

Recommended City Infrastructure Bundling Projects for the Procurement of the Confederation Line Extensions and the Trillium Line Extension**1. CITY PROJECTS THAT WILL REMAIN WITH THE CITY:****Upgrades to Storm and Sanitary Sewers at Byron Avenue and Woodroffe Avenue (Confederation Line Extension)**

The City plans to upgrade storm and sanitary sewers at select locations in and around Byron Avenue and Woodroffe Avenue. Some of the existing storm and sanitary sewers will be removed, realigned / reinstalled as a result of Stage 2 LRT alignment construction along Bryon Linear Park. Since the City's plan and schedule aligned with the timing of when Confederation Line West would be designed and constructed, this project is recommended for bundling with the Stage 2 LRT project. Bundling allows the design, construction, and schedule risks to be assigned to the proponent. Furthermore, this will eliminate the work to be completed concurrently by the Proponent as opposed to in sequence by separate contractors, thereby reducing the disruption to the local community.

Woodroffe Storm Water Management Pond (SWP) (Confederation Line Extension)

The City received provincial funding for a new storm water management pond (SWP) at Woodroffe to serve the Baseline Station area. The O-Train Planning office and the Planning Infrastructure and Economic Development Department (PIED) are jointly managing the Woodroffe SWP Environmental Assessment (EA) and Pinecrest Cumulative Impacts Study (CIS) to support the ability to proceed to construct the pond in parallel with Baseline station construction. To ensure that the pond can be constructed in a timeframe consistent with LRT schedule requirements, bundling the SWP with Stage 2 construction is recommended. The National Capital Commission (NCC) is fully involved in the above process, as the Woodroffe SWP will be located on NCC property.

Rock Wall Stabilization along the West Transitway trench between Tunney's Pasture and Sir John A. Macdonald Parkway (Confederation Line Extension)

The City has determined that it is necessary to stabilize the rock wall along the west Transitway from Tunney's Pasture Station to the west limit of the existing rock wall in the trench, as part of the City's Asset Management program. The rock wall east of Tunney's Pasture Station was stabilized as part of the Confederation Line project. Bundling the stabilization of the rock walls with the Stage 2 LRT project will ensure that all aspects of the design, construction and schedules are fully coordinated, while minimizing the disruption to OC Transpo such that the rock wall work may be completed in parallel with the Transitway detour.

Richmond Road Complete Streets (Cleary Avenue to Berkeley Avenue) (Confederation Line Extension)

The Richmond Road Complete Streets study will generate a Complete Street design concept for the corridor between Sir John A. Macdonald Parkway (SJAMP) and Berkeley Avenue. Given the proximity and impacts from LRT construction within the corridor, the Stage 2 LRT project will include the functional design, from the SJAMP to Berkeley Avenue, as well as construction of the design from the SJAMP to Cleary Avenue.

Staff is reviewing the opportunity to bundle the construction of the remaining segment of the Richmond Road Complete Streets from Cleary Avenue to Berkeley Avenue, subject to funding outside of the Stage 2 budget. The complete street design concept will offer safety, comfort and mobility for all users, while also encouraging healthier, cleaner living by making it easier to walk or bike. Elements of the complete street include: improved sidewalks, crosswalks, pathways, walking routes, a safe and convenient cycling facility with connections to the broader cycling network, promotion of “place making” opportunities and enhancements to the public realm with landscape amenities.

Greens Creek Culvert Replacement (Confederation Line Extension)

The July 2015 functional design included an elevated alignment north of Highway 174 and, with this alignment, the existing Greens Creek culvert (which conveys the creek under Highway 174) would not be altered or extended due to the LRT alignment. However, with the May 2016 shift of the LRT alignment into the median at Montreal Road and the fact that Greens Creek culvert will need to be rehabilitated or replaced within the first five years following commencement of LRT operations, staff, with the support of the NCC, is recommending replacing the creek culvert in conjunction with LRT construction.

Highway 174 Various Culvert Replacements (Confederation Line Extension)

Various existing City culverts along Highway 174 were identified for replacement in the City's asset renewal plans. Staff recommend bundling the identified culvert replacements which are along the Confederation Line east corridor and which the City had forecasted asset renewal within the first 5 years of revenue service. Bundling these projects will optimize the design, construction, and schedule integration by the Proponent, and most importantly avoid service disruptions within the first 5 years after Confederation Line comes into revenue service. This will also transfer responsibility to the Proponent to integrate the culvert renewal with Confederation Line East construction.

Highway 174 Concrete Base Removal (Confederation Line Extension)

Sections of the original Highway 174 lanes were constructed on a concrete base. Over time the concrete pavement was overlaid with asphalt pavement and additional lanes in each direction were added with asphalt pavement in order to increase capacity to accommodate the increased traffic and transit volumes. The original concrete base is reaching the end of its service life and in order to avoid conflicting construction efforts and reduce traffic and transit impacts, particularly in the vicinity of Montreal Road, staff recommends bundling the removal of the

concrete base directly impacted by Stage 2 construction. Based on Stage 2 impacts, the concrete base bundled with Stage 2 includes Highway 174 eastbound lanes from the new proposed LRT flyover into median of Highway 174 easterly, to the east limit of the existing concrete base just east of Montreal Road, and the Highway 174 westbound from just west of Montreal Road to the east limit of the existing concrete base just east of Montreal Road.

Upgrade to the Shefford Road Watermain Crossing of Highway 174 (Confederation Line Extension)

As part of the regulations governing railways watermain crossings, or those in close proximity to the railway, are required to be protected such that any failures of either the watermain and/or the railway do not result in catastrophic consequences to the other. Given the City's plans to upgrade the existing watermain at Shefford Road, the project is recommended to be bundled with Stage 2 LRT project to ensure the upgrade is scheduled with Confederation Line East design and construction while transferring all risks to the proponent. This approach will eliminate the need to complete the work twice - once to protect the existing watermain during LRT construction and the second time to upgrade the watermain after commencement of revenue service and protect against impacts on LRT.

Lawn Avenue Parkette Enhancement (Confederation Line Extension)

Due to sewer construction for the Stage 2 LRT Project, a planned enhancement of a small parkette west of Edgeworth Avenue (in the former Lawn Avenue Road right-of-way) is recommended to be bundled with the Stage 2 LRT Project to coordinate construction timelines. The parkette enhancement will be deferred until after the LRT sewer work is completed and Stage 2 will be responsible for reinstating the parkette and implementing a community garden following completion of the sewer construction (in the first construction season), in consultation with the local community.

Jeanne D'Arc Boulevard Bridge Rehabilitation (Confederation Line Extension)

The Jeanne D'Arc Boulevard Bridge will pass over the Confederation Line East LRT alignment, which includes an integrated station with entrances via the Jeanne D'Arc Boulevard Bridge. Since the bridge has been identified for asset renewal, including full rehabilitation of the superstructure and the substructure, the work is recommended to be bundled to optimize the design, construction, and schedule integration by the Confederation Line Proponent. In addition, bundling the Jeanne D'Arc Boulevard Bridge rehabilitation with the Stage 2 LRT Project will allow the City to transfer the responsibility to integrate the bridge rehabilitation with Confederation Line East construction to the Proponent.

Leitrim and Albion Intersection Improvements (Trillium Line Extension)

The Leitrim and Albion intersection improvements are recommended to be bundled in order to allow the work to be performed at an earlier time than it would otherwise be completed if not bundled. It is anticipated this project will provide significant benefits to both traffic and transit movements. The Stage 2 LRT project will require this work to be completed in advance of the

Trillium Line Leitrim grade separation, thereby ensuring the benefits of this localized intersection improvement are realized by the transit and traffic users during the construction of the Leitrim grade separation over the Trillium Line.

2. CITY PROJECTS THAT WILL FORM PART OF THE O-TRAIN SYSTEM INFRASTRUCTURE:

Rideau River Bridge Rehabilitation (Trillium Line Extension)

The Rideau River Bridge utilized by Trillium Line trains has been identified for asset renewal and upgrades. The bridge is integral to the reliability and availability of Stage 2 LRT construction and service. Therefore, bundling the Rideau River bridge upgrades with the Stage 2 LRT Project will allow the City to transfer responsibility to the Proponent to integrate the bridge upgrades with Trillium Line construction.

Dow's Lake Tunnel Rehabilitation (Trillium Line Extension)

Similar to the Rideau River Bridge, the Dows Lake Tunnel has also been identified by the City for asset renewal, and is also integral to the reliability and availability of the Trillium Line. As such, this renewal project is also recommended to be bundled and transferred to the Trillium Line Proponent for integration and long-term maintenance.

Existing Trillium Line Station Upgrades (Trillium Line Extension)

The existing stations along Trillium Line are planned to be upgraded to have communications systems, wayfinding and signage consistent with Confederation Line. These requirements are being incorporated into the Stage 2 LRT project to ensure the station upgrades are coordinated by the Trillium Line Proponent, thereby minimizing disruptions and inconvenience to the current and future Trillium Line service. Incorporating these works will not impact or duplicate any of the works undertaken related to the fare gate implementation.