# NORTH–SOUTH CORRIDOR LRT PROJECT

## (Rideau Centre to Barrhaven Town Centre)

# ENVIRONMENTAL ASSESSMENT

## Southern Corridors and Alignments

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# 1.0 Corridors from South Keys Station to the Rideau River

As part of the development of the overall plans for the Riverside South community, the City of Ottawa examined potential corridors for extending rapid transit services south of the South Keys Station to the Rideau River at the location of the future Strandherd Bridge. Three general corridor alternatives (with a number of potential alignments within each corridor) were examined:

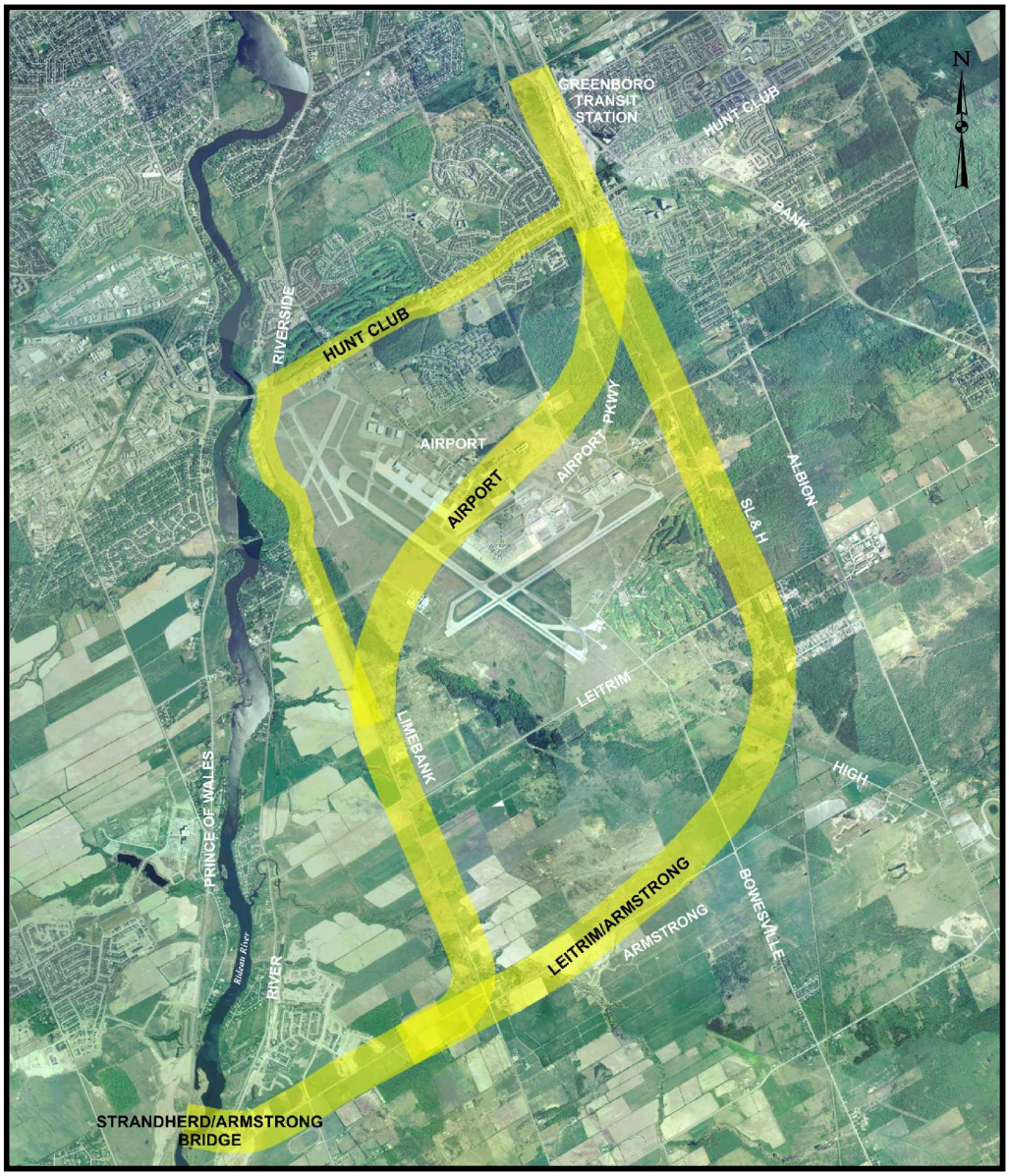
1) Hunt Club Corridor – generally follows Hunt Club Road, River Road, Limebank Road and Earl Armstrong Road from South Keys to the Rideau River.

2) Airport Corridor – follows the existing railway corridor/Airport Parkway south from South Keys, curves west through the airport serving the terminal, continues west to Limebank Road, south along Limebank and west along Earl Armstrong to the Rideau River.

3) Leitrim/Armstrong Corridor – follows the existing railway corridor south to south of Leitrim Road, then curves west to travel in the vicinity of Earl Armstrong Road to the Rideau River.

Figure 1.1 illustrates these corridors. Discussion of each corridor as well as the alternative alignments within each corridor is provided in the following sections. Comparative evaluation of the three corridors follows the corridor information.

**Figure 1.1**
**Alternative Corridors – South Keys Station to the Rideau River**



## 1.1 Hunt Club Corridor

The Hunt Club Corridor runs along Hunt Club Road, from South Keys Station to River Road/Riverside Drive, continues south from Hunt Club along River Road, proceeds along Limebank Road (either along the side or down the middle) and into the Riverside South Town Center before crossing the Rideau River at the proposed Strandherd-Armstrong crossing. This alternative does not service the airport or the planned development in Riverside South to the east of the proposed Town Center. Advantages of this alternative are that it uses an existing transportation corridor and it could act as a staged network connection. Disadvantages are the need to widen Hunt Club Road and River Road, the high capital cost, disruption to the community and its incompatibility with rail technology.

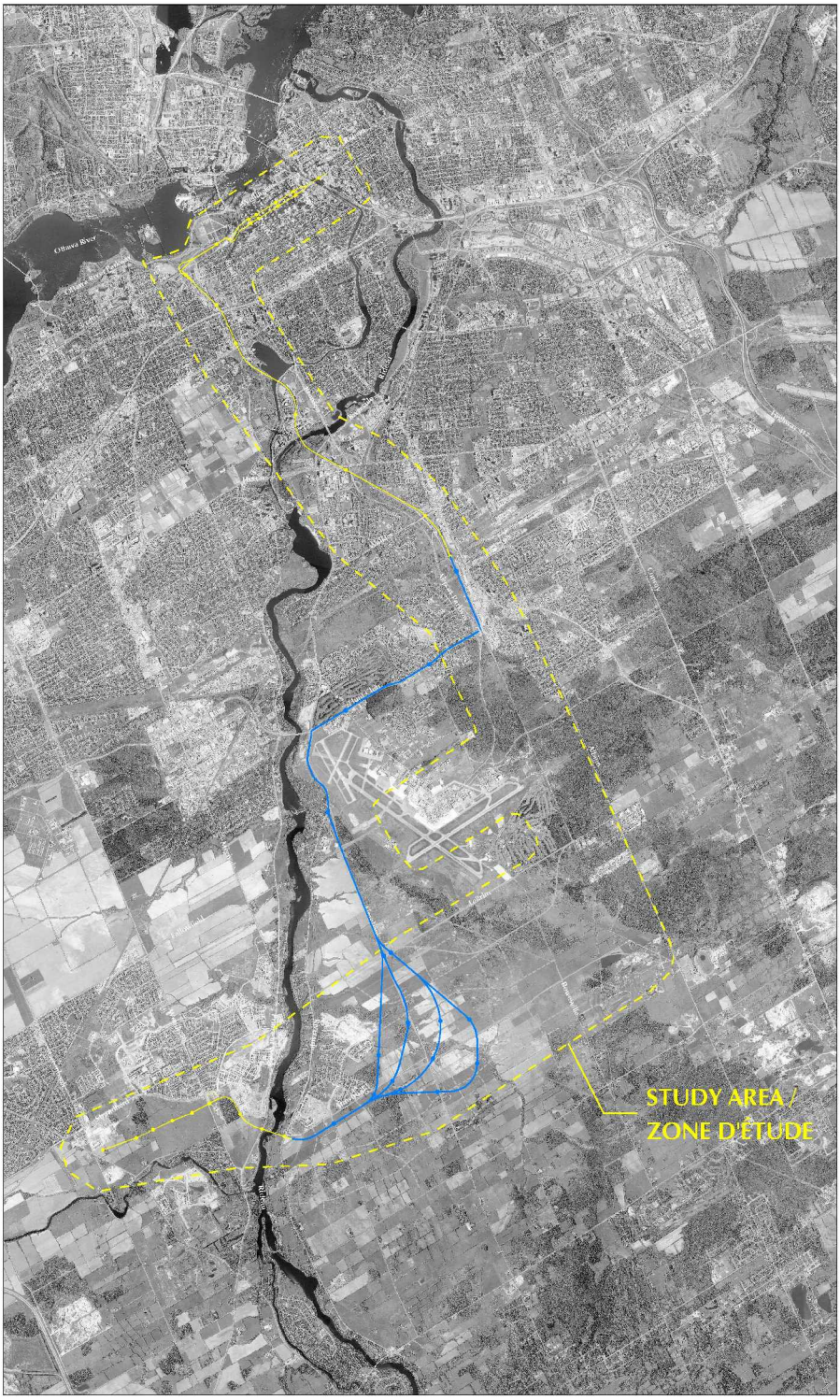
There are three different alignments proposed through the Riverside South Urban Community from the Limebank approach. These are shown in Figure 1.2.

One option has the tracks curve east at Leitrim road and runs parallel to Mosquito creek until it reaches Earl Armstrong road. This alignment suggests backtracking to the east, which is undesirable. This option serves the employment area and the new development proposed. The train runs west along or south of Earl Armstrong road serving the community center before crossing the proposed Strandherd-Armstrong Bridge.

The second option begins the same as the first option but after crossing Spratt road, the tracks turn back towards the community center at the intersection of Limebank and Earl Armstrong Road. Again this alignment services the employment area, but then travels straight to the community center without serving the proposed development to the east.

The last alternative (and an additional variation) shows the tracks reaching Earl Armstrong road to the west of the community center. This is undesirable since implementation of the LRT is supposed to encourage transit use for regional trips by introducing an alternative to the car. A transit service that does not give access to the community center does not accomplish this goal. The alignments run through the existing riverside south community and do not open rapid transit access to the future development to the east.

**Figure 1.2**
**Hunt Club Corridor – Alternative Alignments**



## 1.2 Airport Corridor

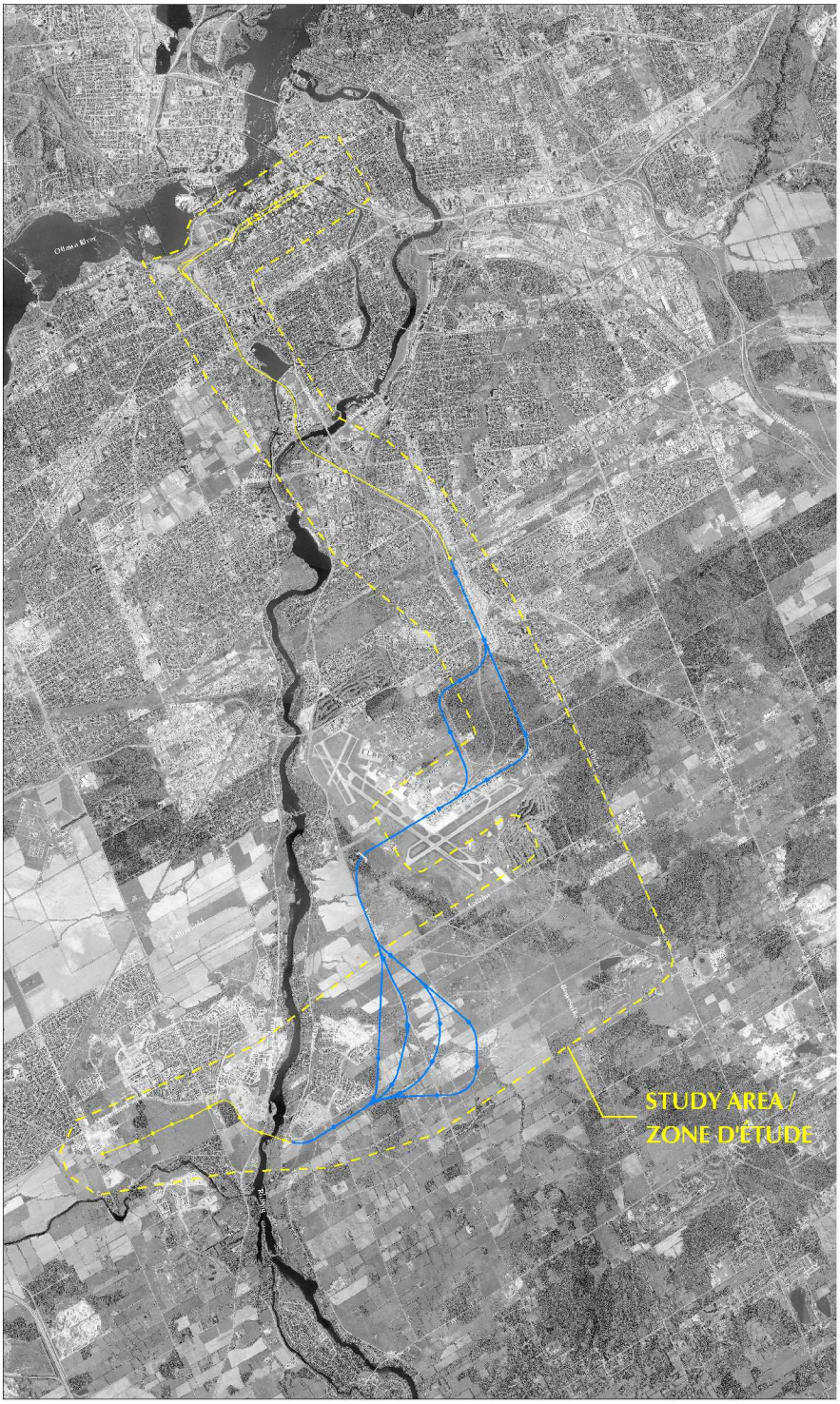
This corridor option extends from the South Keys Station along the existing Transitway/railway corridor, turning westward at the airport. The corridor tunnels under the airport north/south runway, resurfacing at the escarpment at Limebank Road before continuing south on Limebank Road to the Riverside South Town Centre. Two alignment options were considered for this corridor (as shown in Figure 1.3):

**Airport Rail:** This alignment extends from the South Keys Station, along the existing Transitway/railway corridor, turning west through the development at Uplands, continuing south along Uplands Road and then west at the airport. The corridor tunnels under the airport north/south runway coming out at the escarpment at Limebank Road, runs south on Limebank Road, goes in through the Town Center and eventually crosses the Rideau River at the proposed Strandherd-Armstrong crossing. This alternative provides direct access to the airport but does not serve any planned development east of the Town Center. This alignment passes through the airport thereby introducing a circuitous loop that will increase real and perceived travel times for those traveling to/from the South Urban Center (SUC). This alignment option is less desirable, not only because of the increased operational costs, but because service to the major market (SUC) is reduced in order to increase service to the minor market (airport). Grade separations at the Airport Parkway and Uplands Drive/Lester Road crossings will be required. This option has significantly higher capital costs and greater environmental impacts when compared to the existing O-Train corridor.

**Airport Rail Variant:** This alignment option is as described above only instead of running through the Uplands Community, the alignment continues along the existing railway corridor and proceeds west at the airport.

Once through the airport to Limebank this corridor uses the same alignment alternatives as proposed as in the Hunt Club corridor.

**Figure 1.3**
**Airport Corridor – Alternative Alignments**



## 1.3 Leitrim/Armstrong Corridor

This corridor option uses the existing rail corridor connecting south from the South Keys Transitway Station and continues south of the airport past the Leitrim community before turning toward the Riverside South Town Center. This option does not directly serve the airport and supplementary service would need to be provided.

This section describes alignment alternatives that travel through the south urban community, south of the airport, to the Rideau River.

Within this corridor, four specific alignments were considered for connecting between the rail corridor and the Rideau River. They are illustrated in Figure 1.4 and described below:

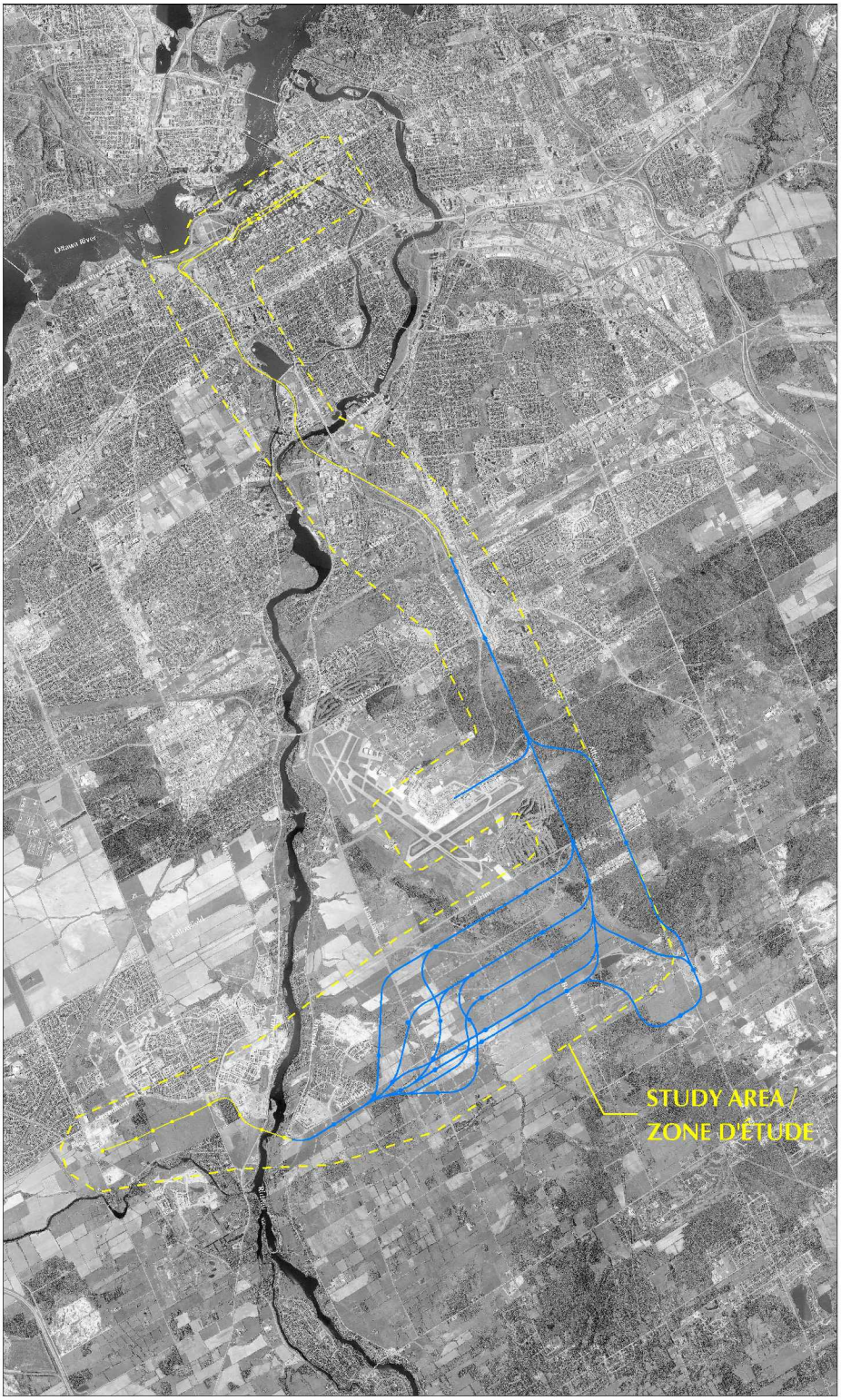
**South Armstrong:** This alternative runs along the existing railway corridor, turns west to the south of Earl Armstrong Road and runs into the Town Center located at the Limebank/Armstrong intersection before crossing the Rideau River at the proposed Strandherd/Armstrong crossing. This alignment does not go through the proposed business park at Leitrim Road, nor does it go through the existing development in the northwest quadrant of Limebank Road and Earl Armstrong Road. It provides a pedestrian friendly land use, quality service in Town Center, quality service to business parks and it is technology neutral. This alignment option can provide access to the Central Canada Exhibition site and the Rideau Carleton Raceway Slots directly or through a shuttle service. The airport would be serviced off-line by a separate service.

**Armstrong:** This option is the South Armstrong alternative only the alignment runs along Earl Armstrong Road instead of to the south of it. This option can run along one side or in the median of Earl Armstrong Road. The alternative using the median provides less complexity and can extend the life of at-grade facilities much further into the future. Disadvantages with this alternative are that it makes it difficult to access development, creates a barrier, and misses the major business park areas.

**South Leitrim:** This alignment alternative runs along the existing railway corridor and turns west approximately 350 m south of Leitrim Road. From there, it travels west to almost Limebank where it follows either the South Armstrong alignment or the Armstrong alignment described above. This alternative is closer to the planned business park around Leitrim Road but is further from the planned residential development around Earl Armstrong Road. As with the above options, the airport would be serviced off-line.

**South Leitrim Variant**: This option is the same as South Leitrim only it turns west approximately 1.1 km south of Leitrim Road. This alternative splits the difference better between the planned business park in the north and residential area at Earl Armstrong Road.

**Figure 1.4**
**Leitrim/Armstrong Corridor – Alternative Alignments**



## 1.4 Corridor Options Screening

Corridor options were assessed against a set of quantitative and qualitative criteria to identify a preferred corridor option. Factors, and associated criteria, included the natural environment, socio-economic, land use, transportation, and costs. The results of this analysis and evaluation are summarized in the following tables.

**Table 1.1**
**Detailed Analysis of Corridor Alternatives**

| Factor / Criteria | Alternative Solution | | |
|---|---|---|---|
| | Hunt Club | Airport | Leitrim / Armstrong |
| **Transportation** | ▪ This alternative has large impacts on existing roads and does not service areas to encourage ridership.<br>▪ This alternative does not access the airport.<br>▪ The LRT would join the T-way at south keys.<br>▪ 2 bus routes (45 and 145) run along the same line as this alternative.<br>▪ On street operation on hunt club and Limebank requires a number of at-grade crossings. | ▪ This alternative has less of an impact on roads since it runs on T-way and freight corridor until airport.<br>▪ Longer travel times to riders of SUC because of on line airport stop.<br>▪ Can service development to east with shuttle service.<br>▪ On line LRT station at airport with interchange of T-way is proposed for airport alternative.<br>▪ Shuttles can run from development areas to LRT station and park and ride lots proposed at Lester.<br>▪ Increased travel time to SUC riders. | ▪ This alternative runs on existing rail corridor and therefore does not impact existing roads.<br>▪ Increased ridership due to servicing developments to the east.<br>▪ Shorter travel time to SUC than both other alternatives.<br>▪ Proposed park and ride lots at Lester and Leitrim.<br>▪ Separate link runs to airport for access.<br>▪ Interchange between t-way and LRT at airport, south keys. |
| **Natural Environment** | ▪ This alternative needs widening of Limebank road taking away from forested land or farmland in greenbelt. | ▪ The airport rail alternative has a larger impact on the natural environment than the other alternatives due to construction of tunnel under airport runways.<br>▪ Disruption of natural environment during construction.<br>▪ Issues of animals going into tunnel? | ▪ The Leitrim Armstrong corridor makes use of the existing freight ROW from Leitrim to South keys. |

| | | | |
|---|---|---|---|
| **Social Environment** | ▪ This alternative has larger effects on surrounding areas with respect to noise since it travels on street and through already developed areas along the Rideau River.<br>▪ Widening of Limebank can potentially displace some residents and does not conform to NCC plan of greenbelt.<br>▪ Limited future development due to airport property.<br>▪ Does not conform to Airport's plan for LRT to service airport.<br>▪ On street operation decreases perception of security. | ▪ This alternative only effects noise through the SUC since its underground or in ROW.<br>▪ Limited future development around stations due to airport property.<br>▪ Going underground preserves green space.<br>▪ Conforms to Airport's plan for LRT service.<br>▪ Does not service Leitrim community and ignores community plan for park and ride lot around LRT station.<br>▪ Conforms to NCC plan for greenbelt by using existing rail and T-way corridor and by avoiding elimination of green space.<br>▪ Security issues with tunnel under airport runways. | ▪ This alternative is on a ROW that operates with freight. There will be no increase in noise.<br>▪ Green space is removed but only within the reserved transportation corridor.<br>▪ Opens up space for development to east.<br>▪ Construction confined to transportation corridor through greenbelt conforms to NCC's plan for greenbelt.<br>▪ Access to Leitrim community and SUC transparent with community design plans and City of Ottawa Transportation master plan.<br>▪ ROW gives perception of security. |
| **Economic Environment** | ▪ Widening of Limebank requires procurement of farmers' land.<br>▪ Access to business NW of airport on hunt club. | ▪ After rail emerges from tunnel southwest of airport, disruption to farmers' land with widening of Limebank road.<br>▪ On-line station at airport increases commercial center at airport. | ▪ No disruption to farmers since LRT runs in existing transportation corridor.<br>▪ Access to both Leitrim and SUC business center. |
| **Cultural Environment** | ▪ On street operation on hunt club and Limebank not as pleasant as other alternatives | ▪ A tunnel for the airport alternative increases image of system.<br>▪ Less impact on landscape vegetation | ▪ ROW in existing transportation corridor through green belt results in a scenic route. |
| **Cost** | ▪ Construction - Widening of road – procurement of land,<br>▪ Maintenance – higher due to on street operation (salting of roads…) | ▪ Construction – Tunnel, widening of road, procurement of land,<br>▪ Maintenance – infrastructure rehab, higher due to on street operation (salting of roads…)<br>▪ Shuttle service to Leitrim expensive.<br>▪ Longer travel times for SUC riders require more vehicles. | ▪ Construction – use existing corridor – extra rail for link to airport.<br>▪ Maintenance – less than other alternatives,<br>▪ May require more vehicles due to extra track. (Airport link) |

**Table 1.2**
**Relative Evaluation of Corridor Alternatives**

| Alternative Solution | Factor / Criteria | | | | | | Overall Assessment Ranking |
|---|---|---|---|---|---|---|---|
| | Transportation | Natural Environment | Social | Economic | Cultural | Cost | |
| Hunt Club | ○ | ◑ | ○ | ◑ | ○ | ◑ | 3 |
| Airport | ◑ | ○ | ◑ | ○ | ● | ○ | 2 |
| Leitrim/Armstrong | ● | ● | ● | ● | ◑ | ◑ | 1 |
| Legend | ● better than other alternatives | | ◑ Middle ground | | ○ worse than other alternatives | | |

Based on the screening factors and criteria, the Leitrim/Armstrong Corridor was identified as the preferred corridor option. Principal factors in selecting the Leitrim/Armstrong corridor as the preferred option include:

- Serves largest potential market;
- Little or no impact to existing communities;
- Minimal impact to existing road network;
- Staging simpler than other options; and,
- Least costly option in terms of construction costs.

A set of alignment and planning considerations were established to guide the development and refinement of specific alignment alternatives within the preferred corridor. Further work is required to elaborate alignment alternatives and to integrate efforts with ongoing development in the study area.

The following alignment considerations were established to guide development alignment options.

- Adjacent Uses: Land uses should be well served by the transit corridor. To the extent possible the transit corridor should be located so as not to divide single or similar land uses, but rather serve as a transition and access point between adjacent land uses.
- Leitrim Area Alignment: General travel patterns are assumed to be from residential areas in the south to employment and other uses in the north.
- Development Feasibility: An alignment through the planned town center should ensure, to the extent possible, that development sites are viable in terms of land area for their intended use.
- Special Uses: A number of special uses are located in the south east section of the study area including the Rideau Carlton Raceway, a potential sports

facility and the exhibition site. Direct service to the exhibition site and planned sports facility is not anticipated. Feeder bus service may be provided to the area potentially enhanced with higher levels of event specific service.

- Service Characteristics (Town Centre): The nature of service and facilities within the town center should be consistent with the planned environment. The town center is envisioned as a lively pedestrian oriented shopping area with lower volume streets that provide access to the core.
- T-Shaped wooded lot: The T-shaped wooded lot south of Armstrong and west of the town center should be preserved to the largest extent possible.
- Earl Armstrong Road: Earl Armstrong Road is envisioned as a major arterial with high volumes of vehicle traffic. Limited right of way and potential conflicts with vehicle movements suggests that alignments should be considered that are in proximity to Earl Armstrong Road to serve demand in the corridor, but that are outside the immediate traffic influence of the arterial corridor.
- Rideau River Crossing: For this study, it has been assumed that the proposed transit crossing of the Rideau River is located south of the Strandherd/Armstrong Bridge.
- Mosquito Creek: An alignment should minimize the impact on Mosquito Creek and should consider the shortest crossing point.

# 2.0 Alignment Screening through the South Urban Community

The previous section explained that the Leitrim/Armstrong corridor is the preferred alignment for the LRT. This section describes more detailed alignment alternatives that travel through the south urban community, south of the airport, to the Rideau River. This community is split up into 3 main parcels for which an alignment must to be determined. The first section that is under investigation is from the airport to Bowesville, the second is from Bowesville to Limebank, and the third is from Limebank to River road as shown in Figure 2.1.

**Figure 2.1**

**Alternative Alignments through South Urban Community**

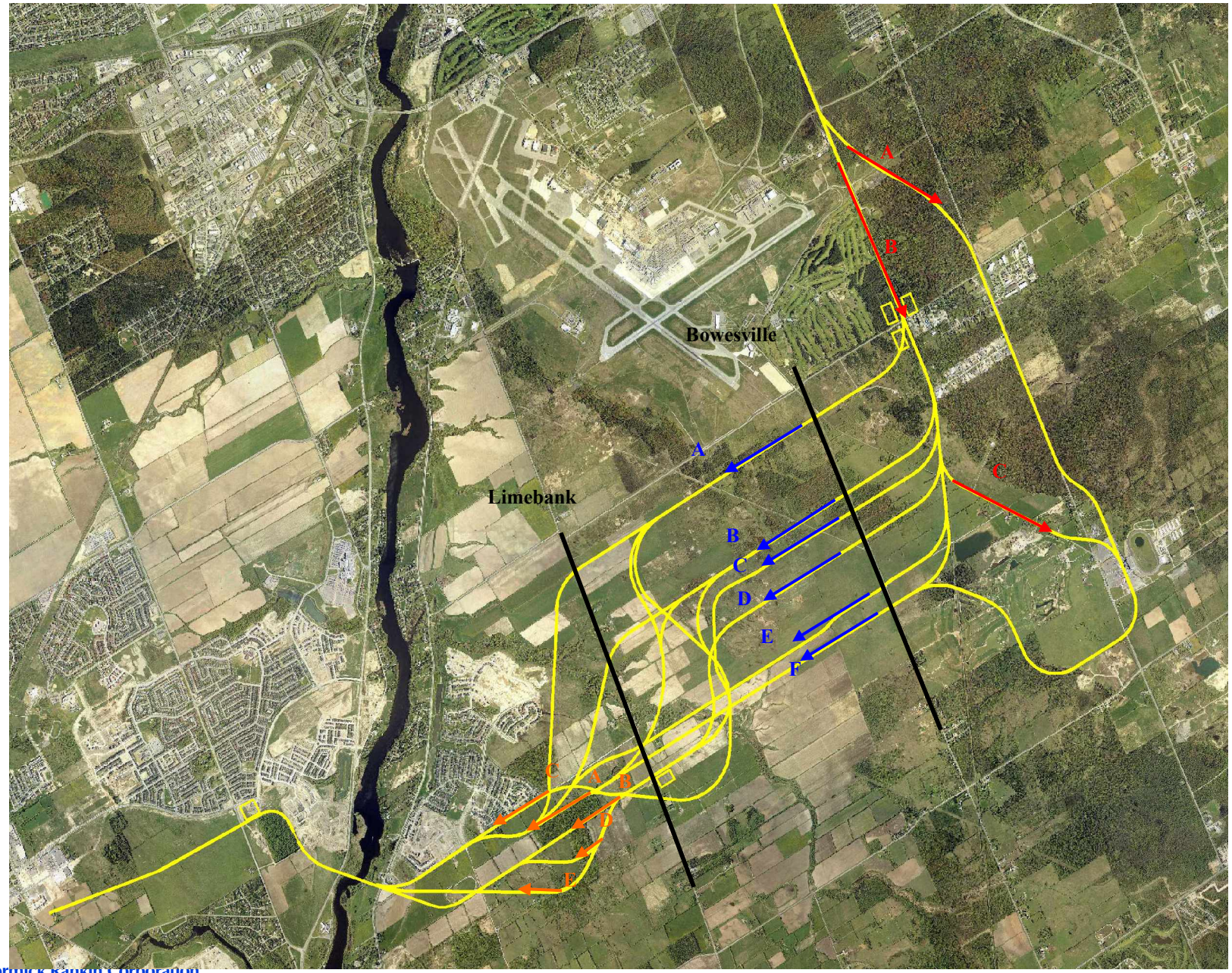


**Table 2.1**
**Detailed Analysis of Alignment Alternatives Between the Airport and Bowesville**

| Factor / Criteria | Alternative Alignments from Airport to Bowesville | | |
|---|---|---|---|
| | A) Through Leitrim Community | B) Existing CP rail | C) Raceway & Sports Centre |
| **Transportation** | ▪ Serves future Leitrim Community.<br>▪ Limits transit to the south end of the Riverside Community.<br>▪ Serves recreational center and Ottawa Racetrack.<br>▪ Increases travel time to Riders in the Riverside and Barrhaven Communities.<br>▪ Impacts the general traffic in the Leitrim community. More minor intersections to be crossed. LRT is to operate slower in Leitrim community. | ▪ Borders the Leitrim Community. Can be better served with a park & ride lot.<br>▪ This alignment does not limit transit to the south of the Riverside Community.<br>▪ Can serve recreational center and Ottawa Racetrack with shuttle bus service.<br>▪ LRT can operate quickly between Bowesville and the Airport | ▪ Borders the Leitrim Community. Can be better served with a park & ride lot.<br>▪ Limits transit to the south end of the Riverside Community.<br>▪ Serves recreational center and Ottawa Racetrack.<br>▪ Increases travel time to Riders in the Riverside and Barrhaven Communities. LRT can operate quickly through the Leitrim Community, but time is lost by going to the sports centre and racetrack. |
| **Natural Environment** | ▪ This option does not pose an adverse effect on the natural environment. | ▪ This option does not pose an adverse effect on the natural environment. | ▪ This option does not pose an adverse effect on the natural environment. |
| **Social Environment** | ▪ The Leitrim community is to be developed more to the east of the proposed alignments, this option brings the LRT closer to the proposed community.<br>▪ Albion Road will become wider and more of a barrier in the community when accommodating the LRT.<br>▪ Providing a direct service to the Raceway & Sports center is beneficial for the image of the City.<br>▪ Properties are impacted when running the LRT down Albion road.<br>▪ More safety concerns since the LRT is to run on or adjacent to Albion Road. Impacts to pedestrians, cyclists and general traffic. | ▪ The existing trains on this alignment are to be replaced with quieter LRT vehicles that will have less of an impact on the social environment.<br>▪ A shuttle service can be provided from the LRT to the racetrack. The image of the city is not increased significantly.<br>▪ There is no direct impact on individual properties surrounding the ROW since it was an existing rail corridor. | ▪ The existing trains on this alignment are to be replaced with quieter LRT vehicles that will have less of an impact on the social environment near the Leitrim Community.<br>▪ Providing a direct service to the Raceway & Sports center is beneficial for the image of the City.<br>▪ More property is required in bringing the LRT to the Racetrack and Sports Centre |
| **Economic Environment** | ▪ Beneficial to for the racetrack and sports centre.<br>▪ Longer track results in higher operational and maintenance costs.<br>▪ The Leitrim Community Station does not have a significant economic impact since only one station is provided for this community. The LRT is to function primarily for commuters rather than short haul trips. | ▪ Does not benefit racetrack and sports center.<br>▪ Shortest costs due to shorter track lengths.<br>▪ The Leitrim Community Station does not have a significant economic impact since only one station is provided for this community. Since this station is primarily for commuters,, a park and ride lot can be situated near the station. | ▪ Beneficial for the racetrack and sports centre.<br>▪ Longer track results in higher operational and maintenance costs.<br>▪ The Leitrim Community Station does not have a significant economic impact since only one station is provided for this community. The LRT is to function primarily for commuters rather than short haul trips. |
| **Cultural Environment** | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified |
| **Cost** | ▪ More track is required for this alternative.<br>▪ More intersections are to be crossed in the Leitrim Community.<br>▪ ROW not purchased<br>▪ An extra station may be required | ▪ Smallest cost due to existing rail corridor. | ▪ This option requires significant funds due to the extra track required.<br>▪ An extra station may be required |

**Table 2.2**
**Detailed Analysis of Alignment Alternatives Between Bowesville and Limebank**

| Factor / Criteria | Alternative Alignments from Bowesville to Limebank | | | | | |
|---|---|---|---|---|---|---|
| | A – Above Leitrim | B – Between Leitrim & Spratt A | C – Between Leitrim & Spratt B | D – Spratt Extension | E – Earl Armstrong Road | F – South of Armstrong |
| **Transportation** | ▪ This alignment option services the business park in the north of the community but does not serve the various proposed mixed land uses in the southeast.<br>▪ While it is important for transit to reach the business park, this option does not let the LRT run through the city centre, which is located south of Earl Armstrong and west of Limebank.<br>▪ No impact to regular traffic. | ▪ This option serves more of a transit market than option A but the majority of the LRT catch basin is within the business park.<br>▪ The LRT can head south, west of the business park to serve the proposed dense mixed development near the city centre.<br>▪ No impact to regular traffic. | ▪ This alignment acts as a border between the business park to the north and the mixed land use to the south.<br>▪ The LRT can head south, west of the business park to serve the proposed dense mixed development near the city centre.<br>▪ No impact to regular traffic. | ▪ This alignment option does not serve the business park directly.<br>▪ The LRT extends through the proposed mixed and residential development while extending through the city centre.<br>▪ No impact to regular traffic. | ▪ Light Rail Transit does not service the business park.<br>▪ Proposed mixed land uses surround the LRT alignment throughout the entire community.<br>▪ Impact to typical traffic operations since transit is using a shared ROW with regular traffic. | ▪ Light Rail Transit does not service the business park.<br>▪ Proposed mixed land uses surround the LRT alignment throughout the entire community.<br>▪ No impact to regular traffic. |
| **Natural Environment** | ▪ Structure to cross Mosquito Creek | ▪ Structure to cross Mosquito Creek | ▪ Structure to cross Mosquito Creek | ▪ Structure to cross Mosquito Creek | ▪ Structure to cross Mosquito Creek | ▪ Structure to cross Mosquito Creek |
| **Social Environment** | ▪ The business park is the land use that surrounds the majority of this alignment. Generally people will only travel to and from the business park during peak periods.<br>▪ The image of the LRT traveling through a quiet business park during the day is undesirable. | ▪ There are a variety of land uses that are proposed around this alignment. This encourages short haul trips to be done by LRT.<br>▪ An LRT running through the community is unique and positively impacts the image of the community and the Nations Capital. | ▪ There are a variety of land uses that are proposed around this alignment. This encourages short haul trips to be done by LRT.<br>▪ An LRT running through the community is unique and positively impacts the image of the community and the Nations Capital.<br>▪ Operating the LRT on this alignment creates a desirable barrier between the business park and the rest of the community. | ▪ There are a variety of land uses that are proposed around this alignment. This encourages short haul trips to be done by LRT.<br>▪ An LRT running through the community is unique and positively impacts the image of the community and the Nations Capital. | ▪ There are a variety of land uses that are proposed around this alignment. This encourages short haul trips to be done by LRT.<br>▪ An LRT running through the community is unique and positively impacts the image of the community and the Nations Capital.<br>▪ Operating the LRT on Earl Armstrong Road creates an undesirable barrier between the north and south of the community. | ▪ There are a variety of land uses that are proposed around this alignment. This encourages short haul trips to be done by LRT.<br>▪ An LRT running through the community is unique and positively impacts the image of the community and the Nations Capital. |
| **Economic Environment** | ▪ Close to planned Business Park near Leitrim Road but not to the Town Centre. | ▪ Close to planned Business Park near Leitrim Road and the SUC Town Centre | ▪ Close to planned Business Park near Leitrim Road and the SUC Town Centre | ▪ Does not access business park but does run through a mixed development which encourages LRT use for short hauls. | ▪ Does not access business park but does run through mixed and commercial developments. Much commercial activity is to be located on Earl Armstrong Road. | ▪ The Business Park is not on the LRT Alignment.<br>▪ A positive impact on the economy is predicted with the LRT alignment running through the Town Centre. |
| **Cultural Environment** | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified | ▪ No cultural impacts were identified |
| **Cost** | ▪ Length of Track from Bowesville to Limebank: **2.83 or 4.14** | ▪ Length of Track from Bowesville to Limebank: **2.85, 3.4, 4.0** | ▪ Length of Track from Bowesville to Limebank: **3.5** | ▪ Length of Track from Bowesville to Limebank: **3.26** | ▪ Length of Track from Bowesville to Limebank: **2.83** | ▪ Length of Track from Bowesville to Limebank: **2.83 Km** |

**Table 2.3**
**Detailed Analysis of Alignment Alternatives Between Limebank and River Road**

| Factor / Criteria | Alternative Alignments from Limebank to River Road | | | | |
|---|---|---|---|---|---|
| | A – Top of Woodlot | B – Through Woodlot | C – Earl Armstrong Road | D – Below Woodlot | E - South |
| **Transportation** | ▪ A minimum distance is required between Earl Armstrong Road and the Transit Corridor in order to prevent queuing vehicles from stopping on the LRT Tracks.<br>▪ Does not open up much transit to the new development south of Earl Armstrong Road. | ▪ Enough distance for queuing cars between Earl Armstrong and the transit Corridor.<br>▪ Opens up transit service to the proposed residential development in the south | ▪ Conflicts arise when the LRT shares the road with regular traffic. Even if the LRT is in its own separated lane.<br>▪ Does not open up much transit to the new development south of Earl Armstrong Road. | ▪ Enough distance for queuing cars between Earl Armstrong and the transit Corridor.<br>▪ Opens up transit service to the proposed residential development in the south. | ▪ Enough distance for queuing cars between Earl Armstrong and the transit Corridor<br>▪ Opens up transit service to the proposed residential development in the south. |
| **Natural Environment** | ▪ There may be some edge effects due to the LRT running along the north edge of the woodlot. | ▪ The "T" shaped woodlot is intended to be a protected park. Running the LRT through the center of this park is undesirable. | ▪ This option does not pose an adverse effect on the environment. | ▪ There may be some edge effects due to the LRT running along the north edge of the woodlot. | ▪ This option does not pose an adverse effect on the environment. |
| **Social Environment** | ▪ The LRT is suggested to function in higher density locations where there are a variety of productions and attractions. While people do access the park for recreation, this attraction is not very significant and does not increase ridership.<br>▪ The minimal noise from the LRT is undesirable near parks and recreational areas. | ▪ The LRT is suggested to function in higher density locations where there are a variety of productions and attractions. While people do access the park for recreation, this attraction is not very significant and does not increase ridership.<br>▪ The minimal noise from the LRT is undesirable near parks and recreational areas. | ▪ Earl Armstrong Road is a major collector in the SUC that acts as a barrier between the commercial and residential land uses.<br>▪ Noise is not a factor since the vehicles that are to operate on street are even louder than the LRVs. | ▪ This option gives access to the park but also reaches more developable land.<br>▪ The minimal noise from the LRT is undesirable near parks and recreational areas. | ▪ This option extends through a variety of land uses and still gives access to the park.<br>▪ Noise is less of a concern near the park since only the southeastern tip is in the vicinity of the LRT. |
| **Economic Environment** | ▪ Based on the City of Ottawa's Proposed Land Use plan, this option extends through a busy commercial area around Earl Armstrong Road. | ▪ Having Light rail vehicles running directly through the center of the woodlot is not beneficial for the economy since there is no commercial activity. | ▪ It is desirable to have transit in the vicinity of Earl Armstrong road since proposed development plans specifies commercial businesses. | ▪ The largest growth of residential development is through the south west of the SUC. This option does not have much economic activity itself, but the LRT would encourage transit for the short trips to and from the City Center. | ▪ The largest growth of residential development is through the south west of the SUC. This option does not have much economic activity itself, but the LRT would encourage transit for the short trips to and from the City Center. |
| **Cultural Environment** | ▪ The LRT running along the edge of the woodlot does have an effect on the cultural environment but not very significant. | ▪ The LRT running through the protected woodlot has an adverse effect on the cultural environment. The LRT would be a distraction to the proposed land use. | ▪ This option does not have an effect on the cultural environment. | ▪ The LRT running along the edge of the woodlot does have an effect on the cultural environment but not very significant. | ▪ This option does not have an effect on the cultural environment. |
| **Cost** | ▪ Length of Track from Limebank to River Road: **2.85 Km**<br>▪ # Of intersections: **6** | ▪ Length of Track from Limebank to River Road: **2.75 Km**<br>▪ # Of intersections: **5** | ▪ Length of Track from Limebank to River Road: **2.75 Km**<br>▪ # Of intersections: **6** | ▪ Length of Track from Limebank to River Road: **2.75 Km**<br>▪ # Of intersections: **6** | ▪ Length of Track from Limebank to River Road: **3 Km**<br>▪ # Of intersections: **6** |

# Table 2.4
## Summary of Alternative Alignments Through the Riverside South Community

| Factor / Criteria | Alternative Alignments from Airport to Bowesville | | |
|---|---|---|---|
| | Through Leitrim Community | Existing CP rail | Raceway / Sports Centre |
| Transportation | ○ | ● | ◑ |
| Natural Environment | ◑ | ◑ | ◑ |
| Social Environment | ◑ | ● | ● |
| Economic Environment | ◑ | ● | ◑ |
| Cultural Environment | ◑ | ◑ | ◑ |
| Cost | ○ | ● | ◑ |
| Overall | ○ | ● | ◑ |

| Factor / Criteria | Alternative Alignments from Bowesville to Limebank | | | | | |
|---|---|---|---|---|---|---|
| | A – Above Leitrim | B – Between Leitrim & Spratt A | C – Between Leitrim & Spratt B | D – Spratt Extension | E – Earl Armstrong Road | F – South of Armstrong |
| Transportation | ○ | ◑ | ● | ◑ | ◑ | ◑ |
| Natural Environment | ◑ | ◑ | ◑ | ◑ | ◑ | ◑ |
| Social Environment | ○ | ● | ● | ● | ● | ● |
| Economic Environment | ◑ | ● | ● | ◑ | ◑ | ◑ |
| Cultural Environment | ◑ | ◑ | ◑ | ◑ | ◑ | ◑ |
| Cost | | | | | | |
| Overall | ○ | ◑ | ● | ◑ | ◑ | ◑ |

| Factor / Criteria | Alternative Alignments from Limebank to River Road | | | | |
|---|---|---|---|---|---|
| | A – Top of Woodlot | B – Through Woodlot | C – Earl Armstrong Road | D – Below Woodlot | E - South |
| Transportation | ○ | ● | ○ | ● | ● |
| Natural Environment | ◑ | ○ | ● | ◑ | ● |
| Social Environment | ○ | ○ | ◑ | ◑ | ● |
| Economic Environment | ● | ○ | ● | ◑ | ◑ |
| Cultural Environment | ◑ | ○ | ● | ◑ | ● |
| Cost | ◑ | ● | ◑ | ◑ | ○ |
| Overall | ◑ | ○ | ◑ | ◑ | ● |
| LEGEND | ● Better Than Other Alternatives | ◑ Middle Ground | ○ Worse than Other Alternatives | | |

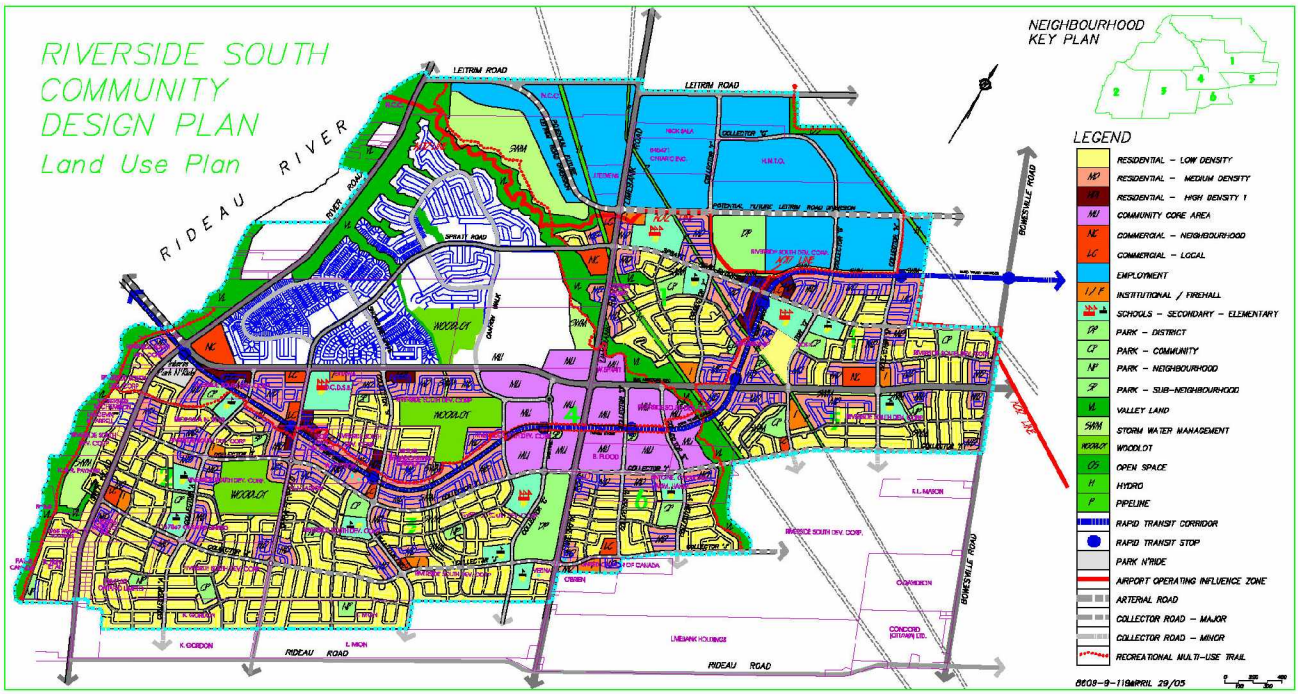
# 3.0 Summary

## 3.1 Preferred Alignment

A preferred alignment was identified based on the alignment and planning considerations described above, and in consultation with developers in the Riverside South community. Figure 3.1 illustrates the preferred alignment within the overall development plan.

The screening of the many possible corridors preformed above showed that the preferred alignment follows the existing CP rail line south from Lester Station. To service the riverside community, the LRT heads west after crossing Leitrim Road. The rail can then service the new proposed business development, and then travel towards the Riverside South City centre. The LRT is aligned just south of the protected woodlot where the majority of land uses are residential. The tracks then head towards the Rideau River crossing at Earl Armstrong Road. This alignment provides a high level of service through the Riverside South community with LRT stations approximately every 500m. This service attempts to encourage public transport for short haul trips for residents of the community while providing a quick alternative to the personal vehicle for trips downtown.

Figure 3.1
Preferred Alignment in Riverside South



## 3.2 Crossing the Rideau River

A previous environmental assessment study by the former Region of Ottawa-Carleton defined the location and arrangements for a bridge crossing of the Rideau River between Strandherd Drive and Earl Armstrong Road. A subsequent addendum to that study identified that the best long-term arrangement for transit to cross the river would be on a separate transit bridge immediately adjacent to the planned roadway bridge. No other alternative locations for crossing the river were considered because communities on both sides of the river have been planned and construction started assuming that the Strandherd/Earl Armstrong location would be constructed.