering
Steel Girders
WB Garth Bridge
http://www.modot.org/ColumbiaBridges

Any Questions?