Developer Funded Area Structure Plans:
Connection & Collaboration in Land Use & Transportation Planning


Abstract. Area Structure Plans (ASPs) are the form of land use and transportation area planning mandated by the Municipal Government Act in Alberta. The City of Calgary, in conjunction with the development community, established a new model for funding and developing these plans. To overcome limited City staff resources, groups of developers in pre-defined future planning areas committed to funding staff time for plans in 6 greenfield areas. In 2013, the City embarked on an ambitious plan to complete plans for 6 areas which will accommodate 193,000 future residents and 53,000 future jobs.

This new model introduced new challenges and opportunities for the successful and timely adoption of these plans by Calgary City Council. The intensive inclusion of landowners and their consultant teams in the plan development process introduced a number of opportunities that were exploited to achieve the planning objectives. Developer consultant teams had access to data, analysis tools and resources that supplemented and at times were superior to those directly available to the City. Insight into what many of the developers envisioned for their lands was inevitably provided during the process, allowing an early discussion on how those plans aligned with broader City planning objectives, and stimulating consideration of creative options. Since both the developers and City staff had a common objective – to gain Planning Commission and Council approval for the plans within the timeframe – all parties were motivated to resolve differences and agree on a common plan.

The Glacier Ridge Area Structure Plan had the largest physical plan area, with 1290 hectares of land at the north limits of the City. A population of 58,800 and 10,900 jobs are anticipated for the area. Natural features, topography, unplanned and unconstructed adjacent areas and municipal boundaries were some of the unique challenges addressed. Land use and transportation planners at the City and a team of consulting firms collaborated to develop a robust but flexible Area Structure Plan for this area.

1.0 INTRODUCTION AND BACKGROUND

1.1 Background on Area Structure Plans
Area Structure Plans (ASPs) set out area plans for land use, transportation and other servicing and are mandated by the Municipal Government Act in Alberta. These plans follow regional and municipal level planning and precede detailed establishment of land uses (zoning) and servicing plans.
For The City of Calgary, the completion of ASPs effectively regulates the quantity of serviced land supply in the city, directing the sequence of development in a logical and cost effective manner. This is an important consideration for responsible City management, since part of the funding for higher-level infrastructure capital costs, including interchanges, skeletal roads (expressways / freeways) and light rail transit (LRT) systems, and virtually all operating costs, including transit operating costs, are covered by The City’s budget.

For major developers, who fund infrastructure construction in new communities, including arterial, collector and local streets, ASPs are an important milestone in order to secure financing for and advance planning work for their projects. Historically, the process of developing an ASP has been City-led, with a schedule of 2 to 3 years’ duration, followed by developer-led Outline Plan, Land Use Designation and Subdivision approvals that can add 1 or more years to approval timelines before construction begins.

1.2 Calgary Population Growth
Sustained population growth and regular annexation of land from adjacent rural municipalities mean that there continues to be a supply of unplanned land within Calgary’s boundaries. Over the past 5 years, significant population growth has occurred, peaking with an increase in 38,500 residents between April 2013 and 2014. While the population growth rate has declined along with economic growth over 2014 and 2015, total population continues to increase and Calgary maintains long range population targets of 2.4 million people within current City boundaries, approximately doubling the current population. With constantly changing considerations and ongoing growth pressure, it remains a challenge for City planning staff to satisfy the demand for timely creation and approval of the various levels of land use plans.

The figure below illustrates population growth patterns from 2005 through 2015.

![Population Growth in Calgary (2005-2015)](image_url)
The series of figures below illustrate how changes to municipal boundaries and development have increased the land supply in Calgary between 2001 and 2014.

<table>
<thead>
<tr>
<th>Year</th>
<th>Built Form</th>
<th>City Limit</th>
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</thead>
<tbody>
<tr>
<td>2001</td>
<td>400 km²</td>
<td>722 km²</td>
</tr>
<tr>
<td>2011</td>
<td>469 km²</td>
<td>848 km²</td>
</tr>
<tr>
<td>2014</td>
<td>487 km²</td>
<td>848 km²</td>
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</tbody>
</table>

**Figure 3 – Built Form in Calgary (2001-2014)**

### 1.3 Developer Funded Area Structure Plans
In March 2013, tension between The City (who maintain serviced land supply commitment and fund broader infrastructure systems) and the developers / landowners (who were seeking to obtain development approvals and realize profits from their land) about the timing and progress on Area Structure Plans led to adoption of a new model for funding and developing ASPs. Based on City Council direction, groups of developers in pre-defined future planning areas committed to funding City staff time for plans in 6 greenfield areas. These plans, expected to accommodate an estimated 193,000 residents and 53,000 jobs, were initiated in Fall 2013 with a completion date of December 2015.

### 1.4 New Growth Management Framework
In a parallel process, the Growth Management Framework was created to protect The City’s interest in establishing priorities for funding for the major infrastructure, including interchanges and LRT lines, which connect new ASP areas. The framework includes identification of all City funded capital and operating expenses related to a given plan area, and which are included in approved 4-year budgets and 10-year capital plans. All 6 of the Developer Funded ASP’s were subject to a Growth Management Overlay which restricts development in a given area until solutions to any infrastructure gaps are identified and addressed by affected developers. The framework ensures that infrastructure is available and in-place for new development areas as they build out, without leaving City taxpayers with a legacy of unfunded or unbuilt infrastructure.

### 1.5 Case Study: Glacier Ridge Area Structure Plan
In 1989 and 2007, land from the Rocky View County was annexed into the north sector of Calgary. In 2010, planning for the collective annexation lands between 85 Street NW and Deerfoot Trail were first considered in The City’s North Regional Context Study (NRCS), a broad document outlining planning constraints, general land-use patterns and infrastructure needs for the 5,660 hectare area. The NRCS divided the north region into 8 distinct planning cells, and developed the framework for advancing these areas to the ASP level in future. The figure below shows the 8 planning cells for this high level plan.
Cells C and D from the North Regional Context Study were renamed Glacier Ridge, in reference to the glacial erratics and carved topography that mark the area landscape. With primarily residential land-uses, a population of 58,800 and 10,900 jobs are anticipated for this 1,290 hectare area. Natural features such as West Nose Creek, steep topography, interaction with unplanned and unconstructed adjacent areas, and interaction with municipal boundaries were some of the unique challenges addressed through the ASP development process. Of interest from a transportation planning perspective was the interest by City planners and landowners to convert an existing truck route, which currently provides a connection to Alberta Transportation’s High Load Corridor for oversized truck movement, to become a walking- and cycling-only link. The balance of this paper provides an overview of the transportation planning process for the Glacier Ridge ASP, including the collaborative assessment undertaken between The City and the landowner team, and lessons learned that may be helpful for future planning processes in Calgary and beyond.

2.0 GLACIER RIDGE PLANNING PROCESS AND CONCEPTS

The framework, mutual responsibilities and milestones for each developer funded ASP were set out in a written agreement between The City and benefitting developers. The processes were collaborative in nature, with the funding partners having a voice in the planning process including participation in planning workshops, access to relevant planning data, and input on alternative evaluation. The City, in turn, benefitted by having direct access to knowledgeable owners who had a direct understanding of expected market conditions, and by working together with an external consulting team who could bring significant resources to bear in preparing planning deliverables in relatively short time-frames. On Glacier Ridge, the landowner group engaged ISL Engineering and Land Services Ltd. to work with The City on transportation servicing for the plan area. Over the course of a year, ISL and The City’s Transportation Development Services team worked collaboratively to develop, evaluate and recommend sustainable transportation solutions for the future residents of the area.

The Glacier Ridge ASP was completed in a little over one year, with the key events and milestones highlighted in Table 1 below.
### Phase 1: Plan Visioning

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestone</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>November to December 2013</td>
<td>Research, data collection</td>
<td>--</td>
</tr>
<tr>
<td>November 4, 2014</td>
<td>Site Tour w/ City team, landowners and consultants</td>
<td>Team-building and on-site observation of planning constraints and opportunities</td>
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<tr>
<td>December 3, 2014</td>
<td>Visioning Workshop</td>
<td>Initial concept plans, capturing “blue sky” ideas and objectives of The City and landowners</td>
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### Phase 2: Creating the plan

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestone</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2013 to January 2014</td>
<td>Land use concept development</td>
<td>Establishment of process and requirements for transportation forecasting and analysis</td>
</tr>
<tr>
<td>February 10, 2015</td>
<td>Transportation Kick-off Meeting</td>
<td>Establishment of process and requirements for transportation forecasting and analysis</td>
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<tr>
<td>February 19, 2015</td>
<td>Land use concept workshop</td>
<td>Refined land use and transportation network options developed</td>
</tr>
<tr>
<td>March 16, 2015</td>
<td>Public open house</td>
<td>Public input on potential land use and transportation concepts</td>
</tr>
<tr>
<td>April to May 2015</td>
<td>Preliminary forecasting and analysis</td>
<td>Establishment of transportation framework and options, focusing on potential capacity bottlenecks</td>
</tr>
<tr>
<td>June to July 2015</td>
<td>EMME scenario modelling and analysis</td>
<td>Development of detailed forecasts and comparative analysis of options</td>
</tr>
<tr>
<td>August 2015</td>
<td>Final plan recommendations and policies</td>
<td>Refinement of the plan and supporting policies</td>
</tr>
<tr>
<td>September 23, 2015</td>
<td>Public open house</td>
<td>Public input on draft ASP</td>
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### Phase 3: Approvals

<table>
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<tr>
<th>Date</th>
<th>Milestone</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 22, 2015</td>
<td>Calgary Planning Commission</td>
<td>Technical review of ASP and recommendation to Council</td>
</tr>
<tr>
<td>December 7, 2015</td>
<td>Public Hearing of City Council</td>
<td>ASP approval</td>
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</table>

Table 1 – Glacier Ridge ASP Milestones

In the visioning phase of the plan, a blank-sheet or “blue sky” approach was taken, with members of The City and external teams working collaboratively to consider possible planning alternatives that considered a wide range of options for land use, transportation network, parks and open space, and topographic integration.

#### 2.1 Existing Transportation Network

The pre-established transportation network for the Glacier Ridge area was anchored by three major east-west routes and a series of north-south connections. The east-west routes include:

- **Stoney Trail (Highway 201)** – an access-controlled freeway, forming the north leg of Calgary’s Ring Road system, located between 2 and 5 km south of the plan area, and which is the major commuter connection to the rest of the city
- **144 Avenue NW** – a major arterial street, forming the south boundary of the plan area
- **Highway 566** – a provincial highway and future expressway route, located 1.6 km north of the plan area
The north-south network is primarily defined by five arterial roadways that connect south with interchanges on Stoney Trail. These are (from west to east):

- 85 Street NW – along the west plan boundary, connecting to Stoney Trail via Country Hills Blvd
- Sarcee Trail – a new arterial that currently terminates south of the plan area
- Shaganappi Trail – a new arterial that currently terminates at the south plan boundary
- Symons Valley Road
- 14 Street NW – along the east plan boundary

The figure below illustrates the current road configuration in and adjacent to the plan area.

![Figure 5 – Existing Road Network](image)

Due to development progression or topographic constraints, most of the north-south roadways either do not exist or have limited function and connectivity beyond in plan area to the north. The main north-south available today is Symons Valley Road, which parallels West Nose Creek at the bottom of the river valley and continues north of the City limit / plan boundary as a provincial highway (Highway 772) connecting to Calgary’s High Load Corridor.

In the longer-term, Shaganappi Trail was seen as a critical north-south connection from Glacier Ridge to the city at large. Shaganappi Trail continues some 16 km south of the plan area, providing access to the University of Calgary, Foothills Hospital and the downtown core.

### 2.2 Symons Valley Road Conversion

During the visioning phase, the lack of north-south continuity in the existing road network came to the fore as a significant constraint in development of a practical long-term network. In the central part of the ASP area, in particular, there are three Stoney Trail connectors (Sarcee Trail, Shaganappi Trail and Symons Valley Road) entering from the south, but in effect only one major road exiting to the north (Highway 772). Various land-use concepts were developed that considered a “convergence” of the three roadways into a single corridor, which only helped to illustrate how complicated the issue could be. An
example of a visioning sketch showing the convergence of Shaganappi Trail and Simons Valley Road is shown in the figure below.

**Figure 6 – Sketch Concept for Convergence of Simons Valley Road**

The retention of Symons Valley Road as a major road in the ASP was also considered problematic due to area topography. In effect, most of the land surrounding the roadway was disconnected from the roadway either due to significant elevation differences (up the valley wall to the west) or due to severance by the parallel West Nose Creek. In effect, any substantial infrastructure investment in the road could ultimately be of little benefit, as it would not serve adjacent land use.

In consideration these constraints, participants in the visioning workshops brought forward an innovative idea to remove Symons Valley Road from the long-term network plan, and instead connecting Shaganappi Trail north to Highway 772. The former Symons Valley Road could then be converted into a dedicated walking and cycling facility within a rejuvenated park space along West Nose Creek. There were also environmental benefits to be gained by removing a major transportation corridor from a river valley and helping to restore it to a more natural state. An early sketch of this concept is shown in the figure below.

**Figure 7 – Sketch Concept for Closure of Simons Valley Road**
2.3 **East-West Connectivity in Plan Area**

East-west transportation connections were also a major consideration in the early planning stages. 144 Avenue NW along the south plan boundary provides the primary east-west spine, but no other roads currently exist. Traditionally, Calgary has developed with a one-mile arterial grid, which logically led to consideration of a new “160 Avenue” alignment along the north plan boundary. However, a traditional grid road on the section line seemed to be problematic in many respects, including:

- Variability in the City boundary, with parts of Rocky View County extending south of “160 Avenue” into the plan area
- Steep topography crossing West Nose Creek
- A high natural escarpment face is located along or near the section line through the west half of the plan area

In addition to these geometric constraints, questions also arose about the ability of a north arterial to support transportation capacity requirements for the plan area. Although consistent with traditional planning in Calgary, the Glacier Ridge ASP was being planned to higher density targets of 20 units per hectare set in Calgary’s Municipal Development Plan, or around 30 to 50% higher than suburban areas developed since the 1970s. The location of the east-west road along the north boundary may also be less effective in capturing east-west trips, as it would not have full land-use interactions on both sides in some areas of the plan.

In consideration of these potential capacity constraints, some land use concepts were developed with a more centrally-located east-west corridor. The intent of this corridor is to increase east-west capacity and located it more centrally within land-use areas. However, the alignment of a central east-west corridor also had significant topographic constraints, requiring large cut / fill operations to cross the escarpments through the West Nose Creek Valley.

2.4 **Land Use and Transportation Concepts**

Following the visioning phase, the Glacier Ridge ASP continued with development of alternative land use concepts for the plan area. Incorporating many of the ideas identified during the visioning process, the development of these plans was led by The City and gave practical form to the plan area by beginning to identify community features such as schools, park spaces, and commercial services. The North Regional Context Study had previously identified Glacier Ridge as a primarily residential area, complementing major employment areas in adjacent ASPs. As such, the land-use pattern was generally set early in the process, and the major alternatives primarily focused on transportation network options. The key roadway alignment issues to be evaluated were:

- Retention or closure of Simons Valley Road
- Location of the second east-west connector either to the north side of the plan area, or more centrally within the plan area

In addition to road alignment issues, transportation network evaluation also considered the following issues:

- Limitations of north-south capacity for residential commuter access to Stoney Trail
- Opportunities to promote east-west travel and commuter travel patterns that stay within the ASP or the immediate region

The three transportation network concepts developed for the project are shown in the figures below.
Figure 8 – Network Option 1 – Maintaining Simons Valley Road

Figure 9 – Network Option 2 – Closure of Simons Valley Road, with Northerly East-West Route

Figure 10 – Network Option 3 – Closure of Simons Valley Road, with Central East-West Route
3.0 EVALUATION / ASSESSMENT
Evaluation of transportation network options for Glacier Ridge was completed by the following process, with each step discussed in the following sections:

- High-level forecasting and capacity review to define analysis parameters
- Detailed travel demand forecasting
- Detailed analysis
- Option evaluation and recommendation

3.1 High Level Capacity Review
An initial capacity review was completed for Glacier Ridge in order to better define the range of options and parameters for more detailed analysis. The City’s key concern at this stage was the north-south capacity available for commuter traffic to access Stoney Trail via the five available interchanges. Using current traffic data, The City identified critical ramps at each interchange, and what the remaining capacity would be each ramp in the AM and PM peak periods. The first version of the analysis involved simplified spreadsheet forecasts based on high-level trip generation and distribution assumptions for the total population expected in Glacier Ridge, which did identify potential capacity gaps throughout the area.

Having identified the capacity gaps, The City and ISL collaboratively undertook to refine and add detail to the high-level forecasts. Factors considered in the refined version included additional capture of residential trips internally trips within Glacier Ridge by pairing them with such uses as schools and neighborhood amenities, consideration of east-west movement to employment nodes in adjacent ASP areas, and diversion of trips to transit (with an LRT line being planned ~1.6 km east of Glacier Ridge). These considerations narrowed the capacity gap in most areas, however a potential gap did remain in the east part of the plan area.

To consider options for closing the remaining gap, The City initiated consideration of land use changes to add local office nodes within Glacier Ridge. Such land-use changes had the potential for two-fold benefit, first by reducing residential trip generation outright by replacing residential areas with employment use, and second by further promoting internal trip capture.

The City shared the landowners’ desire to zone for commercial uses in areas where these could be supported by market demand in consideration of approved ASPs for adjacent areas. The types and sizes of employment areas identified for evaluation from a transportation perspective were developed in conjunction with City Economic Development staff. However, landowners involved in the ASP process had mixed reaction to the potential for office nodes within Glacier Ridge. In the west part of the plan area, opportunities were identified to mass these uses along parts of 144 Avenue NW, providing a natural extension and transition from the major employment area planned on the south side of 144 Avenue. However, in the east part of the plan area, landowners expressed concern at the economic viability of these uses, as they would lack the critical mass of a major employment centre and be in direct competition with the major employment uses planned along the LRT line just to the east.

Ultimately, to advance the process, consensus was reached to include easterly employment lands in the detailed travel demand forecasting for the project. This process is discussed further below.

3.2 Travel Demand Forecasting
Detailed forecasting for the Glacier Ridge ASP was completed with The City of Calgary’s Regional Transportation Model (RTM), and EMME-based forecasting model that aggregates land use and policy direction to generate robust travel demand forecasts for Calgary and its surrounding region.
The EMME model was capable of generating a range of data sets that were useful for detailed analysis of Glacier Ridge, including:

- peak hour forecasts at major interchanges and intersections;
- trip generation and distribution plots for individual zones within Glacier Ridge;
- mode split data; and
- transit ridership data

Land use inputs for the model runs were generated by The City’s Geodemographics group, who developed robust population and employment forecasts for each zone. Land use scenarios were developed and modelled for two time horizons:

1) A 30-year forecast, which reflected full build-out of Glacier Ridge and other approved plan areas both inside and outside the City, but no further growth in unplanned areas within City limits. This scenario notably excluded the major employment lands southwest of Glacier Ridge, which have no current ASP in place and an uncertain build-out timelines due to current use for gravel extraction operations. Lacking these nearby employment uses, the intent of this forecast was to test network conditions where residents of Glacier Ridge would have to commute to employment areas at longer distances.

2) A long-term forecast, which reflected full build-out within City limits, including all unplanned lands north and southwest of Glacier Ridge. The intent of this forecast was to consider how travel patterns may change over time, and to identify requirements for protecting capacity for additional north-south travel demands to lands beyond Glacier Ridge.

As noted above, land uses within Glacier Ridge included an office employment node in the east part of the plan area. The intent in including the node was so that the model would reflect potential changes in traffic patterns resulting from the internal node. Assessment of the landowner-preferred all-residential scenario was later completed by manually adjusting the model outputs and substituting the employment zone data with residential trip generation and distribution patterns, a methodology that leveraged available analysis resources made available by ISL, and which helped reduce the number of modelling scenarios.

The transportation network scenarios for the forecast modelling all included a central east-west road corridor, although again this remained an open consideration at the time of modelling. Similar to the case of the employment node, the intent in including the connection was to ensure that the model outputs reflected potential traffic pattern changes arising from adding this connection, with manual adjustment methodology then used to consider the alternate scenario with and without this roadway.

3.3 Detailed Analysis

Once forecasting data was received, ISL worked with The City to rapidly generate a range of analysis scenarios for Glacier Ridge. Up to eight scenarios were possible, based on various combinations of three paired variables:

1) Variable 1 – 30-year or Long-Term Horizon
2) Variable 2 – Include or not include east employment node
3) Variable 3 – Include or not include central east-west roadway

Analysis was completed primarily in Synchro, checking intersection performance at major junctions in both the AM and PM peak periods. The analysis found that design-level solutions such as enhanced intersection treatments would be capable of managing transportation demand in the region, without either the central east-west road or the larger employment node in east Keystone. Some benefit was also seen when adjacent (longer-term) employment areas came on-line, which led to policy language in the ASP that will provide for future transportation capacity and staging reviews to ensure that there is a reasonable balance of residential and employment land coming on-line in the City’s north sector over time.
3.4 Option Evaluation and Recommendations
The detailed forecasting and analysis generally showed that the plan area could function well under a number of the land use and transportation network scenarios. As such, evaluation and selection of the final network recommendations considered a range of considerations besides transportation capacity. Generally, affected landowners were of the opinion to proceed without either the east employment lands or the central east-west roadway, however there was need for The City consider options for long-term flexibility and adaptability and economic viability of the plan.

With respect to the east employment lands, a compromise was ultimately reached that eliminated the large office node from the plan, but instead expanded and incorporated more local-scale employment uses in the planned community commercial / recreational core in the east part of Glacier Ridge. Supporting policy statements were developed to provide for additional transportation capacity review at the Outline Plan stage.

With respect to the central east-west roadway, it was ultimately agreed that this was not a necessary component of the plan. Refinements were made to the remaining east-west roadways to ensure that robust and direct connections were available along the northern part of the plan area, with particular emphasis on accommodating quality transit service along these routes. A comprehensive transit network plan was added to the ASP a first for Calgary. The intent of the plan is to ensure that future stages of community planning ensure that transit is a primary consideration in planning the layout and distribution of uses within individual neighborhoods. Policy language, outlining the conditions to be met in advance of closure to protect against the potential risks to property access and the integrity of the truck route network, was added to the ASP.

![Figure 11 – Recommended Transit Network](image)

The final recommended road network for Glacier Ridge is illustrated in the figure below.
4.0 LESSONS LEARNED
Calgary’s new Developer Funded ASP program introduced a number risks compared with the former delivery model, and an ongoing process of determining and applying “lessons learned” was embedded in the program. Through the course of the developing the Glacier Ridge ASP, three key lessons became evident:

1) Sustained attention to team and relationship building is critical for working with the inevitable competing interests;
2) All key contributors must clearly understand the risk management approach; and
3) There must be a clear escalation and dispute resolution process that is understood and followed by all.

4.1 Team and Relationship Building
To successfully deliver the Glacier Ridge ASP, multiple teams with discrete functions and varied interests had to reach consensus a compressed timeframe. The teams involved in the process included:

- An internal City Technical Advisory Committee (TAC) with representation from affected City departments, led by the City’s Project Manager;
- Landowner group at large, including funding and non-funding landowners;
- City’s management team, including managers of TAC members, Directors of Business Units and General Managers;
- Subject matter experts on City staff, including the transportation planning team;
- Landowners’ consultant team, hired by funding landowners;
- Additional consultant subject matter experts hired by individual land owners at their option;
- Broader project team including the TAC, the landowners and their consultants;
- The general public including affected residents, landowners and business operators in areas adjacent to the plan area; and
- City Council.

The need for effective team building to facilitate identification of common goals, such as meeting the compressed timelines, was recognized early in the process. Regular team meetings, workshops and site visits were all worked into the project schedules to support the need for productive working relationships and clear direction.
At times, despite the efforts toward team building, competing interests and compressed timelines resulted in the need to apply dispute resolution in order to make a decision and move forward. One recommendation at the conclusion of all 6 developed funded ASPs was to sequester the TAC team early and do more extensive team building work in the group so that there is a stronger understanding of what competing interests are likely to arise, and stronger capabilities to resolve issues within that group before engaging with landowners and general public.

4.2 Risk Management
Risks identified at the outset of the program included:

- Risk of not being able to collect required data and conduct required servicing studies, then apply results and integrate between technical areas within the compressed timelines;
- Risk of general public interest not having adequate representation through the process and risk of the funding landowners, who held weekly or bi-weekly meetings with the project managers, influencing the outcome in their favor;
- Risk of inter-municipal issues (since 4 of the 6 developed funded ASP plan areas reached to municipal boundaries) not reaching resolution within the timeframe;
- Risk of inaccurately establishing future assumptions, since time frames for build out are closer to 50 years, compared to 20 year planning horizons for previously developed ASPs;

To address schedule constraints, some of the detailed technical studies were preceded by high level, low effort evaluations to identify the focus of the detailed studies. Due to 50 year build out horizons for these plans compared to 20 year horizons for previous plans, there was less certainty in the assumptions for the technical studies. For example, transportation forecasting depended upon future geo-demographics for the City and surrounding region, plus prediction of which road and transit projects would be funded by what horizon year. The desire for sensitivity analysis to understand risks related to input assumptions had to be weighed against the deadlines for producing analysis results.

One of the benefits of the developer-funded model was the ability of The City to leverage resources and capacity of the external consultants engaged by the landowners to support the ASP process. In the case of the Glacier Ridge ASP, ISL was empowered to work directly with The City as a common team, and together the collective team were able to process and review a significant volume of forecasting and analysis in a very short time-frame.

Where sensitivity to uncertain assumptions, dependency on approvals by other levels of government or future City Councils, or yet to be completed technical work introduced risks to the viability of the plan, policy or informative content was included in the plan to document and make Council, future staff and the public aware of the issues and potential risks.

4.3 Dispute Resolution
With multiple opportunities for competing interests, including between The City and landowner group, between individual landowners, and between departments within The City, there were a number of issues that became difficult to resolve. It was City Council’s expectation that all 6 plans would be complete and ready for Council consideration by the end of December 2015, therefore it was essential that there be a way for persistent issues to be resolved.

As required, Managers, Directors and General Managers were drawn into the decision making process to understand the issues of contention and to make decisions on the issues. Staff then took these decisions and continued with the process. Where escalation through City Management did not result in resolution to the satisfaction of individual landowners, the option to speak as a member of the public either opposed to, or supportive with points of contention about the plan was available through the Public Hearing
portion of the Council presentation. Council was then tasked with weighing all considerations and adopting, adopting with agreed upon amendments, or rejecting each plan.

On December 8, 2015, Calgary City Council adopted the final 3 of the 6 Developer Funded Area Structure Plans, including the Glacier Ridge ASP, successfully meeting the mandated schedule.

5.0 CONCLUSION

Calgary’s Developer Funded ASP program was an innovative new approach intended to meet the joint objectives of The City and landowners to provide comprehensive, sustainable plans that will guide development and ensure an ongoing supply of residential and employment land in Calgary, within accelerated timeframes. A common commitment to project timelines and general objectives enabled all parties to work collaboratively, develop and evaluate innovative solutions, and resolve competing interests and disputes, when necessary. The City and affected landowners were ultimately able to work collaboratively and deliver 6 new ASPs in a two-year time-frame.

The Glacier Ridge ASP in north Calgary provides a good example of how the process worked, with The City and external consultants forming a combined working group that was able to work through various scenarios and sensitivity analyses to provide innovative and broadly acceptable transportation network solutions for the plan area. Supporting policy will inform future users about the process and assumptions underlying the plan, and give all parties the tools needed to develop complete, well-connected communities for decades to come.

ACKNOWLEDGEMENTS

The authors wish to acknowledge the entire team involved in preparation of the Glacier Ridge Area Structure Plan. The final plan is the result of the input, effort and collaboration of team members from The City of Calgary, the landowner group, and the external consulting team over a period of 14 months, and will provide a comprehensive blueprint for sustainable community and infrastructure development in north Calgary for decades to come.
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