

## MEMORANDUM

June 28, 2019

To: Dan Belos & Chris Dulaba

Organization: Otto Capital and Beljan Development Management

From: Ryan Batty and Tyler Golly

Project: Glenora DC2 Rezoning

### **Re: Draft Parking & TDM Study**

Toole Design was retained by Otto Capital to complete a parking and transportation demand management study in support of a proposed rezoning from RF3 (Small Scale Infill Development Zone) to DC2 (Site Specific Development Control Provision) in the Glenora neighbourhood in the City of Edmonton. The proposed development would replace a single-family home with a two-storey commercial building with a total floor area of 820m<sup>2</sup>. The proposed development could accommodate up to ten businesses and would include a mixture of uses in accordance with the DC2 application.

The site is in close proximity to the existing businesses along the west side of 134 Street north of Stony Plain Road. The Glenora neighbourhood has recently undergone Neighbourhood Renewal which replaced its sidewalks and streets. The future Valley Line LRT will be located along Stony Plain Road and will change the street network, it may also instigate the introduction of a Residential Parking Permit program to discourage the use of on-street parking as a primary vehicle storage strategy for transit users. To evaluate the existing parking demand and the impacts on parking supply due to LRT, the City of Edmonton requested that a parking study be completed.

A map of the study area, including the location of the proposed development and the future LRT station, is shown in Figure 1 on the next page.

### **Project Scope**

This memo assesses two scenarios. The first is based on the impact the proposed development will have on the availability of on-street parking on adjacent roadways based on the existing roadway configuration. The second scenario reviews the impact to the available on-street parking supply resulting from the proposed roadway changes identified in the preliminary plans for the Valley Line LRT.

Due to the complexity of the current and future operation of the area, the scope for this study includes evaluation of Transportation Demand Management (TDM), in addition to the typical components of a parking study. The TDM plan provides more details to City staff and Glenora residents about how the businesses in the proposed development will work to minimize customer and staff-related parking demands. In addition, recommendations are made that can be incorporated into future stages of the West Valley Line LRT design to improve access and parking to the existing and future businesses and residents along 104 Avenue and 134 Street.



Figure 1: Site Location

## Data Collection

### *Existing Parking Utilization and Turnover Survey*

A Parking Utilization and Turnover Survey was completed along 104 Avenue from 135 Street to the turnaround east of 134 Street, along 134 Street from Stony Plain Road to 105 Avenue, and in the parking lots behind the existing businesses. The plan on the next page (Figure 2) shows the extents of the parking survey and each of the six survey zones for which data was collected.

The survey was completed during the following periods based on typical commercial parking demands:

- Weekday midday (12:00pm to 4:00pm on Friday, January 25, 2019. Weather: Sunny, -5°C)
- Weekday evening (4:00pm to 7:00pm on Tuesday, January 22, 2019. Weather: Light snow, -12°C)
- Weekend midday (12:00pm to 4:00pm on Saturday, February 16, 2019. Weather: Sunny, -14°C)

For the purpose of the surveys, the total number of parked vehicles were counted each half hour. Vehicle origin/destination information and trips related to other transportation modes—pedestrians and cyclists—were not assessed as part of this survey. Photos were taken during each survey period and compared to the previous 30-minute period to determine vehicle turnover. The parking utilization and turnover data from each of the survey periods, broken down by survey zone, are summarized in the tables on the following pages.



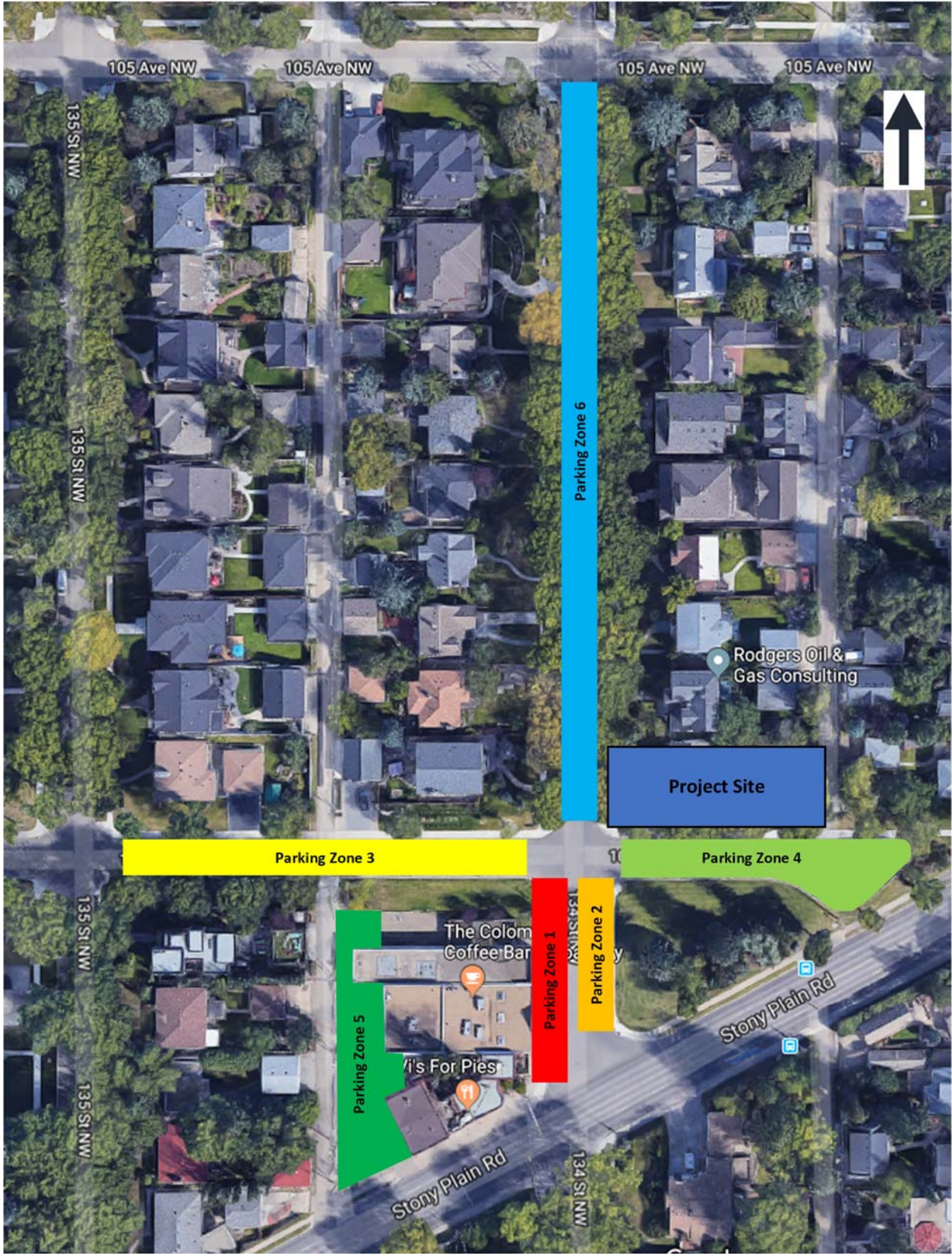


Figure 2: Parking Survey Zones

**Table 1: Weekday Midday (12:00pm to 4:00pm) Parking Survey Results**

	Parked Vehicles in Zone 1	Parking Supply in Zone 1	Parked Vehicles in Zone 2	Parking Supply in Zone 2	Parked Vehicles in Zone 3	Parking Supply in Zone 3	Parked Vehicles in Zone 4	Parking Supply in Zone 4	Parked Vehicles in Zone 5	Parking Supply in Zone 5	Parked Vehicles in Zone 6	Parking Supply in Zone 6	Total Parked Vehicles	Turnover from Previous Count
12:00pm	11	7	5	4	14	26	13	16	11	15	10	46	64	N/A
12:30pm	11	7	4	4	20	26	13	16	11	15	10	46	69	23
1:00pm	8	7	4	4	18	26	10	16	11	15	10	46	61	11
1:30pm	9	7	4	4	14	26	10	16	10	15	13	46	60	18
2:00pm	11	7	3	4	10	26	10	16	7	15	10	46	51	17
2:30pm	9	7	4	4	11	26	7	16	11	15	7	46	49	13
3:00pm	8	7	3	4	9	26	7	16	10	15	6	46	43	5
3:30pm	8	7	3	4	8	26	6	16	11	15	7	46	43	12
4:00pm	9	7	3	4	5	26	5	16	11	15	3	46	36	7

**Table 2: Weekday Evening (4:00pm to 7:00pm) Parking Survey Results**

	Parked Vehicles in Zone 1	Parking Supply in Zone 1	Parked Vehicles in Zone 2	Parking Supply in Zone 2	Parked Vehicles in Zone 3	Parking Supply in Zone 3	Parked Vehicles in Zone 4	Parking Supply in Zone 4	Parked Vehicles in Zone 5	Parking Supply in Zone 5	Parked Vehicles in Zone 6	Parking Supply in Zone 6	Total Parked Vehicles	Turnover from Previous Count
4:00pm	5	7	2	4	6	26	4	16	2	15	6	46	25	N/A
4:30pm	8	7	4	4	4	26	4	16	2	15	7	46	29	8
5:00pm	8	7	3	4	3	26	3	16	3	15	5	46	25	5
5:30pm	10	7	2	4	4	26	4	16	4	15	5	46	29	12
6:00pm	3	7	1	4	3	26	3	16	2	15	4	46	16	2
6:30pm	3	7	1	4	2	26	3	16	1	15	3	46	13	0
7:00pm	8	7	1	4	1	26	2	16	1	15	3	46	16	5

**Table 3: Weekend Midday (12:00pm to 4:00pm) Parking Survey Results**

	Parked Vehicles in Zone 1	Parking Supply in Zone 1	Parked Vehicles in Zone 2	Parking Supply in Zone 2	Parked Vehicles in Zone 3	Parking Supply in Zone 3	Parked Vehicles in Zone 4	Parking Supply in Zone 4	Parked Vehicles in Zone 5	Parking Supply in Zone 5	Parked Vehicles in Zone 6	Parking Supply in Zone 6	Total Parked Vehicles	Turnover from Previous Count
12:00pm	10	7	2	4	11	26	3	16	8	15	3	46	37	N/A
12:30pm	12	7	2	4	12	26	5	16	7	15	7	46	45	19
1:00pm	12	7	3	4	14	26	6	16	10	15	7	46	52	17
1:30pm	12	7	4	4	15	26	6	16	8	15	6	46	51	15
2:00pm	11	7	3	4	14	26	3	16	7	15	9	46	47	13
2:30pm	10	7	4	4	11	26	4	16	9	15	9	46	47	16
3:00pm	12	7	3	4	12	26	4	16	10	15	8	46	49	21
3:30pm	10	7	3	4	12	26	9	16	8	15	11	46	53	22
4:00pm	11	7	3	4	8	26	7	16	10	15	11	46	50	16

The parking demand was observed to reach a peak during and then immediately after the lunch hour during the weekday midday survey period. For four consecutive counts from 12:00pm through 1:30pm the survey identified a minimum of 60 vehicles parked within the survey area. At 12:30pm when 69 cars were counted, there were no available parking spaces along 104 Avenue between the alley behind the existing commercial development west of 134 Street and the turnaround east of 134 Street (i.e., half of Zone 3 and all of Zone 4), or along 134 Street between Stony Plain Road and 104 Avenue (i.e., Zones 1 and 2). In the period leading up to this count, several drivers were observed parking their vehicles in front of the residential properties north of 104 Avenue (i.e., Zone 6) and then walking back to the businesses along 134 Street. From the parking survey data, it was determined that four (4) vehicles were parked immediately north of 104 Avenue and are believed to represent additional parking demand related to the existing commercial development.

As observed during the weekday midday survey, parking in Zone 6 associated with existing businesses likely occurs when parking along 134 Street in front of the existing business is at or near capacity. During the surveys there was limited parking noted in Zone 6, so commercial parking in this area is not expected to impact parking availability for area residents.

During the parking surveys it was noted that some vehicles were parked both on 134 Street in front of the existing commercial businesses and north of these businesses on 104 Avenue for periods of time in excess of two hours; in some cases, vehicles were parked for the full duration of the parking survey. We further observed people leaving businesses after closing and getting into the vehicles that were parked longer term, indicating employees of the current businesses are parking along 134 Street and 104 Avenue instead of parking in areas associated with these businesses off the alley behind the businesses. Based on our observations, four (4) to six (6) vehicles parked on the adjacent streets during the survey period belong to employees of the local businesses. Relocating these employee vehicles to the available parking located at the rear of the businesses along the alley (i.e., Zone 5) would help reduce the demand for on-street parking. For the parking analysis included in this memo, it has been assumed that five (5) employees are utilizing the on-street parking during the observed peak period.

Also evident during the counts were vehicles parked within the turnaround, on 104 Avenue east of 134 Street, that appeared to be using the available on-street parking as a park-and-ride location. These vehicles were present when the surveys were initiated and remained parked for an extended period of time prior to the afternoon rush hour. During the weekday evening count, snow, which had fallen earlier in the day, helped to identify two vehicles whose owners had left their vehicles parked earlier in the day and then moved their vehicles shortly after 5:00pm supporting our observations that park-and-ride activity is occurring in the area. The parking analysis assumes two (2) vehicles parked during the observed peak period represent park-and-ride activity.

## **Parking Requirements**

As indicated in the DC2 rezoning application, off-street vehicular parking is to be provided as per Section 54.2, Schedule 1(C) Transit Oriented Development and Main Street Overlay of the Edmonton Zoning Bylaw 12800.

For the parking requirements associated with this site, through discussion with the developer, it has been assumed that 120m<sup>2</sup> of the development will include uses identified as “Bars and Neighbourhood Pubs, Restaurants, and Specialty Food Services” in the Zoning Bylaw. The remaining 700m<sup>2</sup> of the building floor area will be comprised of uses classified as “other non-residential uses” as per the Bylaw. It is expected that these assumptions will be confirmed at the development permit stage when information regarding the type and size of businesses proposed for the space is available.

The parking requirements based on these assumptions are summarized in the following table.



**Table 4: Minimum Number of Parking Spaces Required**

Site Use	Floor Area	Parking Rate	Bylaw Parking Requirement
Bars and Neighbourhood Pubs, Restaurants, and Specialty Food Services	120m <sup>2</sup>	1 parking space per 30m <sup>2</sup> of Public Space	4
All other non-residential Uses	700m <sup>2</sup>	1 parking space per 100m <sup>2</sup> of Floor Area	7
<b>Total</b>	<b>820m<sup>2</sup></b>	<b>--</b>	<b>11</b>

In addition to the vehicle parking requirements, Bylaw 12800 indicates bicycle parking is required based on “40% of the number of vehicular parking spaces” with five bicycle parking spaces being the minimum to be provided and at least 10% of bicycle parking spaces shall be short term spaces. For this site, the Zoning Bylaw requirement would result in five bicycle parking spaces. Development plans identify 11 bicycle parking spaces—five short term spaces which are publicly accessible in the form of bike racks and six long term bicycle parking spaces in a secure facility within the building—meeting the Bylaw requirement.

## Transportation Demand Management Review

Transportation Demand Management (TDM) is used to manage traffic and parking demands associated with an existing or proposed development. In the context of this study, TDM best practices and policies have been reviewed to help inform City staff and area residents about how the businesses of the proposed development will work to minimize customer and staff-related parking demands. This included a review of TDM-related opportunities and their impact on parking and traffic demands based on research and practices documented by the City of Vancouver and Victoria Transportation Policy Institute (VTPI).

The Parking Management Comprehensive Implementation Guide (VTPI, November 2018) identifies a number of policies and programs, from evidence-based research, which can be used to maximize or improve the efficiency of parking resources. A summary of the most applicable programs for the proposed development, and the typical parking reduction that can be expected with each, is provided in the table on the next page.

The location of the proposed development is in a walkable neighbourhood with the recently reconstructed sidewalks and a traffic signal at 134 Street and Stony Plain Road to facilitate safer crossings for people walking. The low-volume and low-speed streets are also conducive to cycling. High frequency transit service (i.e., eight (8) buses per hour during peak periods) is also currently provided along Stony Plain Road by Route 2 and the Valley Line LRT will provide similar or better frequency of service in the future. The neighbourhood is predominantly residential with the small cluster of existing commercial businesses. Residents will be concerned with spillover parking that occurs in front of their homes north of 104 Avenue and businesses will be best served by higher parking turnover to support more customers accessing their businesses.

**Table 5: Transportation Demand Management Strategies**

Strategy	Description	Typical Parking Reduction
Parking Regulations	Regulations including time limited or time restricted parking areas.	10-30%
Walking and Cycling Improvements	Improve walking and cycling conditions to expand the range of options available.	5-15%
Parking Pricing	Charge motorists for parking.	10-30%
Financial Incentives/Transit Benefits	Employees receive a subsidized transit pass.	10-30%
Bicycle End-of-Trip Facilities	Provide bicycle storage and end-of-trip facilities.	5-15%

Given the context of this site and the overall neighborhood, TDM approaches that are likely to best manage parking supply and demand include the following:

- Establish time limits for parking along 134 Street and 104 Avenue (Zones 1, 2, 3, and 4) rather than charging for on-street parking. We recommend a 2-hour maximum for the time period of 9:00am to 6:00pm. Based on the observations made during the parking surveys, this would reduce on-street parking demand associated with employees (who have other parking options) and people using the area as a park-and-ride location.
- Establish a Residential Parking Permit Program for 134 Street north of 104 Avenue (i.e., Zone 6).
- Provide secure bicycle storage within the proposed development. In addition to the short-term bicycle parking spaces provided outside the proposed development, we recommend providing a bicycle storage room within the building for staff to securely park their bicycles.
- Provide free or subsidized transit passes to employees. We recommend the businesses provide subsidized or free transit passes to employees. This could be in partnership with the ETS@Work program or directly purchased by the employer for their staff.

Based on the approaches above and their associated potential parking reductions outlined in Table 5, in addition to providing double the required amount of bicycle parking, we believe a parking reduction of 20% could conservatively be expected if one or more of the above measures were implemented by the businesses in the proposed development. This reduction is also in line with the process and resulting parking reduction followed by the City of Vancouver in their development review process.

The proposed site will also add a mixture of businesses to the area. It is likely that customers of one business may also shop at another business during the same trip. In addition, some businesses will have busier periods that may not coincide with other businesses (e.g., a restaurant with higher demands in the evening as compared to a professional office with higher demands during the work hours). These factors are included in the concept called shared parking and is an important consideration for parking supply and demand calculations for mixed-use commercial sites. VTPI's Parking Management Comprehensive Implementation Guide identifies a parking demand reduction of 10-30% for shared parking. Based on the characteristics of the proposed development, it is reasonable to assume 10% of customers to the site will shop at more than one business. This will reduce the parking requirements a further 10% in addition to the TDM-related reduction.



## Current Scenario Parking Analysis

To avoid negatively impacting the adjacent neighbourhood, parking demand for area businesses, existing and proposed, should be accommodated within Zones 1 through 4 as illustrated in Figure 2. Based on site measurements and available imagery from Google Maps, the available parking within these Zones is as follows:

- Zone 1: 7 parking spaces
- Zone 2: 4 parking spaces
- Zone 3: 26 parking spaces
- Zone 4: 16 parking spaces

In addition to the available supply of on-street parking, the site plan for the proposed development identifies six parking spaces on the proposed development site with access from the alley. Tandem spaces which are provided as part of the development will be designated for employee use only.

During the observed period of peak demand (i.e., the weekday lunch hour), the volume of cars parked in Zones 1 and 2 exceeded the capacity identified above; as many as 12 cars were parked in Zone 1. In both Zones, this was in part due to some vehicles parking within the areas identified as “No Parking” and, due to drivers parking at an angle closer to perpendicular because the pavement markings were obscured by snow. Both of these behaviours resulted in more vehicles parked than Zones 1 and 2 are designed to accommodate. There were no observed operational issues at the Stony Plain Road and 134 Street or 134 Street and 104 Avenue intersections resulting from additional vehicles parked on 134 Street in Zones 1 and 2.

The following table presents a summary of the parking analysis for Zones 1 through 4 based on the current scenario. The summary identifies four conditions:

- With the existing development only;
- With the existing development and the application of on-street parking restrictions—removing five (5) employee and two (2) park-and-ride vehicles from the total demand;
- With the existing development, the application of on-street parking restrictions, and the parking requirement for the proposed development; and
- With the existing development, the application of on-street parking restrictions, and the parking requirement for the proposed development with reductions for TDM measures (20%) and shared parking (10%).

NOTE: For the peak demand associated with the existing development, it was noted that drivers were parking in Zone 6 and walking to the existing businesses. The parking survey data were reviewed, and it was determined that four (4) vehicles were parked immediately north of 104 Avenue and are believed to represent additional parking demand related to the existing commercial development. These vehicles have therefore been added to the peak parking demand described below for Zones 1-4.

Based on the data presented in Table 6 on the next page, there is sufficient on-street parking capacity to accommodate the combined parking demand associated with the existing development (observed during the weekday midday count at 12:30pm) and proposed development with the provision of six off-street parking spaces on the proposed development site. Through the implementation of the TDM measures outlined previously, it is expected that parking demand can be further reduced, resulting in an on-street parking surplus of six spaces.

**Table 6: Current Scenario Parking Demand Analysis Summary**

Scenario	Existing Development		Proposed Development			Combined Development		
	Current Peak Parking Demand <sup>1</sup>	Employee Parking Relocated / Park-and-Ride Removed <sup>2</sup>	Site Parking Spaces Required <sup>3</sup>	On-Site Parking Spaces Provided	TDM / Shared Parking Reduction <sup>4</sup>	Resulting On-Street Parking Demand	Available On-Street Parking in Zones 1-4	On-Street Parking Excess or Deficit
Existing Condition	52	0	N/A	N/A	N/A	52	53	1
Existing Condition with Parking Restrictions	52	7	N/A	N/A	N/A	45	53	8
Existing Conditions with Parking Restrictions and Proposed Development	52	7	11	6	0	50	53	3
Existing Conditions with Parking Restrictions and Proposed Development with TDM and Shared Parking Reductions	52	7	11	6	3	47	53	6

1: Current peak demand is based on the combined parking in Zone 1-4 observed at 12:30 in Table 1—48 vehicles—plus an additional four (4) vehicles observed parking in Zone 6 as identified on the previous page.

2: Reduction is based on observations details on Page 6 and includes five (5) employees and two (2) park and ride vehicles.

3: Site parking requirement is based on assumptions detailed in Table 4.

4: Combined reduction from the bylaw requirement resulting from TDM measures (20%) and shared parking (10%).

## Future West Valley Line LRT Scenario Analysis

### Potential Future Street Design Review

The West Valley Line LRT is proposed to run along Stony Plain Road connecting Downtown and Lewis Estates. The West Valley Line LRT is proposing a station at 134 Street. The preliminary design was reviewed, and the key components and roadway changes are summarized below:

- Stony Plain Road will be reduced from two lanes in each direction to one lane in each direction. In addition to this change, westbound and eastbound left turns from Stony Plain Road onto 134 Street will be eliminated.
- To accommodate the centre running LRT and its associated station at 134 Street, Stony Plain Road will be widened on both the north and south sides of the existing alignment.
- A channelized right turn is proposed for the westbound-to-northbound right turn at 134 Street. This channelized turn, combined with the widening of Stony Plain Road to the north, will result in a reduced number of parking on the east side of 134 Street between 104 Avenue and Stony Plain Road. It is estimated that one parking space will remain.
- With the modification to the intersection of Stony Plain Road and 134 Street, parking on the west side of 134 Street will be converted from angle to parallel parking. It is estimated that space will be available to provide three parking spaces will be provided on the west side of the roadway.
- The existing cul-de-sac/turnaround at the east end of 104 Avenue will be redesigned and is intended to include a dedicated area for DATS parking. In conjunction with this change, it is likely that most or all parking will be removed from the south side of 104 Avenue in this area.

- In total, the current preliminary design plans for the West Valley Line LRT would reduce the parking supply on 134 Street and 104 Avenue by about 15 parking spaces.

**Future Scenario Parking Analysis**

In conjunction with the development of the West Valley Line LRT, changes to the area roadways will result in the reduction of parking on 134 Street between Stony Plain Road and 104 Avenue, and the elimination of parking on the south side of 104 Avenue east of 134 Street, as described above. In this scenario, the estimated number of available on-street parking spaces would be as follows:

- Zone 1: 3 parking spaces
- Zone 2: 1 parking spaces
- Zone 3: 26 parking spaces
- Zone 4: 8 parking spaces

The following table presents the area’s parking supply and demand with this reduction in available on-street parking. This analysis has been completed using the resulting on-street parking demand for the current scenario of “Existing Conditions with Parking Restrictions and Proposed Development with TDM and Shared Parking Reductions” from Table 6. Table 7 also presents potential alternatives to the area to increase the on-street parking space supply which is explained in more detail below.

**Table 7: Future Scenario Parking Demand Analysis Summary**

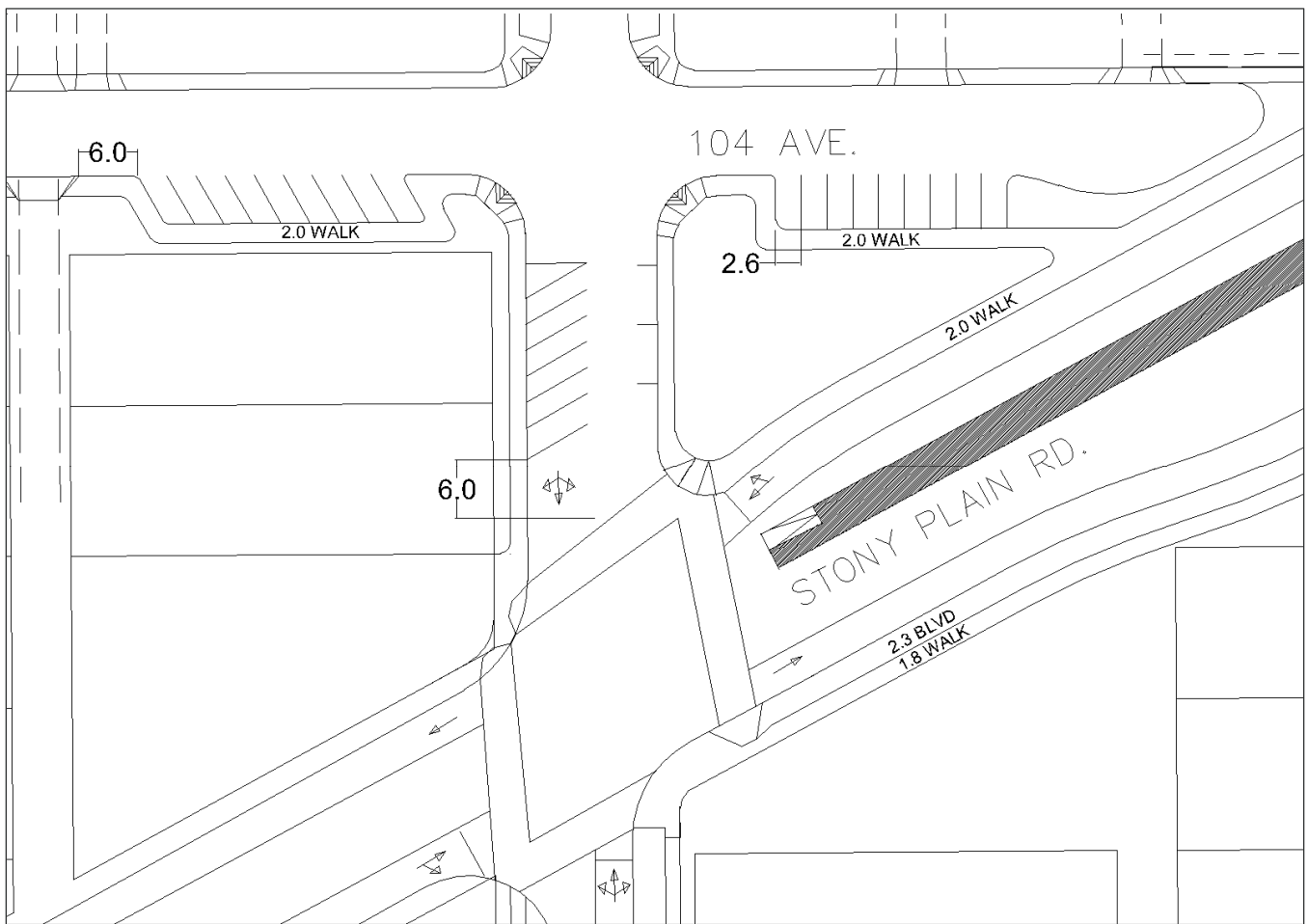
Scenario	Future On-Street Parking Demand	Conversion to Angle Parking along 104 Avenue (Zone 3)	Provision of Perpendicular Parking on 104 Avenue (Zone 4)	Additional On-Street Parking on 134 Street (Zones 1 and 2)	Available On-Street Parking in Zones 1–4	On-Street Parking Excess or Deficit
Current West Valley Line LRT Design	47				38	-9
Proposed Roadway and Parking Supply Changes	47	4	9	4	38	8

Based on the above analysis, as a result of the roadway changes proposed associated with the West Valley Line LRT, parking demand exceeds the available parking supply by nine (9) spaces. To mitigate the significant loss in parking associated with the West Valley Line LRT, it is recommended that the following roadway/parking modifications be included in the scope of the West Valley Line LRT. See Figure 3 for the potential roadway and parking configuration.

- Converting parallel parking to angle parking along the south side of 104 Avenue west of 134 Street;
- Providing 90-degree parking on the south side of 104 Avenue east of 134 Street;
- Reestablishing angle parking on the west side of 134 Street in front of the existing businesses; and
- Eliminating the westbound-to-northbound channelized right turn at Stony Plain Road and reestablish parallel parking on 134 Street.

These changes represent a net increase of a minimum of four (4) spaces west of 134 Street, nine (9) spaces east of 134 Street, and four (4) spaces on 134 Street. As a result, there would be sufficient on-street parking to accommodate the area commercial developments following the construction of the West Valley Line LRT. It should be noted that the LRT Design Team is not supportive of additional parking on 104 Avenue at this time, but parking requirements and supply will be further refined throughout the design process.

In preparing Figure 3, it was noted the development of curb extensions at the intersection of 134 Street and 104 Avenue would likely result in further additional on-street parking supply. In addition, curb extensions would better delineate parking on 134 Street, help to control vehicle speeds in the area, and would reduce crossing distances and improve safety for pedestrians. It is therefore recommended that the design of the 134 Street and 104 Avenue intersection be reviewed as part of the scope of the West Valley Line LRT, in conjunction with the recommended parking changes. Figure 3 also identifies a sidewalk on the south side of 104 Avenue; a sidewalk is not currently provided on this side of the roadway.



**Figure 3: Potential Parking Reconfiguration in Conjunction with West Valley Line LRT**



## Summary of Recommendations

To accommodate the parking requirement associated with the proposed development, Toole Design recommends the following actions.

### *Parking Supply*

- Provide six parking spaces on the proposed development site with access from the alley.
- The above results in 94% utilization of the available on-street parking for the area during peak periods.

### *TDM Approaches*

- Establish time limits for parking along 134 Street and 104 Avenue (Zones 1, 2, 3, and 4). We recommend a 2-hour maximum for the time period of 9:00am to 6:00pm. Based on the observations made during the parking surveys, this would reduce on-street parking demand associated with employees (who have other off-street parking options) and people using the area as a park-and-ride location.
- Establish a Residential Parking Permit Program for 134 Street north of 104 Avenue (i.e., Zone 6).
- Provide secure bicycle storage within the proposed development. In addition to the five short-term bicycle parking spaces provided outside the proposed development, we recommend providing a bicycle storage room within the building for staff to securely park their bicycles while they are working.
- Provide free or subsidized transit passes to employees. We recommend the businesses provide subsidized or free transit passes to employees. This could be in partnership with the ETS@Work program or directly purchased by the employer for their staff.
- A parking reduction of 20% could conservatively be expected if one or more of the above measures were implemented by the businesses in the proposed development. With consideration of shared parking and a reduction in parking requirement of 10%, the demand for on-street parking for the proposed development would be further reduced, resulting in an on-street parking surplus of six spaces.

### *LRT-Related Design*

In conjunction with the development of the West Valley Line LRT, changes to the area roadways will result in the reduction of parking on 134 Street between Stony Plain Road and 104 Avenue, and the elimination of parking on the south side of 104 Avenue east of 134 Street. In total, it is expected that 15 parking spaces will be removed as a result of these roadway modifications. To mitigate the significant loss in parking associated with the West Valley Line LRT, it is recommended the following design changes be incorporated with West Valley Line LRT construction:

- Parallel parking be converted to angle parking along the south side of 104 Avenue west of 134 Street resulting in a minimum increase of four (4) parking spaces.
- Redesign 104 Avenue east of 134 Street to provide additional 90-degree parking on the south side of 104 Avenue. This results in a net increase of at least eight (8) parking spaces.
- Reestablish angle parking on 134 Street in front of the existing businesses;
- Eliminate the westbound-to-northbound channelized right turn at Stony Plain Road and reestablish parallel parking on 134 Street.
- Review the design of the intersection of 134 Street and 104 Avenue to determine if curb extensions would be a suitable treatment for controlling vehicle speeds, improving pedestrian safety, delineating the extents of parking on 134 Street, and further increasing parking supply.

**Conclusion**

In completing this analysis, we purposefully were very conservative in the application of TDM-related and shared parking reductions to parking requirements and have only applied them to the proposed development. We are also using the highest peak parking demand observed during the parking survey to calculate parking demand for the existing businesses. Taken together, we believe the proposed parking supply, parking restrictions, and supportive TDM measures will adequately accommodate the existing businesses and the proposed development.

Sincerely,



**Tyler Golly P.Eng., M.Sc.** | Edmonton Office Director | Western Canada Market Lead

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