S.0 SUMMARY

S.1 Historical Context/Lyammo System Expansion

The Central Florida Regional Transportation Authority (a.k.a. LYNX) and the City of Orlando are in partnership in sponsoring a study to evaluate alternatives to enhance transit service in downtown Orlando, including potential expansion of the existing LYMMO premium bus circulator system.

LYMOMO currently operates in a 2.4 mile corridor through downtown Orlando, connecting the Centreplex area to the northwest (with the former Amway Arena, Bob Carr Performing Arts Center and Orange County School Board offices) with LYNX Central Station, the Orange County Courthouse, and office and residential development in the downtown area. LYMMO was one of the first bus-based premium downtown circulators operating in an exclusive running way in a major city in the U.S. when service was initiated in 1997, with enhanced stations, real-time passenger information, on-board transit TV, and transit signal priority. Figure S-1 identifies the existing LYMMO corridor, and station locations.

In 2006, the City of Orlando adopted a new Downtown Transportation Plan that created a new vision for the downtown area based on furthering multi-modal transportation improvements to serve new office and residential development in the downtown, with the cornerstone being the expansion of the LYMMO circulator, to better serve the overall central city area and to serve as a stimulus for added development and redevelopment in the central city. The 2006 Plan was followed by a study in 2007 that evaluated both bus rapid transit and streetcar circulator options, including an expansion of LYMMO service to the north and south to serve the expanding Florida Hospital and Orlando Health medical centers, and the development of premium circulator service in the east-west direction to connect the Thornton Park/Lake Eola and Parramore residential districts with downtown.

The 2007 study evaluated the costs and impacts of developing Bus Rapid Transit (BRT) and streetcar for the north-south and east-west corridors, but did not make a final recommendation on either the appropriate transit mode or specific alignment for circulator expansion.

Since 2007, the SunRail commuter rail project has crystallized into a project that will provide major new regional transit service to central Orlando, and for which LYMMO is envisioned to be the major local service connection from commuter rail stations to central city destinations. This progression of studies and projects has led to the current South Corridor Alternatives Analysis (AA) study to establish the mode and alignment for potential expansion. The corridor limits extend from Church Street in the North, Delaney Avenue to the east, Michigan Street to the south and Parramore Avenue and the CSX rail line to the west.

In 2010, a formal Alternatives Analysis study for the expansion of the LYMMO system was initiated, with the initial intent to evaluate expansion to the North, South, East and West of downtown in a singular AA process. Figure S-2 identifies the four corridor study areas, with the North study corridor highlighted in yellow. During the initial stages of this study, two separate LYMMO corridor planning efforts were initiated given federal funding award or the availability of earmark funding. For the East/West corridor, in late 2010, a separate Alternatives Analysis was initiated given the need to complete AA and NEPA documentation (Categorical Exclusion) to access a $9.8 million earmark that was set to expire in September 2010. This report identified a Locally Preferred Alternative (LPA) for the East/West Corridor connecting the Parramore residential area on the west with the Thornton Park area on the east (extending through...
Figure S-1
Existing LYMMO Corridor and Station Locations
downtown). At the same time, an Urban Circulator grant was awarded to develop the Parramore Corridor connecting LYNX Central Station with the Amway Center, and a separate corridor planning study (not a formal AA) and Categorical Exclusion connected for that project as well. In 2012, both projects are proceeding into a design-build process with both corridors expected to be completed and operational by the time SunRail is completed in 2014.

With the East/West and Parramore Corridors removed from the LYMMO System AA process, the issue became how to proceed and evaluate the remaining North and South Corridors. In discussion with FTA, recognizing the agency would want to see separate assessments of proposed projects in each corridor to assess their justification for federal discretionary funds, it was decided to evaluate the North and South Corridors separately. So in 2011, the South Corridor Alternatives Analysis (AA) study was initiated to establish the mode and alignment for potential expansion to the south of downtown Orlando. The South Corridor limits extend from South Street on the North to Michigan Street on the south, and Delaney Avenue on the east, and Parramore Avenue and the CSX rail line Street on the west.

S.2 South Corridor Connections

The South LYMMO Corridor project would provide a connection with the planned East/West and North BRT services, thus providing greater mobility options for LYMMO riders in general. Figure S-3 shows the LPA routes for both the East/West and North routes. The South Corridor service would increase accessibility between downtown and the new Dr. Phillips Performing Arts Center, senior housing south of SR 408, the Orlando Health campus, the new Sodo mixed-use development at Grant Street, and the Market at Southside shopping center at South Orange Avenue and Michigan Street, which is scheduled for redevelopment. The Delaney residential area east of South Orange Avenue would also be served. The South Corridor also would provide a connection to the central downtown area and the Amway Center via the East/West corridor.

On the northwest side of downtown Orlando in the area centered around the old Amway Arena, is a new major redevelopment project, known as “Creative Village”. The Creative Village project will include 500 units of mixed-income housing, 400,000 square feet of office (largely media) space, 250,000 square feet of education space, and associated community and commercial facilities. A cornerstone to the new development is the extension (by 0.53 miles) of the existing LYMMO line through the development, and further extending the service to the south to serve the Florida A&M Law School, U.S. Courthouse, new Amway Center, and the Parramore residential district. This new BRT line (known as the Parramore BRT) would intersect the new East/West Corridor which would provide expanded service opportunities for riders on both lines.
Figure S-2
Initial Expanded LYMMO Corridor Study Areas
Figure S-3
East/West, Parramore and North LYMMO LPA Route Connections with South Corridor
S.3 Alternatives Considered

S.3.1 No Build Alternative
The No Build Alternative includes transit and roadway improvements in the corridor associated with the MetroPlan Orlando Year 2030 existing and committed network in its Cost Feasible Regional Transportation Plan.

S.3.2 Transportation System Management (TSM)
This alternative would provide a “best bus” system in the study area, including improving the service frequency and span of service of local bus service. It would not include enhanced stations, enhanced vehicles, off-board fare collection or other amenities. This alternative would also include development of the East/West and Parramore LYMMO routes.

S.3.3 Build Alternatives
The South LYMMO Corridor assumed from the very beginning only the bus rapid transit mode for the build alternatives. This was based on an initial BRT vs. streetcar mode assessment in the East/West LYMMO corridor which revealed that the development of streetcar in the central city area would be cost-prohibitive and have extensive traffic impacts. The BRT alternatives in the South Corridor would primarily operate in the north-south direction to connect the downtown Orlando with the Orlando Health campus and commercial/office and residential development along the South Orange Avenue corridor. This service would include such features as exclusive lanes and intersection priority treatments (where possible), enhanced stations, stylized vehicles, real-time passenger information, and other designated amenities.

Initially 10 alternate routes were evaluated for the South Corridor as illustrated in Figure S-4. An initial screening evaluation was performed to identify and compare the various alternative alignments to criteria as defined for each of the six project goals. The screening enabled the Study Technical Committee and Project Advisory Group to distinguish among the alternatives, separating those that are most likely to meet the study goals from those that are not. As a result, the 10 alternative routes were narrowed down to nine potential alignments.

The nine refined alternative alignments (Figures S-5 through S-13) were packaged by combining one of three route options north of Miller Street, and one of three options south of Miller Street. The options north of Miller Street include operating on Lucerne Terrace, South Orange Avenue and Gore Street, or South Orange Avenue and Columbia Street to serve the new Amtrak/SunRail station and then the Orlando Health campus. South of Miller Street, the LYMMO route could either extend south along South Orange Avenue to the new Sodo development, extend south to Michigan Street to turnaround within the Market at Southside development, or extend in a one-way, counterclockwise loop serving the Delaney Avenue corridor. Based on further field review and public and agency input, it was determined that these nine route alternatives would be carried forward for further evaluation.

Alternative 1 – Lucerne Terrace/Sligh Boulevard/Stop at Sodo Access
From South Street, the route would travel south on Magnolia Avenue, to west on Lucerne Circle, south on Lucerne Terrace to Columbia Street, turning south onto Sligh Blvd. past the Amtrak/SunRail station, east on Miller Street through the Orlando Health campus, and south on South Orange Avenue to serve the Sodo development. At Sodo, the route could either turn onto Grant Street and extend down to a vacant property on the northeast corner of Grant and Lucerne Terrace to turnaround, or extend to Crystal Lake Avenue and go through the Sodo development past the Target store and continue on Grant Street back to South Orange Avenue.
Figure S-4
South Corridor Initial Alternatives
Alternative 2 – Lucerne Terrace/Sligh Boulevard/Orange 2-Way

Same as Alternative 1, except the route would continue south to Michigan Street, to loop through the northwest corner of the Market at Southside development in the southeast quadrant of Michigan Street/South Orange Avenue intersection.

Alternative 3 – Lucerne Terrace/Sligh Boulevard/Delaney Avenue

Same as Alternative 1, except the route would continue south of Miller Street in a one-way loop going southbound on South Orange Avenue, eastbound on Michigan Street, northbound on Delaney Avenue, and westbound on Miller Street back to South Orange Avenue.

Alternative 4 – Orange Avenue/Gore Street/Sligh Boulevard/Stop at Sodo Access

From South Street, the route would travel south on Magnolia Avenue, merging onto the westbound SR 408 on-ramp, continue southbound on South Orange Avenue, west on Gore Street, turning south onto Sligh Blvd. past the Amtrak/SunRail station and east on Miller Street through the Orlando Health campus, and south on South Orange Avenue to the Sodo development. At Sodo, the route would turnaround using one of the route options identified in Alternative 1.

Alternative 5 – Orange Avenue/Sligh Boulevard/Orange 2-Way

Same as Alternative 4, except the route would continue south to turn east on Michigan Street, travel through the northwest corner of the Market at Southside development, and travel back north on South Orange Avenue.

Alternative 6 - Orange Avenue/Sligh Boulevard/Delaney Avenue

Same as Alternative 4, except the route would continue south of Miller Street with a one-way loop going southbound on South Orange Avenue, eastbound on Michigan Street, northbound on Delaney Avenue, and westbound on Miller Street back to South Orange Avenue.

Alternative 7 – Orange Avenue/Columbia Street/Sligh Boulevard/Stop at Sodo Access

From South Street, the route would travel south on Magnolia Avenue, merging onto the westbound SR 408 on-ramp, continue southbound on South Orange Avenue, west on Columbia Street, turning south onto Sligh Avenue past the Amtrak/SunRail station and the Orlando Health campus, continue east on Miller Street, and south on South Orange Avenue to serve Sodo (with either terminus option as identified in Alternative 1).

Alternative 8 – Orange Avenue/Columbia Street/Sligh Boulevard/Orange 2-Way

Same as Alternative 7, except the route would continue south to turn east on Michigan Street, travel through the northwest corner of the Market at Southside development, and travel back north on South Orange Avenue.

Alternative 9 – Orange Avenue/Columbia Street/Sligh Boulevard/ Delaney Avenue

Same as Alternative 7, except the route would continue south of Miller Street on a one-way loop going southbound on South Orange Avenue, eastbound on Michigan Street, northbound on Delaney Avenue, and westbound on Miller Street back to South Orange Avenue.
Figure S-5
South Corridor Refined Alternative 1
Figure S-6
South Corridor Refined Alternative 2
Figure S-7
South Corridor Refined Alternative 3
Figure S-8
South Corridor Refined Alternative 4
Figure S-9
South Corridor Refined Alternative 5
Figure S-10
South Corridor Refined Alternative 6
Figure S-11
South Corridor Refined Alternative 7
Figure S-12
South Corridor Refined Alternative 8
Figure S-13
South Corridor Refined Alternative 9
S.5 Evaluation Of Alternatives

Both the initial 12 South LYMMO Corridor alternatives and the nine refined alternatives were evaluated using a set of eleven measures which were related to the six major goals identified for the project and are presented as follows:

1) Goal: Improve mobility and transportation accessibility throughout Central Orlando
2) Goal: Assure equitable transportation options for the community
3) Goal: Enhance the quality of the environment
4) Goal: Enhance the social integrity of the urban community
5) Goal: Develop transit improvement options that are financially viable
6) Goal: Promote economic development and new development/redevelopment opportunities

Each measure was assigned specific values in terms of its importance, and a 3-2-1 scoring system was applied to each measure to identify a total score for each alternative. The scores were then compared between alternatives to provide insights on the performance of each alternative. This methodology was used in screening the initial 10 alternatives down to nine refined alternatives and then to evaluate the refined alternatives to recommend a draft Locally Preferred Alternative (LPA). In both evaluations, capital costs were developed in some detail.

S.6 Important Impacts And Mitigation

The refined alternatives evaluation for the South Corridor did not identify any significant impacts associated with the development of a BRT project in the corridor. In some cases, there may be minor impacts which may be avoided or minimized. The proposed BRT route would operate primarily within existing right-of-way in mixed traffic, with transit priority treatments largely concentrated at intersections with signal priority. No right-of-way impacts have been identified at this stage of project development. The on-line stations would either be developed on the sidewalk, between the sidewalk and curb (in parkway area), or through a curb extension, within existing street right-of-way.

S.7 Locally Preferred Alternative

The recommended Locally Preferred Alternative (LPA) for the South LYMMO corridor is a refined Alternative 8 (South Orange Avenue/Columbia Street/Sligh Boulevard/Two-Way on Orange Avenue), with the development of a clockwise, one-way loop around the outside of the Market at Southside using eastbound Michigan Street, southbound Delaney Avenue, and westbound Pineloch Avenue, back to South Orange Avenue (see Figure S-14). This route extension, 6.2 miles in total, would increase accessibility to the residential area around the shopping center as well as the Southgate Business Park on South Orange Avenue (see Figure S-14). At the north end of the corridor, the route would circle around the existing LYMMO south downtown loop using westbound South Street, northbound South Orange Avenue, eastbound Church Street, and southbound Magnolia Avenue. The project includes 17 proposed stations will include an enhanced shelter (in most cases), passenger seating, lighting, trash receptacle as well as amenities such as real-time passenger information, way finding signage/information, ticket kiosks, bike racks and landscaping. Buses would operate primarily in mixed traffic, with Transit Signal Priority (TSP) to be applied on a “conditional” basis at intersections. A queue jump is proposed in the southbound direction on South Orange Avenue at Gore Street.
The service would operate 16 hours on weekdays (6 AM to 10 PM) Monday through Thursday, 18 hours on Friday (6 AM to 12 AM), 14 hours on Saturdays (8 AM to 10 PM), and 12 hours on Sundays and holidays (10 AM to 10 PM). Service frequency would be every 10 minutes during weekday peak periods, and every 15 minutes for other periods. A total of five new vehicles would be needed for the new BRT service. These would be 35-foot hybrid buses similar to the buses LYNX operates in the current LYMMO corridor. No modifications to existing bus maintenance facilities are assumed.

The estimated capital cost of the draft LPA is $10.4 million in 2011 dollars, with an approximate $1.1 million annual operating cost in 2011 dollars.
Figure S-14
South Corridor Locally Preferred Alternative