ISL Engineering and Land Services

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DanTec Associates

Parkland County

Draft Final Report

Acheson Industrial Park Transit Feasibility Study

July, 2012

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1.0 Introduction

The Acheson Transit Study has been commissioned by Parkland County to determine the feasibility of serving Acheson Park by transit. The study is to assess the feasibility of transit service linking employees with businesses in Acheson, to examine options and identify an optimal transit service model for the unique Acheson market, and to identify an implementation strategy for service delivery on a pilot project basis.

The Acheson Business Park is a thriving and expanding industrial business park (see Exhibit 1.1) located in Parkland County between the cities of Spruce Grove and Edmonton along Highway 60. Acheson encompasses over 16 square miles of land. According to the Acheson Business Association there are currently over 5,000 employees in the Park, and given the amount of land available for development, the number of employees in the park will expand considerably.

Parkland County has received requests for transit service to the Acheson Business Park. Traditionally such industrial parks have been challenging to serve with transit due to their relatively remote location and rural roadways that lack sidewalks. However, as the surrounding cities grow and the road network in the region is strengthened (especially Anthony Henday Drive), Acheson has become more accessible. In addition, the introduction of limited transit service to the Nisku Industrial Park last year provides evidence that Acheson transit service may be feasible.

This report identifies relevant background data, including previous studies as well as Employer and Employee surveys conducted as part of this study. Based on this data, three options are analysed using assumed routing and timing plans. Following the analysis conclusions and recommendations are made, including the recommended pilot program.

EXHIBIT 1.1

PARKLAND COUNTY
ACHESON INDUSTRIAL PARK
TRANSITY FEASIBILITY STUDY

Acheson Industrial Park

2.0 Background Data Review and Collection

Three main sources were used for background data:

- Previous Studies – Parkland County provided several relevant studies previously undertaken as part of this project.
- Employer Survey – a survey of employers in Acheson was undertaken.
- Employee Survey – a survey of employees in Acheson was undertaken.

Each of these data sources is discussed below.

2.1 Previous Studies

Key findings for each document provided by Parkland County are summarised below in the following sections.

2.1.1 "Acheson Bus Service: A Proposal to Parkland County", Acheson Business Association, November 2011

This report proposes a pilot program transit service for Acheson. The need for the transit service is driven by Acheson employers requiring wider access to a tighter labour environment. The report proposes a pilot program transit service that would cost $38,700 for 6 months and $77,400 for one year, using a private service provider.

The service would use one bus making two runs in each peak hour. Each run serves three common locations in Spruce Grove:

- Work force/Bredin Institute, Westgrove Profesional Buidling 131 – 1st Avenue
- Spruce Grove High School, Grove Drive Entrance
- Alliance Church, Century Road

In Acheson, each run serves different businesses:

- AM Run 1
  - Pro-V Manufacturing (Zone 3)
  - Flynn (Zone2)
- AM Run 2
  - Northgate Industries (Zone 1)
  - Sysco (Zone 2)
  - Jasper Tank (Zone 3)
- PM Run 1
  - Sysco (Zone 2)
  - Flynn (Zone 2)
  - Pro-V Manufacturing (Zone 3)
  - Jasper Tank (Zone 3)
- PM Run 2 – schedule and route to be determined depending on volume and shift times.

Ridership was estimated at 15 to 25 riders per day, with an expectation of growth with more companies using the service. Monthly bus passes would be sold to Acheson employers through the Acheson Business Association for $80 per rider.

There is a letter in the report from the Bredin Institute, an employment development specialist, indicating that there are two client types who face barriers with transportation in their job search. First are those who do not have a vehicle and/or a valid license and second are those who have a vehicle and valid license but lack the financial capacity to commute regularly at the beginning of their job. Both of these groups can benefit from a transit service.

2.1.2 "Acheson Transportation Strategy" Prepared for the Acheson Business Association by D.A. Management & Consulting, (Jan 30, 2008)

This report indicates need for a transit service is based on an extremely tight labour market with critical shortages of labour reported by businesses due to a lack of transportation for employees. The goal is to provide transportation for the workforce employed in Acheson; in this sense the report states it is not public transportation.

Three major businesses were providing employee transportation at the time of this report:

- ***Winalta (Zone 1)*** – a private shuttle service provided by "Private Charter Corp." Ridership was about 70 employees.
- ***Sysco (Zone 2)*** – "Laidlaw" provided a private shuttle for about 100-150 employees, using two pick-up/drop-off points in Edmonton and a variety of shuttle times.
- ***IGLOO (Zone 5)*** – IGLOO purchased their own bus to shuttle employees from Edmonton. Ridership was about 20 to 25.

The report identifies several major issues. First is funding and planning. Second deals with choices for effective and efficient operations. Third is directional signage, lack of sidewalks and bus shelters. The single greatest issue is the CN mainline at-grade rail crossing at Highway 60.

Primary funding sources for public transit identified in the report are municipal, provincial and federal governments. In terms of organisational options for operating public transit the following three were presented:

- Directly owned and operated systems
- Operations contracted to a private operator with public authority
- Private contractors providing vehicles, maintenance and operations

There are over 200 businesses in the Acheson Business Area in diverse sectors including distribution, manufacturing, oilfield, forestry and agriculture. Another part of the report says there are 136 active businesses with about 3,000 full-time jobs.

Discussions with Edmonton Transit System (ETS) were held and ETS indicated that an independent route is needed; an Acheson Industrial Route would not use existing services to Spruce Grove or Parkland Village due to the high forecasted ridership. A proposed route is identified by word description and is based on discussions with Edmonton Transit. It is very circuitous due to the road network and desire to serve nearly everywhere in Acheson zones 1, 2 and 3. It uses private parking lots to turn around.

Three major businesses provide a transportation service for their employees:

- Winalta (Zone 1); ridership is 70 employees on a contracted private service.
- Sysco (Zone 2); Ridership is 100-150 employees with two pick-up/drop-off points in Edmonton and a variety of shuttle times, using a contracted private service
- IGLOO (Zone 5); ridership is 20-25 using a bus purchased by IGLOO.

An employer survey indicated that there is support for a transit service, with two major businesses supporting the total numbers. However, schedules for pick-up and drop-off

were across the board. Major businesses would not adjust working hours to use public transit and would not subsidize operating costs of public transit. Some of the key survey results follow:

- What pick-up destinations in Edmonton would best accommodate your employees? Highest was WEM (86%) followed by Westmount (74%), Kingsway (43%), then downtown (7%)
- What other pick-up destinations not listed above? Spruce Grove and Stony Plain (8 responses), Spruce Grove (3), and Spruce Grove and Alberta Beach (1) were responses. Lumping these all as Spruce Grove gives 12 responses, or 29% to compare to the above percentages (stronger than downtown but weaker than Kingsway).
- What number of employees would use public transportation? 568

The report discussed options to operate a transit system, including with Edmonton Transit as well as three private provides. Costs are included on an hourly basis, although some information is missing (fuel costs).

A passenger forecast is provided based on responses to survey; the number of riders for each business is listed.

Recommendations from the report are as follows:

- Review potential grant funding from government
- Funding to finance pilot project and test for one year
- Select preferred operating option
- Acquire necessary products/services such as directional signage, bus shelters, priority snow removal bus route, safety inspection of bus route roadways, advertising bus service.
- Develop data collection of users, time schedules and costs
- Negotiate funding mechanism between Parkland County
- Involvement in regional transit planning and the LRT

2.1.3 "30 Year Transit Service Plan" – Prepared for the Capital Region Board by ISL Engineering and Land Services, July 2011

This report identifies a 30 year living plan for transit in the Edmonton Capital Region. Although very broad in comparison to the Acheson Transit study, the following key relevant information is extracted:

- The Acheson Business Park is identified as an existing and a future major employment area.
- The Acheson Business Park, along with the City of Spruce Grove and the Town of Stony Plain, is within Priority Growth Area (PGA) "A". As stated on page 1 of the plan "The PGA's are where most of the population and employment growth is expected in the Region and therefore where transit service is expected to be more effective than other areas." and therefore is expected to grow to urban densities."
- The recommended scenario in the plan makes provision for a new regional bus service to link Acheson Industrial to both Edmonton and Spruce Grove/Stony Plain.

2.2 Employer Survey

On April 10 and 11, 2012, ISL conducted interviews with the following Acheson businesses:

- Flynn
- Pro V Manufacturing
- Jasper Tank
- Northgate Industries
- Sysco
- Beaver Plastics

The purpose of the interviews was to obtain examples of the employer perspective regarding transit in Acheson. The businesses interviewed had expressed an interest in transit according to the Acheson Business Association (one business declined an interview (Martin Deerline) and instead Beaver Plastics was added to the list). The interview is not considered scientific, but is considered indicative of many businesses in Acheson.

A standard set of interview questions were developed and are shown in Appendix A. During the interview additional questions were sometimes asked for clarity. Company representatives interviewed were often responsible for hiring new employees.

A summary of responses to each question follows and relevant conclusions are identified.

1. What type of business do you operate at your location in the Acheson Industrial Area?

Manufacturing □ Distribution □ Sales □ Other

Summary of Responses		
Company	**Business**	**Comments**
Flynn	Construction	Institutional, Commercial and Industrial Construction
Pro V Manufacturing	Manufacturing	Oil and Gas Related, Modular Construction, Piping and Vessels, Use a lot of welders/skilled tradesmen.
Jasper Tank	Manufacturing	Tank Manufacturing, Oil Field Related, Tank Trailers. Use a lot of skilled tradesmen.
Northgate Industries	Manufacturing	Modular home/camp construction for oil field camps
Sysco	Distribution	Food Distribution, Wholesaler for food services (Hotels, Franchises etc.)
Beaver Plastics	Manufacturing	Expanded Styrofoam Products, (Example is Insulated Concrete Forms for building construction)

Summary for Question 1
Four businesses interviewed operate as manufacturers; there was one construction and one distribution business.

2. How many employees are currently at your location in the Acheson Industrial Area?

Summary of Responses		
Company	**# of Employees**	**Comments**
Flynn	250 – 300	250 work in the field, 50 in the office
Pro V Manufacturing	120	70 at their shop on south side of 16A, 50 north side of HWY 16 A.
Jasper Tank	45 – 50	Varies depending on work load. Most shop workers are skilled trades.
Northgate Industries	160 – 170	Depending on work load. Mixed between skilled trades and labourers.
Sysco	450	100 Drivers, 150 Warehouse (Labourers), 80 Sales, 130 Office
Beaver Plastics	65	35 Labourers/Maintenance, 30 Office

Summary for Question 2
Sysco is the largest of the employers interviewed, while Jasper Tank is much smaller. Flynn has a large number of employees, most of which work in the field but often report to the office at the beginning of the day. There is a variety of worker types; office, skilled trades, unskilled labourers, and sales. Respondents often indicated that a transit service would be most used by unskilled labourers, as these positions typically are the lowest paid and have more challengers to own a car.

3. What is the approximate percentage of your employees living within:

0 – 10 km ____ 10 – 15 km ____ 15 – 20 km ____ 20+ km ____

Summary for Question 3
This question was not well received as it was difficult for interviewees to understand the specific distances identified. Question 4 also addressed employee location and is better received. This subject was covered in more detail in the employee surveys, in the next section of the report.

4. What is the approximate percentage of your employees living between:

Edmonton ___% Spruce Grove___% Stony Plain___%

Summary of Responses			
Company	**Edmonton (%)**	**Spruce Grove/ Stony Plain (%)**	**Comments**
Flynn	50	40	Other employees come from St. Albert, Sherwood Park and surrounding areas
Pro V Manufacturing	35	55	10% to other areas
Jasper Tank	35	45	Remainder comes from other areas.
Northgate Industries	-	-	No specific answer given.
Sysco	80	15	Moved from Edmonton 5 years ago. (Likely explanation of high Edm. Split). Currently recruiting in Stony Plain and Spruce Grove.
Beaver Plastics	50	50	Moved from Edmonton about 6 years ago.

Summary for Question 4

The interviewees lumped Spruce Grove and Stony Plain into one group and thus the results are reported as such. Most employers had a relatively large percentage of employees based in Spruce Grove/Stony Plain, particularly considering that Edmonton has much more population. Sysco's percentage leaned more heavily to Edmonton, as a result of their relatively recent move from Edmonton to Acheson. However, they attend job fairs in Spruce Grove and acknowledge that a growing percentage of their workers are from Spruce Grove and Stony Plain.

5. Have you had or do you have any transit related services for your employees?

□ Yes □ No

Summary of Responses		
Company	**Yes/No**	**Comments**
Flynn	No	However, private transportation program available for recruited foreign workers; for the first 3 months of employment. They also own 3 mobile homes in Winterburn as there is transit available.
Pro V Manufacturing	No	
Jasper Tank	No	
Northgate Industries	No	
Sysco	Yes	Used private transportation to provide transportation means for Edmonton based employees to get to the Acheson location after the move. Cost approximately $120, 000. Usage tapered off with interest free car loan program (Borrow up to 2500).
Beaver Plastics	No	

Summary for Question 5

As described in question 4, Sysco moved relatively recently from Edmonton to Acheson and for some time did have a number of employees in the Edmonton area. For this, Sysco was operating a private transportation system to transport those workers remaining in Edmonton who would have normally used ETS. The amount of users eventually reduced to a point where it was no longer feasible to run a private system. At this point they implemented an interest free car loan program to serve those employees and others with a means of transportation. Flynn currently gives newly recruited foreign workers a means of private transportation via hired drivers, similar to a taxi service. Both companies expressed a need for some form of transportation other than personal vehicle.

6. Do you feel that you are paying higher salaries because you lack access to people who would take transit to the jobs you offer?

□ Yes □ No

Summary for Question 6

The prevalent response for this question was a no. However, most companies felt that they paid higher salaries due to their location and bringing a transit service would soften that effect.

7. How often is an employee unable to take a job due to transportation restrictions?

□ Very Frequent □ Frequent □ Somewhat Frequent □ Never

Summary of Responses		
Company	**Response**	**Comments**
Flynn	Very Frequent	Typically candidates do not pass pre-screening. (Upwards to 70%) Therefore, no interview is given or job offered.
Pro V Manufacturing	Somewhat Frequent	Similar to Flynn, these candidates are pre-screened. Not usually a problem for skilled trades. Can be a problem for labourers.
Jasper Tank	Somewhat Frequent	Similar to Pro V Manufacturing. Candidates are pre-screened.
Northgate Industries	Frequent	
Sysco	Somewhat Frequent	Higher for warehouse staff as these are mostly labourers (non-skilled)
Beaver Plastics	Somewhat Frequent	25% of applicants

Summary for Question 7
Overall, skilled applicants did not have problems with transportation where unskilled applicants did. Therefore, companies who use mostly skilled applicants may not feel that a transit service would be beneficial to them as their employees are typically better off (and usually longer term) than un-skilled workers. Therefore, it could be determined where transit service would be the most beneficial depending on type of company and their employee type: Skill vs. Unskilled.

It should be noted that most companies did ask candidates if reliable transportation was available at the pre-screening level. This limited the amount of jobs offered which in turn would be turned down due to transportation being an issue.

8. On exit interviews of employees, how often is transportation an issue?

□ Very Frequent □ Frequent □ Somewhat Frequent □ Never

Summary of Responses		
Company	**Response**	**Comments**
Flynn	Never	Done only for salaried employees, typically have transportation.
Pro V Manufacturing	Never	
Jasper Tank	Never	
Northgate Industries	Never	
Sysco		
Beaver Plastics	Somewhat Frequent	Have had cases where this has happens. Problems occur if there is a lot of car poolers and the driver cannot make it to work.

Summary of Question 8
Generally exit interviews are not done except sometimes for salaried employees. Therefore, if an employee is leaving due to transportation issues this would not be known to the employer. Beaver Plastics did mention that firing an employee who is the driver for

a car pool can be difficult as this person is a means of transportation for other employees. Losing the driver could mean losing others employees too.

9. If a reliable transit service existed today what do you think is the percentage of your current employees who would take it?

Summary of Responses		
Company	**%**	**Comments**
Flynn	20	
Pro V Manufacturing	10 – 20	In best case scenario, especially if it was to/from the doorstep. Would increase over time, especially for foreign employees.
Jasper Tank	Not Sure	Would rise from the current usage of zero.
Northgate Industries	2 – 20	Don't know, best guess
Sysco	15 – 20	Depending on quality of service, especially useful for night shift.
Beaver Plastics	20	As long as the service matched shit start times.

Summary of Question 9
Generally, the percentages given are likely too high and/or too optimistic. For example, the percentage of Transit users in Edmonton's Industrial areas is quite a lot lower. However, it was agreed and discussed with the employers that Transit usage would increase over time as employers would be able to tap the "Transit Captive" employees.

10. If a reliable transit service existed today do you see your company as helping cover the cost of the transit passes for your employees (in part or in full)?

□ Yes □ No

Company	Yes/No	Comments
Flynn	Yes	Possibly, if beneficial.
Pro V Manufacturing	Yes	If beneficial good quality service. Would need to service Spruce Grove and Stony Plain.
Jasper Tank	Maybe	Depends on how many employees are using the system and would need to be clearly beneficial.
Northgate Industries	Maybe	Definitely not a not. Would need to attract employees.
Sysco	Yes	Depending on cost and quality of service.
Beaver Plastics	Yes	If beneficial

Summary of Question 10
The predominant response was that they would be willing to contribute if the service was beneficial. The definition of beneficial or success will need to be clear when analyzing different options. It should be noted that the persons being interviewed were for the most part Managers or HR staff, who typically would not have a lot of say in company financial decisions. Flynn was the only company which has had this discussion internally and have already made a decision that they would possibly help fund a transit system.

11. If a reliable transit service existed today how do you think this would affect your company?

Company	Comments
Flynn	Easier to recruit and better candidates available.
Pro V Manufacturing	Depending on quality of transit service it would help with recruitment. It would be a positive.
Jasper Tank	The effect would not be dramatic but would be positive to a point. It would be helpful for younger (assuming labourers).
Northgate Industries	Broaden the ability to employ more people.
Sysco	Ability to expand pool of potential employees.
Beaver Plastics	Helpful and increase pool to draw from. Would make Acheson more attractive.

Summary of Question 11
As discussed in previous responses, employers pre-screen applicants on the issue of transportation to work. In general every company felt that a transit system would broaden their access to the labour pool. One problem Sysco has found is that at job fairs would-be applicants do not apply due to their location in Acheson. These people will express concerns with getting to work and therefore not apply. Therefore, it is logical that the labour pool would open up for employers in Acheson given a transit system.

12. Do you think your company would be willing to help fund a transit service that provided benefits to your company if it was the difference between having one and not having one?

□ Yes □ No

Company	Yes/No	Comments
Flynn	Yes	VP decision in the end. If the service was beneficial.
Pro V Manufacturing	Yes	Depending on the service and how much Pro V would benefit.
Jasper Tank	Maybe	Depends, would be an executive decision.
Northgate Industries	Yes	Yes, if used by employees at Northgate.
Sysco	Yes	As long as the cost was much less than previous service ($120,000)
Beaver Plastics	Yes	Especially as the next wave of boom comes.

Summary of Question 12
Overall, questions 10, 11 and 12 were all dependent on the quality of service offered. If the quality of service was high this would increase the attractiveness of the Acheson area and broaden the pool of employees available to hire. As with question 10, those being interviewed were assumed to not be part of the company's financial decisions, therefore these responses should be approached with caution.

13. What do you think would be a fair funding formula for the benefiting companies?

Company	Comments
Flynn	No idea.
Pro V Manufacturing	No idea.
Jasper Tank	If County shares it would be paid for through taxes (added on). However, would not be fair to pay if not using the service.
Northgate Industries	Cost would be based on number of employees using the service.
Sysco	75% County, 25% Companies. Concern about paying more taxes – Companies in Edmonton not paying a transit tax.
Beaver Plastics	Cost sharing between Parkland County, benefiting City's and ABA.

Summary of Question 13
Companies felt that is was totally dependent on the quality of service and benefit to their company. The only issue is paying for a service that is not being used or is beneficial to the particular company. For example this could be the case of a company whose employees would not need/want/use a transit service. There were concerns over paying for a service that was not beneficial.

14. What are your companies work shifts. (This question was not on the list of questions but was typically commented on by businesses. It is expected that this area will be picked up in the employee surveys)

Company	Shifts?
Flynn	Not mentioned
Pro V Manufacturing	6 AM – Shop Workers, 8 AM – Office Workers. Shifts End No later than 6 PM. No night shifts.
Jasper Tank	Starting is similar to Pro V. 6 – 7:30 AM Start. Ends no later than 6 PM but usually earlier.
Northgate Industries	Not mentioned
Sysco	Shifts are staggered start. 6, 7, 8 and 9 AM. Night shift is used
Beaver Plastics	3 shift/day. 7 AM – 3 PM, 3 PM – 11 PM, 11 PM – 7 AM

Summary of Question 14
Start/end times varied. It was found that there are a lot of early morning starts (6 AM) rather than night shifts. Sysco was the only company currently using night shifts. This question is further addressed in the employee survey in detail.

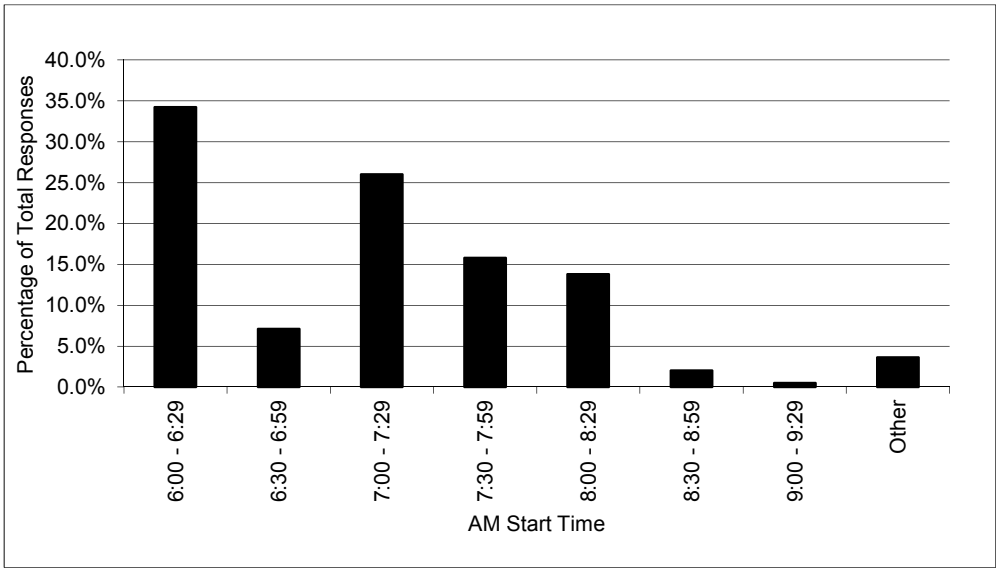
2.3 Employee Survey

Between April 20 and May 04 ISL with the help of the ABA conducted employee surveys. The purpose of the surveys was to validate information collected in the employer survey as well as collect more detailed information in regards to potential ridership and route timings. Surveys were sent in both hard copy and digital (web version) forms to various companies in Acheson, including those who participated in the employer surveys. The following companies completed surveys.

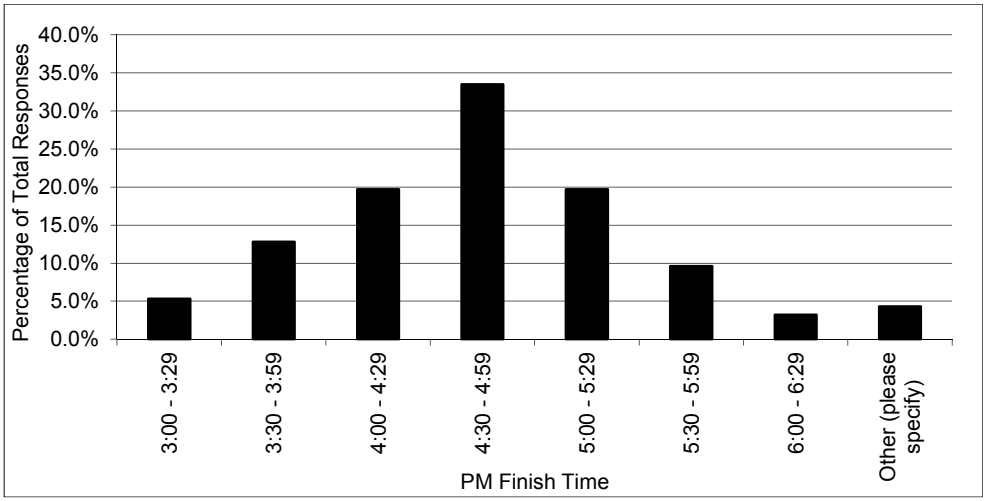
Company	Response Count	% of Total
Beaver Plastics	17	8.6
North American Construction Group	42	21.3
Jasper Tank	15	7.6
Flynn	49	24.9
Northgate	10	5.1
Westmark Products	15	7.6
Spruceland	14	7.1
Pro V	34	17.3
Navistar	1	0.5
Total	197	100%

As shown above, a total of 197 surveys were filled out with approximately 25% completed through the web version and 75 % completed as a hard copy. The following sections outline a summary of responses as well as key findings. As with the employer survey, this survey is not considered scientific, but is considered indicative of the employee trends in Acheson. For each question a summary of responses and key findings are given. For detailed information refer to Appendix A.

1. What time do you start your shift in the morning? (Responses = 196)



2. What time do you finish your shift in the evening? (Responses = 188)



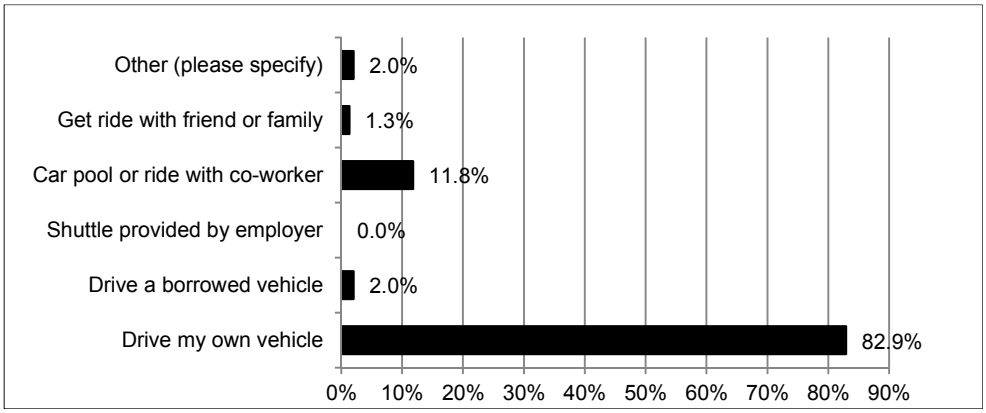
In the morning there is an early peak at both 6:00 – 6:30 AM and 7:00 – 7:30 AM. In the afternoon the peak is central to the 4:30 – 5:00 PM time frame, with equal parts on either side.

3. What days of the week do you work (answer all the apply)? (Responses = 196)
While some responses (<10%) were on Saturday and Sunday, the predominant response was Monday to Friday.

4. How often do you come to work late or start early? (Responses = 192)
50% of responses were never, where the other 50% were late between 1 and 7 or more times a month. These results indicate that the transit service must be flexible.

5. Do you need your own vehicle while you are at work? (Responses = 196)
59% of responses were yes and 41% of responses were no. This indicates that there is a higher percentage of people who do not need their own vehicle at work than those who do.

6. How do you currently get to work on most days? (Responses = 152)



Currently, the primary mode of transportation to work is by personal vehicle. Approximately 15% get to work by other means, with carpooling being the largest portion of this.

7. How long on average does it typically take you to get to work? (Responses = 197)

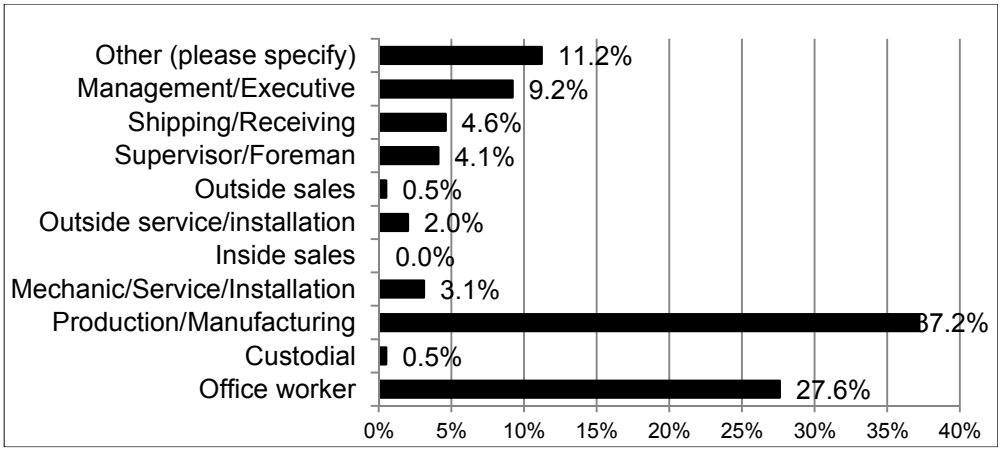
Duration	Percentage of Responses
Less than 15 minutes	28%
16 – 30 minutes	59%
31 to 45 minutes	12%
More than 45 minutes	1%

As shown above, 87% of responses indicated that they get to work in 30 minutes or less. Transit will have difficulty competing with this travel time. 13% of responses indicated that their commute time is over 30 minutes.

8. Was transportation to work a consideration when you accepted this job? (Responses = 193)

67% of responses were "no", that transportation was not a factor when they accepted this job. The rest of the responses were related to some form of transportation issues that resulted from accepted the job. Specifically, 12 % of respondents would prefer to work in a location where transit is available.

9. What is your job? (Responses = 196)



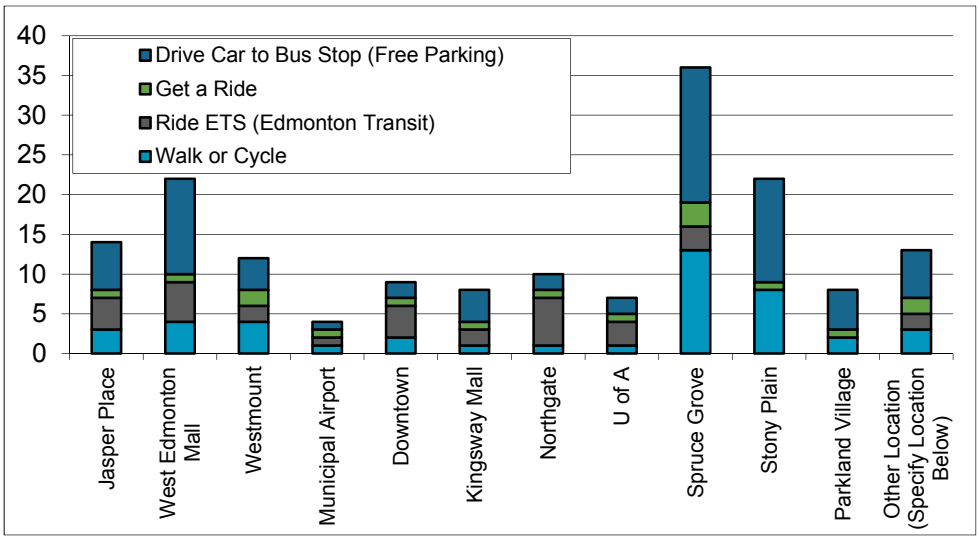
As shown in the above chart the type of job was split unevenly throughout the responses. A majority of responses were either office workers (36.8%, including management/executive) or production/manufacturing (37.2).

10. If a bus was available would you use it? (Responses = 184)

Answer	Percentage of Responses
Yes	34%
No	36%
Don't Know	30%

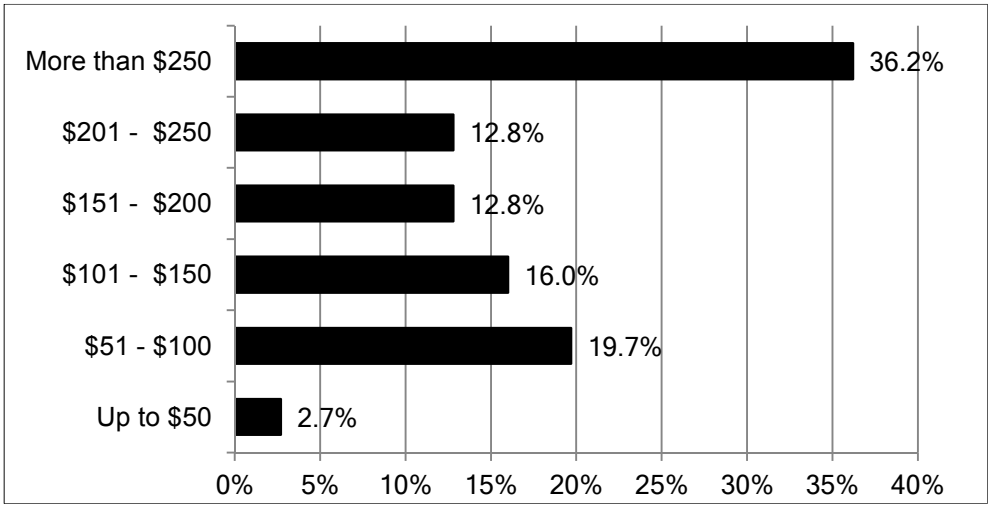
The response for this question was generally even, with a slight edge for "no". As with the employer survey it is expected that the number of response that was "yes" were quite optimistic and/or dependent on the quality of service.

11. If you said yes to the previous question please tell us which stop you would use and how you would get there. (Responses = 110)



The predominant response was in the Spruce Grove and Stony Plain area, which is consistent with the employer interviews. Second to these areas are Jasper Place, West Edmonton Mall and Westmount.

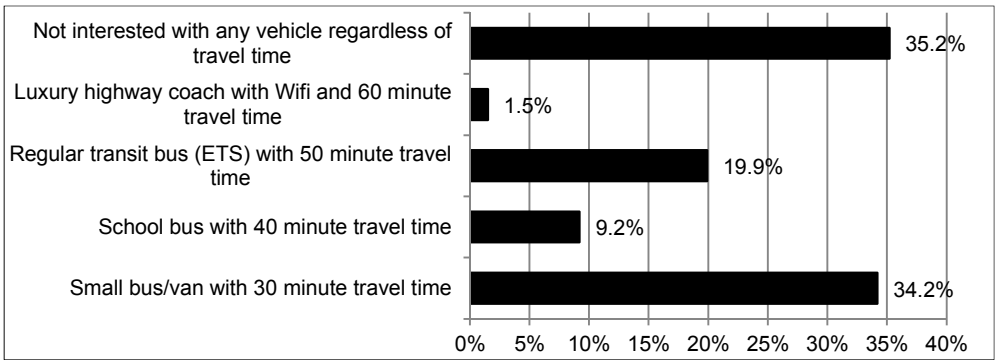
12. How much are you currently spending, per month, to travel to and from this job site? (Costs could include gas, oil, insurance, wear etc.) (Responses = 188)



As shown in the chart, approximately 62 % of responses indicated that the cost of travel to work is greater than $150 per month. This is a high cost which could be competitive for transit as a monthly pass would likely be less than this amount. As described in question

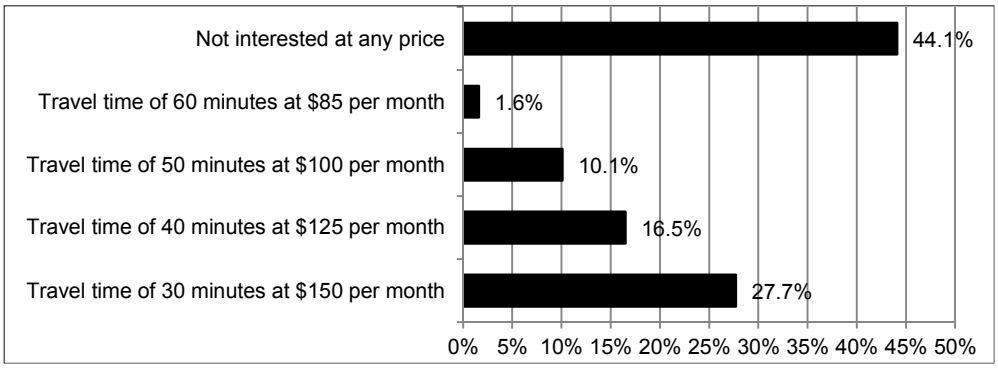
7, transit may not be competitive with commute times but based on the responses to this question could be competitive with commute price.

13. If a bus service was available to Acheson which type of vehicle and travel time would you prefer? (Responses = 196)



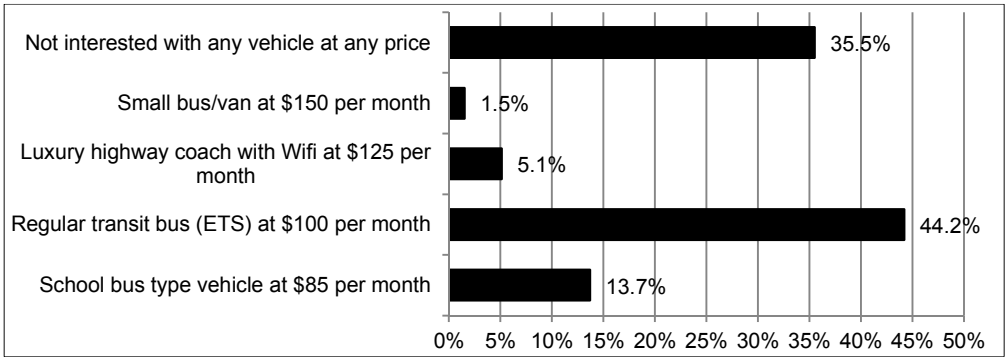
The 35% percent of responses who were not interested is consistent with question 10, the amount who responded “no” to transit (34%). Responses indicated that longer travel times would be accepted to use an ETS bus instead of a school bus, even though a school bus would be 10 minutes faster.

14. If bus service was available to Acheson how long would you be willing to travel, and at what cost would you prefer? (Responses = 188)



Responses indicated that more money up to $150 per month would be acceptable for less travel time.

15. If a bus service was available to Acheson which type of vehicle and cost would you prefer? (Responses = 197)



The preferred rate is $100 a month with an ETS bus. The 36% percent of responses who were not interested is again consistent with question 10, the amount who responded “no” to transit (34%).

16. Does your employer provide winter plug-in? (Responses = 196)

Answer	Percentage of Responses
Yes	63%
No	26.3%
Don’t Know	11.3%

17. Since starting to work at this job site have you moved closer to work? (Responses = 196)

Answer	Percentage of Responses
Yes	15%
No	85%

18. Are you considering moving closer to work? (Responses = 196)

Answer	Percentage of Responses
Yes	7.7%
No	92.3%

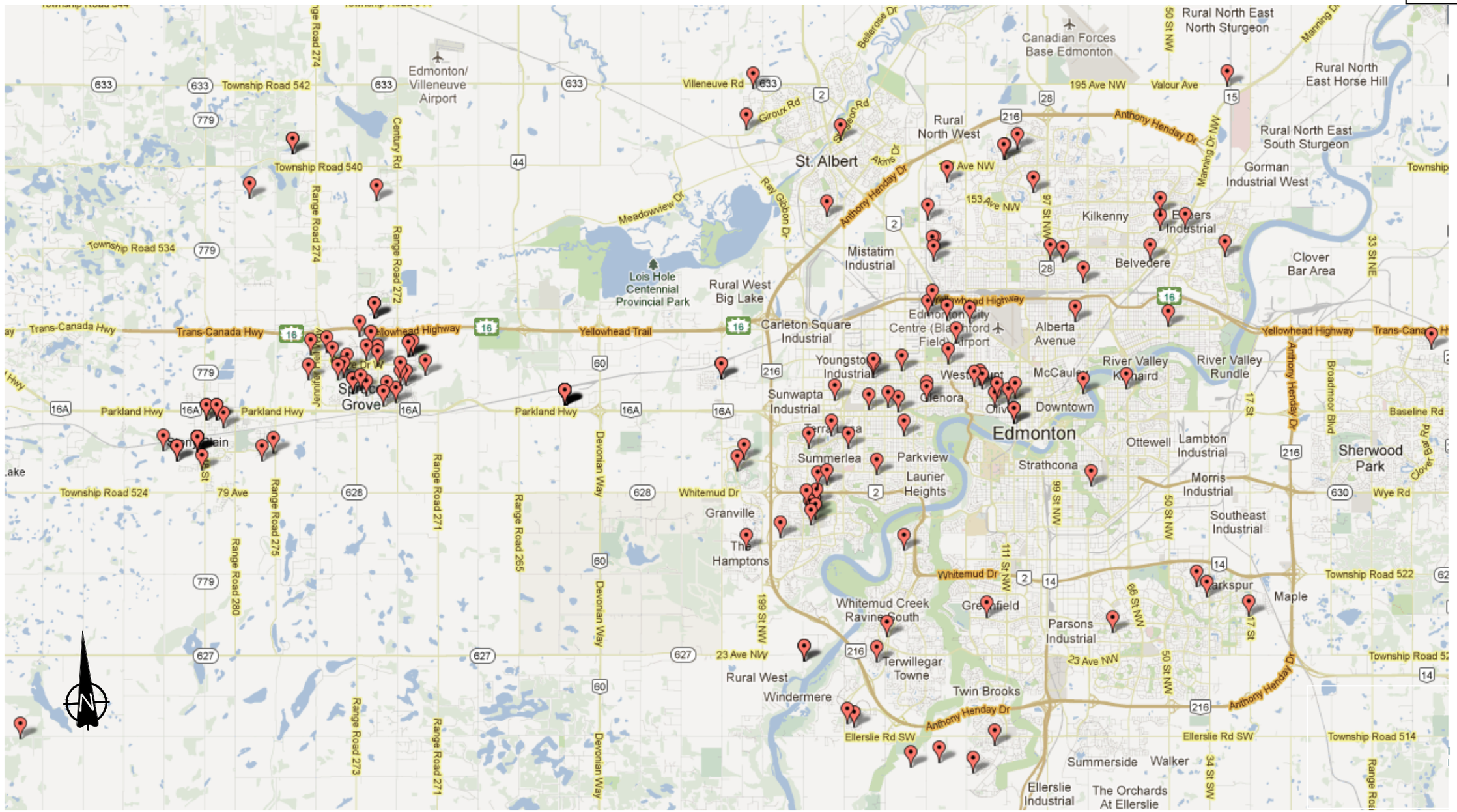
19. What is the postal code of your current residence? (Responses = 179)

See Exhibit 2.1.

20. What is the postal code of your current residence if you said yes you would use transit if it was available to Acheson. (Responses = 63)

See Exhibit 2.2.

EXHIBIT 2.1



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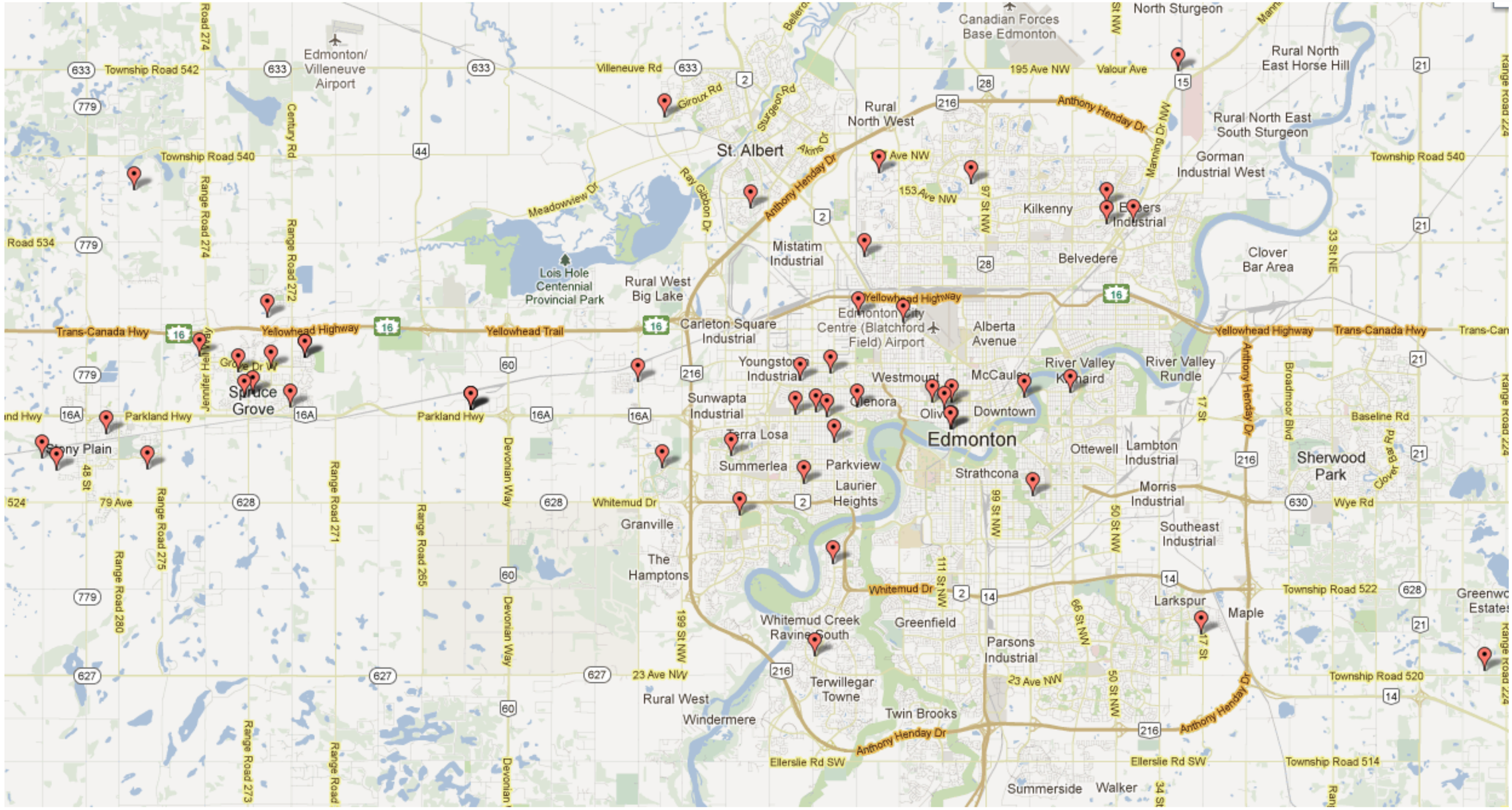
Survey Results - What is you postal code?
(Response plotted)

EXHIBIT 2.2



PARKLAND COUNTY
ACHESON INDUSTRIAL PARK
TRANSITY FEASIBILITY STUDY

Survey Results - Would you use transit if available?
(Crosstab results plotted)

3.0 Transit Service Considerations and Analysis

Three options have been identified to provide new transportation options for employees working in the Acheson Industrial Park. The three options include conventional transit service, buspools, and vanpools. Each option will provide at a minimum peak period transportation to bring works to Acheson from residential areas in the region. The buspool and vanpool options may be viable for employees who have shift time that are outside the normal peak periods.

3.1 Conventional Transit Challenges

Acheson poses several barriers to providing an effective internal conventional transit network. These include:

- The lack of pedestrian infrastructure, including sidewalks;
- The road network is incomplete and missing key links which means significant delays due to backtracking would be required;
- Many of the business are set back from the street without pedestrian access; and
- Major blocks of undeveloped area between pockets of employment, resulting in extended travel time to reach all areas of development
- Many employees work in industries that require them to use their car or truck during day

The conventional transit option also depends on the use of employer provided shuttles to transport workers from the Acheson transit hub to the job sites. The buspool and vanpool options were chosen to mitigate as much as possible the challenges that exist in trying to serve Acheson with conventional transit.

3.1.1 Transit Hub and Shuttle Service

Due to the lack of sidewalks in Acheson it is necessary to assume that a transit service will be to the door of businesses; this increases passenger safety by encouraging passengers to use the bus instead of compelling them to walk along industrial roads. Some transit services, such as drop-in services from existing commuter routes, can offer service to a transit hub or hubs. Acheson passengers would use the hub while passengers continuing onto further destinations would stay on the commuter bus. Therefore, for drop-in services a transit hub needs to be constructed to allow transfer to a local pick up and drop off shuttle for service to the business doors.

The Acheson shuttle could be operated as a public transit service or delegated to the business owners as a group or individually. The service would need to connect the proposed hub location(s) and the door of each business generating passengers.

3.2 Guaranteed Ride Home Program

Since Acheson is relatively isolated, and the services being provided would be limited to normal shift starting and ending times, each option includes a guaranteed ride home program. In jurisdictions with regional transportation agencies guaranteed ride home programs are usually provided regionally. Acheson would be the first area in the region to have this type of program and it would need to be administered by either Parkland County or the Acheson Business Association. A guaranteed ride home program provides staff riding buses or shared ride vehicles with the assurance that they can get home at anytime during the day if an emergency exists.

A typical guaranteed ride home program offers a maximum of 2 emergency trips home per employee per year. In some jurisdictions the responsible agency will arrange a taxi or car rental, while other agencies leave the responsibility for arranging the trip with the passenger and provide reimbursement. The cost per trip is capped to reduce the exposure. In 2006 the Federal Transit Administration (FTA) in the United States reviewed the characteristics, utilization and cost of Guaranteed Ride Home programs and found that on average the programs were used by less than 5 per cent of commuters.

The financial model for each transportation model has included an allowance for a guaranteed ride home program. This allowance is $75 per use for transportation plus an overhead and administrative cost of $50 per occurrence. A taxi ride from Acheson to Jasper Avenue and 124 Street would cost about $43 based on Edmonton taxi rates. The $75 per trip fee should be sufficient to cover the full cost of most uses of the service. Each financial model has also assumed a 15 percent participation rate. This is double the rate observed by the FTA, but also reflects the finding of the FTA that higher rates were observed in the early years of most programs. The total cost of the program is so small that it has little impact on the overall budget for new transportation options to Acheson.

A guaranteed ride home program is an important element of any public transportation program serving an isolated area. The program could eventually be transferred to a new regional transportation agency created in Edmonton.

3.3 The Options

These options are presumed and analysed in separate sections:

- Conventional Transit Service
- Buspool
- Vanpool

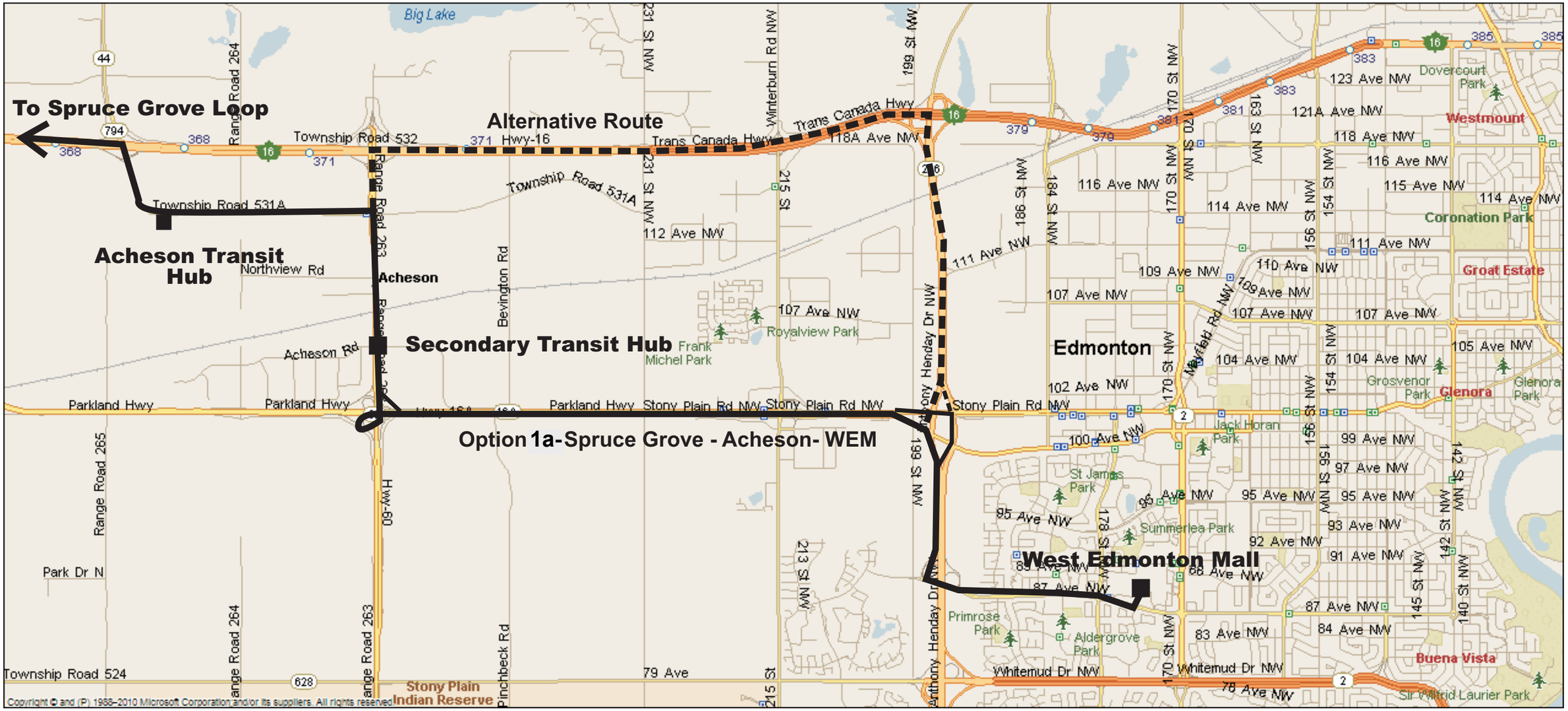
3.3.1 Conventional Transit Service

In this option Parkland County would operate a conventional transit service to Acheson Industrial Estates. Three alternatives have been examined:

- Spruce Grove – Acheson – West Edmonton Mall (Option 1A – See Exhibit 3.1)
- Spruce Grove – Acheson – Jasper Place (Option 1B – See Exhibit 3.2)
- Westmount – Jasper Place – Acheson (Option 1C – See Exhibit 3.3)

All of these routes would bring passengers to a new transit hub within Acheson. At the transit hub they would have to transfer to private transportation provided by their employers in order to reach the actual jobsite. Exhibit 3.4 shows examples of the types of buses that could be used to provide the service by private contractors.

EXHIBIT 3.1



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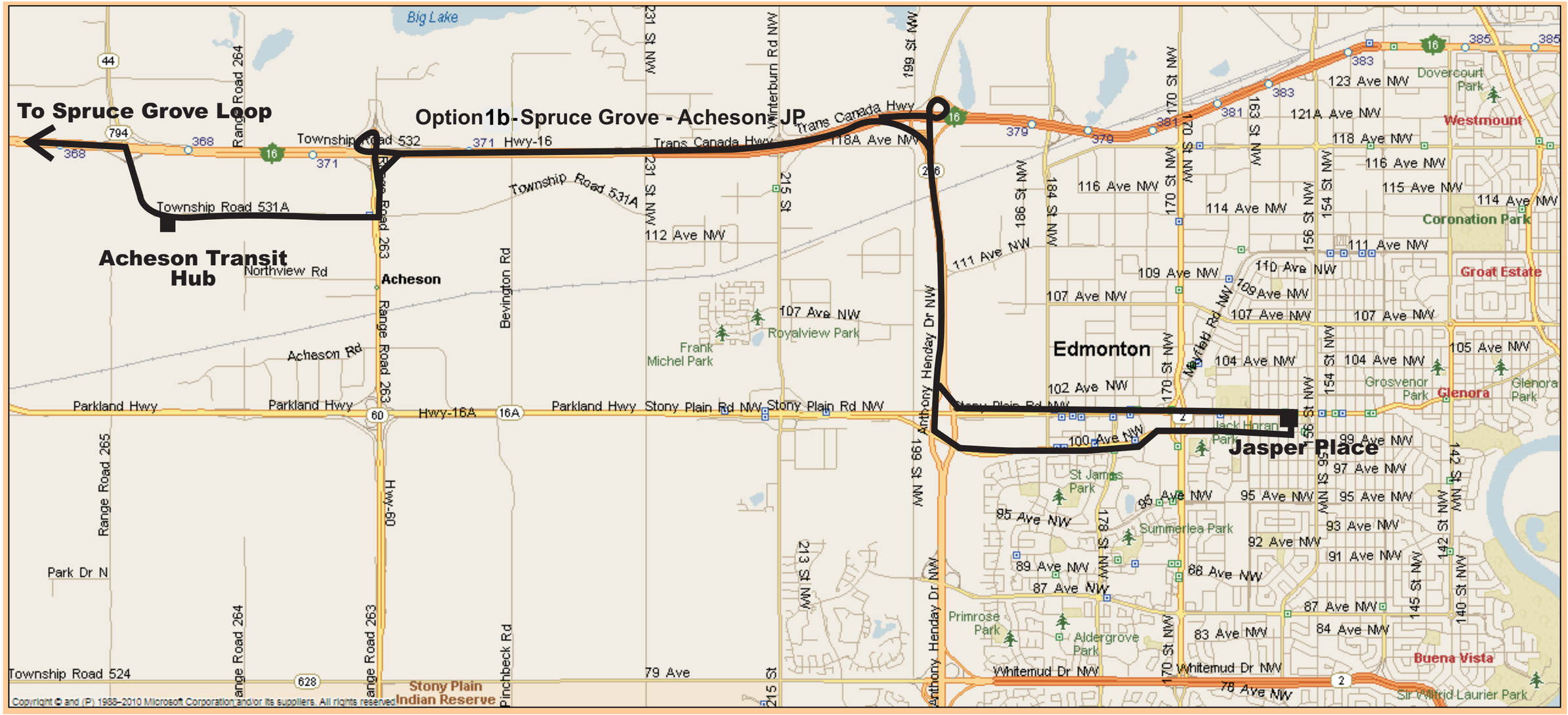
Conventional Transit Route Options
OPTION 1a

EXHIBIT 3.2



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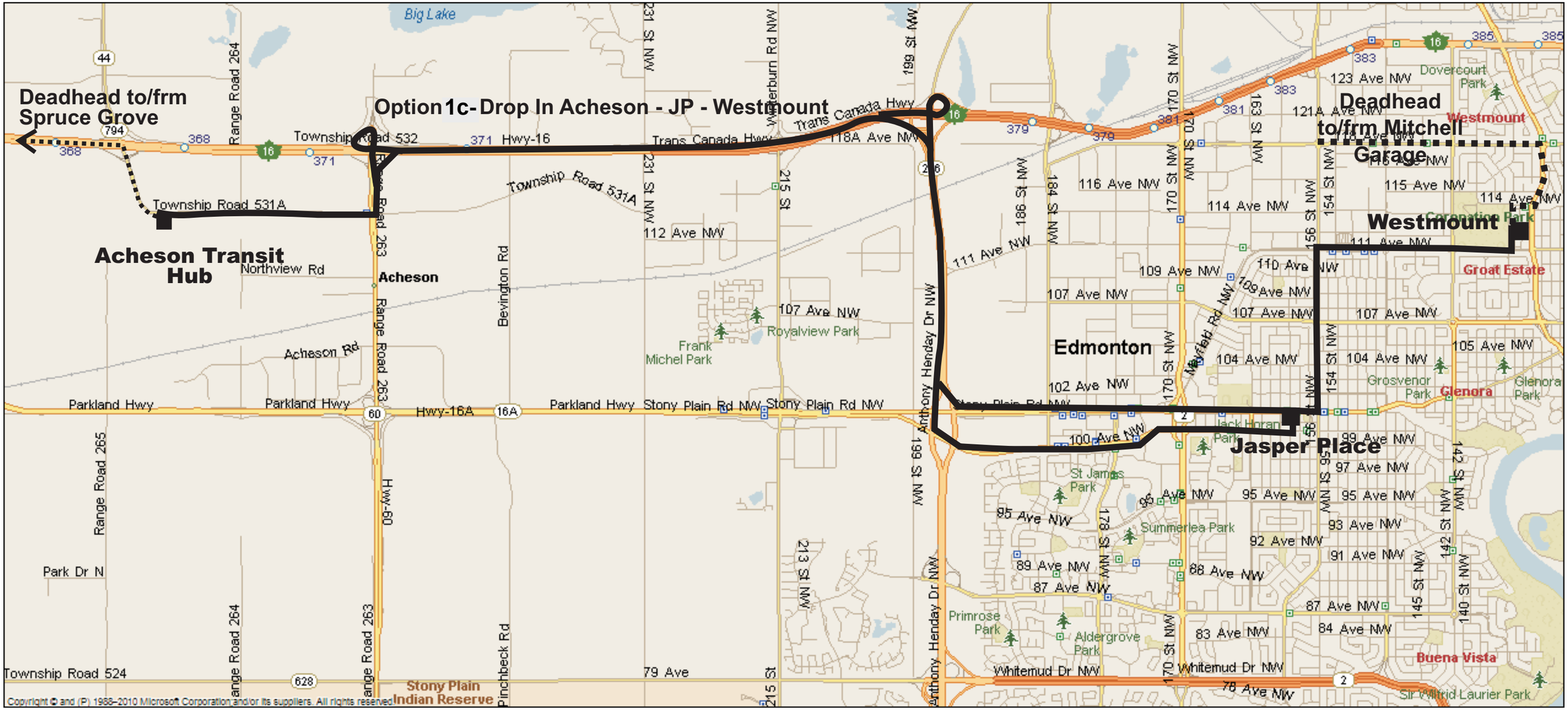
Conventional Transit Route Options
OPTION 1b

EXHIBIT 3.3



PARKLAND COUNTY
ACHESON INDUSTRIAL PARK
TRANSITY FEASIBILITY STUDY

Conventional Transit Route Options
OPTION 1c

Exhibit 3.4: Typical Bus Types Available from Private Contractors 1. 57 Seat highway coach; 2. 43 Passenger cutaway bus; 3. School bus type vehicle; 4. Low floor cutaway bus

The first route would operate on the existing transit loop within Spruce Grove (not shown on Exhibit 3.1), and then east to Acheson via Highway 16, exiting at Highway 44, stopping at a new transit hub to be developed by Parkland County on Township Road 531A. Following a stop at the hub the service would operate to West Edmonton Mall Transit Center (WEMTC) where connections are available to ETS and St. Albert Transit. The route would follow the fastest routing to West Edmonton Mall, likely travelling down Highway 60 to 16A and East to Anthony Henday Drive, and south to 87 Ave. If a second hub could be provided at Highway 60 and Acheson Road the bus could be routed to WEM via Highways 60 and 16A. This would improve access for employee shuttles south of the CNR mainland, but the railway crossing could disrupt the schedule and require additional layover to be built into the schedules in order to maintain reliability.

The second alternative would follow the same route from Spruce Grove to the Acheson Transit Hub. From here the bus would return to Highway 16 via the Highway 60 interchange and proceed east to southbound Anthony Henday Drive and then east on 16A to Jasper Place Transit Center (JPTC) where connections are available to Edmonton Transit (ETS) routes. This routing provides less coverage in Acheson than the first alternative if a second hub is provided south of the CNR, but it avoids the level crossing challenge. The selected LRT route in west Edmonton travels from West Edmonton Mall to Jasper Place, to downtown. This ultimately allows Spruce Grove to feed its bus routes to the LRT at Jasper Place in order to provide the shortest ride to downtown Edmonton. Serving Jasper Place is consistent with the City of Spruce Grove's future transit plans.

Initially two trips could be provided in the morning and evening peak on either route. In the morning each trip would originate at either WEMTC or JPTC to provide a connection available from ETS to Acheson as well as serving Spruce Grove to Acheson. The routes would operate in the reverse direction in the afternoon.

The third alternative is for a drop in service on the existing Spruce Grove to Edmonton route operated for the City of Spruce Grove by ETS. This route would transport workers between Edmonton and Acheson, but not serve the Spruce Grove to Acheson market. This would serve Acheson using buses that are basically deadheading to or from the Mitchell Garage in west Edmonton to or from Spruce Grove. This would see at least two trips from Mitchell Garage in the morning circulate via Westmount and Jasper Place Transit Centers prior to heading east on 16A, north on Anthony Henday and then east on 16 to Acheson. After stopping at the Acheson Transit Hub the buses would continue to

Spruce Grove where they would join their regular route. The route would reverse in the afternoon. Each trip would add about 30 minutes to the existing trip between Mitchell Garage and Spruce Grove. This is the only marginal cost that would be incurred by the service. It would be an economical way to serve the Edmonton-Acheson demand, however it would not serve any traffic between Spruce Grove and Acheson or Spruce Grove and west Edmonton.

Buses currently leave the ETS Mitchell garage in the morning at 5:16, 5:36, 5:56; 6:16, 6:31. 6:46, and 7:06. The deadhead to Spruce Grove takes 19 minutes. The proposed routing would add about 25 minutes. The 6:46 and 7:06 would need to leave Mitchell about 20 minutes earlier and arrive at Acheson at about 6:40 and 7:00. With time for local shuttles this would meet 7:00 and 7:30 shift times. In the afternoon the buses leaving Spruce Grove to deadhead back to Mitchell would arrive at Acheson about 4:30 and 4:50. These would provide time for 9 hour shifts, with an hour for lunch.

The route concept of a drop-in service in the peak morning direction between Spruce Grove and Edmonton, or in the afternoon between Edmonton and Spruce Grove is not viable. If there are very few passengers from Spruce Grove to Acheson the delay of about six to seven minutes would inconvenience many through passengers on the service. If the service to Acheson was very popular it would be very inefficient as every passenger who alighted in Acheson would be leaving an empty seat for the trip into Edmonton. On the outbound trip there may not be room for Acheson passengers to board which could lead to people being stranded. It would be desirable for Acheson passengers to pay less than a passenger travelling all the way between Spruce Grove and Edmonton, however since the seat is not available to any other boarding passengers after Acheson it is likely same fare would have to be charged to avoid penalizing Spruce Grove Transit.

All of the conventional transit alternatives use a proposed transit hub in the northwest corner of Acheson. The WEM alternatives also proposes that a second hub be developed south of the CNR mainline. In order to get employees from these transit hubs to the individual job sites will require shuttle vehicles. These shuttles could be operated by individual employers, groups of employers, or the local business association. The vehicles could be actual shuttle buses, vans or even sedans or contracted taxis. The use of smaller vehicles means that service would be provided right up to the front door of job sites, mitigating for the lack of pedestrian amenities.

The use of small vehicles also means that each trip would serve a single or limited number of employers and the time on the vehicle would be kept to a minimum. If vans or sedans were utilized the company might designate an existing worker to pick up the employees, using an existing or dedicated vehicle the company may already have on site. The cost of the small vehicles providing the last kilometer service has not been calculated as this would be an employer expense and the actual cost could vary substantially by employer depending on the approach taken.

3.3.1.1 Analysis of Conventional Transit Service

In order to estimate ridership for these conventional transit options data was obtained from an employee survey, as well as ETS and the City of Spruce Grove. The modal split to suburban industrial areas in Edmonton is about 5%. Transit ridership in close suburban areas like St. Albert and Sherwood Park is about a third of the ridership found in Edmonton. In more distant areas like Spruce Grove and Fort Saskatchewan it is even less. Given the particularly challenging environment found in Acheson and the limited transit route coverage it is therefore concluded that a reasonable projection for ridership would be about a 0.5% modal share. The employee survey conducted for this project

found that about 12% of respondents live in Spruce Grove. If this is extrapolated to the entire pool of Acheson employees it would means that about 660 employees live in Spruce Grove. This works out to about 33 persons who would ride transit between Spruce Grove and Acheson each day.

Within Edmonton about 275 employees are estimated to be near ETS routes feeding West Edmonton Mall, about 350 on routes feeding Jasper Place and 250 on routes feeding Westmount. Assuming the 0.5% modal share there would about 14 passengers from WEM, 18 from Jasper Place and about 12 from Westmount. This suggests that alternative 3, serving Jasper Place and Westmount would generate more ridership than a route only serving WEM or Jasper Place alone. A route to West Edmonton Mall would provide access to jobs and provide a connection to the South LRT at the South Campus Station for passengers destined to the University. However the morning trips would be very early and may not have wide appeal. Spruce Grove attempted to operate a service to West Edmonton Mall when it first began providing transit service. The route proved to have very low ridership and was discontinued.

However this service operated before U-Pass was created. Under the current U-Pass system it would be possible for Spruce Grove students to ride free on ETS from West Edmonton Mall to the University of Alberta if they were willing to arrive on campus before 8:00 am. If a pass price for this route is set lower than the regular Spruce Grove pass it could prove a popular alternative for travel to the U of A for students needing to travel early in the morning. With U-Pass the transfer to ETS for the continuation to the campus would be free, providing a cost incentive to shift away from the direct service. The service could also be time competitive, however to reach the main campus a double transfer would be required. The service to West Edmonton would also serve Misercordia Hospital, but due to the limited service and the shift times at the hospital it is unlikely to generate significant ridership.

The vehicles to operate the route could be sourced from ETS or a private contractor. Exhibit 3.2 provides an estimate of the operating cost based on private contractors for alternatives 1 and 2, and ETS for route alternative 3. The ETS option is assumed to use a standard low floor urban diesel bus similar to the vehicles now used to serve Spruce Grove. The bus is equipped with a wheel chair ramp and is accessible. Two choices are provided for the private operation including the use of either a 30 passenger cutaway or school bus type, or a 57 passenger highway coach. The school bus and highway coach are only available as high floor units, but could be outfitted with a wheelchair lift. The cutaway could also be sourced as a high floor with lift or without a wheelchair lift or as a low floor vehicle. There are no regulations or requirements for private bus operators to provide wheelchair accessible vehicles, however provincial subsidies are only available for accessible vehicles. A pilot project could be implemented with existing or readily available vehicles that are not accessible. If a decision is made to implement a permanent service operated by a private operator dedicated vehicle with lifts could be acquired. The buses would need to be wheelchair accessible if a Green Trip grant was used for their purchase.

3.3.1.2 Analysis and Financial Model for Shuttle

Options 1 and 2 provide a fixed route bus service from Spruce Grove to either Jasper Place or West Edmonton Mall. A public transit shuttle for the last kilometer between the transfer point and jobsites will be costly. It will require about 13 hours of service per day. Based on a cost of $60 per hour for a 20-24 passenger cutaway style minibus-bus the annual cost would be approximately $120,000, and assuming a free transfer from the fixed route service there would be no offsetting revenue.

This cost estimate is based on meeting all four trips arriving in the morning from Spruce Grove and Edmonton, and connecting with the four departing trips in the afternoon. The total round trip time on the Edmonton – Acheson – Spruce Grove service will be 90 minutes, which means there will be 45 minutes between buses in Acheson. A possible schedule would have a bus arriving at Acheson in the morning from Edmonton at 6:20 a.m. and 7:50 am; and from Spruce Grove at 7:05 a.m. and 8:35 a.m. This provides about 45 minutes for buses to circulate from the transfer point in Acheson to each of the morning drop offs and return to the transfer point for the next arrival. The pattern would be reversed in the afternoon. Given the relatively large area of Acheson and the discontinuous street pattern two local buses will be required in order to serve all of the businesses with potential riders in less than 45 minutes. One bus would serve zones 1 and 2, and the second bus would serve zones 3 and 4. Each of the two mini-buses would be required for 3 hours in the morning and afternoon (6 hours total) and each bus would have 4 deadhead trips, which are estimated at 15 minutes each for a total of 8 hours per day. The 15 minute deadhead trip is based on garaging of the vehicles in Spruce Grove. If the buses were based in Edmonton the deadhead costs could be higher and if parked in Acheson the costs might be lower.

Assuming every passenger riding the fixed route service transferred to the local shuttle the cost for the connection for Option 1 (West Edmonton Mall) would be $3.87 daily per passenger, per round trip. For Option 2, Jasper Place, the daily cost would be $4.29 per passenger, per round trip.

In the third option deadheading buses from the ETS service to Spruce Grove are utilized. Two trips arrive in Acheson in the morning, and two trips depart in the afternoon. The buses would be 40 minutes apart, which still provides sufficient time for the local Acheson buses to loop through the industrial area and return to for the second trip. This service would require about 5.3 hours of revenue service daily. Adding deadhead would increase the total to about 7.3 hours. The cost for this service is estimated to be $110,000 per year without any offsetting fare revenue. This cost is also based on $60 per hour for 20-24 passenger cutaway style mini-buses. The cost per passenger, per day would be $7.30 per day.

Table 3.1 summarizes the financial impacts of adding a public transit shuttle for the connection between the Acheson Transfer point and job sites. The table shows two assumptions on the level of use of the local shuttle. The first option assumes that every rider on the fixed route portion also uses the local shuttle, while the second option assumes that only 80 percent of riders make the transfer to the shuttle. The remaining 20 percent are assumed to utilize connecting service provided by their employer and do not ride the public shuttle. The table assumes that a free transfer is provided from the fixed route service to the Acheson shuttle. The total subsidy per Acheson rider ranges from a low of $5.34 to a high of $9.76 per rider, per day, or $1,327 to $2,435 per rider, annually. This subsidy per rider could be reduced if a higher fare was charged, however the proposed monthly pass price of $100 is comparable with existing regional rates. Higher pass prices would be expected to result in lower ridership.

Table 3.1 Public Transit Acheson Shuttle Financial Model

Acheson Shuttle Financial Model	Option 1 WEM Connection	Option 2 JP Connection	Option 3 JP Westmount Connection	Option 1 WEM Connection	Option 2 JP Connection	Option 3 JP Westmount Connection
Description	100%	100%	100%	80%	80%	80%
Seats per Bus	24	24	24	24	24	24
Estimated Cost Per Hour	$60.00	$60.00	$60.00	$60.00	$60.00	$60.00
Hours per day	8.0	8.0	7.3	8.0	8.0	7.3
Workdays per year	250	250	250	250	250	250
Annual Transit Service Cost	$120,000	$120,000	$109,500	$120,000	$120,000	$109,500
Total Load One Way	62	56	30	50	45	24
Total Seats One Way	120	228	76	192	192	96
Total trips per day	124	112	60	99	90	48
Monthly Passengers	2,583	2,333	1,250	2,066	1,866	1,000
Annual Passengers	31,000	28,000	15,000	24,800	22,400	12,000
Estimated Adult Monthly Pass Price	100	100	100	100	100	100
Average Revenue per Trip	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Revenue	$0	$0	$0	$0	$0	$0
Cost Recovery	0%	0%	0%	0%	0%	0%
Subsidy required	$120,000	$120,000	$109,500	$120,000	$120,000	$109,500
Subsidy per Pax Shuttle Only	$3.87	$4.29	$7.30	$4.84	$5.36	$9.13
Subsidy per Pax Fixed Route	$1.46	$3.50	$0.64	$1.46	$3.50	$0.64
Combined Subsidy per pax	$5.34	$7.79	$7.94	$6.30	$8.86	$9.76

The Canadian Nation Railway level crossing on Highway 60 creates problems due to the potential for significant crossing delays. A local shuttle bus travelling from the transfer point in Acheson Zone 1 to job sites in Zones 3 or 4 could experience a significant delay if a train is in the crossing. This problem would occur in both the morning and afternoon periods, however afternoon delays would be more troublesome as the fixed route service would have to be held to allow connections to be made. That would result in higher costs and delays for subsequent trips. Delays in the morning would result in passengers having to wait for the shuttle at the connecting point, and possibly being late for work.

Overall a more economical approach for the County would place responsibility for the local connecting service entirely on the business association or individual employers. However with multiple individual services it would be more difficult to respond effectively to service disruptions due to crossing delays. In addition not all employers may be willing to provide the connection, and ridership on the fixed route service could be negatively impacted.

3.3.1.3 Financial Model

The model in Table 3.2 assumes a monthly pass price of $100, and following the practice of Spruce Grove there are no discounts for seniors or students. Figure 4 also includes an estimate of the ridership for each of the three route options. These projections are based on the modal share experience of industrial areas in Edmonton, employment data from the Acheson Business Association, and current and past West Edmonton Mall and University of Alberta student ridership from Spruce Grove. The service has been priced based on two return trips in the morning and two in the afternoon. For transparency the costs associated with the shuttle service are identified separately and then included in overall totals.

Table 3.2 Conventional Transit Financial Model

Description	Option 1A	Option 1B	Option 1C
	WEM Private	JP Private	JP Westmount ETS
Seats per Bus	30	57	38
Estimated Cost Per Hour	$65.00	$90.00	$97.00
Hours per day	7.3	7.3	2
Workdays per year	250	250	250
Annual Transit Service Cost	$118,625	$164,250	$48,500
Estimated Cost for Guaranteed Ride	$1,163	$1,050	$563
Total Annual Cost	$119,788	$165,300	$49,063
Total Annual Cost with Shuttle	$239,788	$285,300	$158,563
Estimated Ridership			
Spruce - Acheson	33	33	0
Acheson - Edmonton	14	18	30
Spruce - Edmonton	15	5	0
Total Load One Way	62	56	30
Total Seats One Way	120	228	76
% Capacity	52%	25%	39%
Total trips per day	124	112	60
Monthly Passengers	2,583	2,333	1,250
Annual Passengers	31,000	28,000	15,000
Estimated Adult Monthly Pass Price	100	100	100
Average Revenue per Trip	$2.40	$2.40	$2.40
Annual Revenue	$74,400	$67,200	$36,000
Cost Recovery	62%	41%	74%
Subsidy required	$45,388	$98,100	$13,063
Cost Recovery with Shuttle	24%	19%	23%
Subsidy required with Shuttle	$165,388	$218,100	$122,563
Hub Construction	$250,000	$250,000	$250,000

The financial model shows that a significant subsidy will be required to be covered by Parkland County for Options 1 and 2. Employer contributions will likely come through the subsidization of the employee transit passes. Option 3 is more cost effective because the shuttle has a smaller range of hours to operate, yet still requires a significant subsidy due to the shuttle service. All three options include a contingency of $250,000 to construct a transit hub to accommodate transfers from the conventional bus to the Acheson Shuttle.

Option 1C is the lowest cost, and lowest risk public transit option. It serves the greatest number of potential employees and does not require any additional buses from ETS. A pilot system could be established quickly, and run for at least 12 months to test the market. The service would not displace any existing Spruce Grove passengers, and would not have a schedule or reliability impact on the Spruce Grove route.

One of the limitations of this option is that it depends on the availability (timing and number) of buses deadheading between the ETS Mitchell Garage and Spruce Grove. Spruce Grove uses seven ETS buses, but only 2 or at most 3 have garage in and garage out times that are compatible with an eight hour workday in Acheson. In addition viability of the service could be affected if Spruce Grove were to change contractors or build their own garage, however no such changes are currently programmed.

3.3.2 Buspool

A buspool is another name for a subscription bus service, employee shuttle or a long term charter. A buspool exists when an employer, group of employers or a transit agency contracts for the provision of a dedicated bus service to transport the same group of employees to and from work every day. The service may be offered to employees for free or some predetermined share of the cost. Generally employees are required to pay some share based on a monthly pass. This is required in order to ensure that the employer or buspool organizer has a committed rider group and is not faced with fluctuating ridership and an uncertain revenue stream or empty buses.

The service typically uses large vehicles seating anywhere from 30 to 57 passengers as shown in the examples in Exhibit 3.5. The use of larger vehicles will likely not be possible in Acheson as these units would unable to negotiate the driveway, entrances or turn-arounds in order to provide on-site service. Even with vehicles seating 30 passengers it would take too long to pick up and drop off each employee at their own residence particularly when multiple jobsites are also being served. The service must use regular stop locations, transit centers, park and ride sites or hide and ride to pick up employees in morning and drop off in the evening. Employee riders are responsible for getting to the buspool stops by their own means. This could include walking, cycling, getting a ride or being dropped off. Hide and ride is the name applied when riders park in neighbourhoods and board buses at nearby stops. Buspools will bring each employee directly to their place of work.

Exhibit 3.5: Left to Right, Buspools operated for employees by Microsoft and FedEx. Buspool organized by Smart Commute for a suburban business park in Toronto.

3.3.2.1 Analysis of Buspool

A buspool route can evolve over time based on where the most number of potential riders may be located. However the route must maintain service to existing riders and seek to minimize travel time which does limit the amount of flexibility. Travel time can become a major issue if many employer locations must be served, particularly since the road pattern in Acheson is not very continuous. A buspool that circulates around Spruce Grove, and then must serve work locations in several quadrants of Acheson could take 60 minutes or more from the time of first pick up in Spruce Grove to the last drop off in Acheson. The survey undertaken for this study shows that most potential users would expect the travel time to be less than 60 minutes.

3.3.2.2 Financial Model for Buspool

The costs for a buspool program can be closely controlled since it can be implemented only when a suitable number of workers sign up for the program. The costs increase as more buses are added, but the costs to the sponsoring employer or agency are known in advance. Based on the survey data Stony Plain and Spruce Grove appear to have enough employees to make a buspool viable. Extrapolating from the survey about 850 Acheson employees live in the two communities. A single bus pool would require about 30 registered participants. Table 3.2 shows the cost implications for two different sizes of buses operating a bus pool service from Spruce Grove and Stony Plain to Acheson. A buspool may also be viable from west and central Edmonton. The Edmonton route should be able to support a larger bus. Based on the results of the survey about 800 Acheson works live south of Yellowhead and west of 116 Street.

Table 3.3: Buspool Financial Model

Description	Option 2A	Option 2B	Option 2C
	Spruce Grove & Stony Plain	West Edmonton	North or South Edmonton
Seats per Bus	24	34	57
Estimated Cost Per Hour	$60.00	$65.00	$90.00
Trips per Peak Period	2	2	1
Hours per day	4.5	3.5	5.5
Workdays per year	250	250	250
Annual Cost	$67,500	$56,875	$123,750
Estimated Cost for Guaranteed Ride	$619	$ 338	$900
Total Annual Cost	$68,119	$57,213	$124,650
Total Load One Way	33	18	48
Total Seats One Way	48	68	57
% Capacity	69%	26%	84%

Description	Option 2A	Option 2B	Option 2C
	Spruce Grove & Stony Plain	West Edmonton	North or South Edmonton
Total Passenger Trips per Day	66	36	96
Monthly Passengers	1,375	750	2,000
Annual Passengers	16,500	9,000	24,000
Estimated Adult Monthly Pass Price	100	100	100
Average Revenue per Trip	$2.40	$2.40	$2.40
Annual Revenue	$39,600	$21,600	$57,600
Cost Recovery	58%	38%	47%
Subsidy Required	$28,519	$35,613	$67,050

A buspool system would also require a guaranteed ride home program as described in the section on conventional transit. Figure 5 provides a financial model for three potential buspool routes using different vehicle sizes. The ridership is based on the same assumptions as the conventional transit model. If an insufficient numbers of workers sign up for a buspool program, it can be cancelled prior to beginning operation. The cost exposure to the employers would be limited to initial set up, administration and marketing costs.

The financial model provides three options. In the first option a small bus makes two trips in each peak period between Stony Plain/Spruce Grove and Acheson. In the second option a single medium size bus makes one trip in each peak period between west Edmonton and Acheson, and in the last option a large bus makes two trips from either north or central Edmonton. The results show that the cost recovery for the buspool to Spruce Grove is higher than for the services to Edmonton. This is at least partly due to the longer travel times and the inability of the service from the north or central area to make two trips. The subsidy required is less than the conventional transit model except for the drop in service. All of the bus pool options assume that the service will be operated by a privately owned bus company.

3.3.3 Van Pools

Van Pool programs provide groups of commuters with a van or mini-van which one member of the group volunteers to drives. In return for volunteering the driver receives reduced cost or free participation and is permitted to drive the vehicle for personal trips on the weekend or evenings. The cost to participants can and does vary with the number of participants. Typically at least 6 participants are required for a seven or eight passenger mini-van, and 10 passengers in a 12 passenger van, however fewer passengers can be viable if the participants or sponsor is willing to pay a high percentage of the costs. The actual cost can be a flat rate per month or a charge based on the actual mileage. The Canadian experience has shown that vanpools can operate economically – even without a subsidy - although some type of assistance is usually offered. Vanpools tend to be very popular with their users. There are a number of factors that contribute to this including:

- Riding the with the same individuals every day rather than with strangers
- Guaranteed seat every day – no need to stand
- Door to door service, no walking and no waiting outside in all types of weather
- Reasonable costs
- Travel times geared to personal schedule
- Preferred parking and traffic priority

Employers often provide extra incentives such as preferred parking and in some jurisdictions vanpools receive traffic priority or are allowed to share transit only priority features. Vanpools usually use mini-vans which can carry up to 8 passengers (including the driver) and do not require any special license to drive. In some jurisdictions full size 12 or 15 passenger vans require a commercial driver's license which can make it more difficult to find volunteer drivers. Vanpools are eligible for a federal tax credit which increases the financial incentive to rideshare. A vanpool program would also require a guaranteed ride home program as discussed earlier in this report.

In the U.S. vanpools are subsidized by the Federal government, however in Canada successful programs have been developed in British Columbia, Ontario and Nova Scotia using subsidies from foundations, regional governments, transit agencies, businesses or on a profit making basis. Exhibit 3.6 shows examples of actual vanpools operating in elsewhere in Canada.

Exhibit 3.6: 1- Employer vanpool in Nova Scotia, 2 – Private vanpool in Nova Scotia, 3 – Natural Gas vanpool in Ontario, 4 – Jack Bell Foundation vanpool in Vancouver

3.3.3.1 Vanpool Experience Canada

Nova Scotia

In Nova Scotia the legislation allows for profit vanpools to be operated. At least one company is in the business of organizing and providing such vanpools. Green Rider Ltd. is a commuter van service that has been in business since 1981. The company organizes groups of commuters who live along a common route in rural Nova Scotia and have similar work or school hours within the Halifax Regional Municipality. The company often purchases used minivans to keep down the cost of operation. In addition to for profit vanpools Nova Scotia also has employer provided vanpools. Convergys operates several contract call centers across the province and provides vanpools to help bring employees to jobsites from areas without public transit.

Ontario

In the Metropolitan Toronto area the regional transportation planning agency, Metrolinx, sponsors an agency that is dedicated to promoting alternative commute options. The agency, known as Smart Commute, is a multijurisdictional workplace based transportation demand management program serving Greater Toronto and Hamilton. One of its programs is to promote and develop employer based vanpools and to provide an emergency ride home program that is available for participants in various programs

including carpools and vanpools. In Metro they have partnered with several major employers to promote and develop vanpools. One of the participating employers, Enbridge, has taken the environmental benefits of the program a step further by promoting the use of natural gas powered vehicles. The program in Toronto was begun following a major feasibility study conducted in 2007.

British Columbia

The Jack Bell Foundation in Vancouver organizes and coordinates vanpools in Greater Vancouver and Greater Victoria. They are the largest vanpool organization in the county, with more than 100 vans on the road. The program was begun in 1992 and now receives financial support from BC Transit and TransLink in order to cover its administration costs. Riders cover the full cost of the actual vanpools. This arrangement is necessary as the legislation in BC does not allow vanpoolers to pay any more than the actual cost of the ride. In fact Jack Bell participants pay per kilometer based on their exact commute distance. In most other jurisdictions vanpools pay a flat monthly charge based on the cost of operating the vehicle. More than 90% of the participants in the Jack Bell program are choice riders who have a car at home they could have used to make their commute. On average the commuters in Vancouver travel longer distances and many of the routes operate in areas with no, or poor transit service. Jack Bell prefers to purchase their minivans through commercial lenders rather than leasing.

Vanpools can be coordinated and managed by employers or employer associations; third party government agencies or third party private providers. There do not seem to be any active private companies offering vanpool services outside of Nova Scotia at the present time. Enterprise Car Rental which has offices across the capital region, including Spruce Grove, is one of the largest vanpool operators in the United States transporting over 25,000 vanpoolers every day.

3.3.3.2 Financial Model of Vanpool

Vanpooling could have widespread application in the Capital region if it proves successful in Acheson. Suburban industrial areas like Nisku, Strathcona County and the Alberta Heartland share many of the characteristics of Acheson. A vanpool program is completely scalable. This means that a single vanpool serving 7 passengers is just as feasible as a program with 20 vehicles. The main operating costs of the vans will be the same regardless of the number of vehicles. Administration and overhead will decrease per van, but total costs will increase as the size of the program grows.

Table 3.3 provides an estimate of the financial prospects for vanpools serving Acheson from Spruce Grove, as well as west, central and north Edmonton. The results show that vanpools offer a cost effective solution for commuter travel to Acheson. A vanpool could operate without an operating or capital subsidy. Additional research will be required to determine if a surcharge could be placed on the passengers to cover any of the administrative costs. Some subsidy could be provided by the Acheson Business Association, Parkland County or employers in Acheson to cover these administration costs and the initial startup costs. It may also be desirable to contract with a third party agency to manage the fleet and provide support for the operation.

Table 3.4: Vanpool Financial Model

Description	No Subsidy for Van Purchase			50% Subsidy for Van Purchase			90% Subsidy for Van Purchase		
	Spruce Grove	Edmonton West	Edmonton North/South	Spruce Grove	Edmonton West	Edmonton North/South	Spruce Grove	Edmont on West	Edmonton North/South
Driver Costs/Revenues									
Dodge Caravan	$22,000	$22,000	$22,000	$11,500	$11,500	$11,500	$2,200	$2,200	$2,200
Interest Rate	5%	5%	5%	5%	5%	5%	5%	5%	5%
Down Payment	0	0	0	0	0	0	0	0	0
Term	60	60	60	60	60	60	60	60	60
Total Van Payment	$415.17	$415.17	$415.17	$217.02	$217.02	$217.02	$41.52	$41.52	$41.52
Cost Per Km (CAA rate for 2011)	$0.1965	$0.1965	$0.1965	$0.1965	$ 0.1965	$0.1965	$0.1965	$0.1965	$0.1965
Annual Insurance	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Annual License/Registration	$120	$120	$120	$120	$120	$120	$120	$120	$120
Km Travelled/Day	50	70	100	50	70	100	50	70	100
Personal Use km per week	20	20	20	20	20	20	20	20	20
Total Km per week	270	370	520	270	370	520	270	370	520
Total Annual Km	13,540	18,540	26,040	13,540	18,540	26,040	13,540	18,540	26,040
Cost/Month/Van	855	937	1,060	657	739	862	482	563	686
Cost/Year Per Van	$10,263	$11,245	$12,719	$7,885	$8,867	$10,341	$5,779	$6,761	$8,235
Revenue per Passenger per month	**$143**	**$157**	**$177**	**$ 110**	**$124**	**$144**	**$81**	**$95**	**$115**
Revenue Per Van per Month (6 Pass)	$858	$942	$1,062	$660	$744	$864	$486	$570	$690
Cost per Passenger/Month (6 pass)	$142.54	$156.18	$176.65	$109.51	$123.16	$143.63	$80.26	$93.91	$114.38
Cost per Passenger/Day	$6.63	$ 7.26	$8.22	$5.09	$ 5.73	$6.68	$3.73	$4.37	$5.32
(Deficit)/Surplus per Pass per month	$2.78	$4.91	$2.09	$2.93	$5.05	$2.24	$4.43	$6.56	$3.74
Cost Recovery	100%	101%	100%	100%	101%	100%	101%	101%	101%
Additional Costs for Program									
Guaranteed Ride Home(GRH)/Van/Year	$131	$131	$131	$131	$131	$131	$ 131	$ 131	$131
Annual Admin/Overhead per vehicle	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Cost/Year/Vanof Subsidy for Overhead/GRH	**$3,131**	**$3,131**	**$3,131**	**$3,131**	**$3,131**	**$3,131**	**$3,131**	**$3,131**	**$3,131**

The model assumes that a minivan can be purchased, for a total price of $22,000 including GST. The least expensive Dodge Caravan is currently list as having a minimum retail price of $20,000. Fleet discounts are frequently available which suggests a price of $22,000 should be sufficiently conservative for an initial budget. Insurance costs are assumed to be about double the normal price allowing for significantly higher coverages and protection. The operating costs have been derived from a 2011 Canadian Automobile Association (CAA) publication which specifically covers Dodge Caravans. The cost per km includes fuel, oil, and repairs but does not include insurance. The vehicles are assumed to be financed at 100% through normal commercial lenders, at an interest rate of 5 percent for sixty months. Two additional options are provided to show what happens to the financial model if the acquisition of the vans is subsidized by the province (Green Trip), Parkland County or an employer. Subsidization of 50 percent and 90 percent are shown. The impact of the subsidy can be seen in the required revenue per passenger which drops by $33 per month with a 50 percent vehicle subsidy and $61 with a 90 percent vehicle subsidy. The actual lifecycle capital cost of minivans is more expensive than transit bus on a per seat basis when considered over the typical 18 year life of a transit vehicle. However, savings that result from having a volunteer driver offset the higher capital costs.

The financial model assumes that passengers pay a flat rate, however it may be more appropriate to calculate each passengers' cost based on the actual distance as is done by the Jack Bell Foundation in British Columbia. An additional cost of $3,000 for overhead and administration is assumed to be covered by Parkland County or the Acheson Business Association. The legislation in British Columbia precludes charging vanpool passengers any more than the exact cost of providing the vehicle. Jack Bell Foundation expenses of about $3,000 per vehicle are covered by outside agencies such as TransLink. There may be some ability to influence the design of legislation in Alberta to allow the recovery of administration costs from the riders. In Nova Scotia the governing legislation actually allows a profit to be realized on vanpool operations.

The experience in many jurisdictions is that vanpools cover distances that are, on average, longer than typical commutes. This is generally consistent with Acheson, which has commuters from all across the region, including distant locations like Millwoods and Clareview. The longer distance commutes support purchasing of the minivans, however shorter commutes from Spruce Grove or even west Edmonton may be feasible with leased vehicles. From Spruce Grove the annual distance driven could be less than 15,000 km annually, and from west Edmonton the total distance will likely be less than 20,000 km. Leasing vehicles may reduce the acquisition costs as this model has not assumed any recapture from the sale of vehicles at the end of their useful life. The recapture would not be a factor until the second generation of vehicles was purchased in about six or seven years. Leasing, on the other hand, would create an immediate reduction in the acquisition costs.

Since a vanpool program is very scalable different levels could be developed based on interest. If there is only limited interest a program could be developed to provide assistance to specific employers (or employees) willing to try vanpools. The investment by Parkland County or the Business Association would be limited to the technical support and marketing materials. If interest is more widespread the program sponsors could initiate a contract with a fleet management company and provide turnkey solutions for employers and employees. The $3,000 cost per vehicle is an estimate based the mature system in British Columbia. Higher costs may be anticipated during the startup phase of the project.

4.0 Conclusions and Recommendations

The conventional transit service option based on drop-in extensions of commuting services requires the operation of a shuttle from a hub. The costs to operate the shuttle and construct the hub effectively negate the option of using conventional transit service. Using the deadheading Spruce Grove busses is the least expensive conventional option (about $123k subsidy and $250k for the transit hub), but it is still well above vanpool and buspool options.

The buspool option is less expensive than conventional transit, as it can use smaller buses to directly access each work site, negating the need for a hub and shuttle transfer system. Option 2A, serving Spruce Grove and Stony Plain, provides the least subsidy while allowing for reasonable ridership and aligns with the stated needs of businesses to be served from Spruce Grove and Stony Plain. There is a risk that ridership may not meet forecasts and this should be managed by requesting employees to pay a share of the service cost. The buspool is a viable option and may be coordinated with the existing Spruce Grove commuter service by using the same bus stops.

The vanpool is the best option in terms of financial performance and minimizing risks, as vans need only be purchased or leased once enough riders are committed to each van.

It is recommended that Parkland County enter into discussions with the Acheson Business Association regarding the creating of an Acheson Vanpool Program. As part of the process Parkland County should discuss with the Acheson Business Association the following elements:

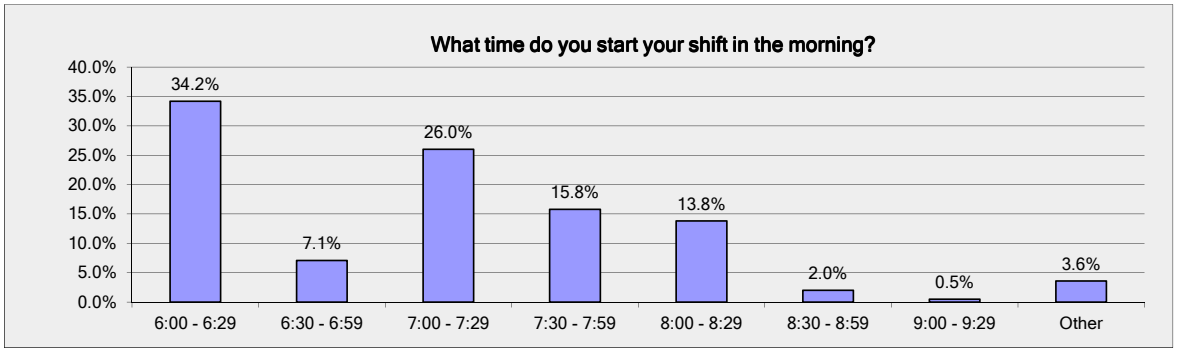
- Jointly funding a detailed feasibility study of a vanpool program and identify any legal constraints or barriers that may exist in Alberta
- Development of basic education/marketing materials to determine the potential interest in vanpools among employers and employees in Acheson
- Extend feelers to potential fleet managers in the Edmonton region to determine interest and costs for managing the program

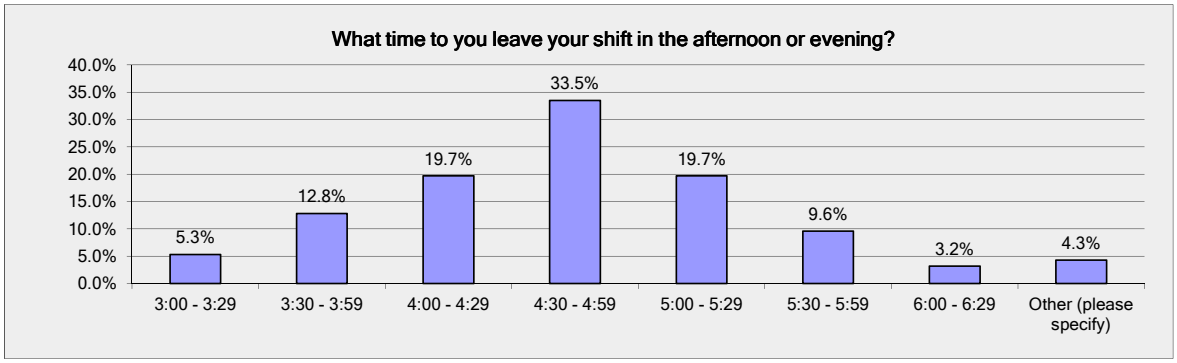
In Vancouver, Toronto and urban regions in the United States vanpool promotion and development is a responsibility of the regional transportation authority or regional transportation planning agency. It is recommended that Parkland County seek Green Trip funding to introduce the concept of vanpooling in the Capital Region (and Alberta) and work with the Capital Region Board to explore creating a broader regional vanpooling initiative.

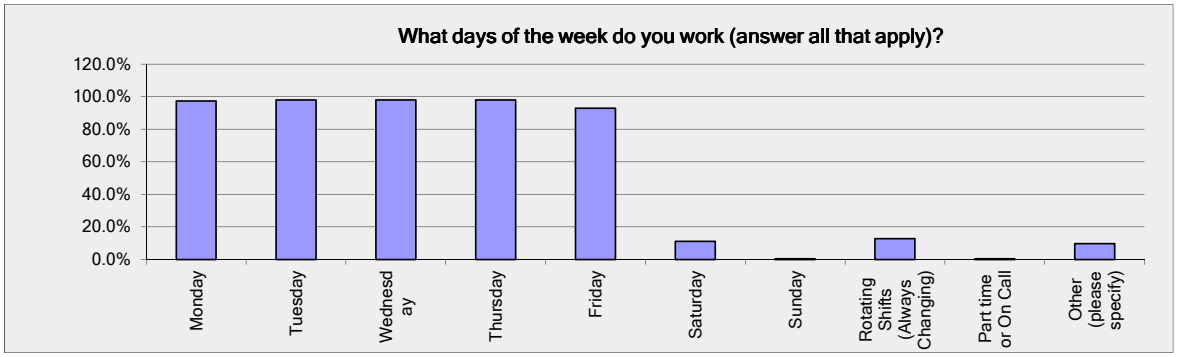
Appendix A

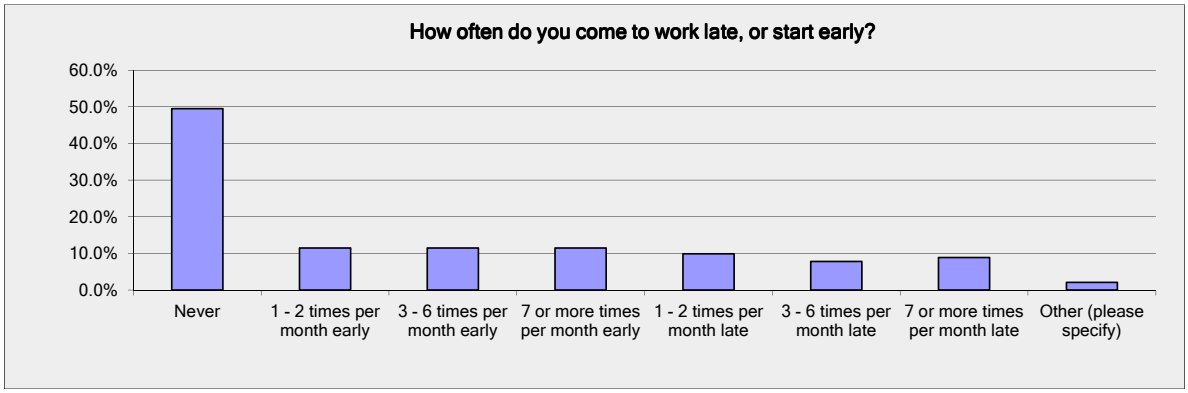
Employee Survey Results

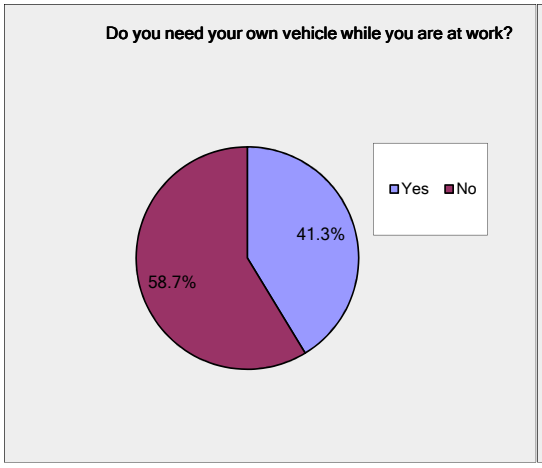
Company	Response	% of Total	Type of Company
Beaver Plastics	17	8.6	Manufacturing
North American Construction Group	42	21.3	Construction
Jasper Tank	15	7.6	Manufacturing
Flynn	49	24.9	Construction
Northgate	10	5.1	Modular Construction
Westmark Products	15	7.6	Manufacturing
Spruceland	14	7.1	Distribution
Pro V	34	17.3	Manufacturing
Navistar	1	0.5	Distribution
Total	197	100%	

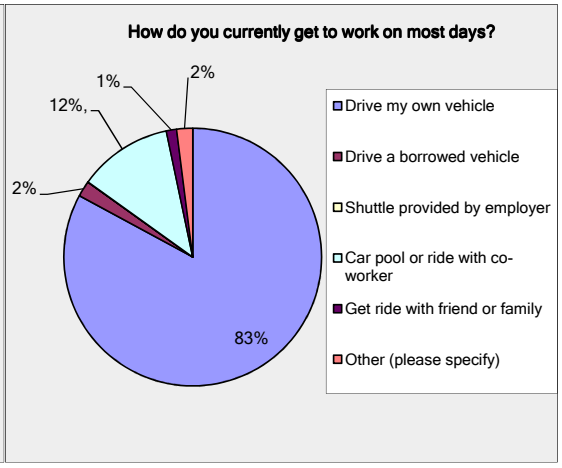


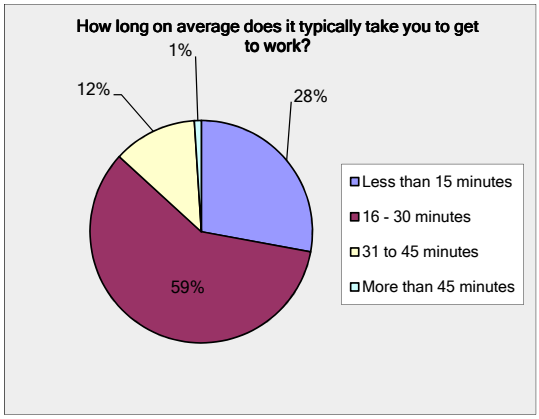


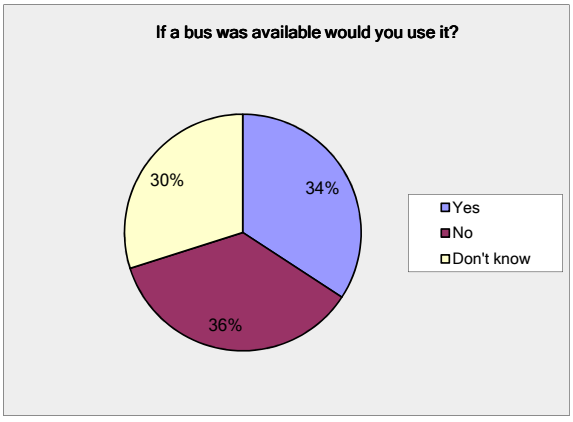


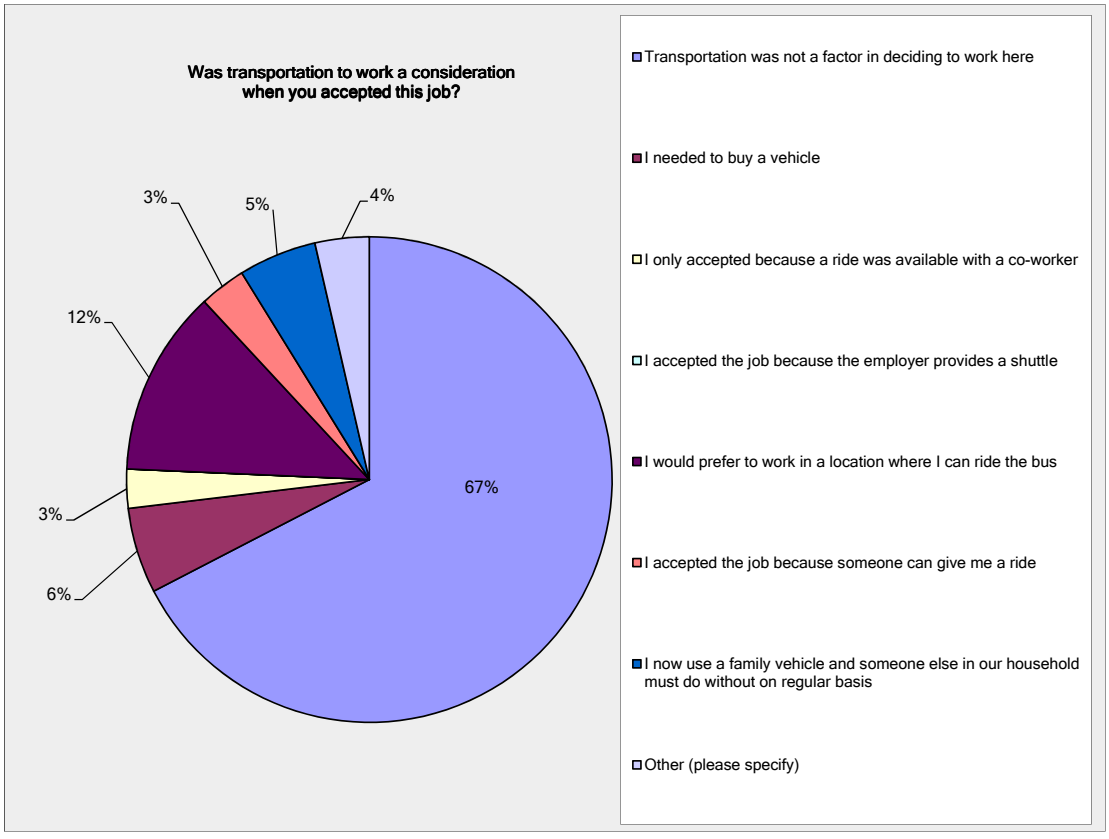


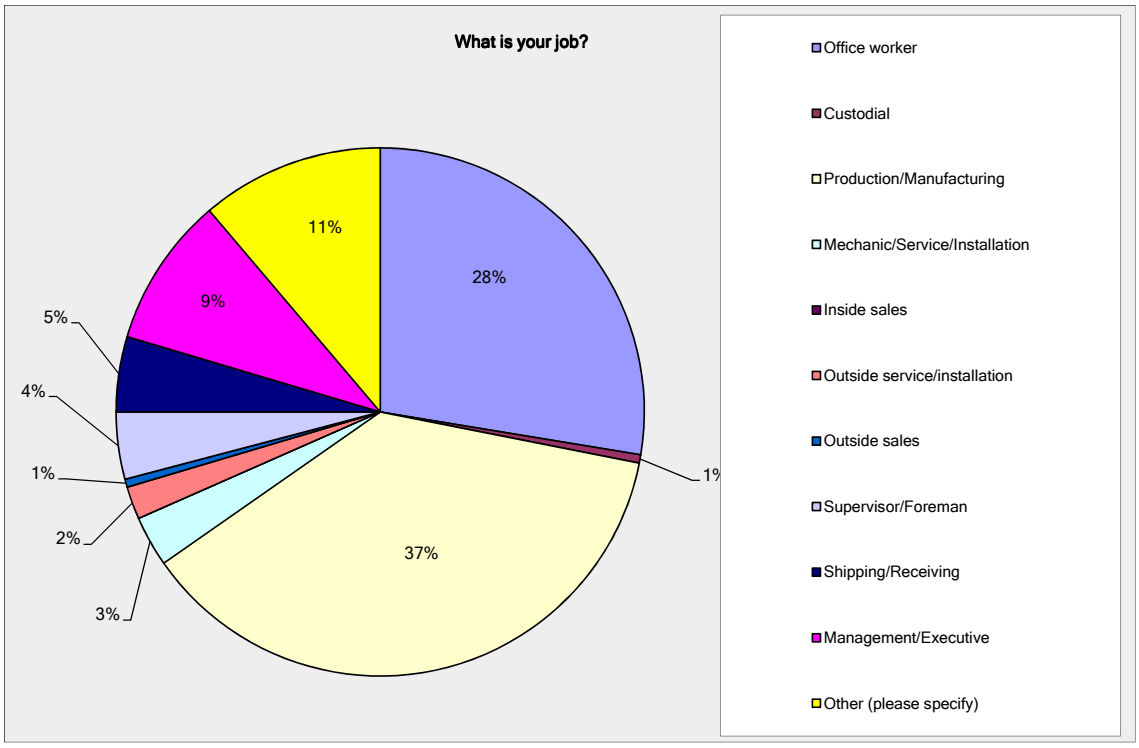

Do you need your own vehicle while you are at work?
Yes
No
41.3%
58.7%

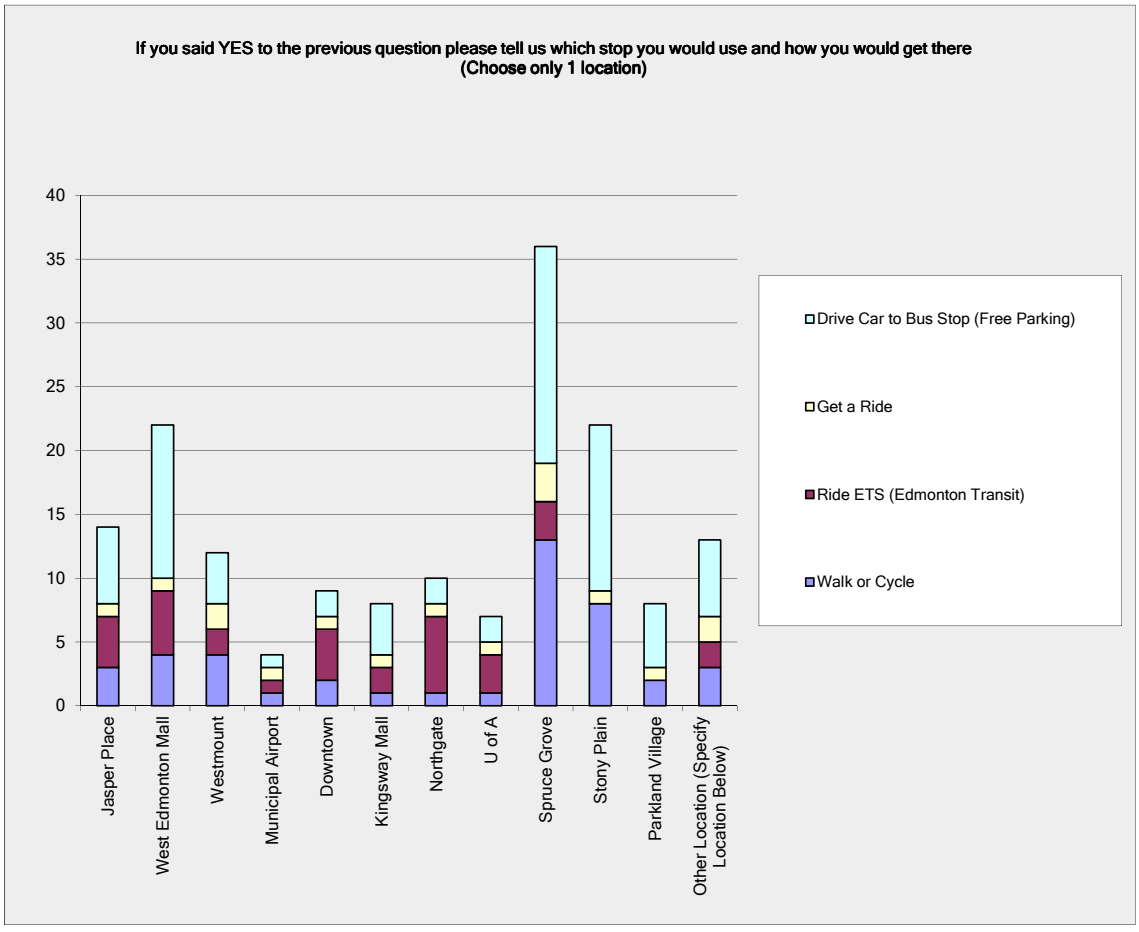

How do you currently get to work on most days?
Drive my own vehicle
Drive a borrowed vehicle
Shuttle provided by employer
Car pool or ride with co-worker
Get ride with friend or family
Other (please specify)
83%
2%
12%
1%
2%


How long on average does it typically take you to get to work?
Less than 15 minutes
16 - 30 minutes
31 to 45 minutes
More than 45 minutes
28%
59%
12%
1%

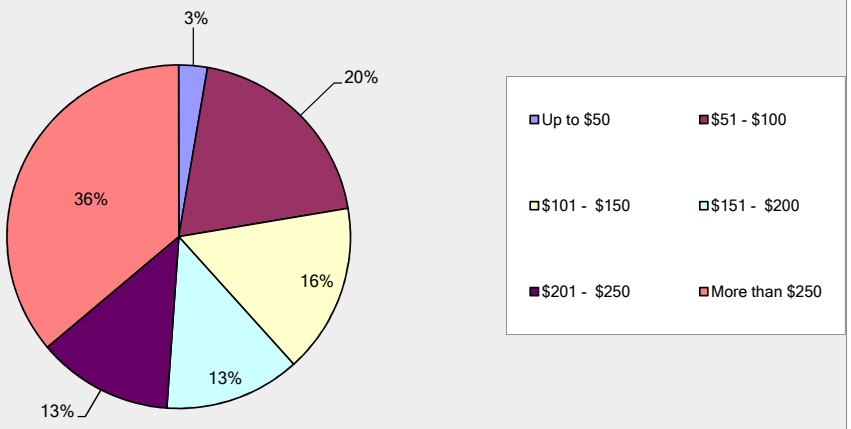

If a bus was available would you use it?
Yes
No
Don't know
34%
36%
30%


Was transportation to work a consideration when you accepted this job?
Transportation was not a factor in deciding to work here
I needed to buy a vehicle
I only accepted because a ride was available with a co-worker
I accepted the job because the employer provides a shuttle
I would prefer to work in a location where I can ride the bus
I accepted the job because someone can give me a ride
I now use a family vehicle and someone else in our household must do without on regular basis
Other (please specify)
67%
6%
3%
12%
3%
5%
4%

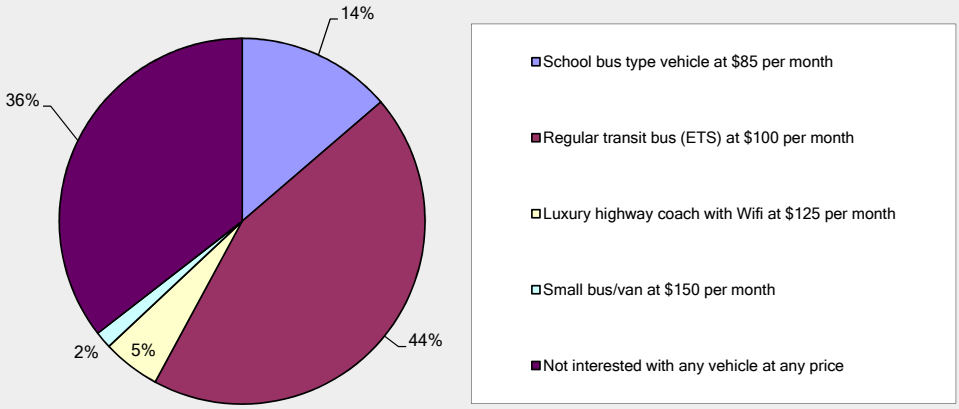

What is your job?
28%
1%
37%
3%
2%
1%
4%
5%
9%
11%
Office worker
Custodial
Production/Manufacturing
Mechanic/Service/Installation
Inside sales
Outside service/installation
Outside sales
Supervisor/Foreman
Shipping/Receiving
Management/Executive
Other (please specify)


If you said YES to the previous question please tell us which stop you would use and how you would get there (Choose only 1 location)
40
35
30
25
20
15
10
5
0
Jasper Place
West Edmonton Mall
Westmount
Municipal Airport
Downtown
Kingsway Mall
Northgate
U of A
Spruce Grove
Stony Plain
Parkland Village
Other Location (Specify Location Below)
Drive Car to Bus Stop (Free Parking)
Get a Ride
Ride ETS (Edmonton Transit)
Walk or Cycle

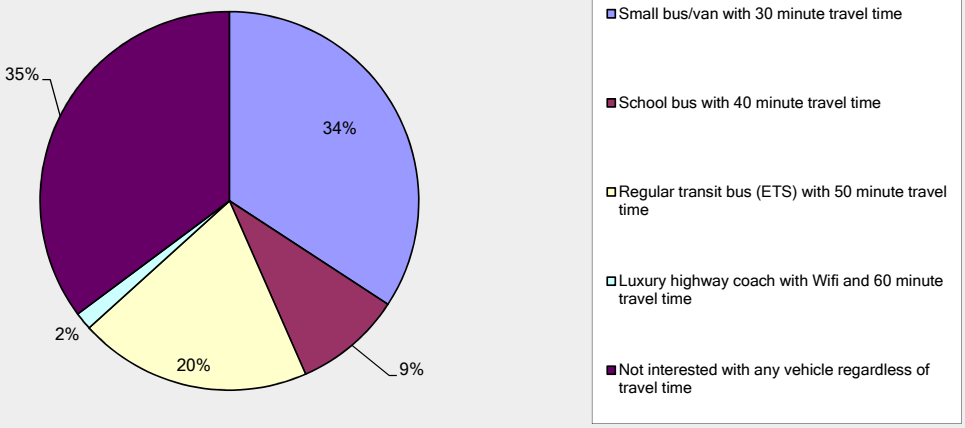
How much are you currently spending, per month, to travel to and from this job site? Costs could include gas, oil, insurance, wear etc



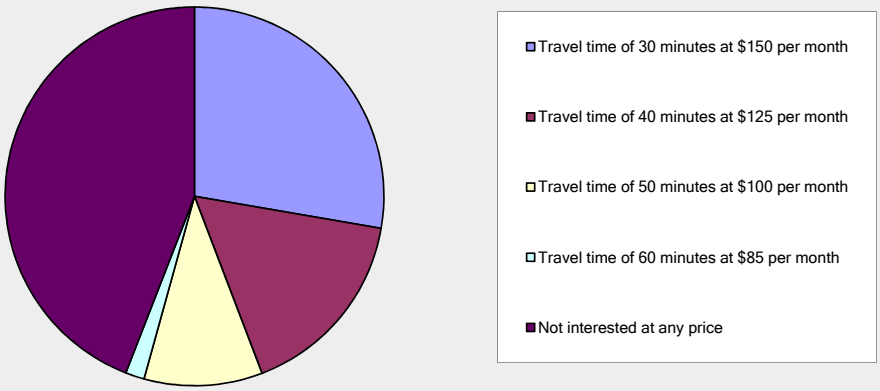
If a bus service was available to Acheson which type of vehicle and cost per month would you prefer?



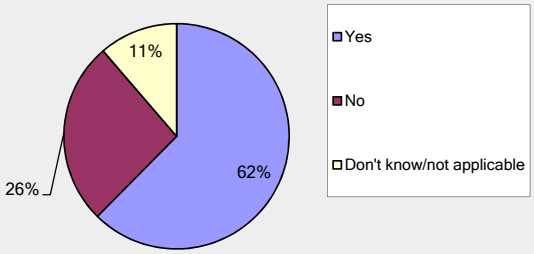
If a bus service was available to Acheson which type of vehicle and travel time would you prefer?



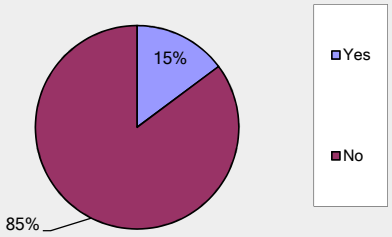
If a bus service was available to Acheson how long would you be willing to travel, and at what cost would you prefer?



Does your employer provide free winter plug-ins (for parked vehicles) ?



Since starting to work at this job site have you moved to be closer to work?



Are you considering moving to be closer to work?