

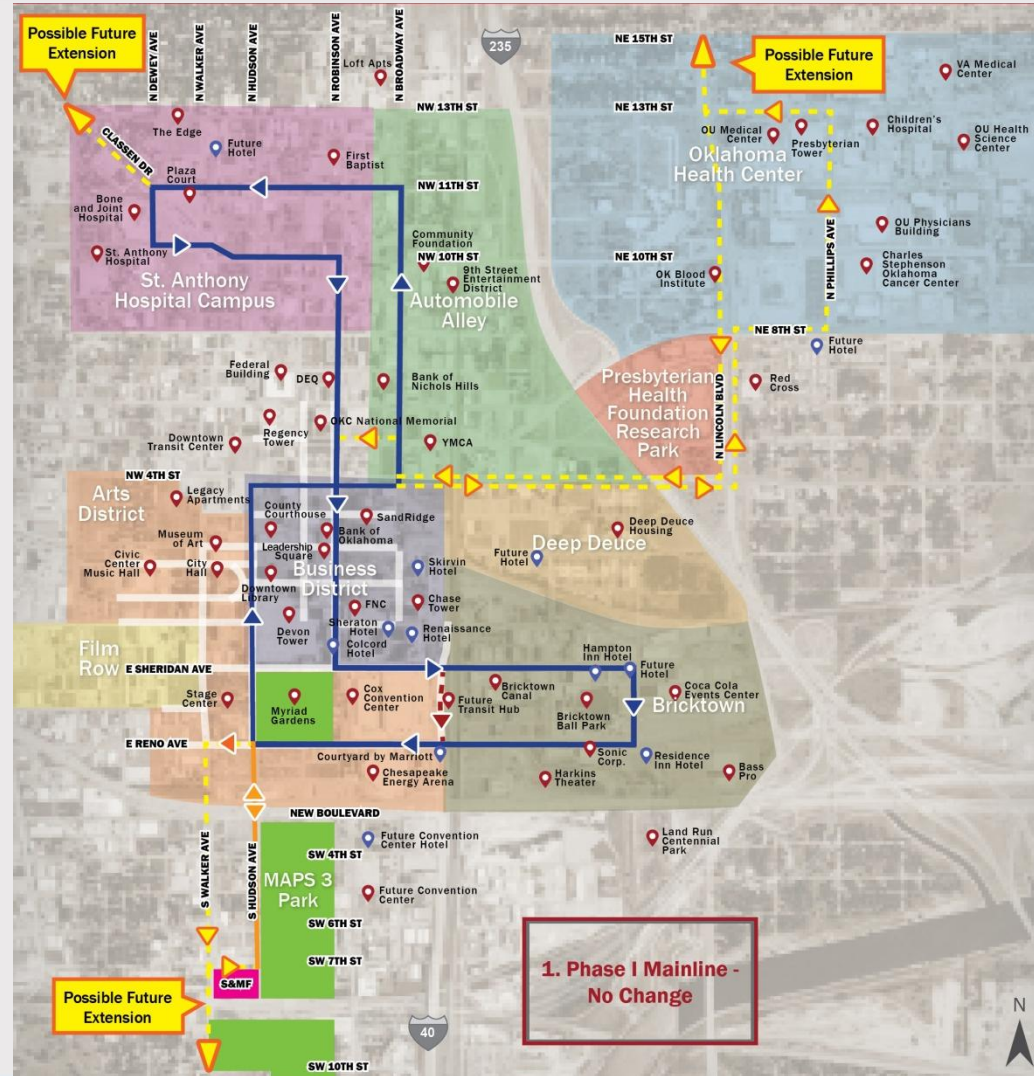


MAPS 3 Transit/Modern Streetcar Convention Center Route Alternatives

January 2016

Route Development and Evaluation

- Criteria
- First level screening
 - MAPS and program management staff
 - Embark staff
 - Convention Center and peripheral consulting teams
 - Transit Subcommittee
- Data collection and detailed evaluation
- Recommendations and decision document
- Selection of alternative



Evaluation Criteria

- System Accessibility/Connectivity
- Integrate with MAPS Projects
- Operations
- Technical Considerations
- Schedule Impacts
- Phase I Construction Schedule
- Cost

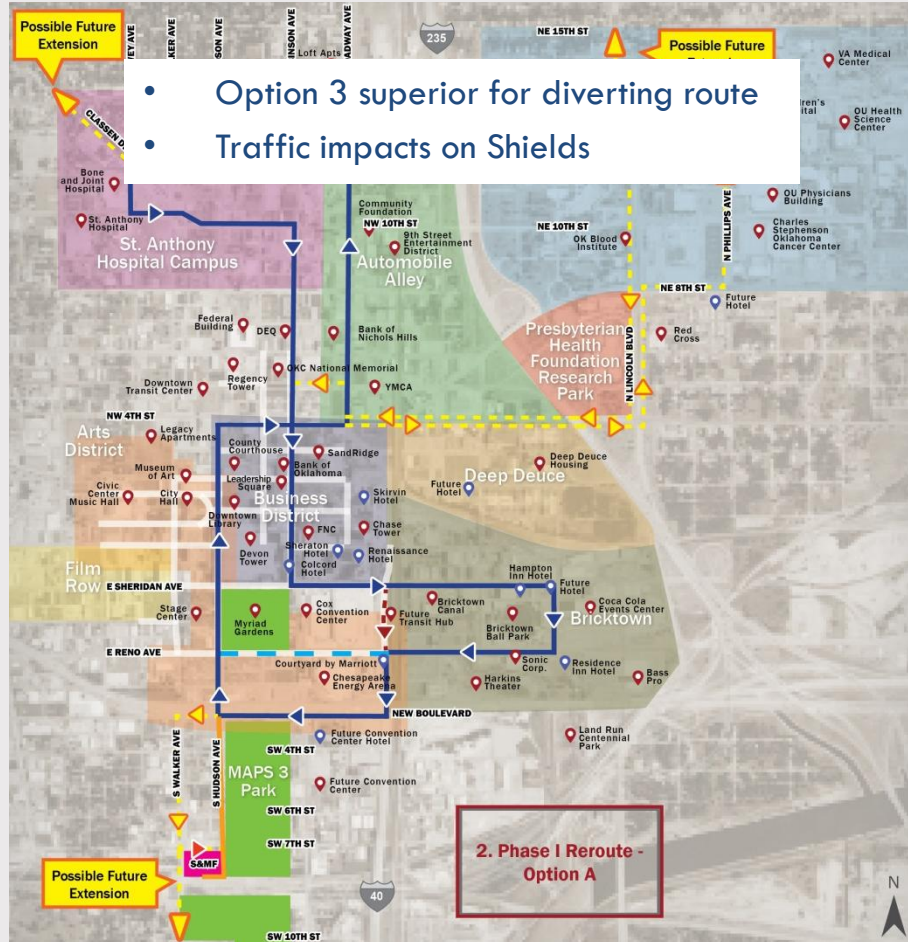
Important Considerations Voiced



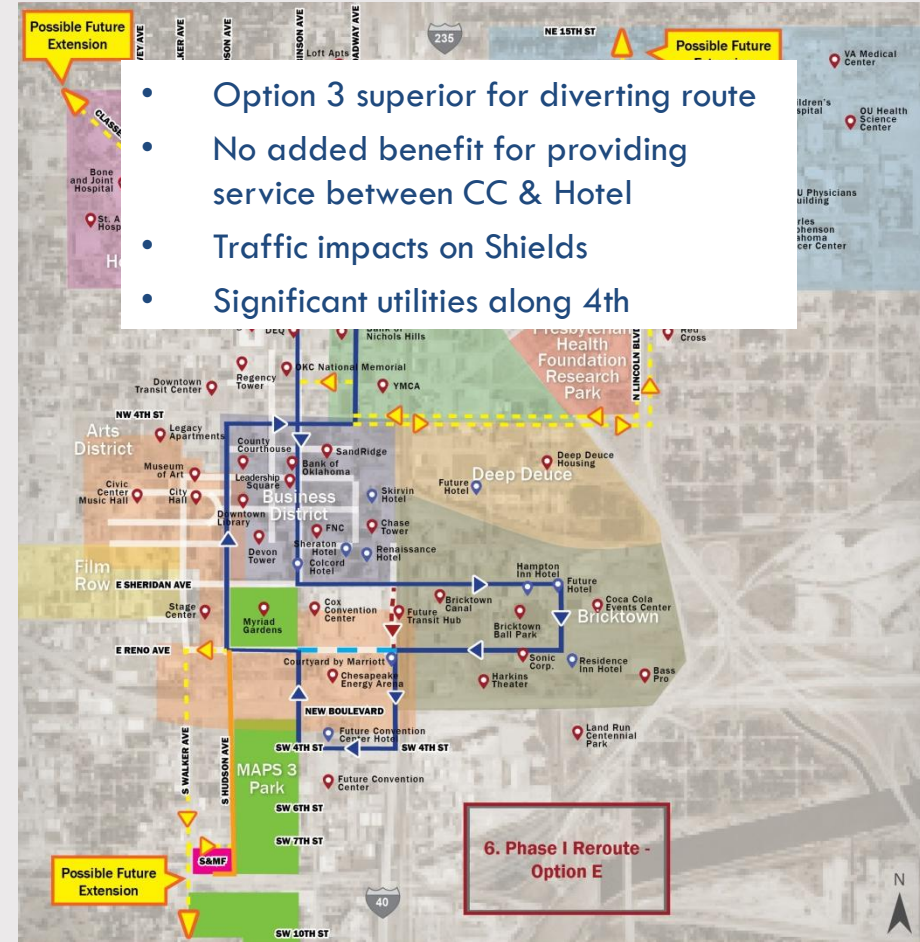
- Serve the CC Hotel (Robinson at Blvd.)
- Service from CC Hotel directly to/from Bricktown
- Traffic and challenges on Shields
- Limit to one additional vehicle if possible
- Phase II budget allocation
- Phase 1 schedule/implementation
- Park project impacts (cost, schedule, function)

Eliminated from Further Evaluation

Option 2



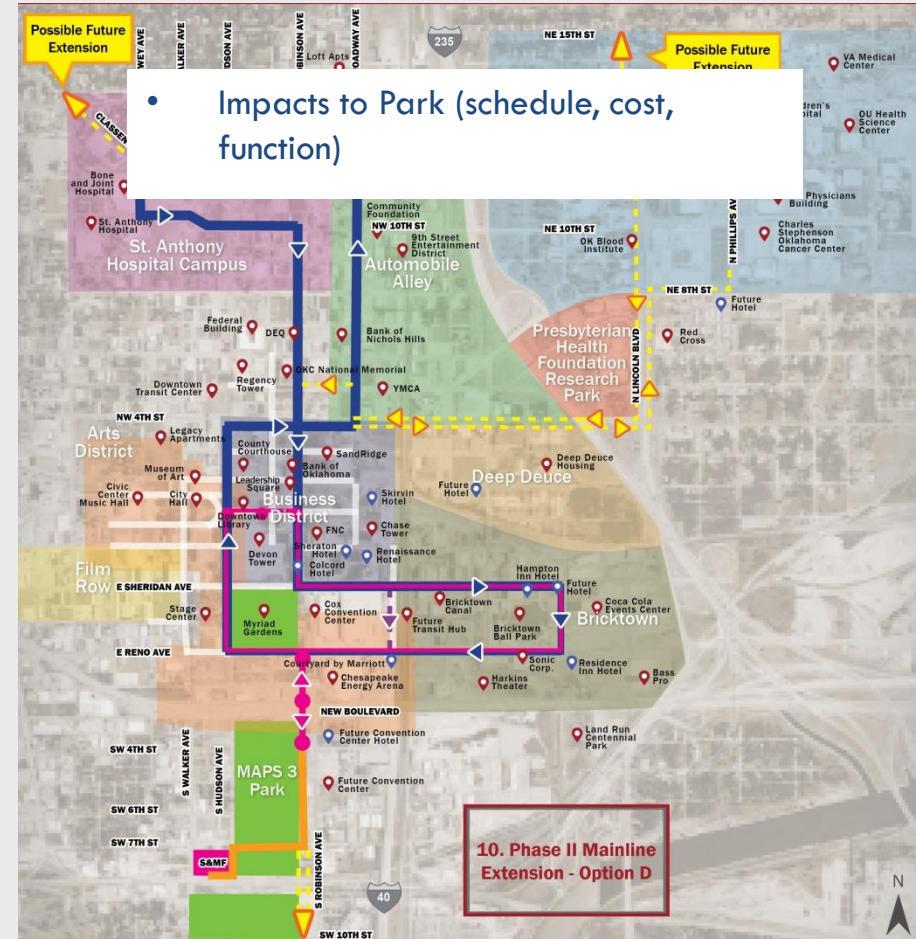
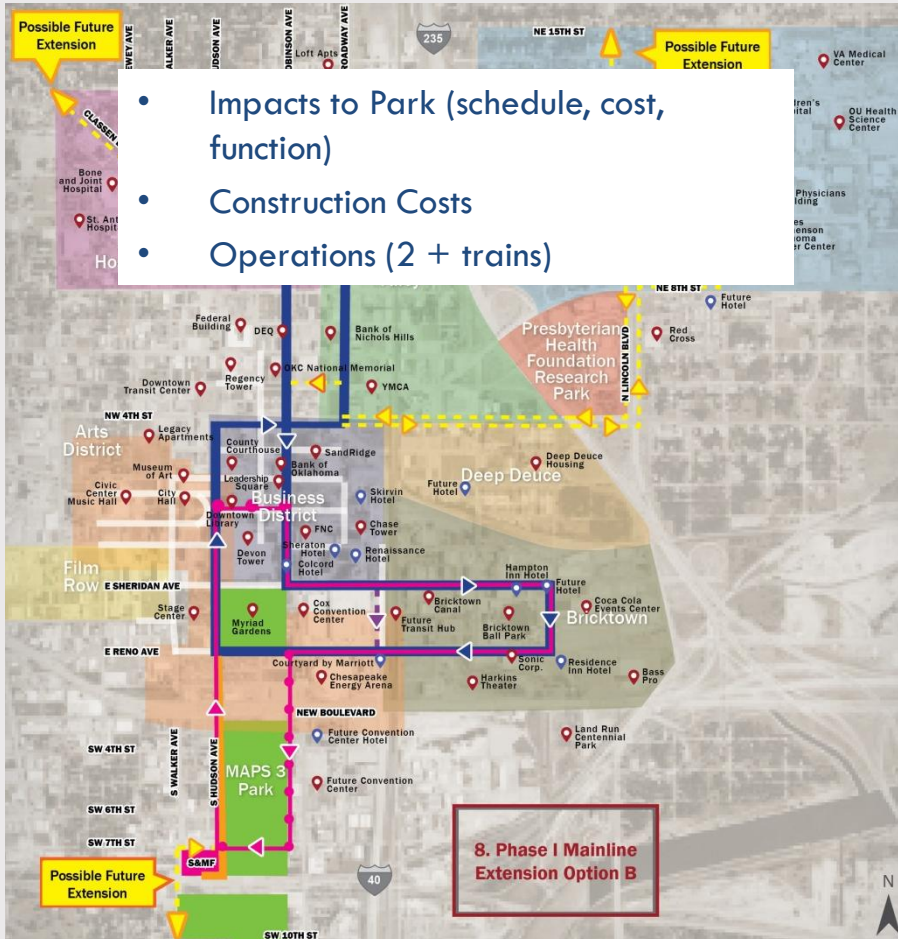
Option 6



Eliminated from Further Evaluation

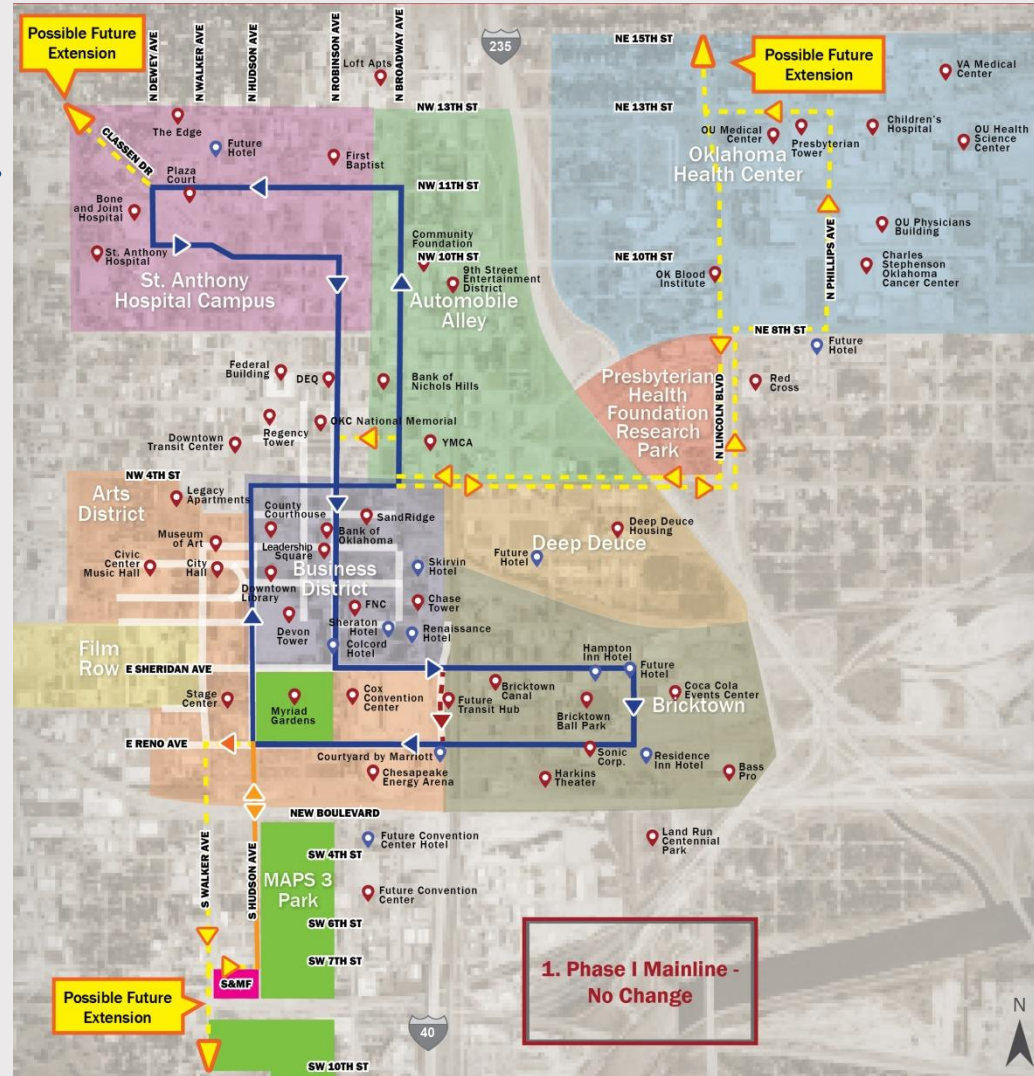
Option 8

Option 10



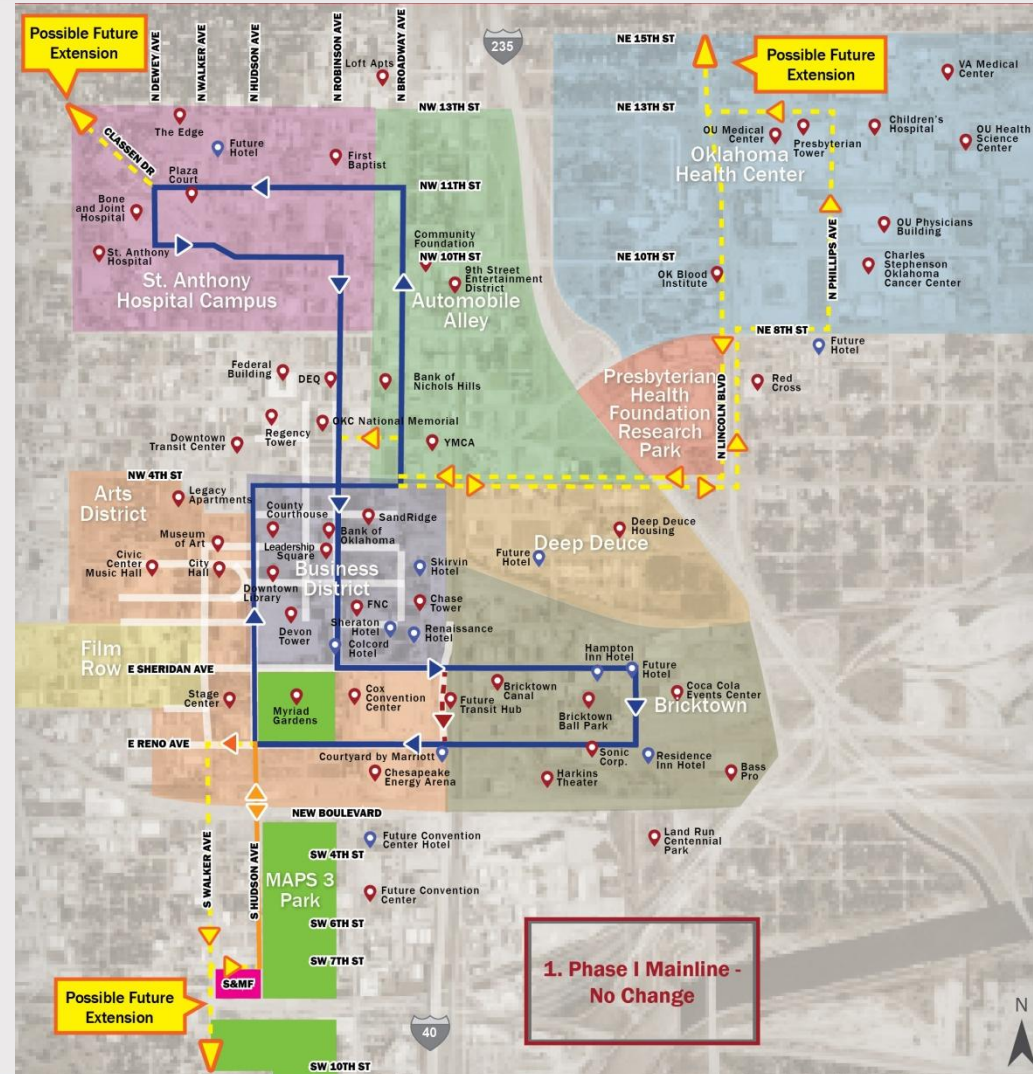
1. Phase I Mainline – No Change

- Service Route Length: 4.58 mi.
- Total Service Route Length: 4.58 mi.
- New Construction: 0 mi.
- Net New Construction: 0 mi.
- Additional Vehicles: 0
- Headways: 10 – 12 min
- Net Added Cost: \$0
- Additional Funds Needed: \$0



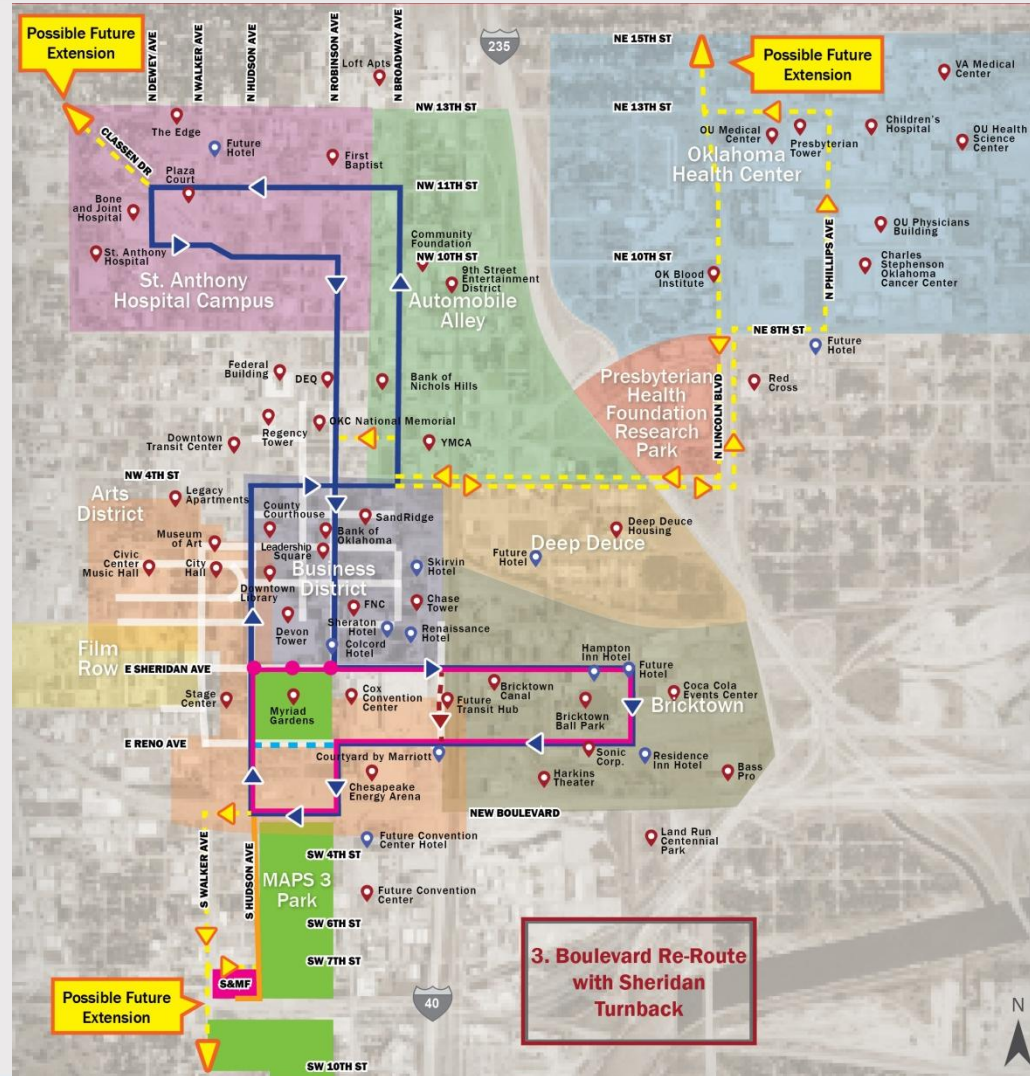
1. Phase I Mainline – No Change

- Pros
 - No additional cost
 - No additional vehicles
 - No schedule impacts
- Cons
 - No direct service to/from CC Hotel to Bricktown
 - Approx. 800-ft walk from CC Hotel to route and transfer required to reach Bricktown



3. Boulevard Re-route with Sheridan Turn Back

- Route 1 Service Route Length: 4.86 mi.
- Route 2 Service Route Length: 2.04 mi.
- Total Service Route Length: 6.90 mi.
- Additional Vehicles: 1
- Joe Carter potential dwell point moves to CC Hotel
 - Charging
 - Mainline routing through
- On/off wire evaluation required
- Headways:
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.53 mi.
- Net New Construction: 0.33 mi.
- Net Added Cost: \$9.5M
- Additional Funds Needed: \$3M



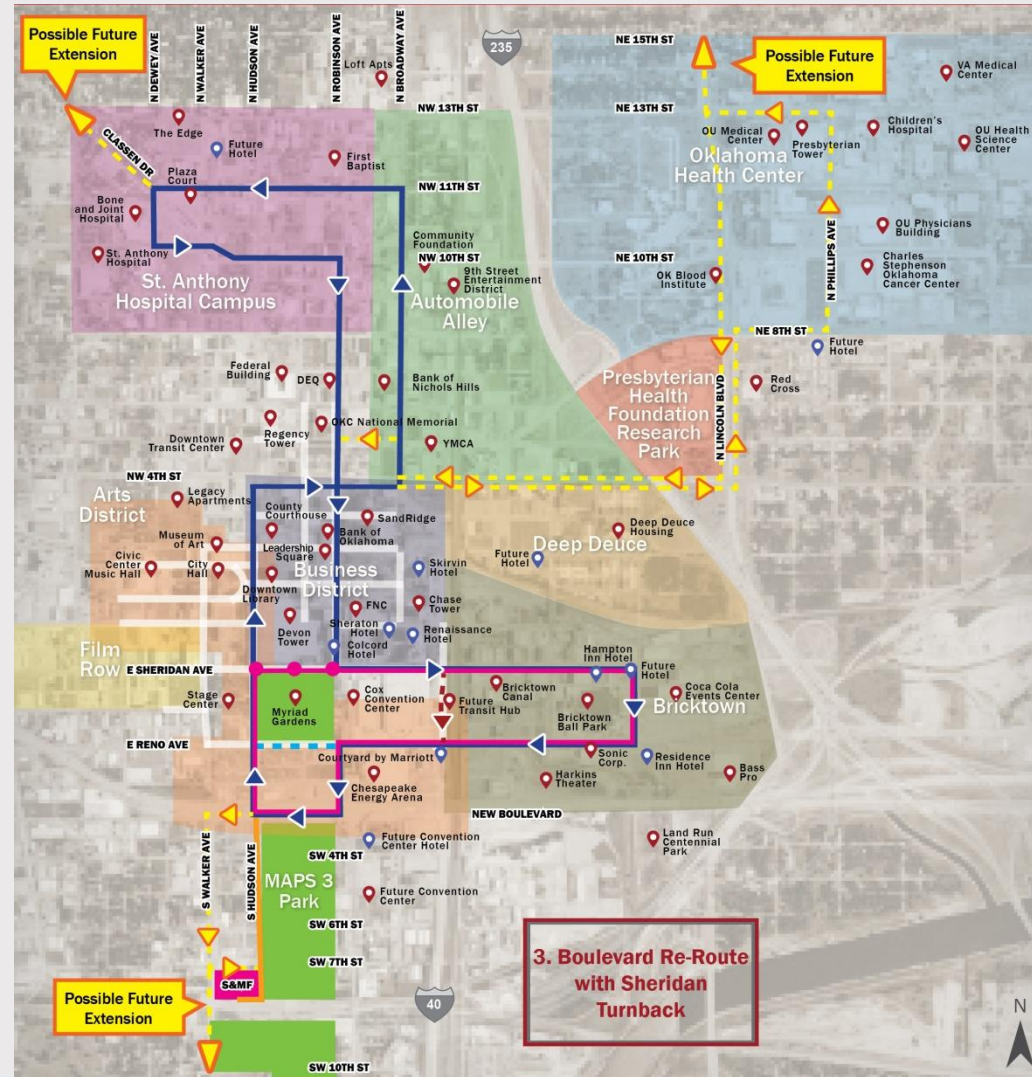
3. Boulevard Re-route with Sheridan Turnaround

Pros

- Direct connection to/from CC Hotel to Bricktown and Midtown
- Full or Part time service
- Phase I schedule could be maintained or slightly modified
- 7 min headway serving CC Hotel
- Dedicated lane adjacent Boulevard

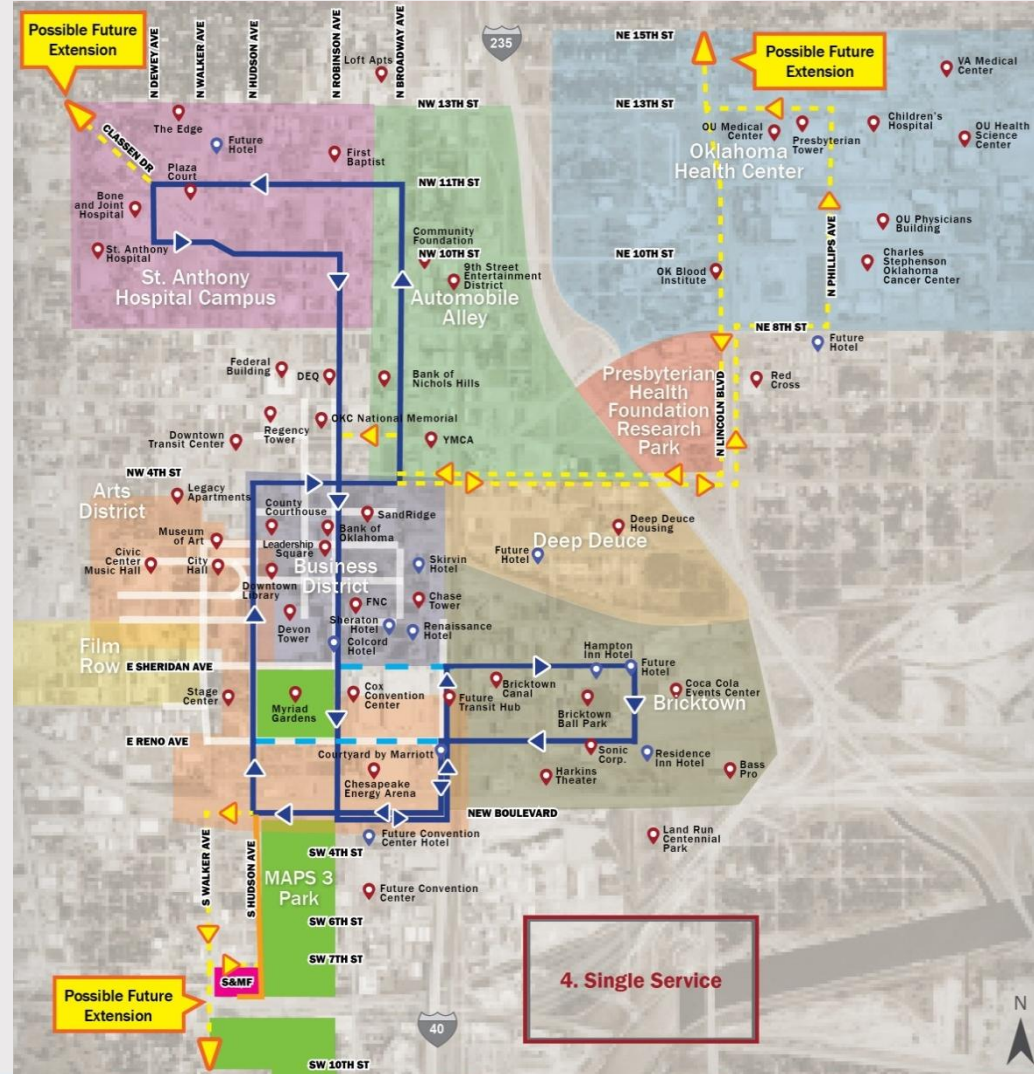
Cons

- Utility impacts along Robinson
- Construction in new Boulevard
- Exceeds MAPS 3 Streetcar funding (~\$3M)



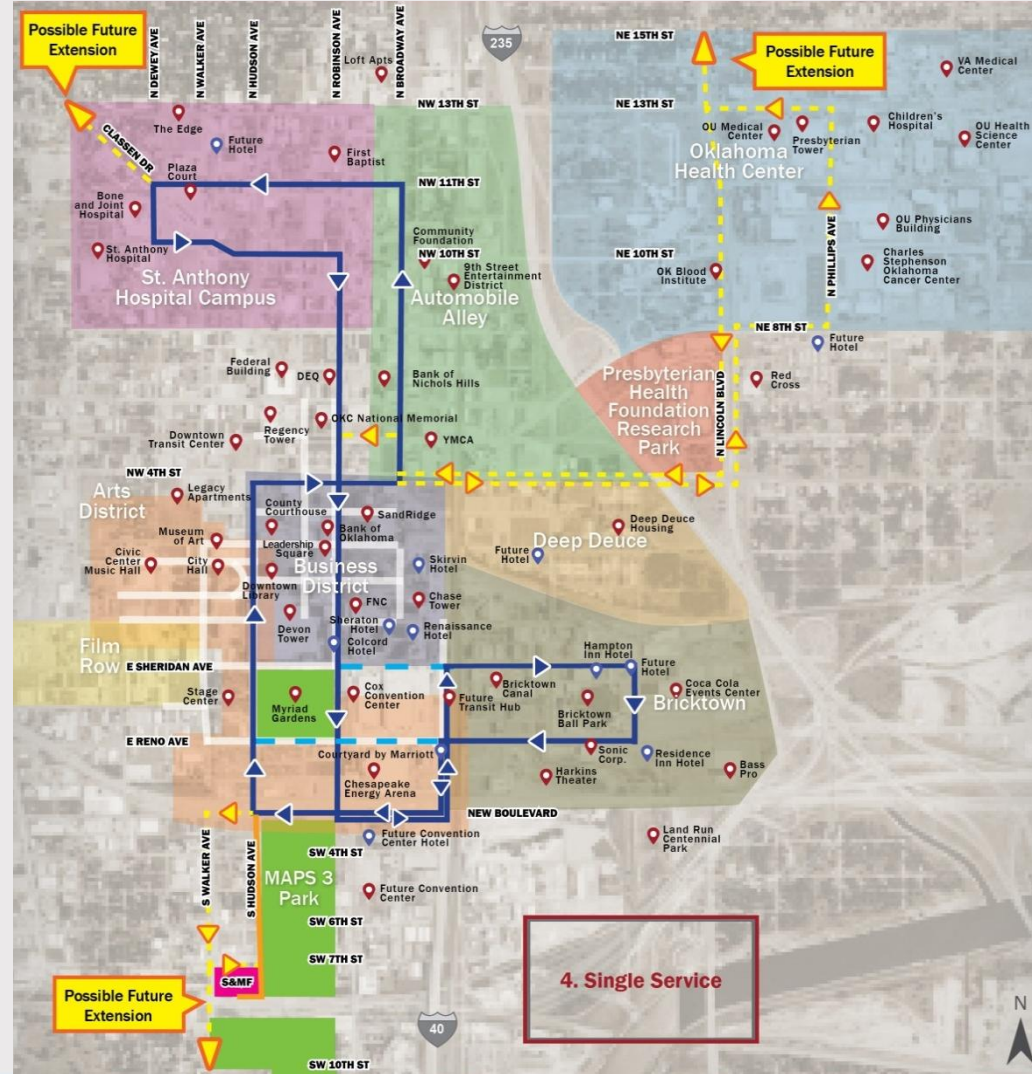
4. Single Service

- Service Route Length: 5.40 mi.
- Total Service Route Length: 5.40 mi.
- New Construction: 1.27 mi.
- Net New Construction: 0.67 mi.
- Additional Vehicles: 1
- Joe Carter potential dwell point
- On/off wire evaluation required
- Headways: 10 - 12 min.
- Net Added Cost: \$19M
- Additional Funds Needed: \$12M



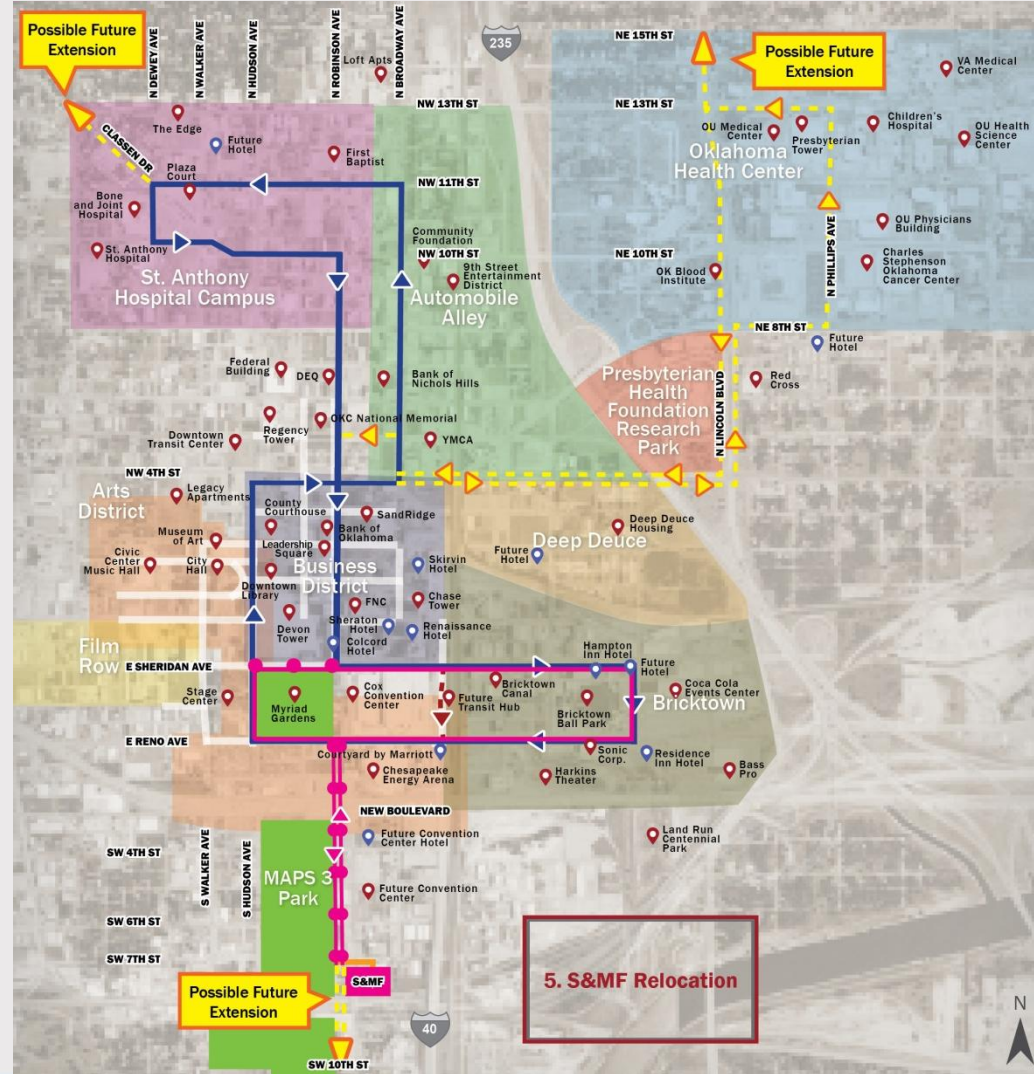
4. Single Service

- Pros
 - Direct connection to/from CC Hotel to Bricktown and Midtown
 - Single route with 1 added train
- Cons
 - Schedule impact to Phase I Mainline
 - Utility impacts along Robinson
 - Traffic/utility impacts on Shields
 - EK Gaylord schedule impacts
 - Intermodal Hub TIGER grant impacts
 - Additional \$12M to implement
 - Future line from Core-to-Shore to HSC would not directly connect to HUB



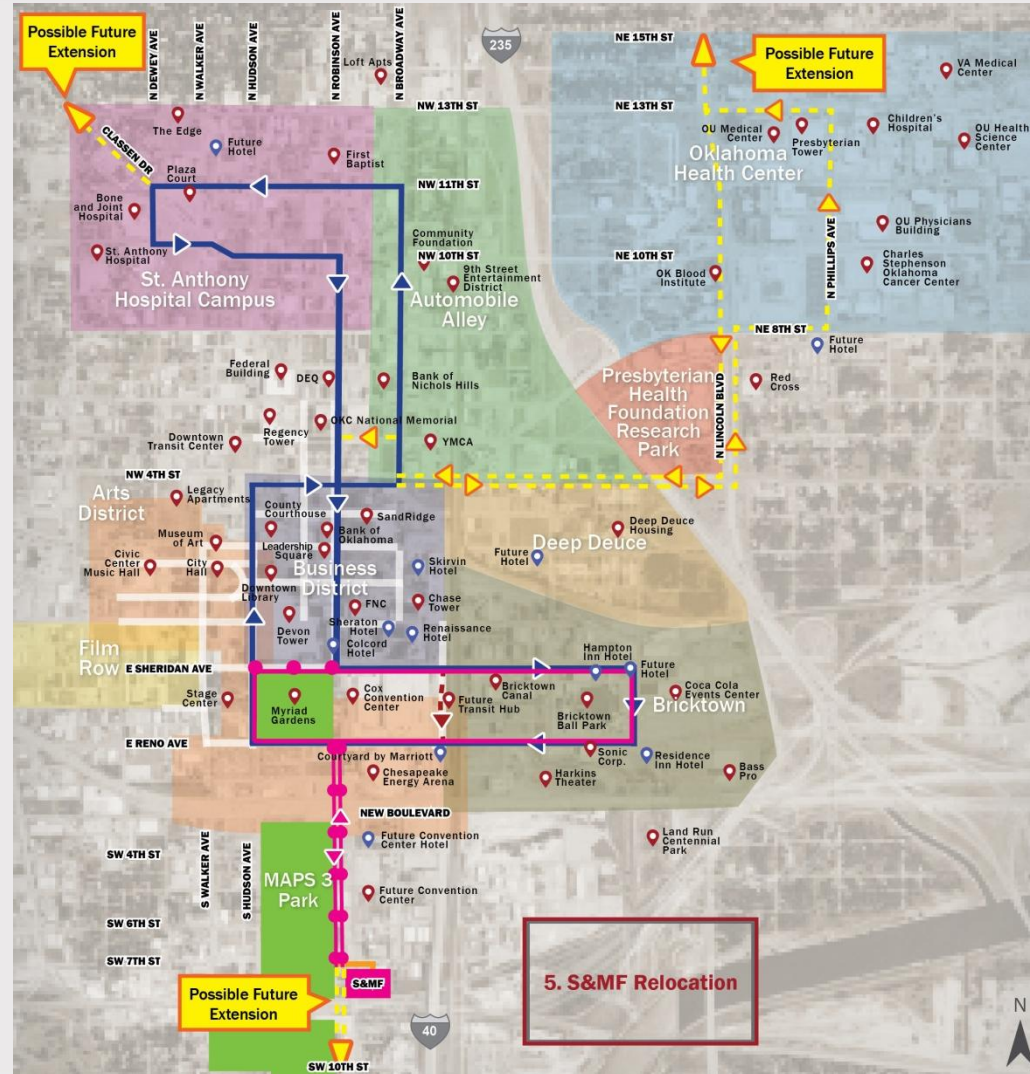
5. S&MF Relocation

- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 2.61 mi.
- Total Service Route Length: 7.19 mi.
- Additional Vehicles: 1
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 1.69 mi.
- Net New Construction: 1.10 mi.
- Net Added Cost: \$25M
- Additional Funds Needed: \$18.5M



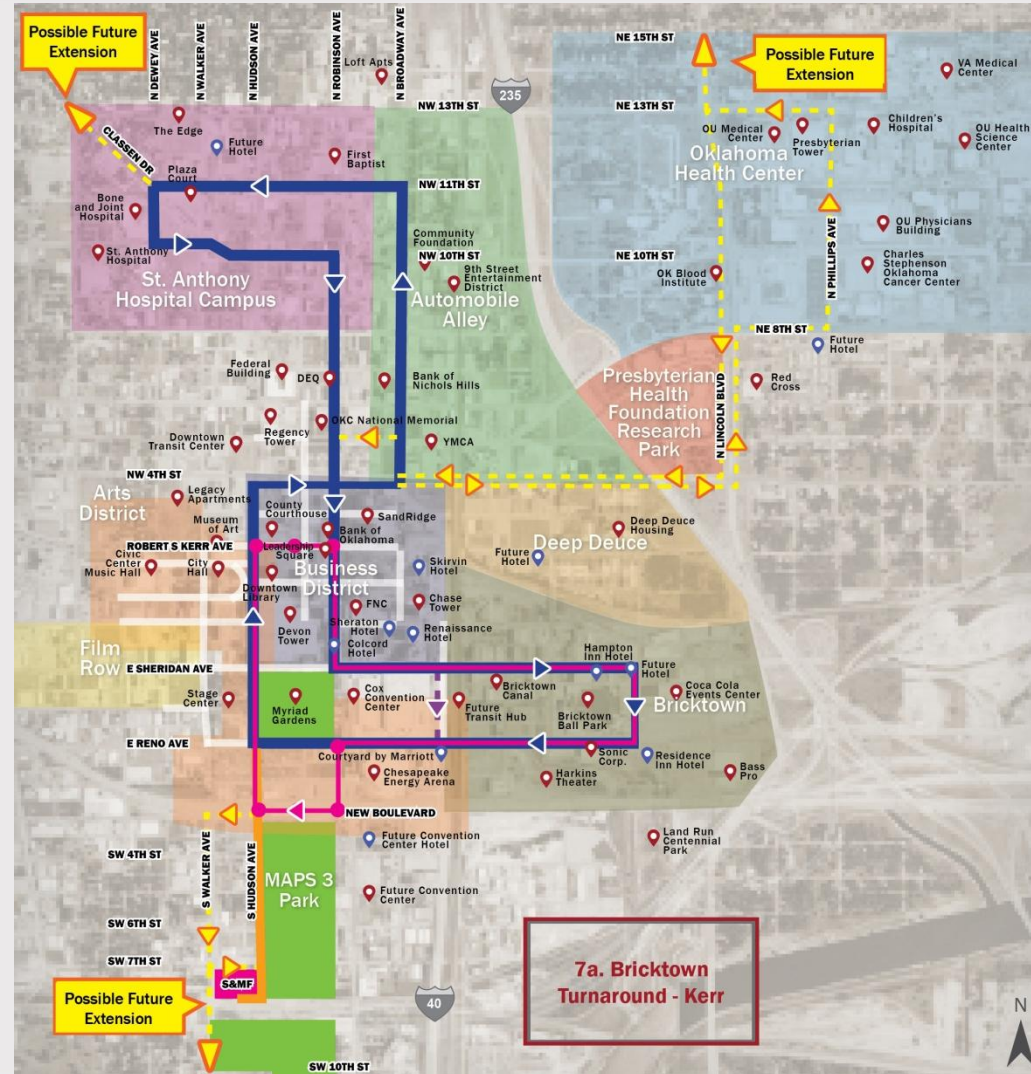
5. S&MF Relocation

- Pros
 - Direct connection to/from CC Hotel to Bricktown
- Cons
 - Schedule impact to Park
 - Utility impacts along Robinson
 - Parking impacts along Robinson
 - Maintenance Facility Schedule
 - Complete redesign
 - Property acquisition
 - Building demolition
 - Hazmat concerns
 - Access along 7th (grades)
 - Transfer required to reach Midtown
 - Additional \$18.5M to implement
 - Higher risk/unknowns



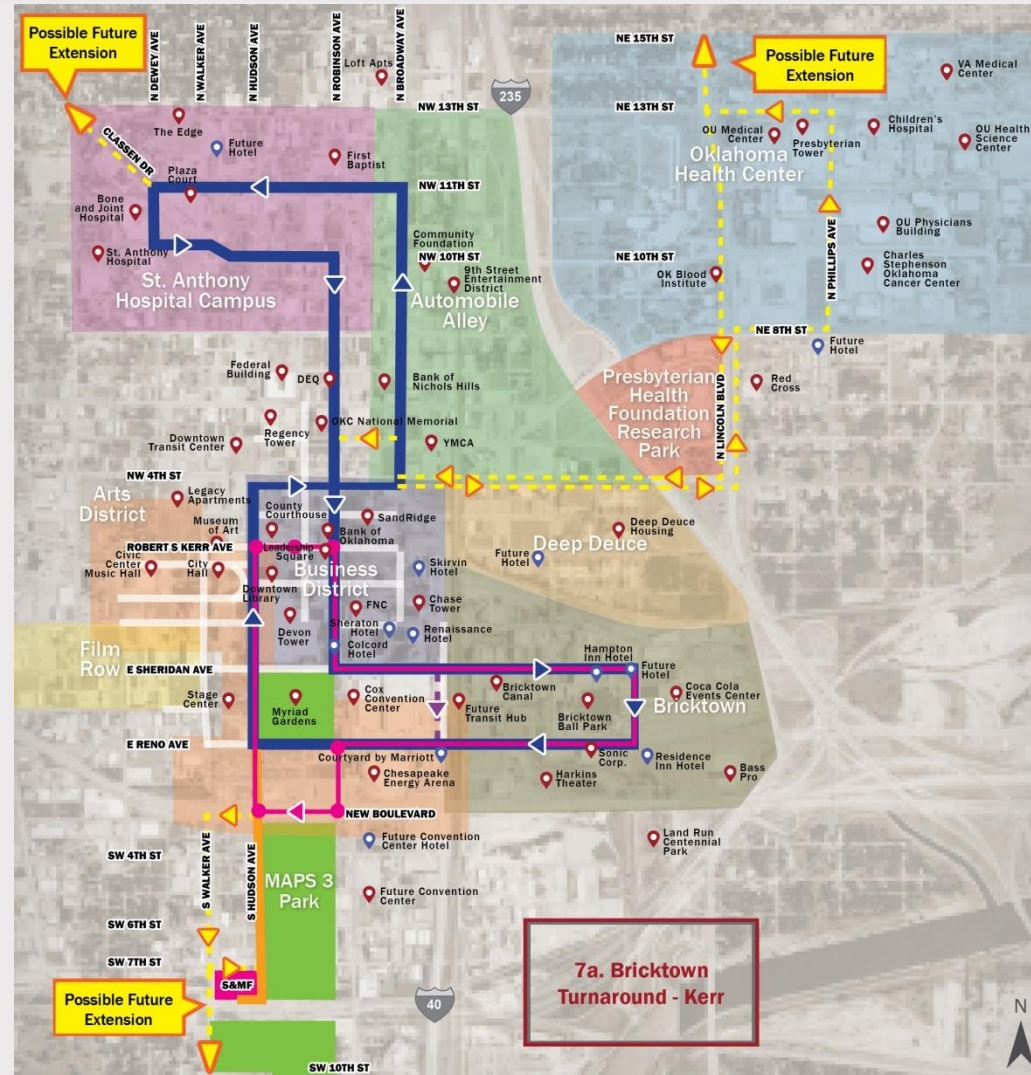
7a. Bricktown Turnaround – Kerr

- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 2.51 mi.
- Total Service Route Length: 7.09 mi.
- Additional Vehicles: 2
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.52 mi.
- Net New Construction: 0.32 mi.
- Net Added Cost: \$14M
- Additional Funds Needed: \$7.2M



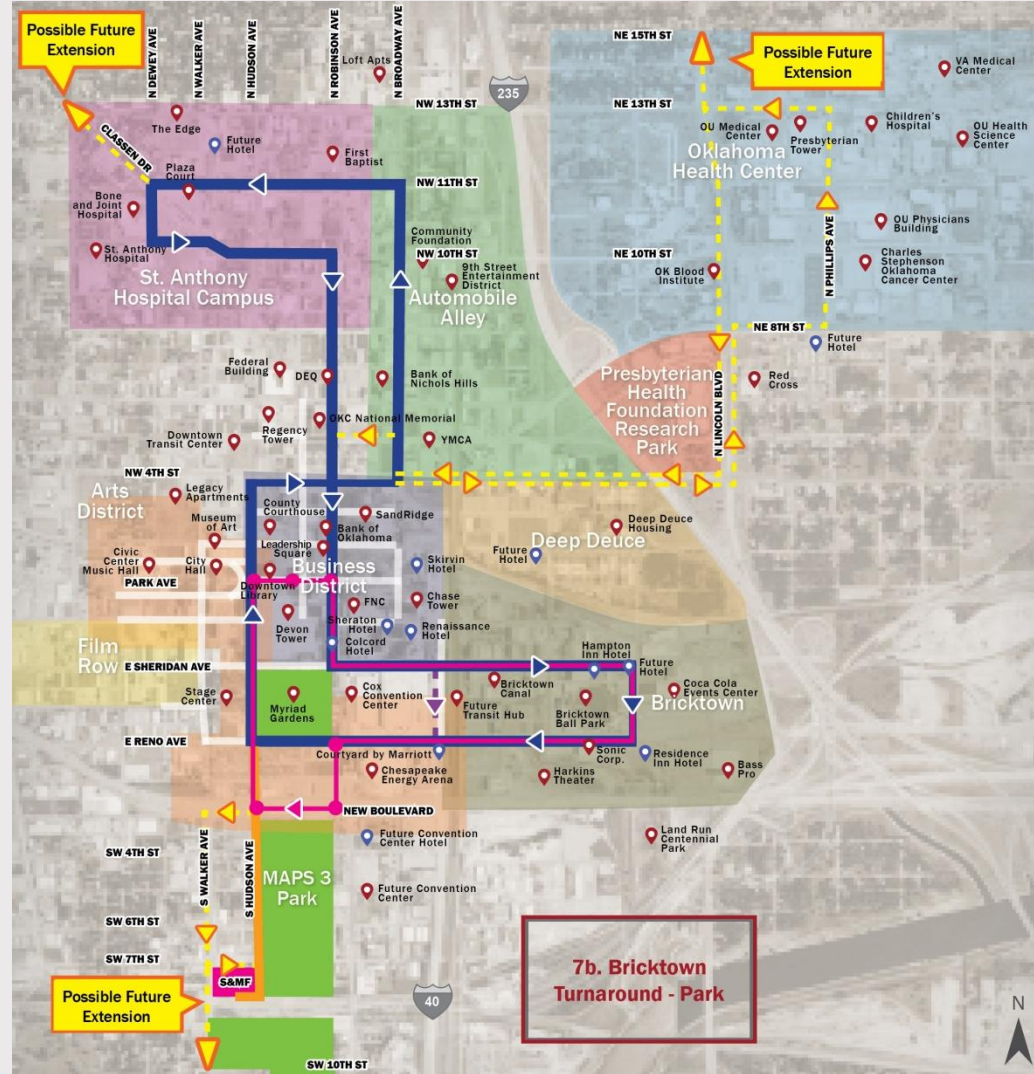
7a. Bricktown Turnaround – Kerr

- Pros
 - Connection to/from CC Hotel to Bricktown and CBD
 - No schedule impact to Phase I Mainline
- Cons
 - No direct connection to/from CC Hotel to Bricktown
 - Utility impacts along Robinson
 - Transfer required to reach Midtown
 - Significant engineering challenges along Kerr
 - 2 additional vehicles needed
 - Additional \$7.2M to implement
 - Higher operation costs



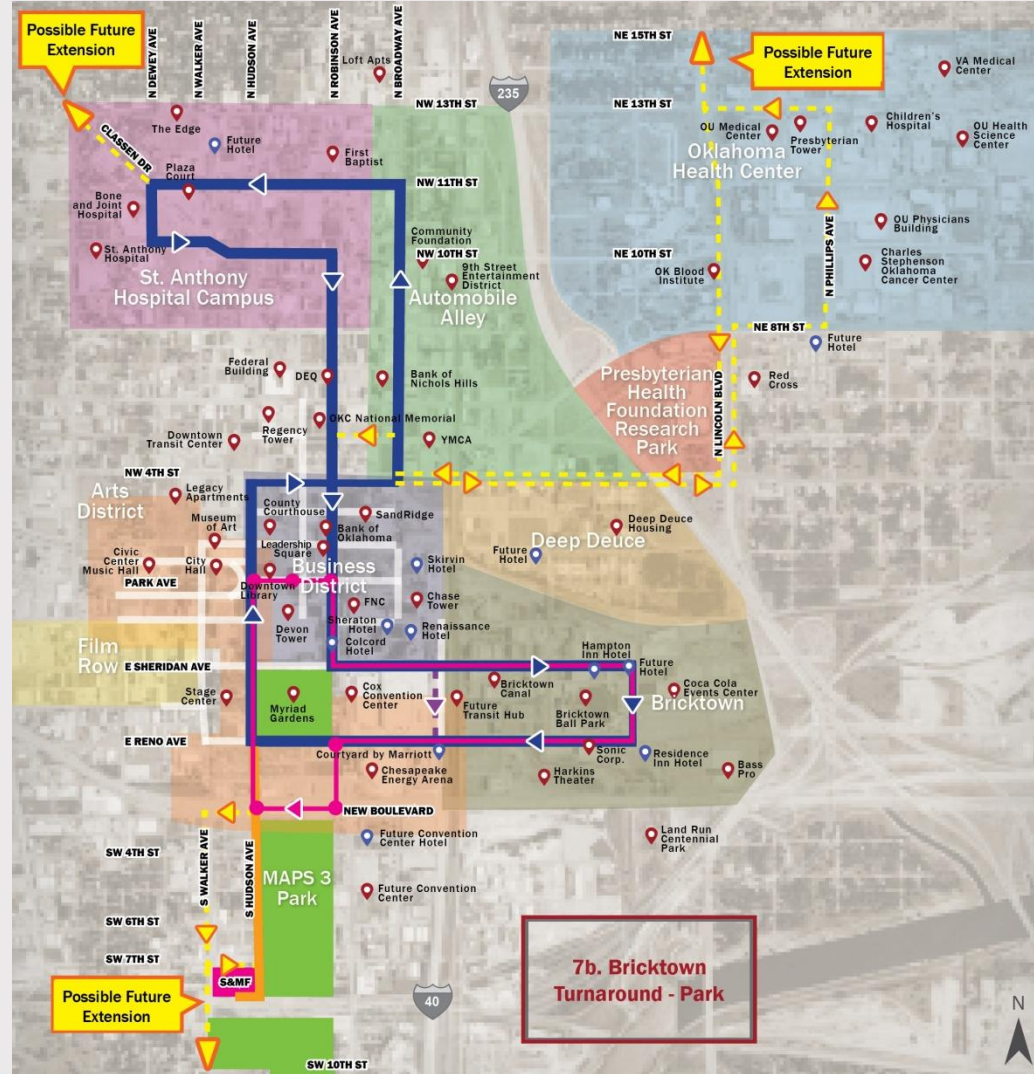
7b. Bricktown Turnaround – Park

- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 2.36 mi.
- Total Service Route Length: 6.94 mi.
- Additional Vehicles: 2
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.52 mi.
- Net New Construction: 0.32 mi.
- Net Added Cost: \$14M
- Additional Funds Needed: \$7.2M



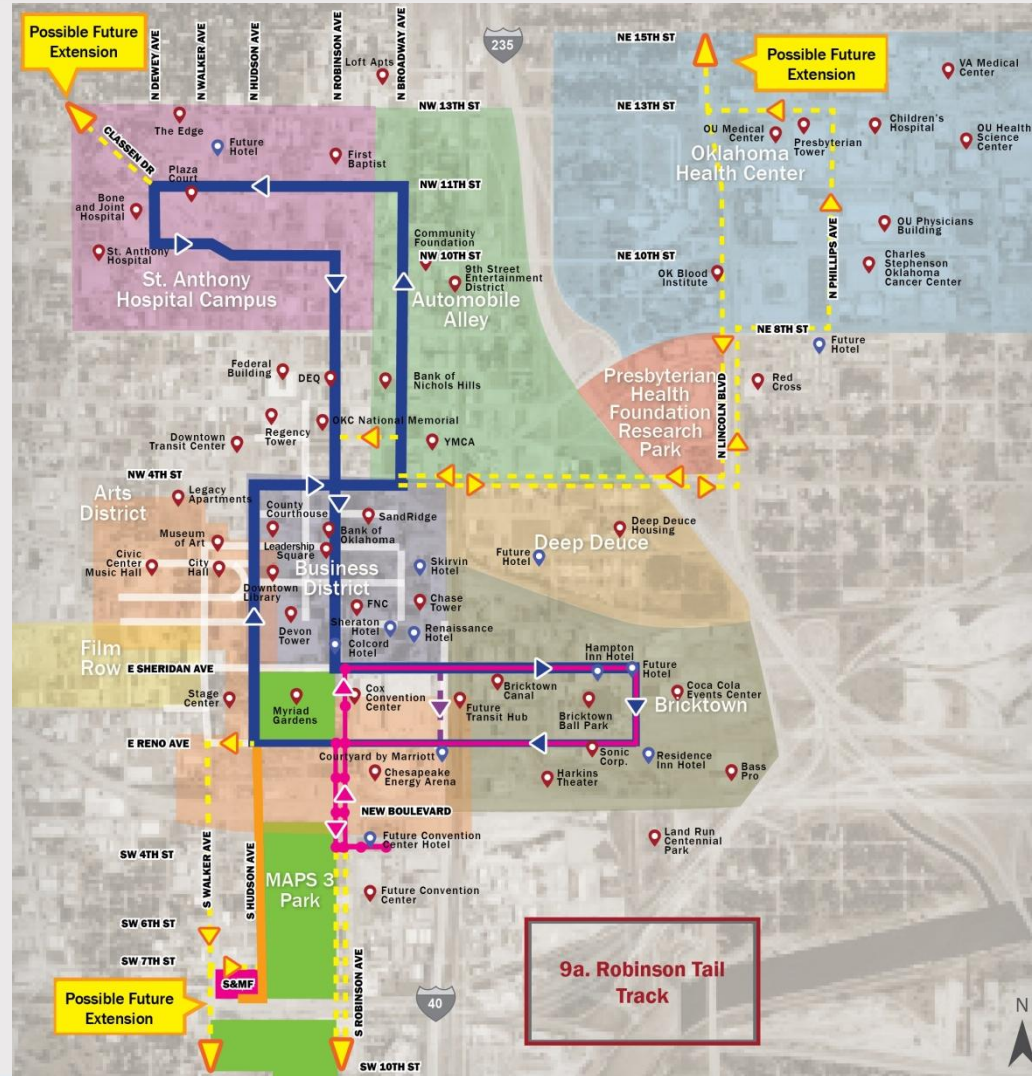
7b. Bricktown Turnaround – Park

- Pros
 - Connection to/from CC Hotel to Bricktown and CBD
 - No schedule impact to Phase I Mainline
- Cons
 - No direct connection to/from CC Hotel to Bricktown
 - Utility impacts along Robinson
 - Transfer required to reach Midtown
 - Significant engineering challenges along Park
 - 2 additional vehicles needed
 - Additional \$7.2M to implement
 - Higher operation costs



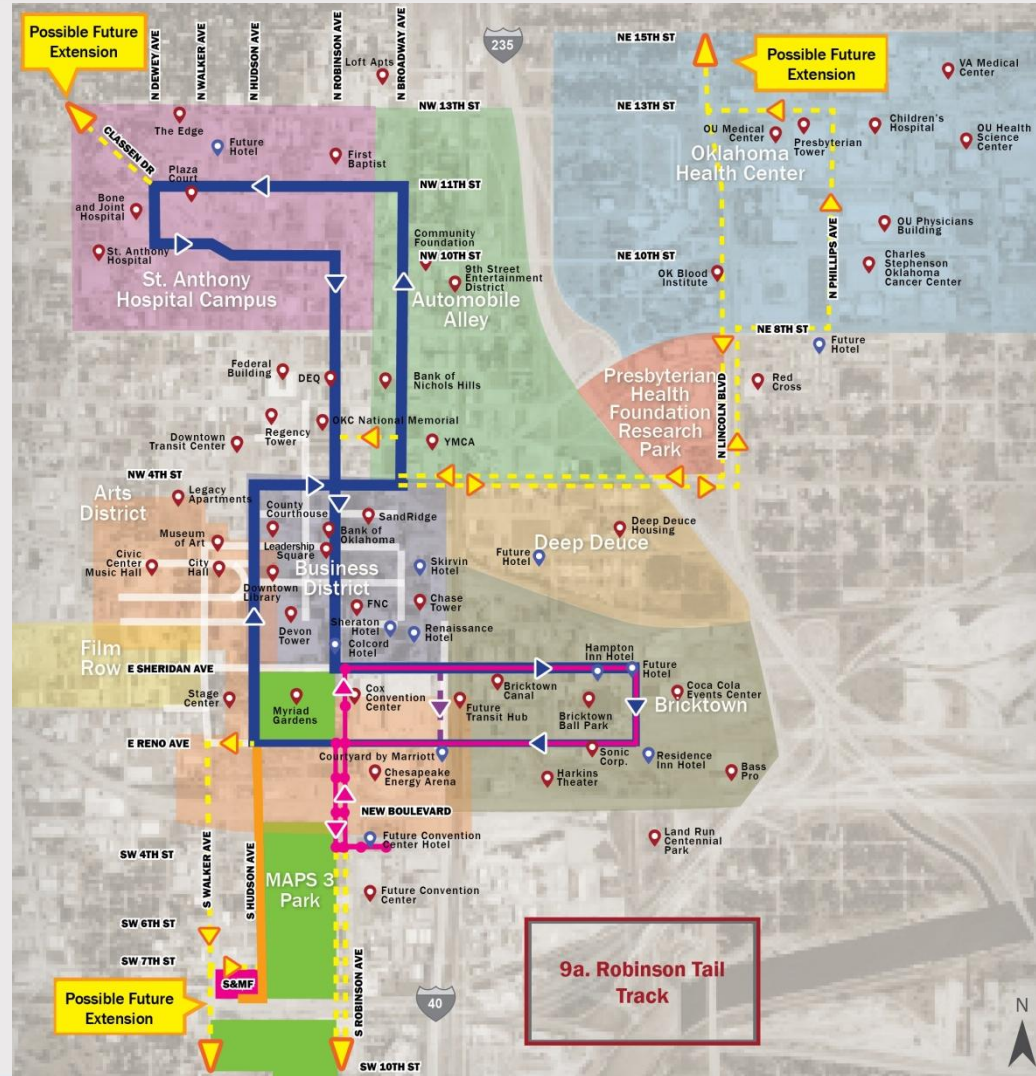
9a. Robinson Tail Track

- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 1.94 mi.
- Total Service Route Length: 6.52 mi.
- Additional Vehicles: 1
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.68 mi.
- Net New Construction: 0.68 mi.
- Net Added Cost: \$15M
- Additional Funds Needed: \$8.1M



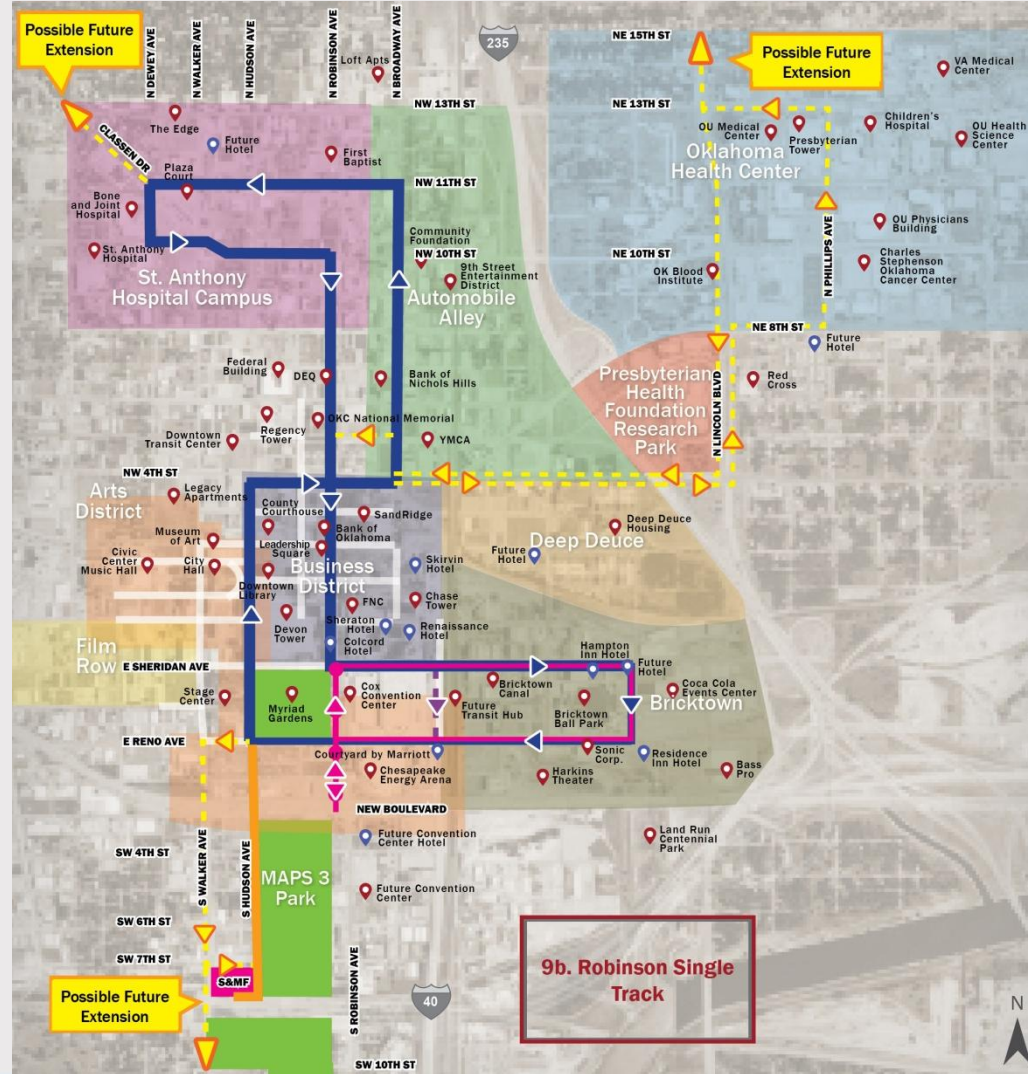
9a. Robinson Tail Track

- Pros
 - Direct connection to/from CC Hotel to Bricktown
 - Ability to turn cars around
 - No schedule impact to Phase I Mainline
 - Full or Part time service
- Cons
 - Utility impacts along Robinson
 - Transfer required to reach Midtown and CBD
 - Additional \$8.1M to implement



9b. Robinson Single Track

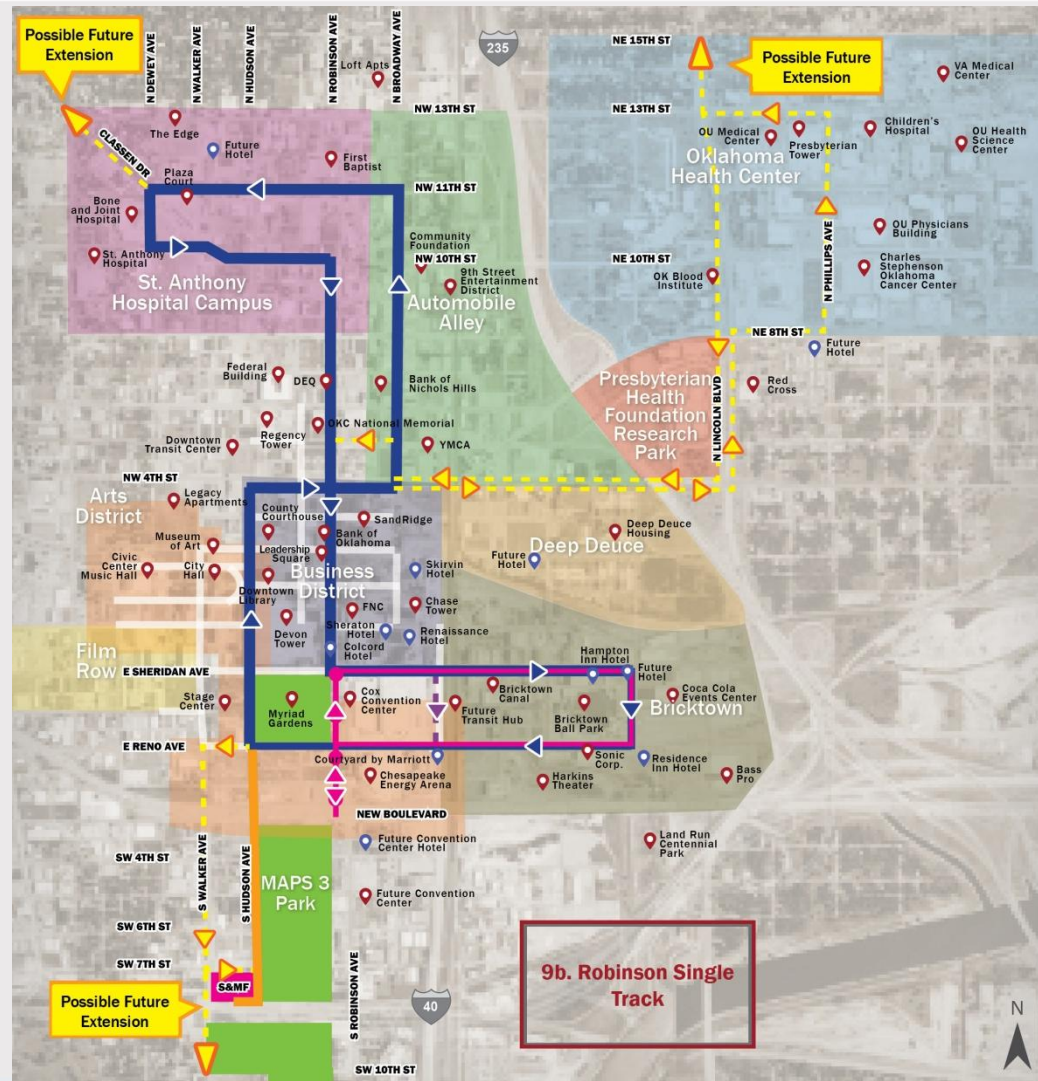
- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 1.56 mi.
- Total Service Route Length: 6.14 mi.
- Additional Vehicles: 1
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.31 mi.
- Net New Construction: 0.31 mi.
- Net Added Cost: \$9.2M
- Additional Funds Needed: \$2.5M



9b. Robinson Single Track

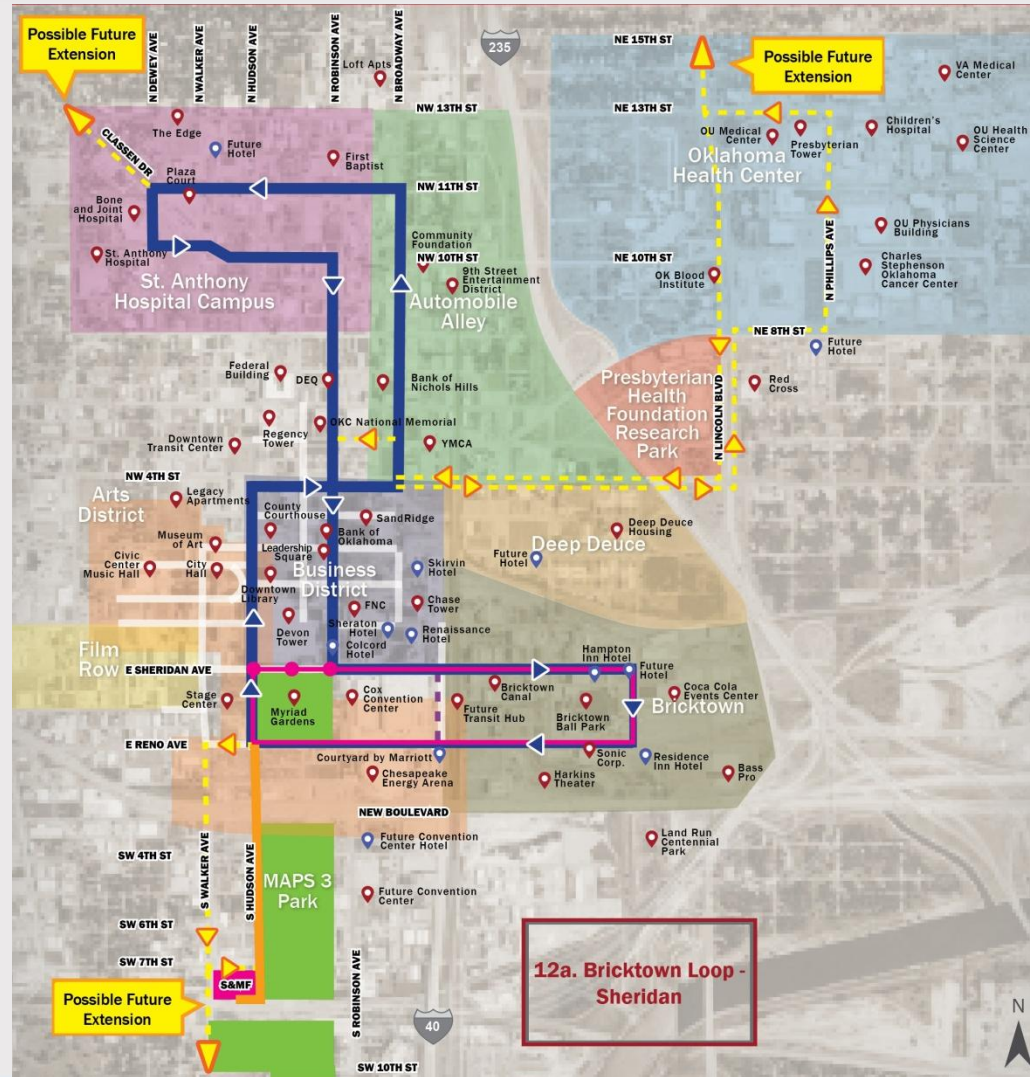


- Pros
 - Direct connection to/from CC Hotel to Bricktown
 - Ability to turn cars around
 - No schedule impact to Phase I Mainline
 - Full or part time operations
- Cons
 - Utility impacts along Robinson
 - Transfer required to reach Midtown and CBD
 - Additional \$2.5M to implement



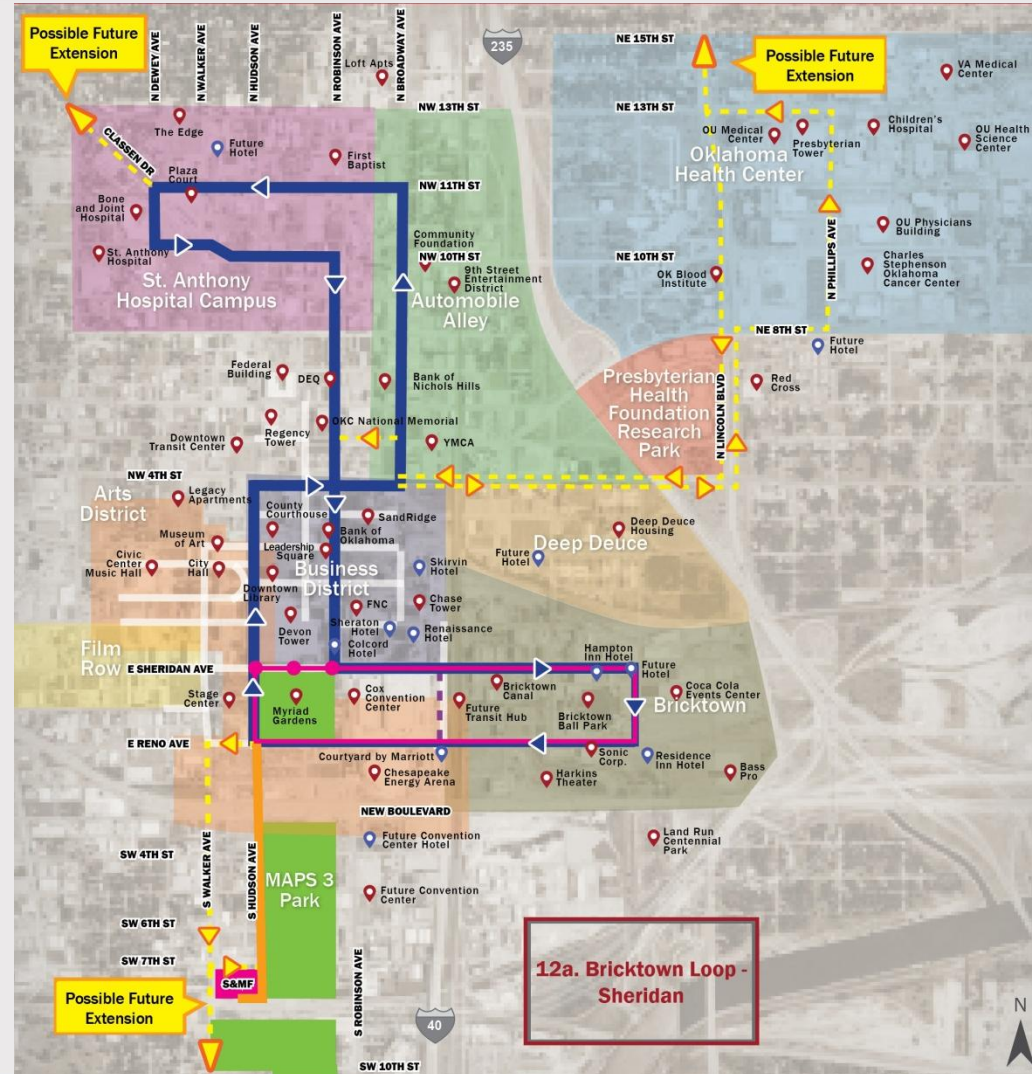
12a. Bricktown Loop – Sheridan

- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 1.77 mi.
- Total Service Route Length: 6.35 mi.
- Additional Vehicles: 1
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.20 mi.
- Net New Construction: 0.20 mi.
- Net Added Cost: \$8M
- Additional Funds Needed: \$1M



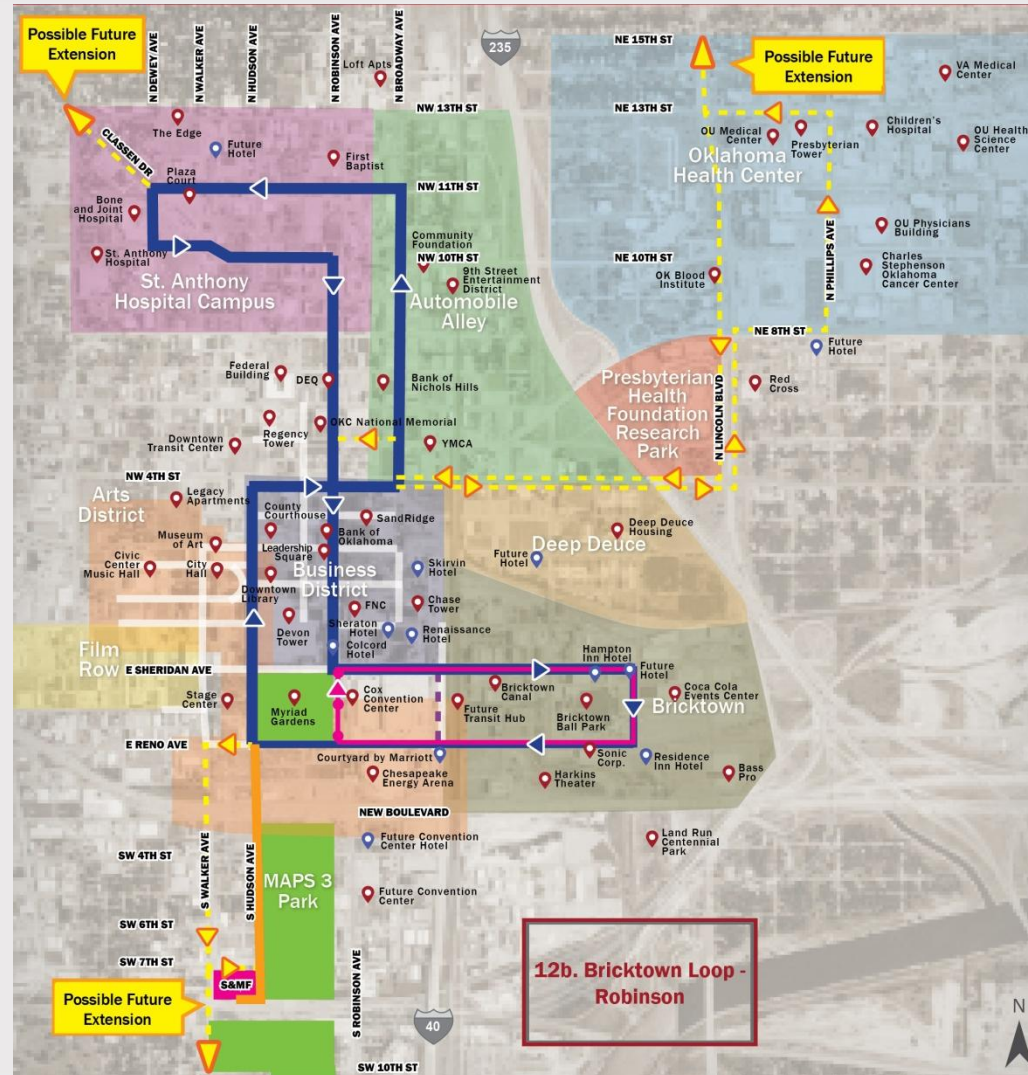
12a. Bricktown Loop – Sheridan

- Pros
 - Connection to/from CC Hotel to Bricktown
 - Option to go to Midtown or Bricktown
 - No schedule impact to Phase I Mainline
 - Full or Part time service
- Cons
 - Approx. 800-ft walk from CC Hotel to route
 - No direct connection to/from CC Hotel
 - Joe Carter terminus required
 - Additional \$1M to implement



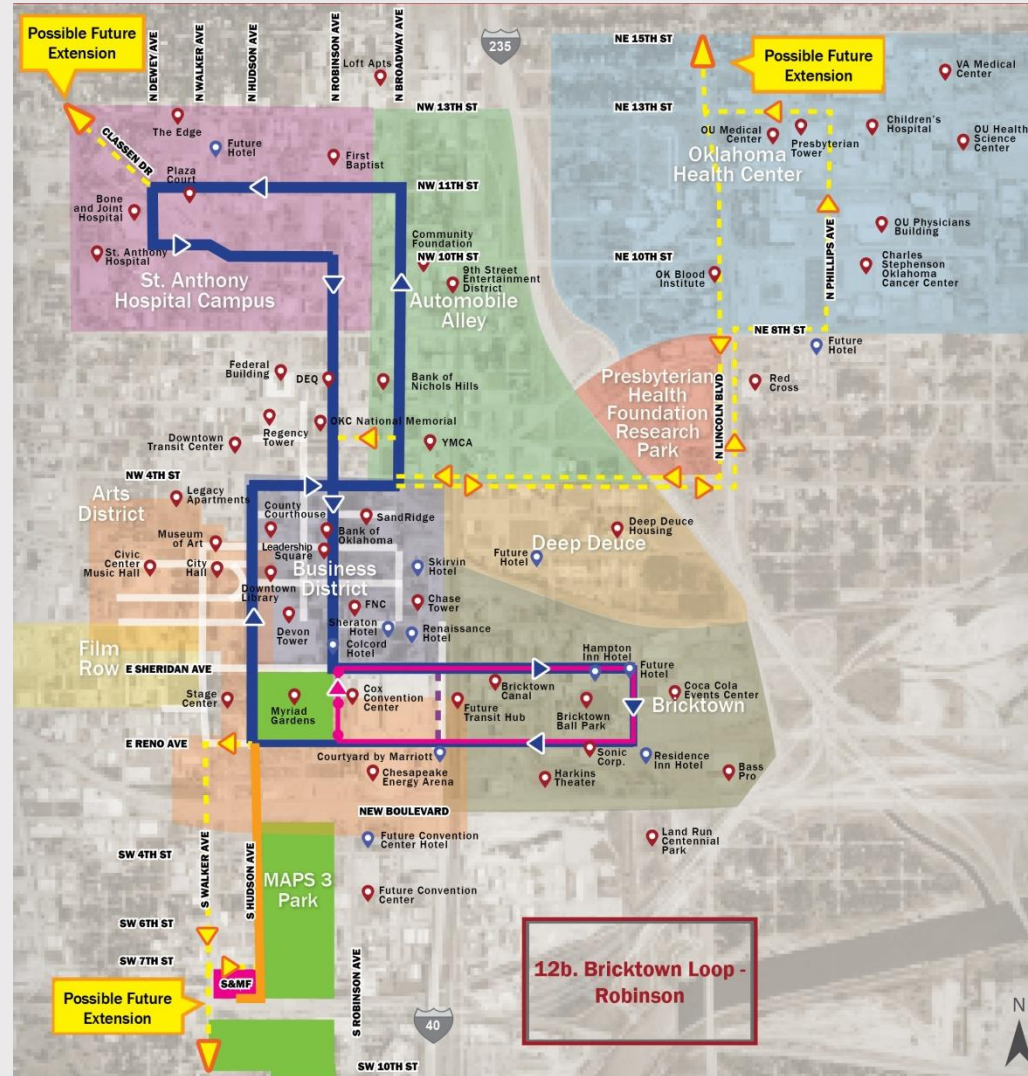
12b. Bricktown Loop – Robinson

- Route 1 Service Route Length: 4.58 mi.
- Route 2 Service Route Length: 1.41 mi.
- Total Service Route Length: 5.99 mi.
- Additional Vehicles: 1
- Headways
 - Route 1: 10 – 12 min.
 - Route 2: 15 min.
- New Construction: 0.16 mi.
- Net New Construction: 0.16 mi.
- Net Added Cost: \$7.0M
- Additional Funds Needed: \$0.3M



12b. Bricktown Loop – Robinson

- Pros
 - Connection to/from CC Hotel to Bricktown
 - Option to go to Midtown or Bricktown
 - No schedule impact to Phase I Mainline
 - Full or Part time service
- Cons
 - Approx. 800-ft walk from CC Hotel to route
 - No direct connection to/from CC Hotel
 - Joe Carter terminus required
 - Additional \$0.3M to implement



Viable Options



- **Additional MAPS 3 Commitment of ~\$1M**
 - Option 1 2a: Bricktown Loop (Sheridan or Robinson)
 - Turn back option subject to off-wire distance allowed
 - Sheridan turnaround provides more service to Bricktown
 - Approx. 800-ft walk to reach route
- **Additional MAPS 3 Commitment of ~\$3M**
 - Option 3: Boulevard Reroute, Sheridan Turnaround
 - Front door service to Convention Center
 - Phase 1 proceeds on schedule with bid alternate
 - Operationally superior to Option 7 a/b (Park/Kerr Turnaround) and Option 9 a/b (Robinson Single/Double Track)
 - CC Hotel terminus/dwell point suggested
 - Evaluation of on/off wire needed – may require charging station

Viabile Options (Cont'd)

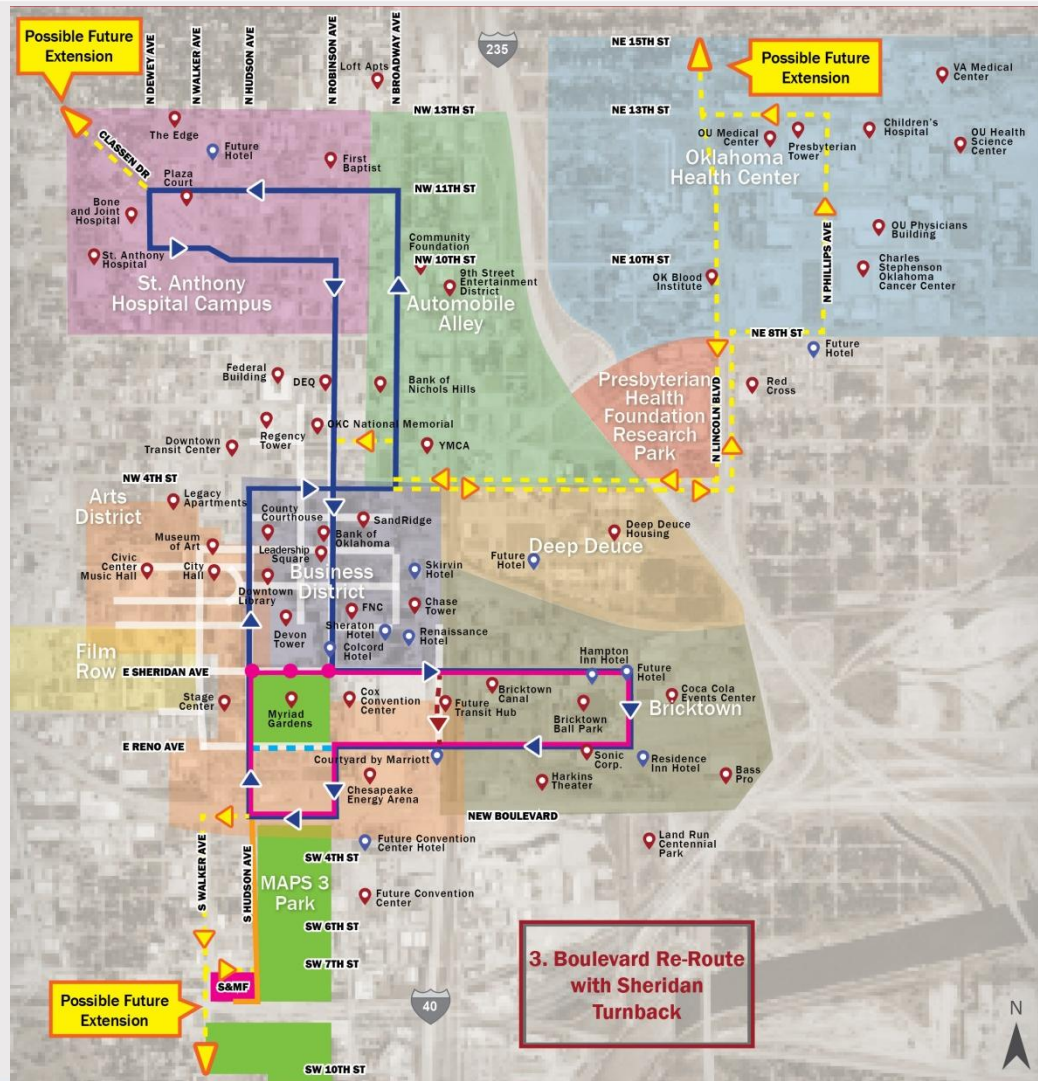


- **Additional MAPS 3 Commitment of ~\$12M**
 - Option 4: Single Service
 - Requires significant additional MAPS 3 Phase II funding
 - Highest level of service to CC Hotel
 - Superior to Option 5 (S&MF Relocation) in this cost range
 - Delays Phase I implementation
 - Future line from Core-to-Shore to HSC would not connect to HUB
 - Impacts to EK Gaylord Road Project and potentially HUB TIGER Grant
 - Off-wire commitment is more extensive

Recommendation – Option 3



- Route 1 Service Route Length: 4.86 mi.
- Route 2 Service Route Length: 2.04 mi.
- Total Service Route Length: 6.90 mi.
- Additional Vehicles: 1
- New Construction: 0.53 mi.
- Net New Construction: 0.33 mi.
- Net Added Cost: \$9.5M
- Additional Funds Needed: \$3M
- Direct connection to/from CC Hotel to Bricktown and Midtown
- Full or Part time service
- Phase I schedule could be maintained or slightly modified
- Dedicated lane adjacent Boulevard
- Serves existing municipal structured parking



Comments/Questions

