BOW VALLEY REGIONAL TRANSIT SERVICES
COMMISSION REGULAR MEETING

111 Hawk Avenue and MS Teams

AGENDA

February 12th, 2024 2:00-4:00pm

1. Call to Order

2. Approval of the Agenda

3. Minutes

- Approval of the December 11th, 2024 Regular Meeting Minutes (attached)

4. Old Business (including Standing Items)

a) CEO Report (For Information)
b) Bring Forward List of Pending Items (For Information)
c) Transit Service Monthly Statistics (For Information)

5. New Business

a) Updated Dillon Fleet and Facility Study Report (Request for Decision- Accept for Information)
b) Rural Transit Solutions Fund (For Information and Later Decision)

6. Next Regular Meeting – Wednesday March 12th, 2025 2- 4pm

To be held at: 111 Hawk Avenue, Banff, and Microsoft Teams

7. Adjournment

BOW VALLEY REGIONAL TRANSIT SERVICES
COMMISSION REGULAR MEETING

111 Hawk Avenue and MS Teams

MINUTES

December 11th, 2024 2:00-4:00pm

BOARD MEMBERS PRESENT

Dave Schebek, ID9 (Chair)
Grant Canning, Town of Banff (Vice Chair)
Tanya Foubert, Town of Canmore
Alex Parkinson, ID9
Barb Pelham, Town of Banff
Sean Krausert, Town of Canmore (Virtual)

BOARD MEMBERS ABSENT

BVRTSC ADMINISTRATION PRESENT

Martin Bean, CEO
Mel Booth, Director of Finance and Administration
Steve Nelson, Director of Service Delivery
Marek Cerny, Data Analyst/Transit Planner
Fiona Gagnon, Manager of Communications & Customer Experience

ADMINISTRATION PRESENT

Danielle Duffy, ID9 (Virtual)
Therese Rogers, Town of Canmore (Virtual)
Patti Youngberg, Parks Canada
Dwight Bourdin, Parks Canada
Daniella Rubeling, Parks Canada

ADMINISTRATION ABSENT

PUBLIC PRESENT

Dennis Kar – Dillon Consulting
Greg Colgan - Rocky Mountain Outlook (Virtual)

1. Call to Order

Dave Schebek calls the meeting to order at 2:01 PM

2. Approval of the Agenda

Dave Schebek adds an In Camera session following the OnIt Year End Report discussion.

BVRTSC24-79 Dave Schebek moves to approve the agenda as amended.

CARRIED UNANIMOUSLY

3. Minutes

- Approval of the November 13th, 2024 Regular Meeting Minutes (attached)

BVRTSC24-80 Dave Schebek moves to approve the November 13th, 2024 Regular Meeting Minutes as presented.

CARRIED UNANIMOUSLY

4. Old Business (including Standing Items)

a) CEO Report (For Information)

b) Bring Forward List of Pending Items (For Information)

c) Transit Service Monthly Statistics (For Information)

5. New Business

a) Dillon Consulting – Fleet and Facility Study Presentation. (For Information Only)
(Dennis Kar – Partner, Dillon Consulting)

b) BVRTSC Customer Survey Report Presentation (Fiona Gagnon) (For Information Only)

c) OnIt Year End Report (For Information Only)

d) In Camera Session

BVRTSC24-81 Dave Schebek makes a motion to go In Camera at 3:32PM.

CARRIED UNANIMOUSLY

Out of camera at 4:04pm

BVRTSC24-82 Barb Pelham moves that Administration moves forward with the charger upgrades and dispenser replacements, with funding for the project to be treated as an operating expense.

CARRIED UNANIMOUSLY

BVRTSC24-83 Dave Schebek moves that the remuneration package for the CEO be approved by the Board as discussed.

CARRIED UNANIMOUSLY

6. Next Regular Meeting – Wednesday January 8th, 2025 2- 4pm

To be held at: 111 Hawk Avenue, Banff, and Microsoft Teams

7. Adjournment

CEO and Admin Report

February 2025

Financial:

- Administration is analyzing maintenance costs and reliability information of the two 2012 Chevrolet Cutaway buses. Both of the buses were scheduled for retirement in 2024, so this information will inform whether to extend the life through this upcoming summer or not. Based on the later than anticipated arrival of new fleet vehicles, it may be decided to keep one or both vehicles active if the anticipated maintenance costs are reasonable.

- As a condition of the Rural Transit Solutions federal funding, any projects over $3 Million in value require an Agreement Monitoring Committee to be set up between the Grant Recipient and Housing and Infrastructure Canada. The first meeting was held in early January, with no concerns identified and the next meeting to be scheduled in late Spring or early Summer.

- One of the 2018 Nova buses had an engine failure ahead of the planned capital expenditure. The $75K from 2027 will be brought forward to 2025 to replace the engine (bus currently at Cummins in Calgary). Actual cost for engine replacement and associated additional maintenance required is $88,000.

- The new accounting generalist has started, working 3 days per week. Training is progressing well, and this is already alleviating pressure and positively supplementing the finance team.

- The Rural Transit Solutions Fund grant for the purchase of the 3 MCI Highway coaches has been completed, with the final project claim and report being submitted at the beginning of February.

- Year end – finalizing 2025 financials in preparation for the auditors – draft financials (pending any audit changes) will be presented at the March Board meeting.

- It is anticipated that an amended budget, including proposed New Service Level Request additions will be presented at the March Commission meeting. Annual requisitions will be sent out mid-late February, subject to final approval of the Town of Canmore budget.

- Budget software – Administration is in the process of narrowing down a budgeting software. The goal is to have this finalized by the end of February, allowing for implementation prior to the 2026 budgeting process.

Transit Service Updates:

- Summer schedules are currently being planned, with the intent of creating staggered rollout of some route increases based on the delivery of new buses. Service increases are set to occur on the Friday of the May long weekend (May 16). With the delay in delivery of the buses from Nova until late April or early May, increased service will occur however full summer complement of service is planned to be achieved by late June. This will correspond with increased visitation and need prior to the July long weekend.
- Based on the recommendations from the recent Dillon report, Administration is making arrangements to trial an articulated bus in Banff and this Spring.
- Administration is working with the Town of Canmore to finalize the final routing for Route 12 for the upcoming summer. Last summer's ridership by stop is currently being analyzed to determine whether revisions would be beneficial.
- With the G7 Summit coming to the Kananaskis area, and a lot of the accommodation being in Banff, Roam is being updated by the Town of Banff on any potential impact to transit routes. Closer to the mid-June dates of the G7, potential route disruptions will be known, and mitigation will be planned.
- Consat will be onsite the week of February 17th to install a new Automatic Passenger Counting (APC) system across all Roam buses, replacing the existing InfoDev APC system. This advanced system will not only provide more accurate and reliable ridership data but will also enable real-time bus capacity monitoring. With this new capability, Roam will be able to better manage passenger loads and enhance the overall transit experience for riders.
- The new BorgWarner bus charging dispensers have been shipped and are expected to arrive this week, marking another milestone in our transit infrastructure improvements. Installation has been arranged with PECO Electric, who also installed the original dispensers and are therefore very familiar with our bus storage facility. The Town of Banff's engineering department has played a key role in providing input and coordinating efforts to ensure the dispensers are installed seamlessly and meet the needs of our growing transit system.

General/Health and Safety

- **General:**
  - Roam administration is involved with the Alberta Passenger Rail Master Plan, having attended and provided feedback during an introductory call of the Rocky Mountain Parks Regional Group, plus attending the Albert Passenger Rail Forum in November.

At the end of February, Roam has a meeting scheduled with the team leading the study and will be providing data and answering their questions around the integration of Roam services and rail.

- Roam has been actively engaging with leading fare technology companies in preparation for the upcoming release of our Request for Proposals (RFP), anticipated near the end of this month. Through a series of talks and demonstrations, we've been exploring the latest innovations and capabilities in fare management systems to ensure we have a comprehensive understanding of the solutions available in the market.
- The BVRTSC Management Team recently held planning meetings in Lake Louise, focusing a multitude of areas, including the sharing of the new Strategic Plan, end of season employee feedback results, performance management, marketing and communications, operational items and future planning. There were six attendees, and it was a great opportunity to team build and share ideas, ensuring Roam is continuing to proactively move forward in our procedures and planning.

- **Human Resources:**
  - Finalized Customer Experience Representative requirements have been completed and the posting for positions will be in place for the middle of February.
  - The hiring process for the Maintenance Manager is progressing. Second interviews are being conducted, and the intent is to finalize around the middle of February.
- **Safety:**
  - The Team is currently conducting hazard assessments for all positions. With Roam expanding rapidly, many new roles come with unique challenges that require assessment to maintain a safe work environment. Additionally, we will be hosting a Health & Safety meeting at the end of the month to discuss current challenges and identify the best solutions.
  - Roam remains a key participant in Bow Valley emergency scenario planning. In January, we took part in the latest emergency scenario roundtable exercise, hosted by the towns of Banff and Canmore, to ensure we are prepared to support the region in emergency situations.
- **Training:**

- Roam's Training Team and HR recently hosted a Transit Operator Info Session at the garage for anyone interested in becoming a driver! Ads ran in the RMO, promotion occurred on Mountain FM and social media, plus the Job Resource Centre was notified. Participants were able to enjoy some refreshments, try the simulator and training farebox, plus tour the facility and buses. Another open house may be held later in the Spring for additional drivers and customer experience representatives.

- The training department has been busy! We recently held our Train-the-Trainer week, where all trainers gathered to review our new Training Program Guidelines and Policies, updated Training Manual, and revised evaluation forms. With these improvements in place, we're excited to welcome our first training group on February 24th.

- A key part of Roam driver training is Ride-Along sessions, where new trainees shadow experienced drivers—our mentors—for a full shift. Currently mentor training is occurring, where we review each route, gather input from our mentors on unique route details, and ensure this knowledge is incorporated into our training program.

Marketing and Customer Experience

- The 2025 recruitment plan for the Customer Service and Ambassador Team is being finalized, with job postings scheduled for mid-February and training set to begin in mid-April. Staff in the summer of 2024 was aligned with our plan and the result was successful, and the goal is to have similar levels this year.

- Marketing and communications planning for the upcoming summer season is well underway, including conversations and collaboration with key partners such as the Transportation Shift Campaign to ensure aligned messaging and marketing strategies. Additionally, we are developing a targeted marketing campaign for Lake Louise residents, promoting the use of off-peak service for travel on the Lake Louise Regional service to and from Banff to improve summer connectivity between the two communities.

- Roam is also participating in a working group to support the Bow Valley Immigration Partnership (BVIP) in defining its goals and priorities for the Bow Valley 2025-2029 Immigrant Inclusion Strategy, with an area of focus being transportation.

- At the end of January, our marketing and communications team attended the Indigenous Tourism Alberta Regional Gathering—an excellent opportunity to

network, learn from industry partners, and strengthen relationships that support the growth of Indigenous tourism and businesses within the Bow Valley.

- Roam administration is in the process of updating our Brand Standard to ensure that is current and reflects changes that have occurred over the past several years. The updated draft version will be presented to the Board for approval later in the Spring.

- Administration and our Board Chair recently attended a day with the Director of the US National Parks Service and senior Parks Canada staff, where we had the opportunity to share information on Roam Transit, experience the simulator and allow them to experience trip that our Route 9, Johnston Canyon service provides.

- Apple Maps has been updated to have a transit component that shows our schedule and has trip planning ability, similar to Google. Additionally, there is a ticket purchase option that sends the user to Token Transit to complete the mobile ticket purchase transaction. This assists in offering transit users additional ways to easily and seamlessly use Roam.

Bow Valley Regional Transit Services Commission

BRING FORWARD LIST

BRING FORWARD LIST OF ITEMS PENDING (as of February, 2024)

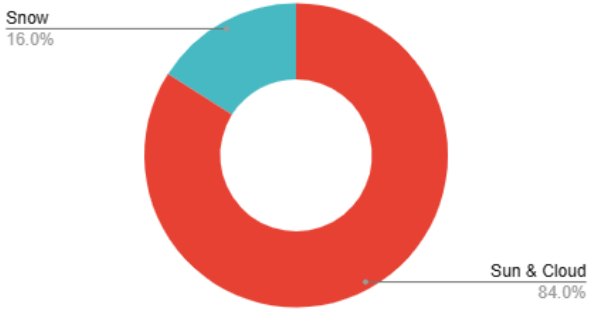
ITEM	Date Initiated	Pending Date	Responsible for Completion	Comments:
BVRTSC23-065 Joanna McCallum moves to hire a consultant to conduct a study based on ridership and projected growth to map out the network-wide fleet associated operational and infrastructure requirements for the next 10 years, as well as the anticipated associated budget, to be funded through capital reserves to a maximum of $50,000 to be brought back by Q3 2024. **CARRIED UNANIMOUSLY**	Oct, 18th 2023	~~Dec 11, 2024~~	Martin/Steve	Study is currently being completed by Dillon Consulting. Dillon presented study to Board in December. Dillon to revise study with updated ridership counts and administrative changes and provided to the Board for approval at the February meeting.
BVRTSC24-75 Dave Schebek moves to direct Commission members to perform a Board Self-Assessment in 2025 led by Elevated HR. **CARRIED UNANIMOUSLY**	Nov 13, 2024	2025	Elevated HR	
BVRTSC24-76 Tanya Foubert moves to initiate a BVRTSC Bylaw Review in 2025, with each Board Member providing comments to the CEO and Board Chair on any suggested amendments by the end of Q1, 2025, with the intent of having the review completed by the end of Q2, 2025. **CARRIED UNANIMOUSLY**	Nov 13, 2024	Q2, 2025	Board	

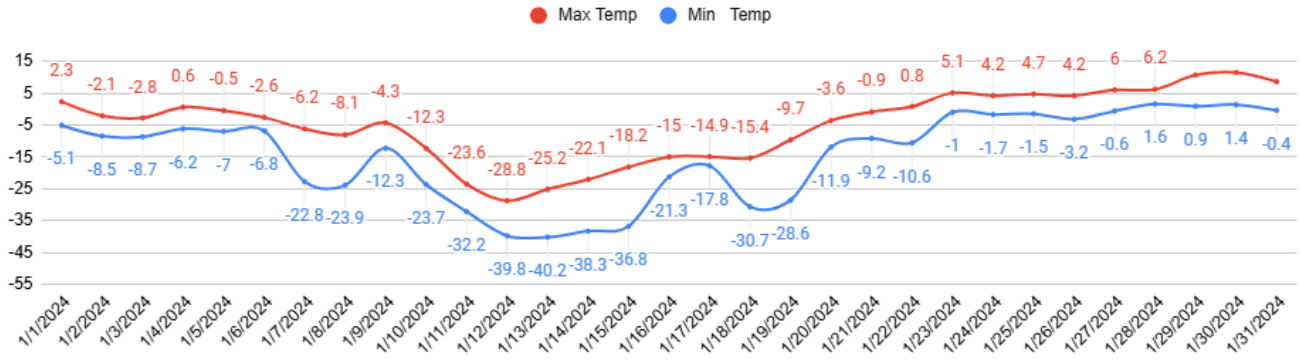
Bow Valley Regional Transit Services Commission Ridership Statistics

Month	Type	Banff Local	Canmore Local	Canmore-Banff Regional	Lake Louise - Banff Regional
January 2025	Ridership	112,147	32,549	30,602	12,444
	Bikes	17	221	254	3
	Winter Sports	3,640	576	2,275	97
	Strollers	134	149	81	8
	Mobility Devices	2	17	6	1

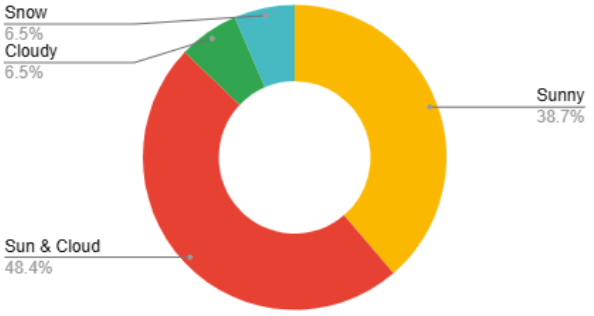
Route	Monthly Ridership Change 2023 - 2024	Comment
Route 1	34.11%	Change from January 2024 to January 2025
Route 2	8.02%	Change from January 2024 to January 2025
Route 3	18.65%	Change from January 2024 to January 2025
Route 4		Change from January 2024 to January 2025
Route 5	5.87%	Change from January 2024 to January 2025
Route 6		Change from January 2024 to January 2025
Route 8X	10.84%	Change from January 2024 to January 2025
Route 9	35.37%	Change from January 2024 to January 2025

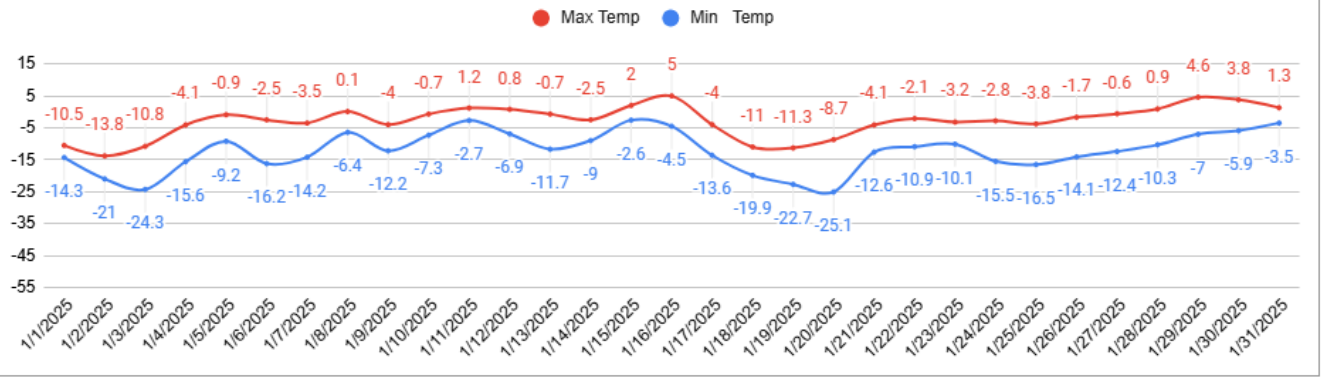
Weather Conditions January 2024





Weather Conditions January 2025





2/3/2025

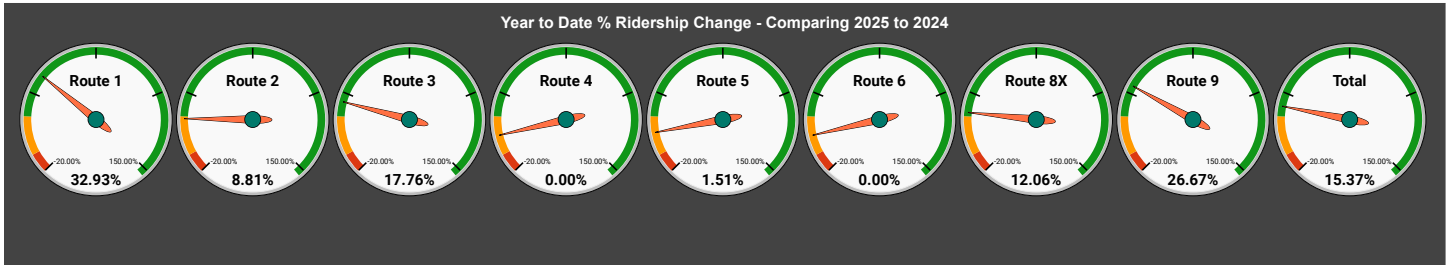
	Route 1 (Inns of Banff/ Gondola)							Route 2 (Tunnel Mtn / Banff Springs Hotel)							Route 4 Cave & Basin							Banff Local (Route 1, 2 & 4)						
Month	R1 2022	R1 2023	R1 2024	R1 2024 YTD	R1 2025 YTD	% Change - 24	% Change - 23	R2 2022	R2 2023	R2 2024	R2 2024 YTD	R2 2025 YTD	% Change - 24	% Change - 23	R4 2022	R4 2023	R4 2024	R4 2024 YTD	R4 2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23
January	16,080	40,636	41,644	41,644	55,849	34.11%	37.44%	16,870	49,989	52,117	52,117	56,298	8.02%	12.62%								32,950	90,625	93,761	93,761	112,147	19.61%	23.75%
February	19,661	40,833	46,080	2,997	3,493	16.55%		21,518	47,270	51,430	3,291	3,993	21.33%									41,179	88,103	97,510	6,288	7,486	19.05%	
March	21,722	47,979	52,307	0	0	0.00%		24,785	53,488	60,558	0	0	0.00%									46,507	101,467	112,865	0	0	0.00%	
April	20,918	41,098	44,341	0	0	0.00%		20,192	44,739	45,853	0	0	0.00%									41,110	85,837	90,194	0	0	0.00%	
May	37,615	67,740	72,973	0	0	0.00%		27,452	55,890	60,403	0	0	0.00%		1,153	1,904	1,740	0	0	0.00%		66,220	125,534	135,116	0	0	0.00%	
June	65,375	103,499	107,404	0	0	0.00%		50,118	76,511	81,019	0	0	0.00%		4,698	6,689	5,116	0	0	0.00%		120,191	186,699	193,539	0	0	0.00%	
July	100,148	125,827	121,640	0	0	0.00%		67,979	93,346	92,431	0	0	0.00%		7,321	7,647	6,131	0	0	0.00%		175,448	226,820	220,202	0	0	0.00%	
August	93,303	122,140	120,506	0	0	0.00%		68,183	91,695	88,241	0	0	0.00%		6,392	7,191	5,945	0	0	0.00%		167,878	221,026	214,692	0	0	0.00%	
September	61,567	88,508	91,008	0	0	0.00%		53,950	75,616	77,274	0	0	0.00%		4,842	4,842	3,200	0	0	0.00%		120,359	168,966	171,482	0	0	0.00%	
October	37,893	52,404	54,243	0	0	0.00%		32,911	46,459	51,530	0	0	0.00%		396							71,200	98,863	105,773	0	0	0.00%	
November	30,751	33,628	42,368	0	0	0.00%		36,146	43,420	48,789	0	0	0.00%									66,897	77,048	91,157	0	0	0.00%	
December	45,460	49,418	60,432	0	0	0.00%		50,744	54,587	61,275	0	0	0.00%									96,204	104,005	121,707	0	0	0.00%	
YTD	550,493	813,710	854,946	44,641	59,342	32.93%	-92.71%	470,848	733,010	770,920	55,408	60,291	8.81%	-91.77%	24,802	28,273	22,132	0	0	0.00%	-100.00%	1,046,143	1,574,993	1,647,998	100,049	119,633	19.57%	-92.40%

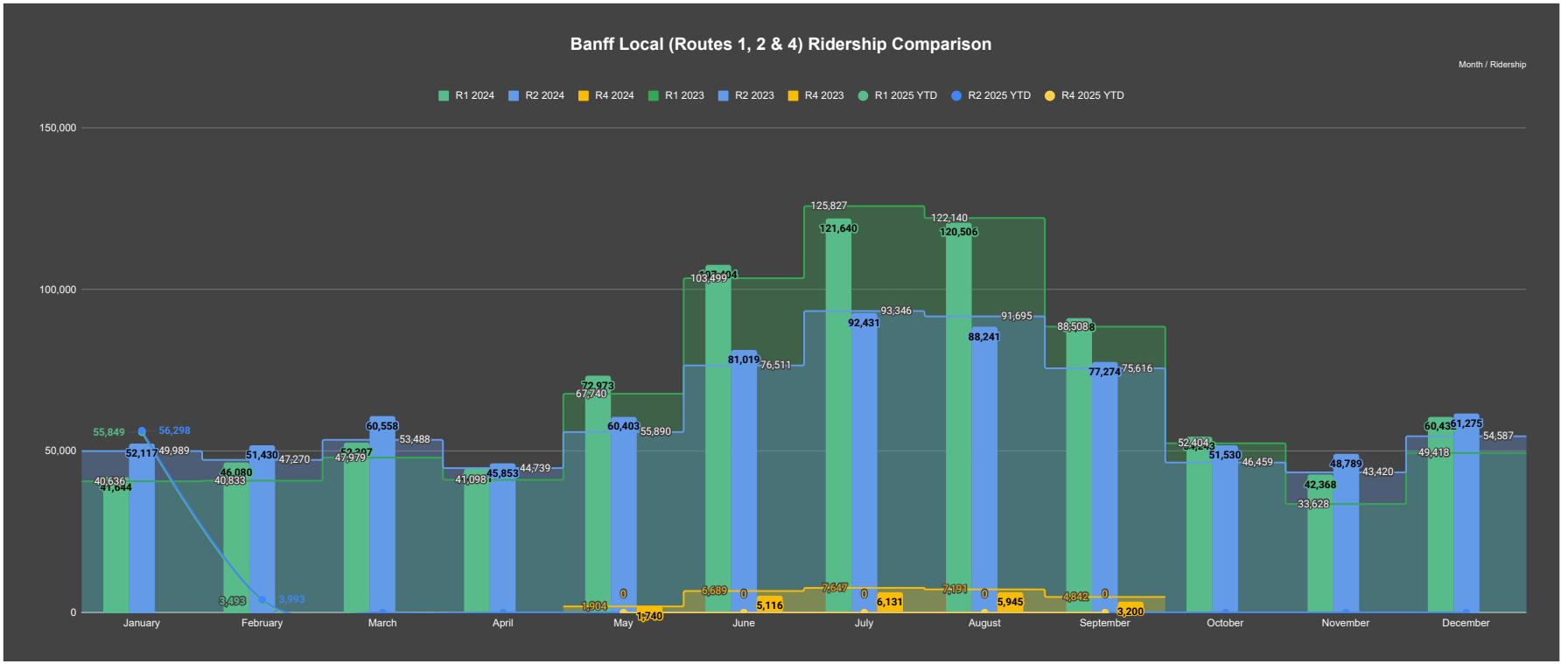
	Route 3 (Canmore-Banff Regional)							Route 5 Canmore							Route 6 Minnewanka							Roam Total Ridership						
Month	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23
January	10,642	23,255	25,792	25,792	30,602	18.65%	31.59%	9,224	22,810	30,744	30,744	32,549	5.87%	42.70%								56,530	147,062	162,228	162,228	188,695	16.31%	28.31%
February	10,492	21,303	25,415	1,597	1,651	3.38%		9,789	22,119	29,174	2,185	877	-59.86%									65,499	141,874	163,675	10,905	11,051	1.34%	
March	12,770	23,824	27,059	0	0	0.00%		12,208	25,116	30,530	0	0	0.00%									75,790	161,319	182,041	0	0	0.00%	
April	12,028	23,622	26,296	0	0	0.00%		10,924	23,308	28,976	0	0	0.00%									68,215	143,794	156,333	0	0	0.00%	
May	15,148	26,946	28,087	0	0	0.00%		13,066	27,143	32,036	0	0	0.00%		2,783	5,879	4,647	0	0	0.00%		106,822	206,716	223,906	0	0	0.00%	
June	19,058	30,304	30,702	0	0	0.00%		16,015	28,039	30,963	0	0	0.00%		12,662	18,255	14,003	0	0	0.00%		190,769	308,030	316,881	0	0	0.00%	
July	22,015	31,836	32,104	0	0	0.00%		16,715	28,691	30,700	0	0	0.00%		20,639	25,806	21,451	0	0	0.00%		271,789	371,077	358,855	0	0	0.00%	
August	19,854	32,667	32,717	0	0	0.00%		17,070	27,658	30,390	0	0	0.00%		19,238	26,074	22,501	0	0	0.00%		253,615	366,644	354,646	0	0	0.00%	
September	17,364	28,533	29,297	0	0	0.00%		17,127	25,056	29,249	0	0	0.00%		10,182	15,400	13,315	0	0	0.00%		187,534	284,961	288,908	0	0	0.00%	
October	17,605	28,139	27,917	0	0	0.00%		16,802	26,233	30,044	0	0	0.00%		530	921						118,488	179,071	190,907	0	0	0.00%	
November	17,797	27,903	26,674	0	0	0.00%		19,956	26,722	32,065	0	0	0.00%									110,983	142,511	160,626	0	0	0.00%	
December	19,213	31,157	31,841	0	0	0.00%		21,194	29,271	31,613	0	0	0.00%									146,145	180,013	201,519	0	0	0.00%	
YTD	193,986	329,489	343,901	27,389	32,253	17.76%	-90.21%	180,090	312,166	366,484	32,929	33,426	1.51%	-89.29%	66,034	92,335	75,917	0	0	0.00%	-100.00%	1,652,179	2,633,072	2,760,525	173,133	199,746	15.37%	-92.41%

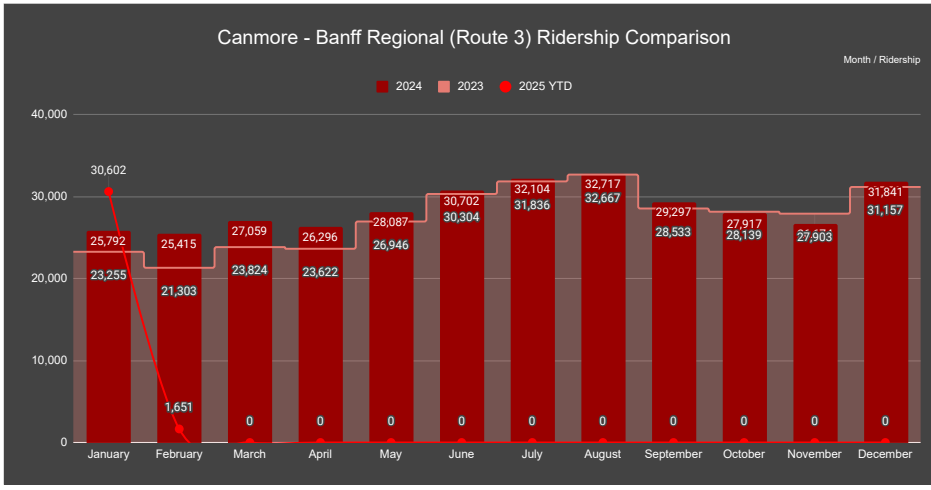
	Route 8X (Express Lake Louise - Banff Regional)							Route 8S (Scenic Lake Louise - Banff Regional)							Route 9 (Johnston Canyon)							Route 10 (Moraine Lake)						
Month	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23
January	3,714	9,788	11,227	11,227	12,444	10.84%	27.14%									584	704	704	953	35.37%	63.18%							
February	4,039	9,363	10,714	658	874	32.83%										986	862	177	163	-7.91%								
March	4,305	10,205	10,694	0	0	0.00%										707	893	0	0	0.00%								
April	4,153	10,013	10,196	0	0	0.00%										1,014	671	0	0	0.00%								
May	8,422	17,400	19,167	0	0	0.00%									1,183	2,602	2,738	0	0	0.00%								
June	18,115	34,555	33,350	0	0	0.00%									4,728	6,185	7,265	0	0	0.00%								
July	28,200	41,826	36,750	0	0	0.00%		2,183	2,755			0			6,589	7,409	8,719	0	0	0.00%								
August	22,575	43,140	37,346	0	0	0.00%		1,640	2,974			0			5,360	6,897	8,413	0	0	0.00%								
September	16,059	31,100	26,149	0	0	0.00%									2,908	5,776	6,468	0	0	0.00%		3,535	6,556	7,178	0	0	0.00%	
October	8,061	17,351	16,962	0	0	0.00%									897	1,884	2,243	0	0	0.00%		3,393	4,827	6,751	0	0	0.00%	
November	6,021	10,248	10,089	0	0	0.00%									312	590	641	0	0	0.00%								
December	9,248	14,463	14,565	0	0	0.00%									286	1,117	1,793	0	0	0.00%								
YTD	132,912	249,452	237,209	11,885	13,318	12.06%	-94.66%	3,823	5,729	0	0	0	0.00%	-100.00%	22,263	35,751	41,410	881	1,116	26.67%	-96.88%	6,928	11,383	13,929	0	0	0.00%	-100.00%

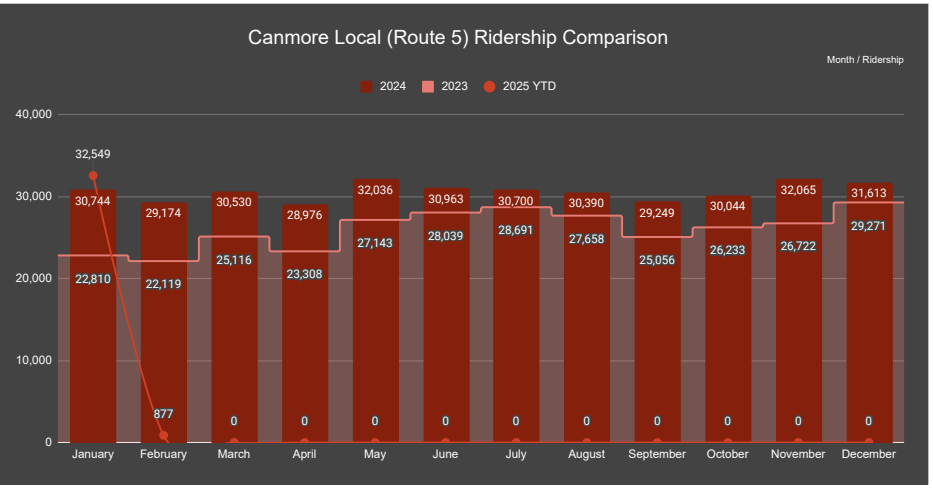
	On-It (Calgary Regional) - Banff							On-It (Calgary Regional) - Lake Louise							On-It (Calgary Regional) - Moraine Lake							Route 11 (Lake Louise Local)						
Month	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23
January			363	363	0	-100.00%																						
February			753	0	0	0.00%																						
March			830	0	0	0.00%																						
April																												
May	1,759	2,792	2,401	0	0	0.00%																1,212	1,435	0	0	0	0.00%	
June	3,840	6,815	6,410	0	0	0.00%				713	0	0	0.00%									3,993	5,163	0	0	0	0.00%	
July	7,654	10,031	6,231	0	0	0.00%				1,113	0	0	0.00%									5,934	7,206	0	0	0	0.00%	
August	6,531	10,389	8,278	0	0	0.00%				1,290	0	0	0.00%									6,208	5,916	0	0	0	0.00%	
September	5,019	10,329	5,627	0	0	0.00%				199	0	0	0.00%				1,174	0	0	0.00%		3,574	4,813	0	0	0	0.00%	
October		2,389	2,224	0	0	0.00%											617	0	0	0.00%		853	1,217	0	0	0	0.00%	
November																												
December		2,081																										
YTD	24,803	44,826	33,117	363	0	-100.00%	-100.00%	0	0	3,315	0	0	0.00%	0.00%	0	0	1,791	0	0	0.00%	0	0	21,774	25,750	0	0	0.00%	0.00%

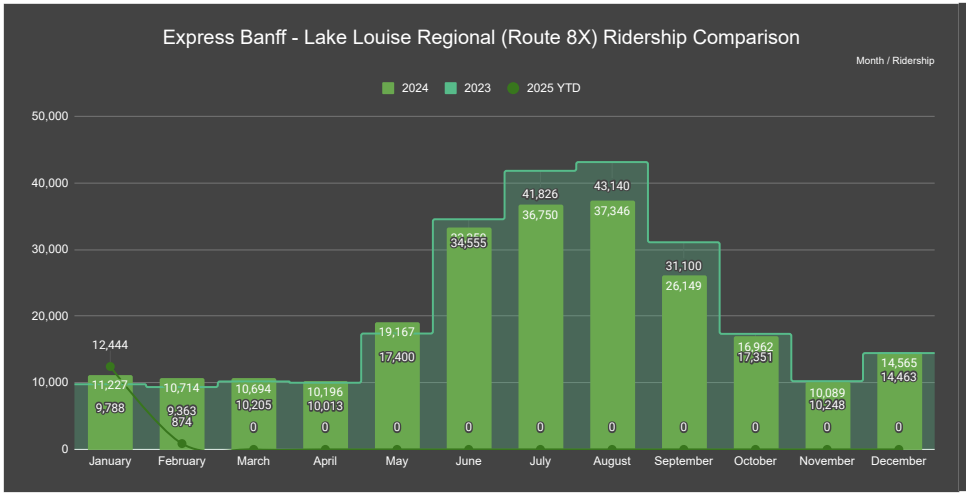
	Route 5C (Cougar Creek)							Route 5T (Three Sisters)							Route 12 (Grassi Lakes)						
Month	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 UTD	% Change - 24	% Change - 23	2022	2023	2024	2024 YTD	2025 YTD	% Change - 24	% Change - 23
January			19,797	19,797	21,263	7.41%				10,947	10,947	11,286	3.10%								
February			17,830	1,348	1,509	11.94%				11,344	837	268	-67.98%								
March			18,442	0	0	0.00%				12,088	0	0	0.00%								
April			17,958	0	0	0.00%				11,018	0	0	0.00%								
May			18,563	0	0	0.00%				13,473	0	0	0.00%				680	0	0		
June			17,076	0	0	0.00%				13,887	0	0	0.00%				1,896	0	0		
July			17,115	0	0	0.00%				13,585	0	0	0.00%				1,723	0	0		
August		15,005	17,118	0	0	0.00%			12,653	13,272	0	0	0.00%				2,671	0	0		
September		14,113	16,643	0	0	0.00%			10,943	12,606	0	0	0.00%				957	0	0		
October		15,771	18,359	0	0	0.00%			10,462	11,685	0	0	0.00%								
November		16,468	20,611	0	0	0.00%			11,318	11,454	0	0	0.00%								
December		18,122	20,228	0	0	0.00%			11,149	11,385	0	0	0.00%								
YTD	0	79,479	219,740	21,145	22,772	7.69%	-71.35%	0	56,525	146,744	11,784	11,554	-1.95%	-79.56%	0	0	7,927	0	0	0.00%	0.00%

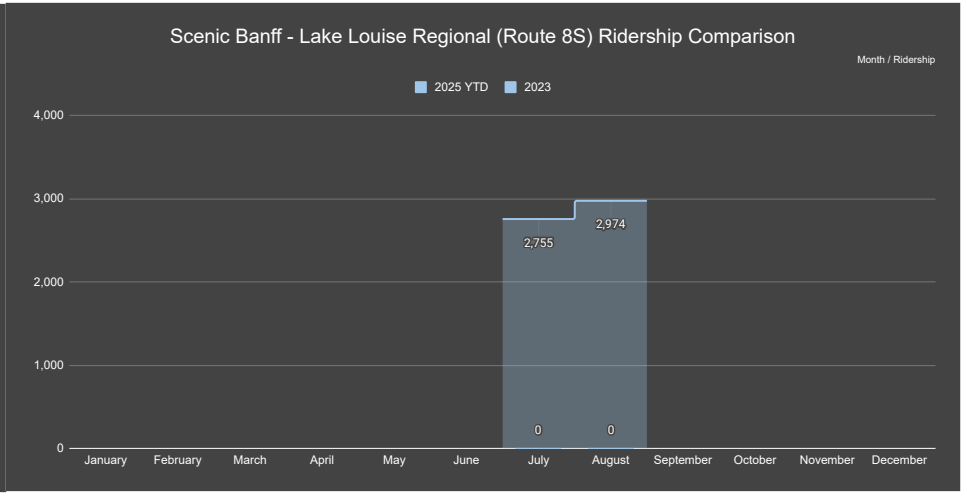


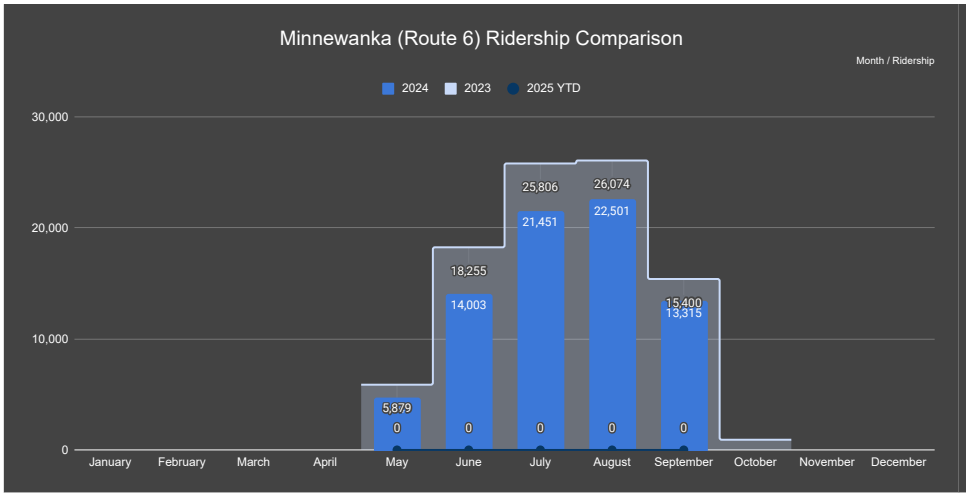

Banff Local (Routes 1, 2 & 4) Ridership Comparison
Month / Ridership
R1 2024
R2 2024
R4 2024
R1 2023
R2 2023
R4 2023
R1 2025 YTD
R2 2025 YTD
R4 2025 YTD
150,000
100,000
50,000
0
January
February
March
April
May
June
July
August
September
October
November
December

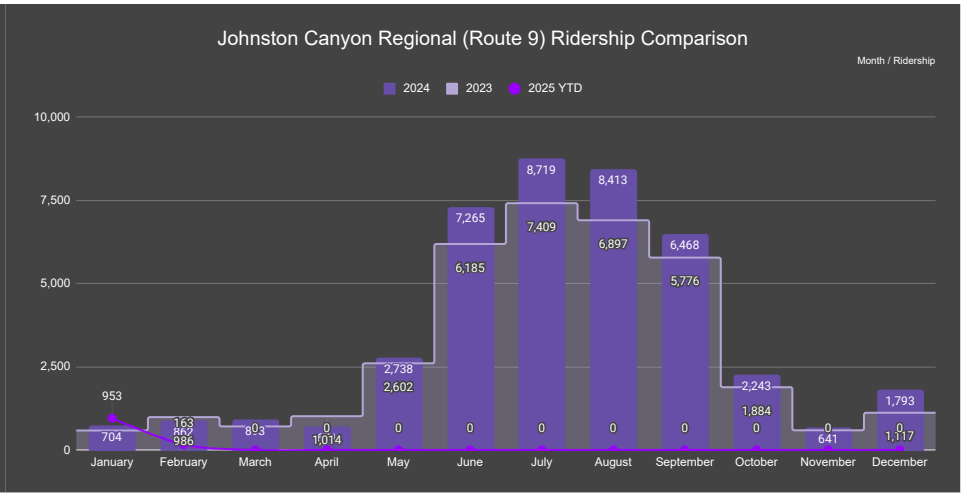

Canmore - Banff Regional (Route 3) Ridership Comparison
Month / Ridership
2024
2023
2025 YTD
40,000
30,000
20,000
10,000
0
January
February
March
April
May
June
July
August
September
October
November
December

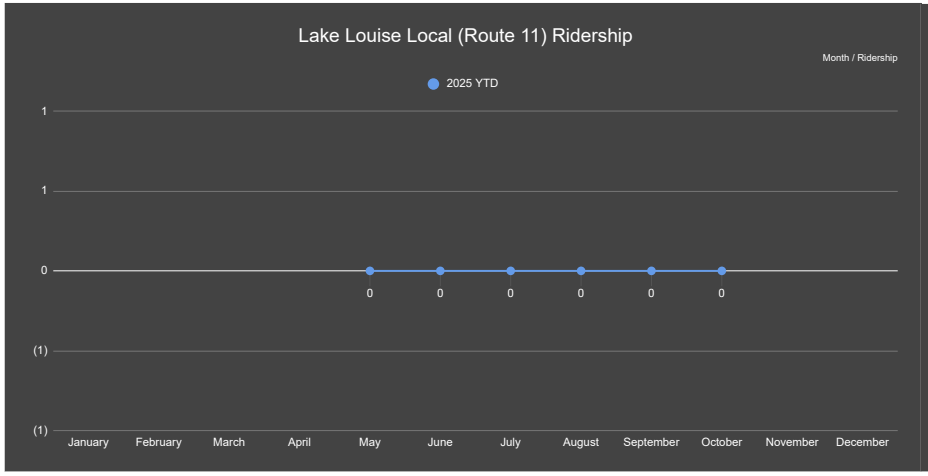

Canmore Local (Route 5) Ridership Comparison
Month / Ridership
2024
2023
2025 YTD
40,000
30,000
20,000
10,000
0
January
February
March
April
May
June
July
August
September
October
November
December

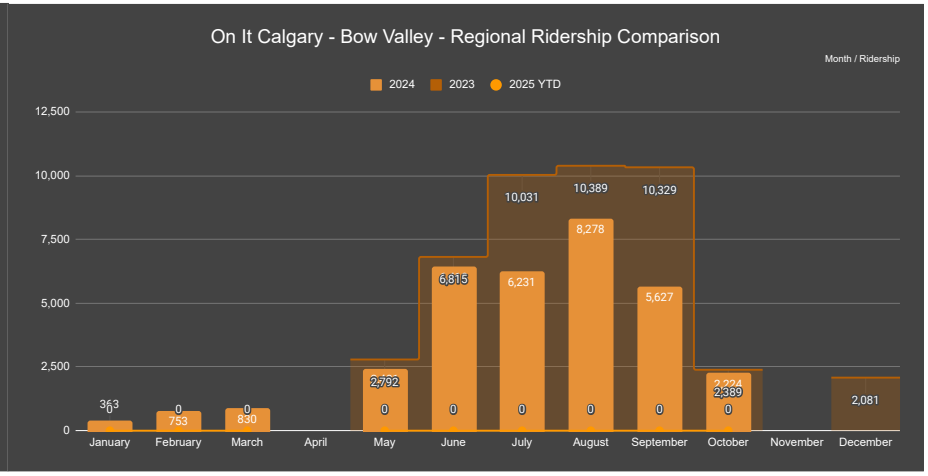

Express Banff - Lake Louise Regional (Route 8X) Ridership Comparison
Month / Ridership
2024
2023
2025 YTD
50,000
40,000
30,000
20,000
10,000
0
January
February
March
April
May
June
July
August
September
October
November
December
12,444
11,227
9,788
10,714
9,363
874
10,694
10,205
0
10,196
10,013
0
19,167
17,400
0
34,555
0
41,826
36,750
0
43,140
37,346
0
31,100
26,149
0
16,962
17,351
0
10,089
10,248
0
14,565
14,463
0


Scenic Banff - Lake Louise Regional (Route 8S) Ridership Comparison
Month / Ridership
2025 YTD
2023
4,000
3,000
2,000
1,000
0
January
February
March
April
May
June
July
August
September
October
November
December
2,755
0
2,974
0


Minnewanka (Route 6) Ridership Comparison
Month / Ridership
2024
2023
2025 YTD
30,000
20,000
10,000
0
January
February
March
April
May
June
July
August
September
October
November
December
5,879
0
18,255
14,003
0
25,806
21,451
0
26,074
22,501
0
15,400
13,315
0


Johnston Canyon Regional (Route 9) Ridership Comparison
Month / Ridership
2024
2023
2025 YTD
10,000
7,500
5,000
2,500
0
January
February
March
April
May
June
July
August
September
October
November
December
953
704
163
887
986
893
0
1,014
2,738
2,602
0
7,265
6,185
0
8,719
7,409
0
8,413
6,897
0
6,468
5,776
0
2,243
1,884
0
0
641
1,793
0
1,117


Lake Louise Local (Route 11) Ridership
Month / Ridership
2025 YTD
1
1
0
(1)
(1)
0
0
0
0
0
0
January
February
March
April
May
June
July
August
September
October
November
December


On It Calgary - Bow Valley - Regional Ridership Comparison
Month / Ridership
2024
2023
2025 YTD
12,500
10,000
7,500
5,000
2,500
0
363
0
0
753
0
830
2,792
0
6,815
0
10,031
6,231
0
8,278
10,389
0
5,627
10,329
0
2,389
0
2,081
January
February
March
April
May
June
July
August
September
October
November
December

Bow Valley Regional Transit Services Commission

NEW BUSINESS

Bow Valley Regional Transit Services Commission

Capital and Fleet Plan

The single-story 1,419 m2 building stores 12 buses inside, with a canopy structure to cover an additional 20 buses on the exterior.

DILLON CONSULTING

BOW VALLEY REGIONAL TRANSIT SERVICES COMMISSION

Fleet and Facility Study - Update

Final Report

February 2025 – 24-8489

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Figures

Tables

Appendices

Summary of Report Update

The following report is an update to the BVRTSC Fleet and Facilities Study, dated December 2024. This update presents a number of updates to the original report based on direction received at a December 11, 2024 Commission presentation. This includes:

1. A desire to update the ridership forecasts to better align with those identified in the BVRTSTC 2025-2028 Strategic Plan;
2. A separation of vehicle capital and replacement costs member of the Commission (Town of Banff, Town of Canmore and Parks Canada/ID9).

The major changes to this report as a result of these comments are identified below:

Section 4.1: Ridership Forecast

This section of the report was updated to reflect both a High and a Low Ridership Forecast. The High Forecast was similar to the one completed in the December 2024, with adjustments made to:

- Better align with the ridership forecasts from the 2023 Town of Canmore Transit Master Plan
- Reduction in rate of ridership growth to reflect constraint on population growth in the Town of Banff

A Low Forecast was added, based on the ridership growth estimates identified in the 2025-2028 Strategic Plan.

A comparison of these forecasts suggest a much slower rate of growth in the Low Ridership Forecast between 2025 and 2029, while the rate of ridership growth in the Low Forecast increases at a faster rate between 2030 and 2034 and is more aligned with the High Ridership Forecast. This comparison is presented in **Table 13** below.

Section 4.2: Fleet Forecast

This section was modified to reflect the Low Ridership Forecast. The three scenarios continued to be assessed in the short-term (2025 – 2029) and medium-term (2030 – 2034). In the short-term, no vehicle expansion is required based on the revised ridership forecasts, therefore, Scenario A is recommended (maintain existing fleet compisition). In the medium-term, Scenario B1 is recommended (similar to the previous report), which will include a reduction in 40-foot buses and increase in articulated buses and highway coach buses for regional routes.

Section 4.3: Comparisons and Recommendations

This section splits that Scenario Comparison table in the December 2024 report into two tables, seperating capital and operating costs. In the short-term, there is no difference in capital costs between any of the scenarios as the ridership forecast does not warrant higher capacity vehicles.

In the medium-term, capital costs for each option are presented. It should be noted that for Scenario B1 and B2, the capital costs represent the full capital costs of new vehicles, but also discounts this by the difference in cost between a 40-foot bus and an articulated bus, and/or a highway coach bus and a double-deck bus, where the is is a reduction in one vehicle type, to be replaced by another.

Operating costs have also been adjusted, and reflect average daily operating costs during the summer period when demand is at its highest.

Based on this assessment, Scenario B1 continued to be recommended in the medium-term.

As noted in the December 2024 report, this section is completed for evaluation purposes, and should not be used to determine the 10-year capital cost of the recommended scenarios.

Section 4.4: Fleet Growth
This section continued to use the Low Ridership Forecast, which results in a reduction in total vehicles required by 2049, from 114, to 98. This was used for the purposes of planning a future facility.

Section 4.5: Fleet Replacement
This section maintains the 12-year fleet replacement schedule, but sees a slight modification to the types of vehicles existing fleet are replaced by. This aligns with the expansion strategy, recognizing the reduction in 40-foot bus requirements in the medium-term and the need to replace some fleet with other vehicle types (in line with the expansion plan). Fleet replacement costs are also broken down by the primary funding authority (Town of Banff, Town of Canmore and Parks Canada/ID9). This is presented in **Table 21**.

Section 5.0 Facility Expansion Need
This section was updated to reflect a smaller vehicle requirement. In the update, all articulated buses to the 2049 horizon would be able to fit within the 111 Hawk Avenue facility. This means that the requirement for the new facility would only need space for approximately 68 parked buses. This reduced the land requirement for a new facility to under 1,800 sq ft.

It is recommended that options to expand the facility at 111 Hawk Avenue also be explored to further reduce the size of the new facility.

7.0: Summary of Recommendations
This section is updated to reflect the new fleet and facility growth plan. The fleet plan in **Table 23** is broken down by funding authority, and include a reduction in fleet expansion as the replacement of certain 40-foot buses fleet can be used to account for part of the growth in articulated and highway coach buses.

1.0 Project Background

Dillon Consulting Limited (Dillon), in conjunction with Richard Haukka Limited, has been retained to develop a Fleet and Facility study on behalf of the Bow Valley Regional Transit Services Commission (BVRTSC). The purpose of the study is to:

- Forecast the 10-year future fleet and facility needs in light of projectedd ridership growth (up to 2034);
- Understand the benefits and limitations of different bus models;
- Identify an appropriate fleet scenario based on ridership forecast results balancing costs, passenger comfort and convenience, and operational reliability;
- Design an annual fleet replacement and procurement plan; and
- Identify size of facility expansion based on 20-year fleet requirements and capacity of the existing facility.

2.0 Existing Situation

The BVRTSC operates transit services within the Town of Banff, the Town of Canmore and Improvement District 9 (ID9), as well as regional services between these municipalities under the brand of Roam Transit. Service is also contracted through Parks Canada to various trails and other visitor destinations in the Banff National Park and Kananaskis Improvement District during summer.

The service area of Roam Transit mainly covers visitor attractions with higher visitations during summer. Therefore, its service levels are divided into the summer period (mid-May to late-September) and winter period (late-September to mid-May), with more service provided in the summer. Service is provided using a fleet of 34 accessible 40-foot single-deck buses, of which 21 are used for peak summer service. This results in a summer spare ratio[1] of 38%, which is higher than industry norms. Using summer service as the peak service threshold, **Table 1** provides service details and a breakdown of the peak fleet by route.

Table 1: Service Details and Peak Fleet by Route

Service Areas	Routes	Name	Service Period	Headway (Mins)	Peak Vehicles
Banff Local	1	Gondola	All-year	8-65	4
	2	Fairmont	All-year	20-62	3
	4	Cave & Basin	Summer Only	29-75	1
Canmore Local	5C	Cougar Creek	All-year	30-70	1
	5T	Three Sisters	All-year	33-70	1
	12	Grassi Lake	Summer Only	63/93	1
Banff / Canmore Regional	3	Canmore - Banff Regional	All-year	24-57	3
Parks Canada / Improvement District 9 (ID9)	6	Lake Minnewanka	Summer Only	30-65	2
	8X	Lake Louise - Banff Regional	All-year	45-77	3
	9	Johnston Canyon	All-year	85-120	1
	10	Moraine Lake Regional Express	Mid-September to Mid-October	40-135	0[2]
	11	Lake Louise Local	Summer Only	35-66	1

The bus fleet consists of a mix of 30-, 40-/ 42.5-foot accessible conventional buses, accessible 45-foot highway coaches, and cutaway vehicles comprised of diesel, hybrid, and electric propulsion models.

[1] Spare ratio = No. of spare fleet vehicles ÷ No. of total fleet vehicles.
[2] Service of Route 10 is not provided in summer. Its operation is excluded from the analysis hereafter.

Table 2 below shows the compositions. For ease of discussion, 40-/ 42.5-foot standard conventional buses will be termed as 40-foot single-deck buses hereafter.

Table 2: BVRTSC Fleet Composition

Models	Length (Feet)	No. in Fleet	Breakdowns and Notes
Nova LFS	40’	12	• Consists of 11 diesel and 1 hybrid vehicles • 3 additional electric & 3 hybrid vehicles are to be delivered in March 2025
Grande West Vicinity	30’	3	• 3 diesel vehicles primarily used on Canmore routes
MCI D45 CRT LE	45’ 10”	7	• 4 diesel vehicles typically used on regional routes • 3 additional diesel vehicles are to be delivered in October 2024
Proterra ZX5/ Catalyst	42.5’	10	• Consisted of electric vehicles only
Chevrolet G4500/ Ford E450 Cutaway	27’	4	• Consisted of diesel vehicles only • Vehicles to be used on routes with lower ridership

In addition to the above fleet, there are also six 40-foot accessible single-deck buses and three accessible 45-foot highway coaches on order, alongside several buses planned to retire in the upcoming 10 years. **Table 3** below shows the fleet composition under existing conditions in the upcoming 10 years.

Table 3: Existing Fleet Composition in 10-Year Timeframe

Year	40' Bus	30' Bus	Highway Coach	Cutaway Vehicle	Total
2024	22	3	7	2	**34**
2025	28	3	7	2	**40**
2026	27	3	7	2	**39**
2027	27	3	7	2	**39**
2028	27	1	7	2	**37**
2029	27	1	7	2	**37**
2030	26	0	7	2	**35**
2031	26	0	7	2	**35**
2032	26	0	7	2	**35**
2033	26	0	7	2	**35**
2034	26	0	7	2	**35**

Buses are stored at a transit facility located at 111 Hawk Avenue within the Town of Banff. As this facility is at capacity, three buses are also stored in Canmore at 115 Boulder Crescent and another two cutaway buses are stored in the Canmore Bylaw Services building.

The 111 Hawk Avenue facility is approximately three years old and across the street from the Public Works facility. At maximum capacity, the facility could park a maximum of 40 x 40' units on site, although the ideal situation would be 28 vehicles. This consists of:

- 12 buses in the building with room for an additional 4 buses in the wash lane (however, this could not accommodate charging stations in these locations);
- 16 buses within three lanes under canopy outside the building, with an additional 4 buses stored in a fourth lane. In an ideal situation, the fourth lane is best used for washing/shuffling of buses[3]; and
- 4 buses that are occasionally stored outside on-site (not under cover).

The total number of units varies when the fleet composition includes 60-foot articulated buses or smaller mid-sized buses (27, 30, and 35 foot).

Other key features of the facility include a drive-through automatic wash rack capable of washing all existing fleet vehicles, including coaches. The side and rear wash function wash brushes are 170" tall (14.2'), sufficient for double-deck buses. The internal bus storage area is heated and includes charging infrastructure for the existing Proterra electric buses. All bays are drive-through, eliminating the need to reverse units to navigate the facility.

Currently, no maintenance is performed at the facility, and there is no inventory. The facility was intended to function solely as a parking/operations facility. However, there are limited opportunities to store inventory on-site. Pallet racking could be placed against the outside wall in the covered parking area. This area would be suitable for storing inventory that is not temperature- or moisture-sensitive.

[3] An fifth lane that would add capacity for four additional 40-foot buses was considered, but would need approval from Parks Canada given its proximity to a nearby creek/riparian zone

Figure 1: External Covered Parking with Parts Storage Opportunity

The property is not fenced/secured other than gates to permit access. Outdoor racking placed against the wall in the covered storage area can provide a fixed inventory position for large inventory items such as brake kits, wheels/tires, body panels, etc., which the Town of Banff is either unable to or unwilling to store due to physical and operational constraints. Minor defects logged on trip inspection reports can be addressed at 111 Hawk Avenue to improve response times from trip inspection reports that do not require the attention of a certified mechanic or a hoist. Examples of these types of repairs include bus interior repairs, lighting, passenger entry and exit door maintenance, farebox and onboard electronics, limited oil and coolant leak repairs and glass work. These types of repairs can be performed with a certified mechanic or may be performed by non-certified technicians if the work is not safety-sensitive in nature.

3.0 Vehicle Type Review

The BVRTSC currently mainly uses accessible 40-foot buses for Banff's Local and regional services. Accessible 45-foot highway coach buses are also dispatched for inter-regional trips to ID9. For Canmore Local services, 30-foot accessible buses are used. It is understood that vehicles of lower capacity, i.e., 30-foot accessible buses and cutaway vehicles, are retiring soon with no replacement planned, they are excluded from discussions hereafter.

Given the challenges in attracting vehicle operators, a review was conducted about the suitability of switching to a higher-capacity vehicle. Two vehicle types that were explored include:

- 60-foot accessible articulated buses; and
- 40-foot accessible double-deck buses.

The following section assesses modifications to the operating environment and facilities necessary to operate these two types of vehicles and provides recommendations for the vehicle types dispatched to each route.

3.1 Vehicle Specifications

New Flyer Industries was contacted to get a better understanding of the specifications, cost and availability of each bus type. It should be noted that New Flyer was contacted because the company produces each bus type. This does not reflect any decision to purchase buses from this manufacturer.

Table 4 provides a breakdown of each bus type, including the existing bus in use by the BVRTSC. It is noted that the Enviro500 SuperLo will not be available as an option unless there is an order of sufficient size (i.e., at least 50 buses) for Alexander Dennis to consider getting it tested for the latest environmental protection assessment. Given the size of the BVRTSC, this will not be a feasible option and therefore, it is excluded from the discussion hereafter.

Table 4: Bus Type Specifications

Metrics		40' Single-Deck Bus	45' Highway Coach	60' Articulated Bus	40' Double-Deck Urban Bus	
Manufacturer		New Flyer	Motor Coach Industries	New Flyer	Alexander Dennis	
Model		Xcelsior	D45 CRT LE	Xcelsior	Enviro500 (Regular)	Enviro500 SuperLo
Length (Feet)		41'	45.8'	60.8'	42.4'	45.3'
Height (Feet)		10.5'-10.9'	11.6'	10.5'-10.9'	13.5'	12.8'
Width (Feet)		8.5'	8.5'	8.5'	8.25'	8.4'
Seated Capacity		40	54	61	80 (One stair) 74 (Two stairs)	81
Standing Capacity		44	0	62	21	0[4]
Fuel Type		• Battery-Electric • Fuel Cell-Electric • Compressed Natural Gas • Hybrid • Clean Diesel • Trolley-Electric	• Diesel • Battery-electric	• Battery-Electric • Fuel Cell-Electric • Compressed Natural Gas • Hybrid • Clean Diesel • Trolley-Electric	• Diesel • Battery Electric	• Diesel • Battery Electric[5]
Capital Cost[6]	Diesel	$850,000	$1,200,000	$1,300,000	$1,750,000	N/A
	Natural Gas	$950,000	N/A	$1,550,000	N/A	N/A
	Hybrid	$1,150,000	N/A	N/A	N/A	N/A
	Battery Electric	$1,450,000	$2,100,000	$2,350,000	$2,500,000	N/A
Average Lifecycle (Years) (Altoona Tested Lifespan)		12+	12	12	12	N/A
Delivery Timelines (Months from Purchase Order)		16-18	10-12	16-18	16-18	Currently unavailable
Max. Electric Option Range (km)		595	402	450	443	N/A

[4] No standees due to low height.
[5] Subject to redesign to incorporate componentry and technology.
[6] Rounded to the closest $50,000.

3.2 Operating Environment Assessment

An assessment of the operating environment was completed to identify any potential constraints operating articulated buses and double-deck buses in the Town of Banff. This included a site visit to review potential constraints on busy bus routes (overhead, turning and bus stop pull-in/out) and an AutoTURN analysis through AutoCAD to identify potential turning-moving challenges of an articulated bus.

3.2.1 Stop Environment

A review of bus stops in Banff was completed to identify if bus stops which were designed for 40-foot buses or 45-foot highway coaches could accommodate a longer articulated bus.

The assessment of stop environment was focused on Routes 1 and 2 and conducted through a combination of Google Maps and site visit. Concerns that might require remediation include short bus bays or stops located adjacent to intersections that may leave articulated buses blocking traffic while passengers are boarding. **Table 5** below identifies stops requiring remediation and the suggested remediation measures.

Table 5: Stops Requiring Remediation to Operating Articulated Buses – Route 1

Stop Names	Directions	Stop Issues	Remediation Measures
Antelope Lane (**Figure 2**)	Industrial Compound	• Short bus pad • Articulated buses stopping would intrude into lawn adjacent and the Banff Avenue/ Antelope Lane intersection	• Move lawn away from the stop • Move the stop forward
Fox Street East (**Figure 3**)	Industrial Compound	• Short bus bay • Articulated buses stopping would block right lane traffic • Rear door boardings of articulated buses would be blocked by trees and lawn	• Remove embayment • Remove trees and lawn
Middle Springs Drive (**Figure 4**)	Industrial Compound	• Not accessible with the absence of bus pad • Articulated buses stopping would not have adequate stop space to align with the stop pole and benches installed	• Construct a bus pad to make the stop accessible • Relocate stop pole and benches forward

Figure 2: Antelope Lane Stop

Figure 3: Fox Street East Stop

Figure 4: Middle Springs Drive Stop

3.2.2 Overhead Environment

A combination of Google Maps and site visit was also conducted on the overhead challenge for operating double-deck buses on Routes 1 and 2. It is found that along the section of Banff Avenue between Moose Street and Marmot Crescent where Route 1 is currently operating, excessively grown trees along the median may hit the upper deck of a double-deck bus (**Figure 5**). However, since buses would generally run along the right lane for ease of boarding, no remediation measures are required.

Figure 5: Excessively Grown Trees Along Banff Avenue

3.2.3 Turning Environment

Due to longer length than the existing buses in use, turning movement of articulated buses might be difficult at intersections with shorter width or higher traffic volume. The BVRTSC identified two intersections for this assessment:

- Banff Avenue & Spray Avenue intersection (**Figure 6**); and
- Mountain Avenue roundabouts (**Figure 7**).

The Dillon team used a combination of site visit and the AutoTURN function of AutoCAD simulating turning movement of an articulated bus to identify any challenges and mitigation measures. It is noted that the analysis accuracy might be affected since only GIS map layers are available from the Town of Banff for the simulation.

Figure 6: Banff Avenue and Spray Avenue Intersection

Figure 7: Mountain Avenue Roundabouts

3.2.3.1 Banff Avenue and Spray Avenue Intersection

Currently buses operating Routes 1 and 2 would turn right from Spray Avenue onto Banff Avenue for northbound departures and turn left from Banff Avenue onto Spray Avenue for southbound departures. Through site visit, the Dillon team discovered the existing right turn movement for a 40-foot bus requires compromise, where bus operators would make the turn after all left turn traffic from Banff Avenue onto Spray Avenue are cleared to avoid hitting the traffic and swing out while making the turn to avoid hitting the curb. The AutoTURN analysis confirms the situation would be more challenging for an articulated bus to make the turn with the following concerns:

- Bus was noted to crossover into the southbound left turn lane by 2.26m.
- Bus may hit traffic calming measure in place (**Figure 8**).
- Bus cannot use advanced green signal due to oncoming traffic turning left.

Figure 8: Traffic Calming Measure

Regarding the observations, it is suggested for the BVRTSC inform operators providing service on Route 1 and 2 to straddle both lanes on Spray Avenue and turn at the left lane. It is also recommended for the Town of Banff to move the traffic calming measure backward to leave more room for bus turning and implement signal priority facilitating turning movements and increasing service reliability. These modifications should be able to allow an articulated bus to maneuver through this intersection.

3.2.3.2 Mountain Avenue Roundabouts

Buses operating Route 1 would use the two roundabouts for both directions. The AutoTURN analysis found the following turning concerns:

- Bus may crossover concrete truck apron of smaller roundabout; and
- Concrete truck apron is already being crossed as evident by tire markings across it (**Figure 7** above).

Since the existing 40-foot buses are already crossing the concrete truck apron and no safety issues are found, no remediation measures are required for operating articulated buses at the roundabouts.

3.2.4 Operating Environment

A high level assessment was also completed regarding the ability of articulated and double-deck buses to operate in a mountainous environment that often has high accumulations of snow/ice, and with certain routes operating on steep roads.

Based on a general assessment, articulated buses do not always perform as well as 40-foot buses on icy slopes. To address this, Coast Mountain Bus Company has procured the new four-wheel drive articulated hybrid buses, which are expected to resolve traction issues on on a route with steep slopes in

specific winter conditions there. The other option would be to use the 40-foot buses during severe winter conditions. Since headways during the winter are not as frequent, the number of spare 40-foot buses would be higher in ther winter and could be used for revenue service.

Double-deck buses are also not shown to have limited performance in these conditions over the existing 45-foot highway coaches currently in operation.

To confirm the operation, particularly in winter operating conditions, it is recommended that the BVRTSC request a bus on loan for a nearby organization to test its operation within the Town of Banff, focused on areas with tight turning movements or steep grades.

3.3 Facility Assessment

The existing facility at 111 Hawk Avenue can accommodate all new bus types being considered to operate in the region. This includes the Alexander Dennis Double-Deck Enviro500 models. No retrofits of the facility would be required if articulated or double-deck buses were fueled and stored in this facility. It should be noted that the existing facility is at capacity under ideal operating conditions and there is no room to park additional vehicles on-site. For the purposes of this assessment, it was assumed that the preferred storage size of this facility is 28 vehicles, with no vehicles parked outside in an uncovered area (as outdoor storage can increase operational inefficiency and maintenance costs through exposure to weather and temperatures that will cause vehicle components to malfunction and wear prematurely).

Buses are maintained at a separate facility located across the street at 136 Hawk Avenue, operated by the Town of Banff. The facility has 2 sets of 4-column lift hoists and one drive-on pit and the ability to maintain 50[7] buses at the same time. Parts for vehicles are also stored in this facility. However, space is limited to a single 12'x15' office converted to an inventory room. Additional parts must be stored outside or in another location. There is no room for bulky or heavy parts in their inventory site. The Town of Banff would prefer to order larger items as needed, which can lead to additional downtime due to lead times when ordering specialty bus parts.

The existing maintenance facility is able to accommodate both articulated buses and double-deck models discussed in this study. The Town of Banff maintenance operation can increase volume by about 30% by increasing labour in the schedule where the shop is underutilized or inactive: nights and weekend evenings. When introducing new models or vehicle types (including propulsion), the existing staff will require technical training and vehicle orientation.

3.3.1 Vehicle Storage and Layout

Servicing and parking buses at the current facility can be achieved in multiple different ways, depending on the fleet configuration and schedule requirements. The existing facility is at capacity. Washing and

[7] Number of buses can be increased by adding labour on weekends and a graveyard shift

cleaning logistics along with staging electric bus charging inside the building, restrict the vehicle dispatch process. This requirement adds a layer of complexity when buses are returned to the depot from service and prepared for use the next day.

3.3.2 Electrification Assessments and Needs

Any new buses powered by electricity, hybrid diesel/electric, could be stored at the 111 Hawk Avenue location (based on a maximum of 28 vehicles). The charging stations should be configured in the facility to align with parking/dispatch requirements. In-depot chargers are the best option for this facility. These chargers can be installed inside and outside the facility. The parking facility at 111 Hawk Avenue was designed with electrification considered and has the ability to increase charging by adding chargers/dispensers as required. Infrastructure connecting the facility to the grid needs to be verified before exact recommendations can be made.

Vehicle clearance in and out of the facility is acceptable for all vehicles discussed in this study. Only one available model may have door clearance issues without adjustment: the Alexander Dennis Enviro 400 EV with long-range batteries. The low points are the overhead door frames at 4.3 meters (168 inches), and the overhead door connecting linkage at 4.4 meters (173 inches).

While not reviewed as part of the scope of this report, the opportunity for on-route charging infrastructure should also be explored.

3.3.2.1 Infrastructure Considerations

To support charging for the projected expansion buses, BVRTSC would need sufficient grid capacity and charging station infrastructure. If power requirements exceed what is available to the facility at some point in transitioning to electric buses, new infrastructure considerations should include the capacity to charge 36 high-capacity buses daily. The option to slow-charge buses versus rapid charge can also reduce peak electrical demand to the facility.

3.4 Recommendations

Table 6 below compares the different fleet types considered for future operation of the BVRTSC. The above assessments show that it is feasible to operate articulated and double-deck buses under the existing operating and facility environment. For double-deck buses, little modifications would need to be made to the operating environment. For articulated buses, some modifications would need to be made to certain stops and intersections. Modifications to the facility would be required for both bus types.

Table 6: Vehicle Type Comparisons

Metrics	40' Single-Deck Bus	45' Highway Coach	Articulated Bus	Double-Deck Bus
Price	Low	Medium	High	High
Capacity	Low	Low	High	Medium
Turning Radius	Medium	Medium	Long	Long
Operating Challenges in Ice/Snow	Low	Low	Low/Medium*	Medium
Boarding Time	Short	Long	Short	Long
Electric Option Range	Long	Medium	Medium	Medium
Operating Cost (Per Passenger)	High	High	Low	Medium
Operators Required	High	High	Low	Medium
Retrofit Effort (Garage)	None	None	Low	Low
Retrofit Effort (Street)	None	None	Medium	None
Comments	Versatile all-rounder	Good for regional routes prioritizing passenger comfort	High capacity, good for routes with frequent ons and offs	Tough dimensions, best for long routes with few ons and offs

**Vehicle configuration influences winter performance and could reduce this to a "Low" category with the correct vehicle type.*

A strategic working session was held in late September 2024 and attended by representatives from BVRTSC, Towns of Banff and Canmore, Parks Canada, and the Dillon team, where the findings in **Table 6** above were discussed and confirmed. Based on these discussions, it was agreed by all parties that:

- 40-foot single-deck buses would continue to operate Route 6, given bus turning difficulties en route[8];
- 40-foot single-deck buses would continue to operate the Parks Canada / ID9 routes with lower ridership (Routes 9 & 11);
- Routes that operate within Banff with higher ridership (Routes 1 & 2) would consider 60-foot articulated buses;

[8] Note: Turning challenges are at specific locations at Johnson Lake and Minnewanka, both of which could be overcome with modifications to the site.

- Articulated buses are not suitable for highway travel in terms of passenger comfort, and therefore, inter-regional routes between Banff and Canmore and Banff and Lake Louise would only consider 45-foot highway coaches or 40-foot double-deck buses;
- The number of vehicle types shall be kept as low as possible to minimize knowledge and costs associated in maintenance, in addition to possible renovation required to storage facilities;
- Articulated buses procured should be the same model as the existing 40-foot single-deck buses (Nova LFS) to share parts and maintain repair efficiency; and
- Service headway should be kept as the existing level or better if larger capacity vehicles are introduced.

As a result, **Table 7** below summarizes the preferred vehicles to be dispatched in the upcoming 10-year timeframe to each route. This includes future service on Route 13 (Three Sisters and Smith Creek), which is expected to commence operation by the end of this timeframe.

Table 7: Preferred Vehicles Dispatched to Each Route

Service Areas	Routes	Preferred Vehicles Dispatched
Banff Local	1	• 40-Foot Single Dec Bus; or • Articulated Bus
	2	• 40-Foot Single Dec Bus; or • Articulated Bus
	4	40-Foot Single-Deck Bus
Canmore Local	5C	40-Foot Single-Deck Bus
	5T	40-Foot Single-Deck Bus
	12	40-Foot Single-Deck Bus
	13	40-Foot Single-Deck Bus
Banff / Canmore Regional	3	• 40-Foot Double-Deck Bus (Regular); or • 45-Foot Highway Coach
Parks Canada / ID9	6	• 40-Foot Single-Deck Bus
	8X	• 40 Foot Double-Deck Bus (Regular); or • 45-Foot Highway Coach
	9	40-Foot Single-Deck Bus
	11	40-Foot Single-Deck Bus

4.0 Ridership Forecast and Fleet Expansion

The number of vehicles required for Canmore, Banff, and Parks Canada routes in the upcoming 10 years shall be dependent on forecasted transit ridership growth. The Dillon team developed two scenarios for a fleet expansion plan based on the projected ridership required to accommodate population and visitor growth. They are:

- **Scenario A** - Continue operation with the existing vehicle types in **Table 2** above; and
- **Scenario B** - Add articulated bus and double-deck buses to operate some routes with higher ridership as per **Table 7** above.

The following section discusses the ridership forecast results and the subsequent vehicle compositions required to satisfy passenger needs. The two scenarios are compared in terms of operating and capital costs to determine which of them would incur lower cost for the BVRTSC while still maintaining a high level of service.

4.1 Ridership Forecast

A Low and a High ridership forecast was developed for this study. The High forecast was based on the outcomes of the 2023 Town of Canmore Transit Master Plan, taking in a number of these assumptions and applying them to the Town of Banff and Parks Canada / ID9 routes. The Low forecast was based on the ridership forecasts included in the 2025-2028 Strategic Plan completed by the BVRTSC. Each are described in more detail below.

4.1.1 High Ridershp Forecast

High ridership forecasts were based on the ridership forecasts that were completed in the 2023 Town of Canmore Transit Master Plan, which reflected a rate of visitor and population growth, and a mode share target for transit trips. This was adjusted for the Town of Banff and Parks Canada / ID9 to reflect local conditions. The detailed methodology is noted below.

Canmore

The ridership forecast for Canmore is based on the Transit Master Plan completed by Dillon in 2023. The goal of the study is to identify any changes to routes and services required to accommodate population growth and the mode share target identified by the Town of Canmore. According to the Plan, transit mode share, including Roam Transit and inter-regional coach services, is expected to grow from 2% to 5% between 2023 and 2030. At the same time, population and visitor is expected to grow at an annual rate of 2% and 3%, respectively. This translates to growing from a maximum of 1,830 riders per day on Roam Transit service in Canmore in 2023 to 4,386 riders by 2030. After 2030, assuming the mode share target would have been met, it is expected ridership would grow at a lower rate equivalent to the

combined population and visitor growth. **Table 8** below illustrates the expected changes in ridership in the upcoming 10 years.

Table 8: 10-Year Ridership Forecast in Canmore

Routes	Existing (2023)	2029		2034	
	Peak Daily Ridership	Peak Daily Ridership	Annual Growth Rate	Peak Daily Ridership	Annual Growth Rate
3*	792	1,644	13.0%	2,322	6.3%
5C	552	919	8.9%	1,298	6.3%
5T	338	687	12.5%	971	6.3%
12	148	523	23.4%	739	6.3%
13	N/A	N/A	N/A	636	N/A
Total	**1,830**	**3,774**	**N/A**	**5,967**	**N/A**

** Note: Route 3 is split with the Town of Banff, but is presented here as the ridership forecast was completed as part of the Town of Canmore Transit Master Plan.*

Banff

The Town of Banff currently does not have a transit mode share target. It is expected population will have limited growth, while visitors will grow at an annual rate of 4%. Given the existing parking shortage in the Town, it is expected more residents and visitors will utilize transit instead of using private vehicles in the upcoming 10 years. Using Canmore as a benchmark, the Dillon team assumed the visitor ridership would grow at a similar rate, while resident ridership would grow as a much slower rate (approximately 1% annually) to reflect limited opportunities for population growth.

Under the High Ridership Growth scenario, the peak daily ridership on Banff local services is ancitipated to increase from 7,307 in 2023 to 13,371 by 2034. **Table 9** below illustrates the expected ridership in Banff.

Table 9: 10-Year Ridership Forecast in Banff

Routes	Existing (2023)	2029		2034	
	Peak Daily Ridership	Peak Daily Ridership	Annual Growth Rate	Peak Daily Ridership	Annual Growth Rate
1	4,083	5,624	5.5%	7,402	5.7%
2	2,973	4,138	5.7%	5,487	5.8%
4	252	358	6.1%	482	6.1%
Total	**7,307**	**10,120**	**5.6%**	**13,371**	**5.7%**

Parks Canada / ID9 Routes

No target transit mode share is designated for Parks Canada / ID9 routes. The Dillon team made the following assumptions to forecast ridership growth on Parks Canada routes:

- The same annual visitor ridership growth rate of 6.3% as Banff Local is assumed on Parks Canada / ID9 routes since ridership on these routes is closely related to that of Banff.
- Upon discussions with Parks Canada / ID9 staff during the strategic working session:
  - It is understood that no new routes to other attractions are expected to launch in the upcoming 10 years.
  - Measures limiting vehicle access to Lake Louise are expected by 2029, where transit mode share and ridership on Route 8X is expected to increase.
  - Measures limiting vehicle access to Lake Minnewanka are expected by 2034, where transit mode share and ridership on Route 6 is expected to increase significantly.

As a result of these assumptions, **Table 10** below shows the results of the 10-year ridership forecast on Parks Canada / ID9 routes.

Table 10: 10-Year Ridership Forecast on Parks Canada Routes

Routes	Existing (2023)	2029		2034	
	Peak Daily Ridership	Peak Daily Ridership	Annual Growth Rate	Peak Daily Ridership	Annual Growth Rate
6	1,006	1,449	6.3%	3,170	6.3%*
8X	1,425	3,313	6.3%*	4,491	6.3%
9	255	367	6.3%	497	6.3%
11	165	237	6.3%	322	6.3%
Total	**2,849**	**5,366**	**6.3%**	**8,480**	**6.3%**

**In addition to this growth, Parks Canada identified that a one-time ridership growth of 61% is expected on Routes 6 and 8X, based on a new private vehicle control measure to Lake Louise and Moraine Lake.*

4.1.2 Low Ridership Forecast

The Low forecast is based on the ridership projections that were conducted as part of the Bow Valley Regional Transit Services Commission 2025-2028 Strategic Plan. The Strategic Plan identifies projected annual ridership growth over a 10-year period, as outlined **Table 11** below.

Table 11: Ridership Growth from BVRTSC 2025-2028 Strategic Plan

Ridership	2023	2029	2034
Annual Ridership	2,632,283	3,000,000	5,000,000
Annual Growth (%)	N/A	2.2%	10.8%

This annual ridership forecast was converted to daily ridership per route to estimate the impact on peak vehicle requirements over a 10-year period. This was done by applying the annual growth rate to each route, with a slight reduction in local Banff routes to reflect the contstraint in population growth. The daily summer-period forecasts are presented in **Table 12** below.

Table 12: Summary of Low Ridership Forecast

Routes	Existing (2023)	2029		2034	
	Peak Daily Ridership	Peak Daily Ridership	Annual Growth Rate	Peak Daily Ridership	Annual Growth Rate
Town of Banff Local					
1	4,083	4,600	2.0%	7,221	9.4%
2	2,973	3,358	2.1%	5,349	9.8%
4	252	286	2.2%	469	10.4%
Town of Canmore					
3*	792	940	2.9%	1,945	15.7%
5C	552	650	2.8%	1,293	14.8%
5T	338	398	2.8%	790	14.7%
12	148	177	3.0%	380	16.4%
13	N/A	N/A	N/A	636	N/A
Parks Canada / ID9					
6	1,006	1,146	2.2%	3,083	10.8%
8X	1,425	2,621	2.2%	4,368	10.8%
9	255	290	2.2%	483	10.8%
11	165	188	2.2%	313	10.8%
Total	**11,987**	**14,654**	**3.4%**	**26,331**	**12.4%**

** Note: Route 3 is split with the Town of Banff, but is presented here as the ridership forecast was completed as part of the Town of Canmore Transit Master Plan.*

4.1.3 Summary

Table 13 below provides a comparison of the Low and the High Forecast over a 10-year period. As noted below, the biggest difference is over the first five-year period, where the Strategic Plan identifies a slower rate of growth by 2029. Between 2029 and 2034, there is less of a difference in daily summer ridership, with the High Ridership Growth Scenario 6.5% more than the Low Ridership Growth Scenario.

Table 13: Peak Daily Ridership Forecast Comparison

Routes	Existing (2023)	2029		2034	
		Low Forecast	High Forecast	Low Forecast	High Forecast
Town of Banff Local					
1	4,083	4,600	5,624	7,221	7,402
2	2,973	3,358	4,138	5,349	5,487
4	252	286	358	469	482
Town of Canmore					
3*	792	940	1,644	1,945	2,322
5C	552	650	919	1,293	1,298
5T	338	398	687	790	971
12	148	177	523	380	739
13	N/A	N/A	N/A	636	636
Parks Canada / ID9					
6	1,006	1,146	1,449	3,083	3,170
8X	1,425	2,621	3,313	4,368	4,491
9	255	290	367	483	497
11	165	188	237	313	322
Total	**11,987**	**14,654**	**19,259**	**26,331**	**28,040**

** Note: Route 3 is split with the Town of Banff, but is presented here as the ridership forecast was completed as part of the Town of Canmore Transit Master Plan.*

4.2 Fleet Forecast

Based on Low Ridership Growth Scenario identified above, the following sub-section discusses the fleet required to satisfy passenger needs in the two scenarios. With reference to the existing boardings per revenue vehicle hour (rvh) and balancing passenger comfort and cost-efficiency, the boardings per rvh triggers in **Table 14** below are assumed as a trigger to add another vehicle (increase frequency). For Route 1 and 2, since its boarding activities in the Town of Banff are more frequent than other routes, a higher trigger is assumed on these two routes.

Table 14: Boardings per Revenue Vehicle Hour Triggers of Bus Types

Bus Types		Seat Capacity	Standees	Total Capacity	Boardings per Rvh Triggers
40-Foot Single-deck Bus (40')		40	44	84	90 (Routes 1 & 2) 50 (Other Routes)
45-Foot Highway Coach (Coach)		54	0	54	45
Articulated Bus (Artic)		61	62	123	130 (Routes 1 & 2 Only)
Double-deck Bus (DD)	One Stair	80	21	101	80
	Two Stairs	74		95	

The two fleet scenarios are discussed in **Sections 4.2.1** and **4.2.2** below, where the forecast results are presented in 5-year intervals, i.e., 2029 and 2034. The following assumptions were made to forecast the number of spare vehicles:

- A 25% minimum spare ratio is assumed given the industry norm and existing fleet composition shown in **Table 3** above. Scenarios with more vehicle types will have a slightly higher spare ratio due to smaller sub-fleet sizes.
- Spare vehicles would be procured for each vehicle type with higher spare ratio for 40-foot single-deck bus given its versatility; and
- Existing vehicle types that will not be used based on the chosen fleet scenario, including 30-foot buses and cutaway vehicles, would be phased out by 2029 to maintain fleet efficiency.

4.2.1 Scenario A – Existing Fleet

Table 15 below shows the fleet requirement of Scenario A in the upcoming 10 years. This scenario assumes no change to the type of fleet and uses 40-foot buses and for all services, except for Route 8X, which uses highway coaches. Since the existing fleet vehicles uses lower capacity vehicles than articulated and double-deck buses in Scenario B, more vehicles and revenue vehicle hours are required to satisfy passenger needs in the latter half of the upcoming 10-year timeframe, which in turn signifies the need for more operators recruited and higher vehicle procurement and operating cost.

Table 15: Scenario A Fleet Requirement

Service Areas	Routes	2024				2029					2034				
		Bus Type	No. of Bus	Rvh	Boardings / Rvh	Bus Type	Boardings / Rvh Trigger	No. of Bus	Rvh	Boardings / Rvh	Bus Type	Boardings / Rvh Trigger	No. of Bus	Rvh	Boardings / Rvh
Banff Local	**1**	40’	4	60.8	67.1	40’	90.0	4	60.8	75.6	40’	90.0	6	91.2	79.1
	2	40’	3	39.0	76.3	40’	90.0	3	39.0	86.1	40’	90.0	5	65.0	82.3
	4	Cutaway	1	7.4	34.0	40’	50.0	1	7.4	38.6	40’	50.0	2	14.8	31.7
Canmore Local	**5C**	30’	1	16.8	32.9	40’	50.0	1	16.8	38.7	40’	50.0	2	33.6	38.5
	5T	30’	1	17.0	19.9	40’	50.0	1	17.0	23.4	40’	50.0	1	17.0	46.5
	12	40’	1	7.8	19.0	40’	50.0	1	7.8	22.7	40’	50.0	1	7.8	48.6
	13	--	--	--	--	--	--	--	--	--	40’	50.0	1	16.8	37.9
Canmore / Banff Regional	**3**	40’	3	40.5	19.5	40’	50.0	3	40.5	23.2	40’	50.0	3	40.5	48.0
Parks Canada / ID9	**6**	40’	2	20.8	48.3	40’	50.0	3	31.2	36.7	40’	50.0	6	62.5	49.3
	8X	Coach	3	40.0	35.7	Coach	45.0	5	66.6	39.4	Coach	45.0	8	106.5	41.0
	9	40’	1	10.3	24.8	40’	50.0	1	10.3	28.3	40’	50.0	1	10.3	47.2
	11	40’	1	6.0	27.3	40’	50.0	1	6.0	31.1	40’	50.0	1	6.0	51.9
Peak Fleet Required			**21**	**266.4**				**24**	**303.4**				**37**	**472.0**	
• ***40’***			***15***					***19***					***29***		
• ***Coach***			***3***					***5***					***8***		
• ***30’ / Cutaway***			***3***					***0***					***0***		
Spare Fleet			**13**					**10**					**13**		
• ***40’***			***7***					***8***					***10***		
• ***Coach***			***4***					***2***					***3***		
• ***30’ / Cutaway***			***2***					***0***					***0***		
Spare Ratio			**38%**					**29%**					**26%**		
Total Fleet			**34**					**34**					**50**		

**Boardings per Rvh in red denotes forecasted figures slightly higher than triggers where an extra vehicle added to service is not recommended considering cost efficiency.*

4.2.2 Scenario B – New Fleet

Under Scenario B, articulated buses will be procured and dispatched to local routes in Banff with higher ridership. This scenario is further divided into the following assumed sub-scenarios governing fleet dispatched to regional services of Route 3 and 8X:

- Scenario B1 – 45-foot coaches on regional routes (**Table 16**); and
- Scenario B2 – Double-deck buses on regional routes (**Table 17**).

A mix of coaches and double-deck buses dispatched to regional routes is not recommended due to the assumption in **Section 3.4** above where vehicle types shall be minimized, and therefore, this option is not discussed here.

Based on the results below, with higher capacity vehicles dispatched on local routes in Banff and these regional routes, fewer vehicles and revenue vehicle hours are required than Scenario A to satisfy the forecasted transit demand. This in turn signify fewer operators needed and lower operating cost.

It should be noted that Scenario A would result in more frequent service as during the summer period between 2029 and 2034, as the lower capacity 40-foot vehicles would trigger the need for more service sooner than a higher capacity articulated bus. While this poses a benefit in the summer, this same frequency is not required in the winter, resulting in the need to hire additional operators during the summer period only. This poses a challenge for BVRTSC, as recruiting for seasonal positions has been difficult. The use or articulated buses in Scenario B would reduce this peak summer requirement for operators, as the frequency would not be as high and more closely match the winter schedule.

Table 16: Scenario B1 Fleet Requirement

Service Areas	Routes	2024				2029					2034				
		Bus Type	No. of Bus	Rvh	Boardings / Rvh	Bus Type	Boardings / Rvh Trigger	No. of Bus	Rvh	Boardings / Rvh	Bus Type	Boardings / Rvh Trigger	No. of Bus	Rvh	Boardings / Rvh
Banff Local	**1**	40’	4	60.8	67.1	Artic	130.0	4	60.8	75.6	Artic	130.0	4	60.8	118.7
	2	40’	3	39.0	76.3	Artic	130.0	3	39.0	86.1	Artic	130.0	4	52.0	102.9
	4	Cutaway	1	7.4	34.0	40’	50.0	1	7.4	38.6	40’	50.0	2	14.8	31.7
Canmore Local	**5C**	30’	1	16.8	32.9	40’	50.0	1	16.8	38.7	40’	50.0	2	33.6	38.5
	5T	30’	1	17.0	19.9	40’	50.0	1	17.0	23.4	40’	50.0	1	17.0	46.5
	12	40’	1	7.8	19.0	40’	50.0	1	7.8	22.7	40’	50.0	1	7.8	48.6
	13	--	--	--	--	--	--	--	--	--	40’	50.0	1	16.8	37.9
Canmore / Banff Regional	**3**	40’	3	40.5	19.5	Coach	45.0	3	40.5	23.2	Coach	45.0	4	54.0	36.0
Parks Canada / ID9	**6**	40’	2	20.8	48.3	40’	50.0	3	31.2	36.7	40’	50.0	6	62.5	49.3
	8X	Coach	3	40.0	35.7	Coach	45.0	5	66.6	39.4	Coach	45.0	7	93.2	46.9
	9	40’	1	10.3	24.8	40’	50.0	1	10.3	28.3	40’	50.0	1	10.3	47.2
	11	40’	1	6.0	27.3	40’	50.0	1	6.0	31.1	40’	50.0	1	6.0	51.9
Peak Fleet Required			**21**	**266.4**				**24**	**303.4**				**34**	**442.1**	
• ***40’***			***15***					***9***					***15***		
• ***Artic***			***0***					***7***					***8***		
• ***Coach***			***3***					***8***					***11***		
• ***30’ / Cutaway***			***3***					***0***					***0***		
Spare Fleet			**13**					**10**					**12**		
• ***40’***			***7***					***7***					***5***		
• ***Artic***			***0***					***0***					***3***		
• ***Coach***			***4***					***3***					***4***		
• ***30’ / Cutaway***			***2***					***0***					***0***		
Spare Ratio			**38%**					**29%**					**26%**		
Total Fleet			**34**					**34**					**46**		

**Boardings per Rvh in red denotes forecasted figures slightly higher than triggers where an extra vehicle added to service is not recommended considering cost efficiency.*

Table 17: Scenario B2 Fleet Requirement

Service Areas	Routes	2024				2029					2034				
		Bus Type	No. of Bus	Rvh	Boardings / Rvh	Bus Type	Boardings / Rvh Trigger	No. of Bus	Rvh	Boardings / Rvh	Bus Type	Boardings / Rvh Trigger	No. of Bus	Rvh	Boardings / Rvh
Banff Local	**1**	40’	4	60.8	67.1	Artic	130.0	4	60.8	75.6	Artic	130.0	4	60.8	118.7
	2	40’	3	39.0	76.3	Artic	130.0	3	39.0	86.1	Artic	130.0	4	52.0	102.9
	4	Cutaway	1	7.4	34.0	40’	50.0	1	7.4	38.6	40’	50.0	2	14.8	31.7
Canmore Local	**5C**	30’	1	16.8	32.9	40’	50.0	1	16.8	38.7	40’	50.0	2	33.6	38.5
	5T	30’	1	17.0	19.9	40’	50.0	1	17.0	23.4	40’	50.0	1	17.0	46.5
	12	40’	1	7.8	19.0	40’	50.0	1	7.8	22.7	40’	50.0	1	7.8	48.6
	13	--	--	--	--	--	--	--	--	--	40’	50.0	1	16.8	37.9
Canmore / Banff Regional	**3**	40’	3	40.5	19.5	DD	65.0	3	40.5	23.2	DD	65.0	3	40.5	48.0
Parks Canada / ID9	**6**	40’	2	20.8	48.3	40’	50.0	3	31.2	36.7	40’	50.0	6	62.5	49.3
	8X	Coach	3	40.0	35.7	DD	80.0	3	40.0	65.6	DD	80.0	4	53.3	82.0
	9	40’	1	10.3	24.8	40’	50.0	1	10.3	28.3	40’	50.0	1	10.3	47.2
	11	40’	1	6.0	27.3	40’	50.0	1	6.0	31.1	40’	50.0	1	6.0	51.9
Peak Fleet Required			**21**	**266.4**				**22**	**276.8**				**30**	**375.3**	
• ***40’***			***15***					***9***					***15***		
• ***Artic***			***0***					***7***					***8***		
• ***DD***			***3***					***6***					***7***		
• ***30’ / Cutaway***			***3***					***0***					***0***		
Spare Fleet			**15**					**12**					**11**		
• ***40’***			***7***					***7***					***5***		
• ***Artic***			***0***					***3***					***3***		
• ***DD***			***4***					***2***					***3***		
• ***30’ / Cutaway***			***2***					***0***					***0***		
Spare Ratio			**38%**					**35%**					**27%**		
Fleet Total			**34**					**34**					**41**		

**Boardings per Rvh in red denotes forecasted figures slightly higher than triggers where an extra vehicle added to service is not recommended considering cost efficiency.*

4.3 Comparisons and Recommendations

Table 18 below compares Scenarios A and B1 & B2 in terms of number of fleet vehicles and procurement cost. One-time capital cost assumptions for buses are noted in **Table 4** above.

Low-tier and high-tier bus procurement conditions are forecasted, which comprise the following engine combustions for the different fleet vehicles to be procured:

- Low-Tier[9]:
  - 40-foot single-deck bus: Hybrid;
  - Articulated bus: Clean natural gas;
  - Coach and double-deck bus: Diesel; and
- High-Tier: Battery electric for all fleet models.

Table 19 below compares Scenario A and B1 & B2 in terms of annual and five-year operating costs. The annual operating cost is calculated based on the cost per vehicle hour of $133 provided by BVRTSC[10].

For the first five years until 2029, there is no need to add any expansion vehicles to the Town of Banff or Canmore. For Parks Canada / ID9, Route 6 would need approximately 1 additional peak 40-foot vehicle and Route 8X would need approximately 2 additional peak Coach vehicles (Scenario A) to accommodate ridership growth. This expansion could be offset by lowering the spare ratio, which means there is no need to grow the fleet.

In the first five years, there is no reason to proceed with Scenario B1 or B2, as the existing fleet could accommodate the ridership demand. Adding higher capacity vehicles in Scenario B1 and B2 would increase the capital cost (the difference between a 40-foot bus and an articulated bus or between a highway coach bus and an double-deck bus). Since this is not required in the short-term, **it is recommended that Secnario A continue in the first five years**.

Between 2030 and 2034, ridership is projected to grow at a faster pace. This means that the operating cost of Scenario A will be the highest among all scenarios due to more vehicles operated and operators required, and is therefore not recommended.

In terms of Scenarios B1 and B2, Scenario B1 will result in higher annual operating cost due to lower capacity of highway coaches over double-deck buses, meaning that more vehicles are required to operate to satisfy passenger demand. For bus procurement cost, Scenario B1 will also result in higher capital cost due to more vehicles procured to satisfy future demand. Having said that, discussions with BVRTSC noted that the highway coaches are more comfortable, provide a better passenger experience

[9] Hybrid models are currently not available on articulated and double-deck buses and coaches.
[10] Based on hourly operating cost reported to CUTA Fact Book 2023.

and reduce dwell time (as passengers need to climb stairs to access the second floor) than double-decks. Based on this, **it is recommended for the BVRTSC pursue Scenario B1 between 2030 and 2034 to maintain the higher level of customer experience.** It should be noted that if there is ever a desire to lower cost and switch to double-decks in the future, the BVRTSC should design the new facility to accommodate the extra height of a double-deck.

Table 18: Fleet Scenarios Capital Cost Comparisons

Scenario	2029			2034		
	New Fleet	Low-Tier Cost	High-Tier Cost	New Fleet	Low-Tier Cost	High-Tier Cost
A	0	$0	$0	16	$15,850,000	$27,250,000
B1	0	$8,500,000	$16,250,000	12	$17,950,000	$32,500,000
B2	0	$8,000,000	$10,250,000	7	$17,450,000	$26,000,000

**Costs are rounded to the nearest $1,000.*

***Since there is no fleet expansion recommented between 2024 and 2029, the costs for B1 and B2 reflect the difference between a 40ft bus and the upgrade to an Articulated bus, and/or the difference between the cost of a highway coach bus and the upgrade to a double deck bus.For Scenario A, no Hier-Tier costs were assumed as there were no vehicle upgrades projected.*

Table 19: Fleet Scenarios Operating Cost Comparisons

Scenario	2034		2034	
	Total Fleet	Daily Cost	Total Fleet	Daily Cost
A	34	$47,400	50	$79,700
B1	34	$47,400	46	$67,400
B2	34	$43,300	41	$59,100

**Costs are rounded to the nearest $100*

4.4 Fleet Growth

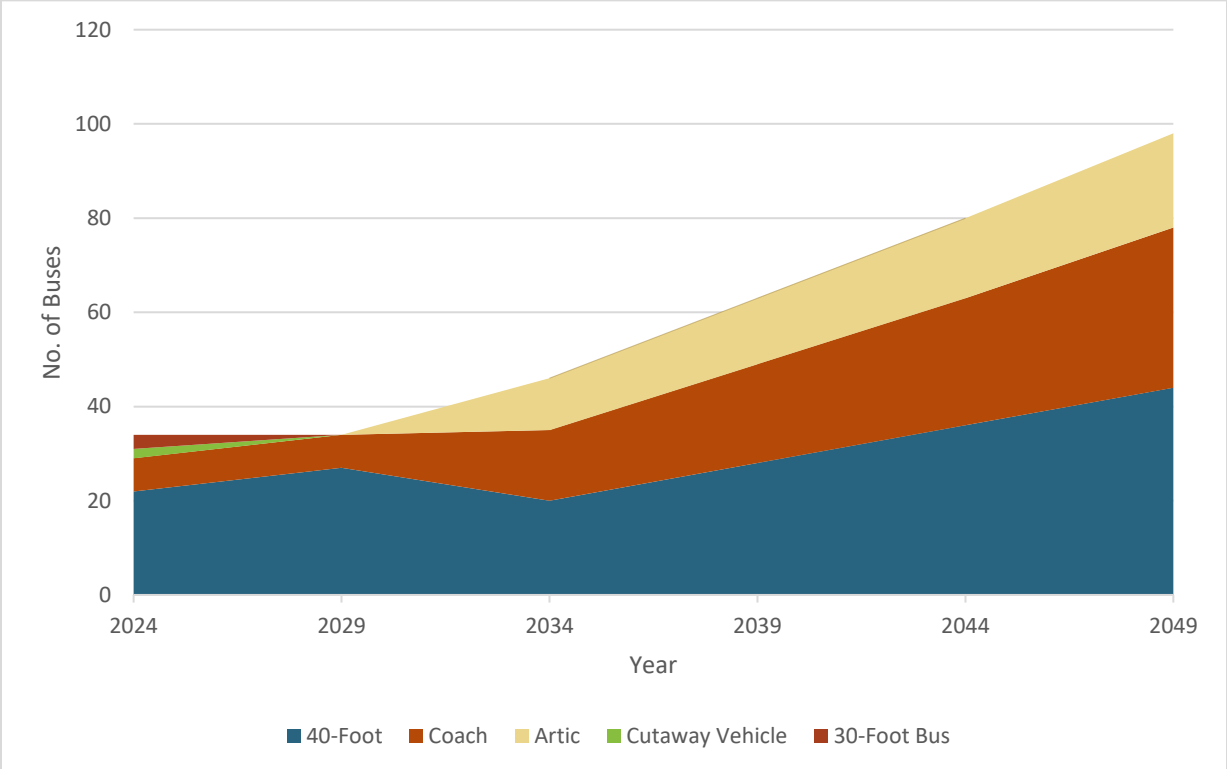
The discussions above analyzed the different scenarios and recommended Scenario A (2025-2029) and Scenario B1 (2030-2034) for the BVRTSC. It is assumed that beyond 2034, ridership would grow at the same pace as the rate of growth that is projected to occur between 2029 and 2034 (using the Low Ridership Growth scenario). Based on the projected ridership, **Table 20** illustrates the forecasted fleet size, including peak and spare vehicles, based on this chosen scenario up to 2049.

Table 20: Forecasted Fleet Size

Year	Annual Ridership	40-Foot Single-Deck	Highway Coach	Articulated Bus	Cutaway Vehicle	30-Foot Bus	Total
2024 (Existing)	2,632,283	22	7	0	2	3	**34**
2029 (5-Year)	3,000,000	27	7	0	0	0	**34**
2034 (10-Year)	5,000,000	20	15	11	0	0	**46**
2039 (15-Year)	7,000,000	28	21	14	0	0	**63**
2044 (20-Year)	9,000,000	36	27	17	0	0	**80**
2049 (Ultimate)	11,000,000	44	34	20	0	0	**98**

Error! Reference source not found. below shows a stacked graph illustrating the fleet growth condition up to 2049. After the phase-out of 30-foot buses and cutaway vehicles, the BVRTSC fleet will be simplified by having 40-foot single-deck, articulated buses, and highway coaches only to maximize vehicle dispatch and repair efficiency and reduce the retrofit effort to house the new articulated buses.

Figure 9: Fleet Growth Stacked Graph



4.5 Fleet Replacement

The following section identifies a recommended 10-year fleet replacement plan for the existing fleet. As identified in **Section 3.0**, there are currently 36 vehicles in operation, using a combination of 40-foot and 30-foot buses, highway coaches and cutaway vehicles. The existing fleet replacement schedule for Roam Transit vehicles is based on the following lifecycle:

- 40-foot buses: 18 years;
- 40-foot Proterra electric vehicle: 15 years;
- 30-foot buses: 12 years;
- Highway Coach vehicles: 18 years; and
- Cutaway vehicles: 12 years.

The recommended plan is to replace the 30-foot and cutaway buses with 40-foot buses. Therefore, these vehicles will be replaced at the end of their expected lifecycle noted above.

4.5.1 Vehicle Lifecycle

In Canada, the legacy practice of full-size transit buses has been to depreciate, operate, and maintain the asset for 18 years. The BVRTSC has followed this industry's best practice for its 40-foot buses and highway coach buses, with the exception of the Proterra 40-foot electric vehicles, which has a lifecycle of 15 years. In the last five to seven years, the Canadian model has transitioned away from mid-life maintenance refurbishment (significant capital reinvestment) and used the capital to more aggressively pay down units in 12 or fewer years and replace them instead. This change has partially come about from the significant increases in performing mid-life work, reducing the cost-benefit of such investments. The American transit industry has largely transitioned to a 12-year (or less) model, for which the data and reasoning is available.

Legacy 18-Year Lifecycle Model

Under the 18-year lifecycle model, transit agencies perform extensive mid-life maintenance, including drivetrain replacements, structural refurbishments, and interior upgrades. This approach aims to maximize asset value while aligning with long-term depreciation schedules. The benefits of this model include lower upfront costs due to delayed replacement needs and reduced short-term capital expenditure. However, the downsides include escalating maintenance costs as vehicles age (mid-life work requires capital reinvestment), decreased reliability, and potential environmental concerns tied to older diesel-powered buses. With electric models such as the Proterra currently deployed in Banff, the reliability of key components raises concerns that the reliability of these vehicles in years 13-15 may be unacceptable. Planning to replace this vehicle type before major components such as battery packs, drive units, and axles need to be replaced near the end of their useful life is recommended.

Shift to a 12-Year Lifecycle Model

The Canadian transit industry's transition to a 12-year or shorter model reflects advancements in bus technology, changing financial strategies, and the increasing adoption of electric buses. Key drivers include:

1. **Capital Optimization**: Redirecting funds from mid-life overhauls to purchasing newer buses reduces the reliance on aging fleets. Newer buses tend to be more fuel efficient, have lower emissions, and have advanced features that improve operational efficiency and passenger experience.
2. **Technological Advancements**: Electric buses, which have become increasingly viable, often have a shorter economic lifespan of about 12 years due to rapid advancements in battery technology. Replacing buses more frequently ensures fleets benefit from the latest innovations.
3. **Operational Costs**: Older buses have higher maintenance and repair costs. Transit agencies minimize these expenses by replacing buses earlier while enhancing fleet reliability.
4. **Environmental Policies**: Federal and provincial initiatives to reduce greenhouse gas emissions have encouraged the adoption of electric buses, which often require a shorter lifecycle to align with funding and technology renewal schedules.
5. **Funding Models**: New funding structures, including federal and municipal grants, prioritize procurement of cleaner, more efficient buses over refurbishment of legacy vehicles.

Depreciating Light-duty Units

The 30' and smaller units deployed in the Roam fleet should have their depreciation schedule adjusted based on the cost and reliability performance experienced in practice. The Vicinity models in use today were a newly updated platform by the manufacturer with a claim of 12-15 years. This claim has proven to be optimistic. Complaints of long-term reliability and maintenance costs for this platform are common across Canadian operators. It is recommended to replace these units by ten years to avoid major frame, body, and drivetrain repairs.

4.5.2 Implications of the New Model

It is recommended that the BVRTSC switch to a 12-year life-cycle model for 40-foot diesel and electric buses, articulated buses and highway coaches. This model has several implications for BVRTSC:

1. **Financial Planning**: The BVRTSC must balance the upfront costs of more frequent bus replacements with the long-term savings from reduced maintenance and operational costs.
2. **Infrastructure Needs**: With the rise of electric buses, the BVRTSC must invest in charging infrastructure and grid capacity, which will influence overall capital allocation. Additional transformers must be installed on-site to power additional charging dispensers. This would be the major capital expense that would need to be reconfigured in the facility plan.
3. **Environmental Impact**: Shorter lifecycles align with sustainability goals but also raise concerns about waste management and the environmental footprint of manufacturing and disposing of

buses. This may be reduced by selling after-market vehicles to other transit agencies that have not adopted this model.

4. **Asset Depreciation**: Depreciating buses over 12 years rather than 18 changes accounting practices, potentially influencing budget flexibility.

The shift from an 18-year to a 12-year lifecycle for transit buses in Canada reflects a strategic response to evolving technologies, environmental imperatives, and financial realities. While this transition offers long-term benefits in fleet modernization and sustainability, it requires careful planning to manage upfront costs, infrastructure demands, and environmental considerations. By adopting this approach, the BVRTSC will position itself for a future defined by efficiency, innovation, and sustainability.

4.5.3 Summary of Fleet Replacement Plan

Table 21 provides a 10-year fleet replacement schedule based on the existing vehicles and expansion requirements noted in **Table 20**. The fleet replacement plan should be adjusted to depreciate the units fully before the expected lifespan is reached in both years of service and kilometres travelled. This will give operational flexibility approaching vehicle retirement years to extend or shorten service life as needed. **Table 22** illustrates the replacement plan for each specific vehicle.

The capital cost of fleet replacement under this lifecycle model is included below. The replacement plan is also tied to the fleet growth plan presented in **Table 16 (Scenario B-1).** The plan identifies the elimination of 30-foot and cutaway buses, as well as a reduction in 40-foot buses over the first five years. These are planned to be replaced with articulated buses between 2030 and 2034, which will be used for local service in Banff. A low-cost scenario using diesel buses and a high-cost scenario assuming electric buses are also included based on unit costs provided in **Table 4**.

Table 21: Recommended Fleet Replacement Plan

Existing Bus	New Bus	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
40-foot	40-foot					1		3		1	
40-foot	Coach				2						
40-foot	Artic					4			3		
30-foot	40-foot		2		1						
Cutaway	40-foot					2					
Coach	Coach							4			
Banff											
Total 40-foot						1					
Total Artic						4			3		
Total Coach (Route 3)					1						
Replacement Cost (Low)		$-	$-	$-	$1,200,000	$6,050,000	$-	$-	$3,900,000	$-	$-
Replacement Cost (High)		$-	$-	$-	2,100,000	$10,850,000	$-	$-	7,050,000	$-	$-
Canmore											
Total 40-foot			2		1	1					
Total Coach (Route 3)					1						
Replacement Cost (Low)		$-	$1,700,000	$-	2,050,000	$850,000	$-	$-	$-	$-	$-
Replacement Cost (High)		$-	$2,900,000	$-	$3,550,000	$1,450,000	$-	$-	$-	$-	$-
Parks Canada / ID9											
Total 40-foot						2		3		1	
Total Coach								4			
Replacement Cost (Low)		$-	$-	$-	$-	$1,700,000	$-	$7,350,000	$-	$850,000	$-
Replacement Cost (High)		$-	$-	$-	$-	$2,900,000	$-	$12,750,000	$-	$1,450,000	$-
Total											
Total 40-foot		0	2	0	1	4	0	3	0	1	0
Total Artic		0	0	0	0	4	0	0	3	0	0
Total Coach		0	0	0	2	0	0	4	0	0	0
Replacement Cost (Low)		$-	$1,700,000	$-	3,250,000	$8,600,000	$-	$7,350,000	3,900,000	$850,000	$-
Replacement Cost (High)		$-	$2,900,000	$-	$5,650,000	$15,200,000	$-	12,750,000	$7,050,000	$1,450,000	$-

Table 22: Proposed Retirement Year by Unit Number in a 12-Year Cycle

Bus Number	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1005										
1006										
1007										
1008										
1011		1011								
1012		1012								
1013				1013						
1014				1014						
1015					1015					
1017					1017					
1018					1018					
1019					1019					
1021				1021						
1022							1022			
1023							1023			
1024							1024			
1026							1026			
1027							1027			
1028							1028			
1029							1029			
1030								1030		
1031								1031		
1032										
1033								1033		
1034							1034			
1035									1035	
1036										
1037										
1038										
1039										
1052					1052					
1053					1053					
1054					1054					
1055					1055					
Total	**0**	**2**	**0**	**3**	**8**	**0**	**8**	**3**	**1**	**0**

5.0 Facility Expansion Needs

The projected fleet size will be 98 units by 2049 and a second facility will need to be planned immediately to accommodate growth in vehicle storage and maintenance.

5.1 Existing Facilities

The existing storage facility is at capacity and additional capacity is required in the short-term. As the system adds articulated buses to its fleet (anticipated between 2029 and 2034), it is recommended that this vehicle type is stored in Banff to limit garage in-out time. The recommended plan would include articulated units for about 20% of the fleet by 2049 (20 vehicles in total). A 60' bus takes up 50% more real estate at a parking facility. With this fleet configuration, a maximum of 19 articulated buses could be parked indoors at 111 Hawk Avenue. To fit all 20 articulated buses, some modification would need to be completed to the facility.

Appendix B contains two conceptual parking variations for the facility at 111 Hawk Avenue. Option 1 illustrates 33 units parked inside and outside the building. Option 2 includes 60' buses with a maximum capacity of 21. All remaining buses from the future fleet of 98 would need to be parked elsewhere.

The maintenance facility located at 136 Hawk Avenue has two 4-post column lifts and a pit. This facility should add a third hoist configured with 6-posts to accommodate articulated buses at the same time as the first articulated buses arrive. The facility could also be used for light-duty and preventative maintenance tasks for articulated buses without significant restructuring. Heavy-duty maintenance of these vehicles or overflow could be provided at the second facility.

While this maintenance facility is also at capacity, the addition of one pit and two sets of column lifts and two additional floor spots for working on a bus inside the building but wheels on the ground would extend its ability to maintain the growth in fleet. Adding buses to the maintenance workload would also require the Town of Banff to staff mechanics on evenings and weekends to accommodate the lack of facility space.

5.2 New Facility

Based on the plan identified above, a new facility would need to be built to accommodate up to 78 40-foot /highway coach vehicles), if the existing facility at 111 Hawk Avenue is used solely for articulated buses. Additional space would be required for fueling/charging, bus wash, cash handling, parts storage, maintenance and operator/maintenance staff amenities and accommodations. The fleet should be planned to accommodate the anticipated vehicle needs up to the 2049 horizon.

The distribution of fleet types within the existing and a proposed new facility will not be an issue, assuming the new facility will have the same amenities to clean, wash and charge buses. If the facilities do not have the same amenities, for example, electric bus charging, the electric buses should be parked in Banff, and all hybrid/diesel units can be parked at the other facility.

The following section provides some insights in the Facility expansion.

Space and Layout Requirements

To maintain 20% of a fleet at once, the garage must accommodate the number of buses in simultaneous maintenance operations. To maintain flexibility in case the existing facility at 136 Hawk Avenue is no longer available, this should be based on the full fleet size of 98 buses, which would require space and equipment for 20 buses in maintenance at a time. Of these 20 buses, not all are on hoists at the same time, but some are on pits, flat working spaces and the wash bay. This necessitates a large, well-organized facility with multiple work bays. As the fleet composition evolves, the bays should be designed to handle different types of buses in Roam Transit's fleet, including hybrid or electric vehicles.

With this 20% requirement, there may be an option to reduce the number of parking spaces in the new facility from the 78 40-foot bus requirement to between 65 and 70 buses, as there will always be buses that are being maintained. This means that the new facility should be designed to accommodate approximately 68 buses parked, approximately 10-14 (including articulated) in some level of maintenance.

Key layout considerations include:

- **Dedicated Work Zones**: Areas for specific tasks like inspections, engine/transmission work, and bodywork to minimize bottlenecks.
- **Vehicle Flow**: A logical flow for buses entering, being serviced, and exiting ensures efficient use of space and resources.
- **Storage**: Ample space for tools, parts, and consumables is crucial for seamless operations.

Hoist Capacity and Maintenance Equipment

Hoists are a critical component of a heavy-duty bus garage. To service 20% of the fleet simultaneously, the facility must have sufficient hoists to lift buses for tasks such as undercarriage inspections, drivetrain repairs, and brake replacements. Heavy-duty hoists typically have lifting capacities ranging from 50,000 to 75,000 pounds, suitable for full-size transit buses. Options include:

- **Fixed Post Hoists**: Permanently installed and capable of handling large vehicles efficiently;
- **Mobile Column Lifts**: Flexible and adaptable for different bus sizes and configurations, making them ideal for a mixed fleet; and
- **Scissor Lifts**: Compact and efficient for specific maintenance tasks in space-constrained areas.

The new facility should be designed with sufficient overhead clearance (and roll-up doors which do not inhibit lifting clearance) so double-deckers could be easily introduced in the future.

Electric Bus Considerations

With the increasing adoption of electric buses, garages must incorporate charging stations and infrastructure compatible with high-voltage battery systems. Maintenance bays for electric buses require additional safety measures, such as fire suppression, insulated tools, specialized hoists, and proper ventilation for cooling battery systems during repairs.

Staffing and Training

Maintaining a fleet concurrently demands skilled technicians trained in diverse areas, from traditional mechanical systems to advanced electric and hybrid technologies. Cross-training staff can ensure flexibility and reduce downtime. A dedicated training area with training models should be incorporated into the facility design.

Operational Efficiency

Automation and digital tools can enhance maintenance efficiency. Fleet management software, for instance, can schedule preventive maintenance, track inventory, and monitor performance metrics. Diagnostic tools integrated with buses' onboard systems allow quicker identification of issues, reducing vehicle downtime. Some software integrates well into physical facility optimization. Using RFID tags to update and monitor vehicle locations and time spent in that location can be worthwhile investments to ensure data-driven operational management.

Sustainability and Safety

Modern garages must meet environmental and safety standards. Incorporating waste management systems and proper ventilation ensures compliance with regulations and reduces environmental impact. Pressure gas fuels require specific ventilation systems to be in operation for maintenance on vehicles equipped with these fuel types.

Staff Space and Accommodations

Space should be available for staff lounge for operators, mechanics as well as supervisors and customer service staff. This will be particularly important as the fleet size grows. The BVRTSC may also choose to move its existing administrative offices to this new facility to have better oversight of front-line staff. Given the challenges with finding suitable accommodations in the region, an option should also be explored to incorporate lodging for operators and mechanics in the new facility design.

Phasing

While suitable land should be identified to accommodate the ultimate facility size, the facility construction should be phased over time at pace with the growth in the fleet. Phase 1 would

accommodate fleet requirements over a 20-year horizon, plus critical facility components that may be more difficult to phase in, such as space for maintenance pits, parts storage, staff offices, and operations staff amenities and accommodation. Ideally, expansion of new bus lanes would be parallel to existing lanes to minimize disruption of operations.

Should land not be available to accommodate the 2049 requirements, there may be a need to build two smaller facilities on two separate parcels, with the potential of centralizing certain functions (e.g. heavy maintenance). Another option would be to consider one new facility with remote parking for dispatching buses that do not require maintenance.

Transition to Double-Decks

Should the BVRTSC ever decide to transition to double-deck buses in the future, the following key points should be considered when designing the new facility.

1. **Facility Upgrades:**
   Maintenance facilities must accommodate the increased height and weight of double-deck buses. This includes taller garage doors, elevated work platforms, and reinforced lifting equipment. Investing in these upgrades early in the transition ensures a smooth integration of the new fleet. For the existing maintenance facility, clearance of doors is not a concern. The weight capacity of the hoists is within the specification for double-deckers, but the pressure settings inside the lifts may need to be adjusted to accommodate the additional weight on the next inspection/scheduled service.
2. **Specialized Training:**
   Maintenance staff must undergo training to handle the structural and mechanical differences of double-decker buses. The upper deck and staircases introduce additional components that require inspection and upkeep, while the higher center of gravity necessitates a focus on suspension and stability systems. Training on these aspects minimizes downtime and ensures safety compliance.
3. **Parts and Inventory Management:**
   Double-deck buses often require unique parts not shared with standard highway coaches. Operators must establish reliable supply chains and adjust inventory practices to include these components. Keeping critical spare parts readily available can reduce repair delays.
4. **Preventative Maintenance:**
   The increased passenger capacity and usage rates of double-deck buses mean that wear and tear may occur faster than on 45’ coaches. Implementing a robust preventative maintenance schedule—covering brakes, tires, structural integrity, and onboard systems—is essential to maintain reliability and extend the vehicles' service life.

By addressing these maintenance considerations, operators can ensure a smooth and cost-effective transition to a double-deck fleet should the BVRTSC decide to move in this direction in the future.

6.0 Facility Design

Based on the above discussion, it is recommended that the new facility be designed to accommodate the following:

- Interior space to store up to 68 40-foot buses (a mix of 40-foot buses and highway coach buses);
- Indoor automatic wash brush with water separator, and air dryer;
- 5 to 6 hoists and 1 or 2 pits for both 40-foot, 60-foot and coach buses, with clearance for double-deckers;
- Maintenance bays (single bus deep for 40/60-foot bus at 125 sq m/1,345 sq m each);
- Small parts cleaning station/machine, large press workstation, downdraft or updraft room for DPF/DOC and brake dust control. Design with battery and motor work in mind;
- Scroll or screw compressor air system;
- Forklift access loading bay for shipping/receiving, forklift mezzanine storage where possible;
- Driver and mechanic change rooms and lounge area to accommodate operators and mechanics;
- Parts storage for temperature and moisture-sensitive parts is approximately 600 sq ft. Also, heavy racking storage for larger components like brake kits, axle parts, etc., which can be outside but under cover;
- Fueling with transition to charging stations;
- Solar/wind installation mounts;
- Administration area for BVRTSC management, supervisors and customer service;
- Accommodations on the second storey of the facility for BVRTSC staff; and
- Employee parking area (employee car charging).

The land requirements for the area should be less than 180,000 sq ftl, depending on the configuration of the land. This would need to be confirmed through a conceptual design once one or two land parcels are identified.

7.0 Summary of Recommendations

The above-noted report identifies a recommended fleet plan over the next 10 years. The expansion plan is based on anticipated ridership growth as noted in the 2025-2028 BVRTSC Strategic Plan. The level of growth is projected to be slower in the first five years, increasing in the last five years, primarily due to the growth in visitors and a desire to increase the transit mode share for both residents and visitors. Higher-capacity articulated buses are recommended between 2029 and 2034 for much of the local service in the Town of Banff to reduce vehicle and operator requirements while accommodating growing ridership demand. This will reduce the number of 40-foot buses, with retired buses during this period being replaced by articulated buses.

The fleet replacement plan recommends moving away from an 18-year lifecycle to a 12-year lifecycle to be more in line with industry standards. This is expected to also reduce maintenance costs for older vehicles as they reach the end of their lifecycle and allow for faster transition to zero-emission vehicles.

It should be noted that between 2025 and 2029, the fleet replacement plan also includes conversion of a number of 40-foot buses to articulated buses and highway coach buses. This is done as there is a reduction in 40-foot buses between 2030 and 2034, and therefore this strategy will help reduce the fleet expansion requirements during this period.

The 10-year capital plan for fleet expansion and replacement for Roam Transit is summarized in **Table 23** below. This is split into five-year periods to provide the BVRTSC with flexibility for vehicle expansion. This should be based on a combination of increases in demand, vehicle crowding and on-time performance issues, as well as a desire to evenly distribute the increase in capital assets each year. For vehicle replacement, the specific year of replacement is based on the recommended lifecycle is identified in **Table 22**. This can be adjusted for each individual vehicle based on the condition of the asset.

A cost range is also provided depending on how quickly the BVRTSC transitions to electric vehicles. It is projected that during the first five years of the plan, the capital cost will primarily focus on diesel buses, whereas the last five years will transition more to electric buses.

Table 23: Ten-Year Fleet Capital Plan

Vehicle Type	Capital Type	2025-2029			2030-2034		
		Units	Cost (Diesel)	Cost (Electric)	Units	Cost (Diesel)	Cost (Electric)
Town of Banff							
40-Foot Bus	Expansion	0	$0	$-	0	$0	$0
	Replacement	1	$850,000	$1,450,000	0	$0	$0
Articulated Bus	Expansion	0	$0	$-	4	$5,200,000	$9,400,000
	Replacement	4	$5,200,000	$9,400,000	3	$3,900,000	$7,050,000
Coarch (Route 3)*	Expansion	0	$0	$-	0.5	$600,000	$1,050,000
	Replacement	1	$1,200,000	$2,100,000	0	$0	$0
Sub-Total	**Expansion**	**0**	**$0**	**$0**	**4.5**	**$5,800,000**	**$10,450,000**
	Replacement	**6**	**$6,050,000**	**$10,850,000**	**3**	**$3,900,000**	**$7,050,000**
	Total	**6**	**$6,050,000**	**$10,850,000**	**7.5**	**$9,700,000**	**$17,500,000**
Town of Canmore							
40-Foot Bus	Expansion	0	$0	$-	2	$1,700,000	$2,900,000
	Replacement	4	$3,400,000	$5,800,000	0	$0	$0
Coach (Route 3)*	Expansion	0	$0	$-	0.5	$600,000	$1,050,000
	Replacement	1	$1,200,000	$2,100,000	0	$0	$0
Sub-Total	**Expansion**	**0**	**$0**	**$0**	**2.5**	**$1,700,000**	**$2,900,000**
	Replacement	**5**	**$4,600,000**	**$7,900,000**	**0**	**$0**	**$0**
	Total	**5**	**$4,600,000**	**$7,900,000**	**2.5**	**$1,700,000**	**$2,900,000**
Parks Canada / ID9							
40-Foot Bus	Expansion	0	$0	$-	3	$2,550,000	$4,350,000
	Replacement	2	$1,700,000	$2,900,000	4	$3,400,000	$5,800,000
Highway Coach	Expansion	0	$0	$-	2	$2,400,000	$4,200,000
	Replacement	0	$0	$-	4	$4,800,000	$8,400,000
Sub-Total	**Expansion**	**0**	**$0**	**$0**	**5**	**$4,950,000**	**$8,550,000**
	Replacement	**2**	**$1,700,000**	**$2,900,000**	**8**	**$8,200,000**	**$14,200,000**
	Total	**2**	**$1,700,000**	**$2,900,000**	**13.0**	**$13,150,000**	**$22,750,000**
Total	**Expansion**	**0**	**$0**	**$0**	**12**	**$23,400,000**	**$40,950,000**
	Replacement	**13**	**$12,350,000**	**$21,650,000**	**11**	**$12,100,000**	**$21,250,000**
	Total	**13**	**$12,350,000**	**$21,650,000**	**23**	**$35,500,000**	**$62,200,000**

**Route 3 expansion and replacement costs are split between the Town of Banff and the Town of Canmore*

The cost summary is presented in 2024 dollars based on the unit costs identified in **Table 4**. These should be revisited annually to account for rising costs and inflation.

The increase in vehicles will require an expansion of the existing facility. The storage facility at 111 Hawk Avenue is currently at capacity and any new expansion vehicles will need to be stored outdoors. This is not an ideal situation, and next steps should be taken to assess the potential to expand this facility and identify a parcel of land to construct a new facility in the short-term.

The existing maintenance facility at 136 Hawk Avenue can accommodate a growth in vehicles in the short-term, but would require the addition of a third hoist with 6-posts prior to the first articulated bus is purchased. The addition of one pit and two sets of column lifts and two additional floor spots for working on a bus inside the building would also extend its ability to maintain the growth in fleet. Adding buses to the maintenance workload would also require the Town of Banff to staff mechanics on evenings and weekends to accommodate the lack of facility space.

A new facility is recommended to accommodate up to 78 40-foot equivalent vehicles. This is based on a 2049 horizon vehicle projection completed by the Dillon team. The number of spaces to park vehicles could be reduced to approximately 68 40-foot equivalent buses, as there is also a recommendation to increase the amount of maintenance space for up to 10-15 vehicles (accommodating maintenance from 111 Hawk Avenue as well to provide flexibility to transition from the maintenance facility at 136 Hawk Avenue.

While the ultimate land requirements should accommodate this number of vehicles and maintenance space, the facility should be built in phases, reflecting a gradual vehicle growth each year. The overall size of land that this facility would be less than 180,000 sq ft, depending on the configuration of the land. This could be further reduced if there is an ability to expand the existing facility at 111 Hawk Avenue. If this sized parcel of land is not available in Banff, Canmore or in the Municipal District of Bighorn, there may be a need to construct two smaller facilities that equal the ultimate vehicle requirement.

Key features of the new facility should include:

- Interior space to store up to 68 buses (a mix of 40-foot buses and highway coach buses);
- Indoor automatic wash brush with water separator, air dryer;
- 5 to 6 hoists and 1 or 2 pits for both 40-foot, 60-foot and coach buses, with clearance for double-deckers;
- Maintenance bays (single bus deep for 40/60-foot bus at 125 sq m/1,345 sq m each);
- Small parts cleaning station/machine, large press workstation, downdraft or updraft room for DPF/DOC and brake dust control. Design with battery and motor work in mind;
- Scroll or screw compressor air system;
- Forklift access loading bay for shipping/receiving, forklift mezzanine storage where possible;
- Driver and mechanic change rooms and lounge area to accommodate operators and mechanics;

- Parts storage for temperature and moisture-sensitive parts is approximately 600 sq ft. Also, heavy racking storage for larger components like brake kits, axle parts, etc., which can be outside but under cover;
- Fueling with transition to charging stations;
- Solar/wind installation mounts;
- Administration area for BVRTSC management, supervisors and customer service;
- Accommodations on the second storey of the facility for BVRTSC staff; and
- Employee parking area (employee car charging).

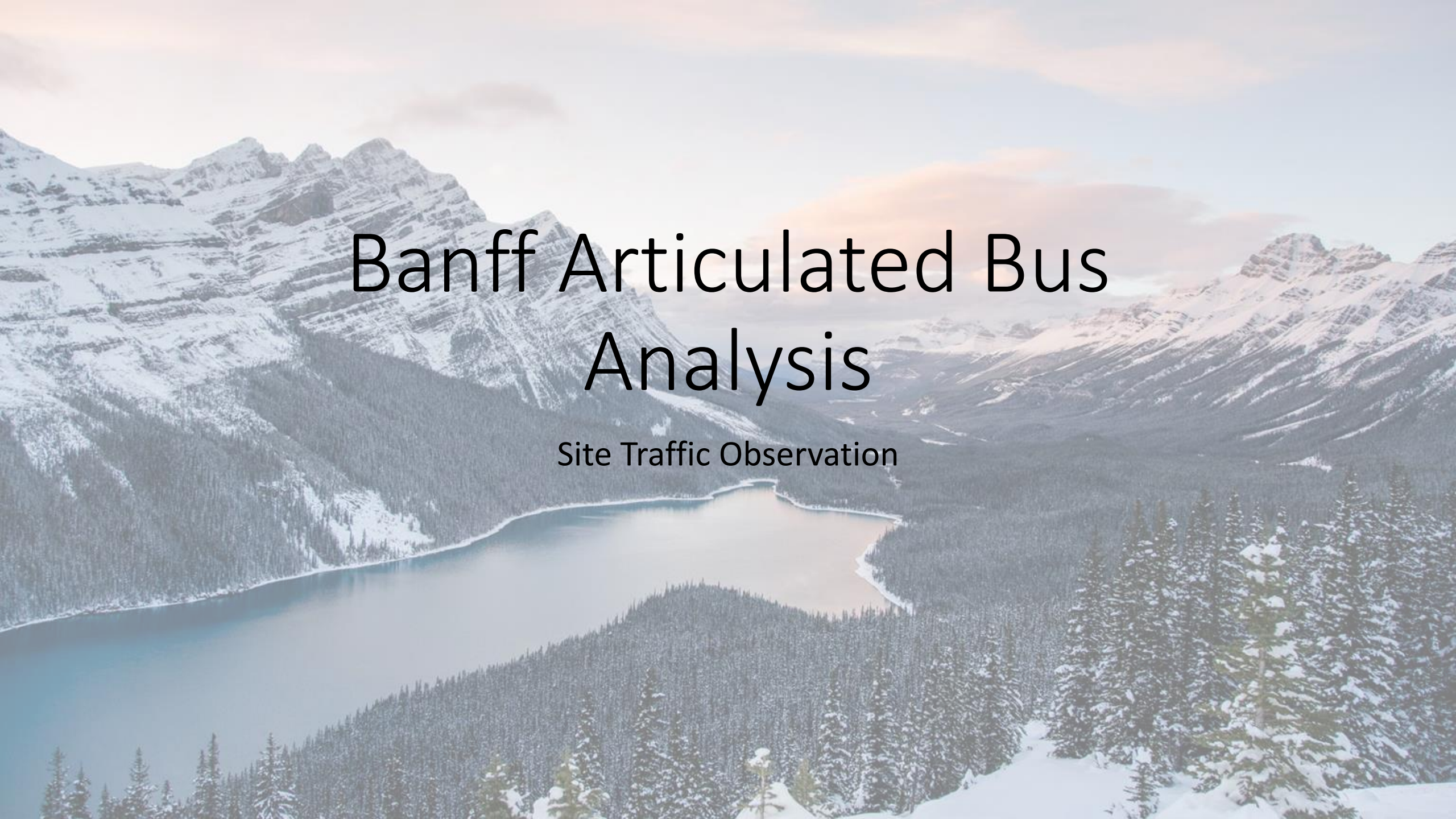
7.1 Next Steps

The next step for the BVRTSC is to:

- Assess the potential to expand the capacity of the existing facility at 111 Hawk Avenue, including a conceptual design.
- Identify parcels of land that may be able to house a new transit facility and develop a conceptual design, including a phasing plan.
- Identify funding sources for shortfalls in fleet replacement reserves, as well as funding sources for fleet expansion.
- Confirm the pace of fleet electrification over the next ten years to confirm which replacement / expansion vehicles identified in the plan should be diesel buses or electric vehicles.
- Modify the 136 Hawk Avenue facility to expand the ability to maintain additional vehicles, including articulated buses.
- Identify potential funding for a new transit facility and begin detailed design.

Appendix A

AutoCAD AutoTURN Analysis Drawings



Banff Articulated Bus Analysis

Site Traffic Observation

Assumptions and Limitations

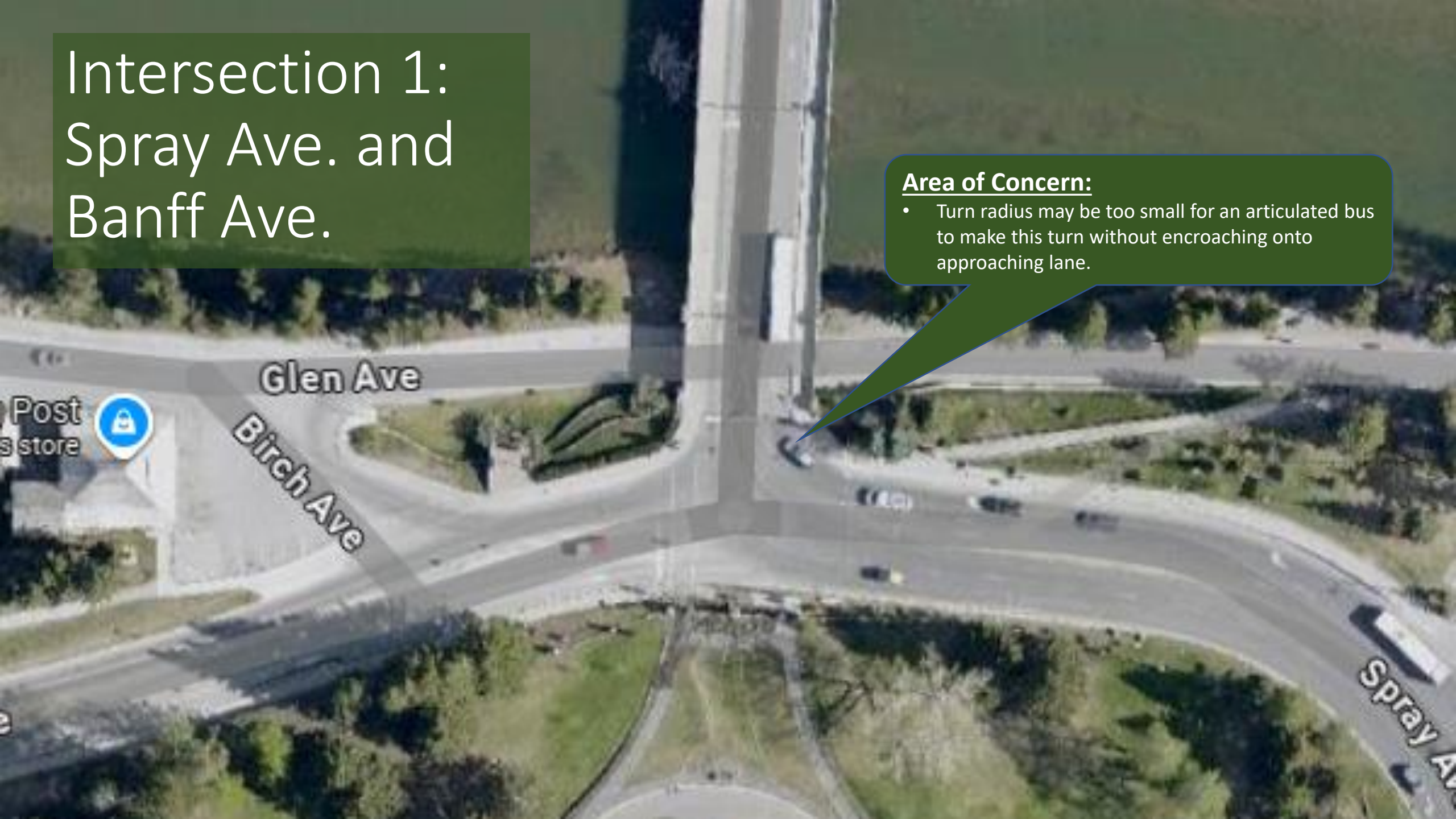
Vehicles Used for Analysis:

- No model available for the 60’ Xcelsior by New Flyers
- Tac-2017 A-Bus with a total length of 18.30m (60’ 0.5”) was used for this analysis.
  - Lock angle of 27.2°
  - Minimum turn radii of 12.80m was used.

GIS Limitations:

- No lane lines or pavement markings.
- Only edge of pavement were identified.

Intersection 1: Spray Ave. and Banff Ave.



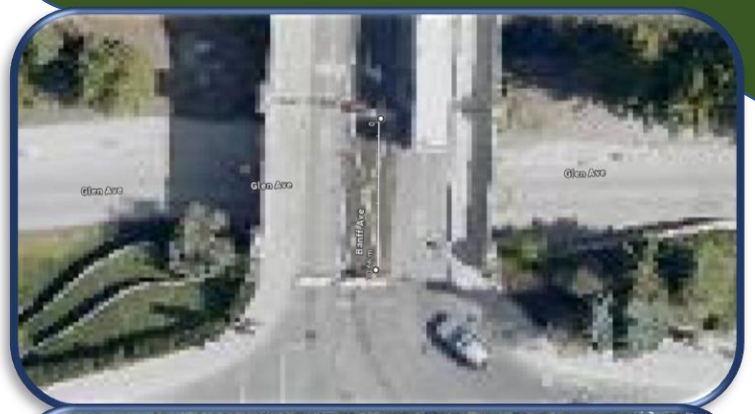
Area of Concern:

- Turn radius may be too small for an articulated bus to make this turn without encroaching onto approaching lane.

East Bound traffic

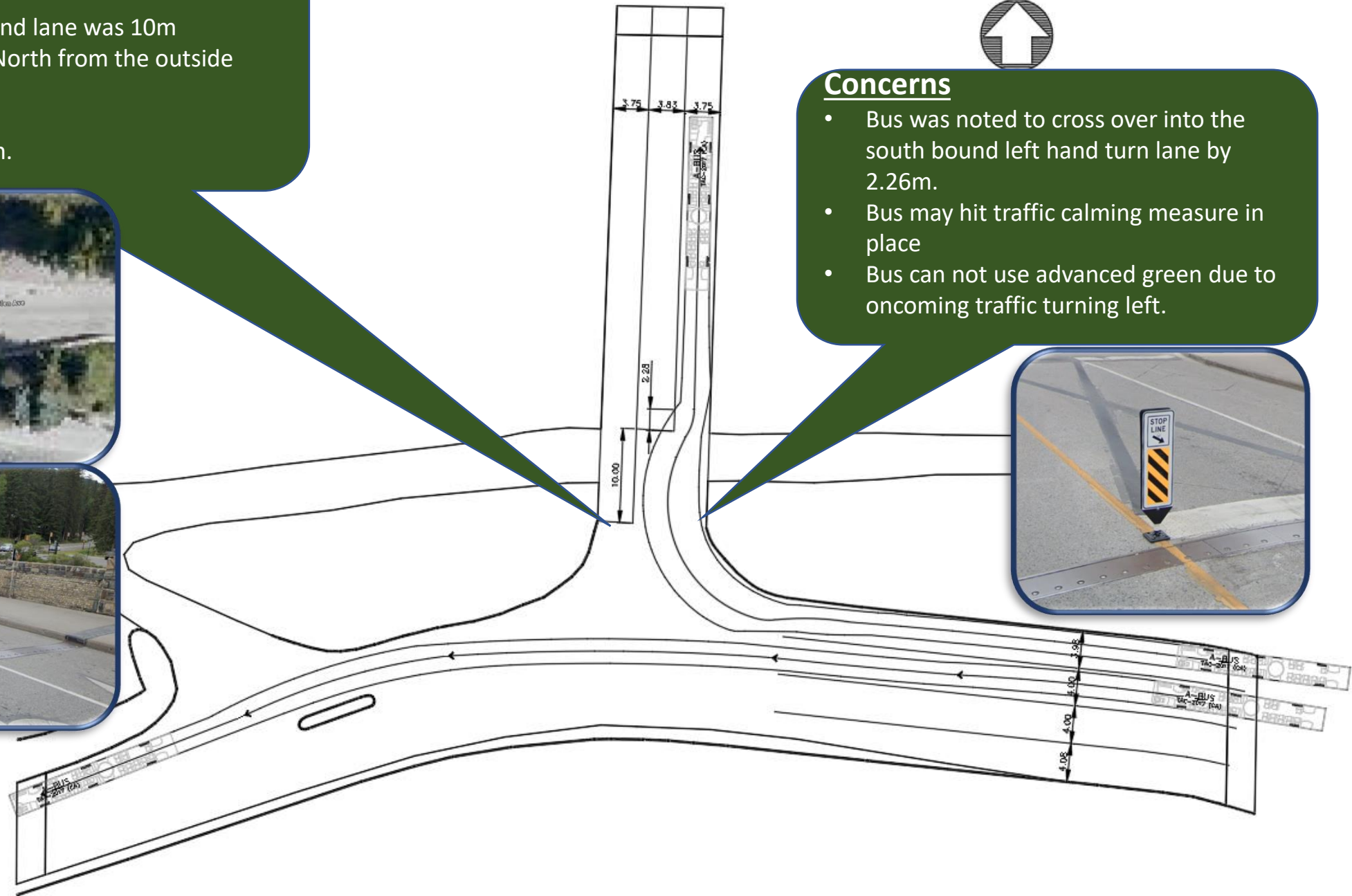
Assumptions

- Stop Bar for outside southbound lane was at the end of the curb layer in the GIS data
- Stop bar for middle South bound lane was 10m (conservative measurement) North from the outside lanes stop bar.
- Southbound lanes 3.75m.
- East lane approximately 4.00m.



Concerns

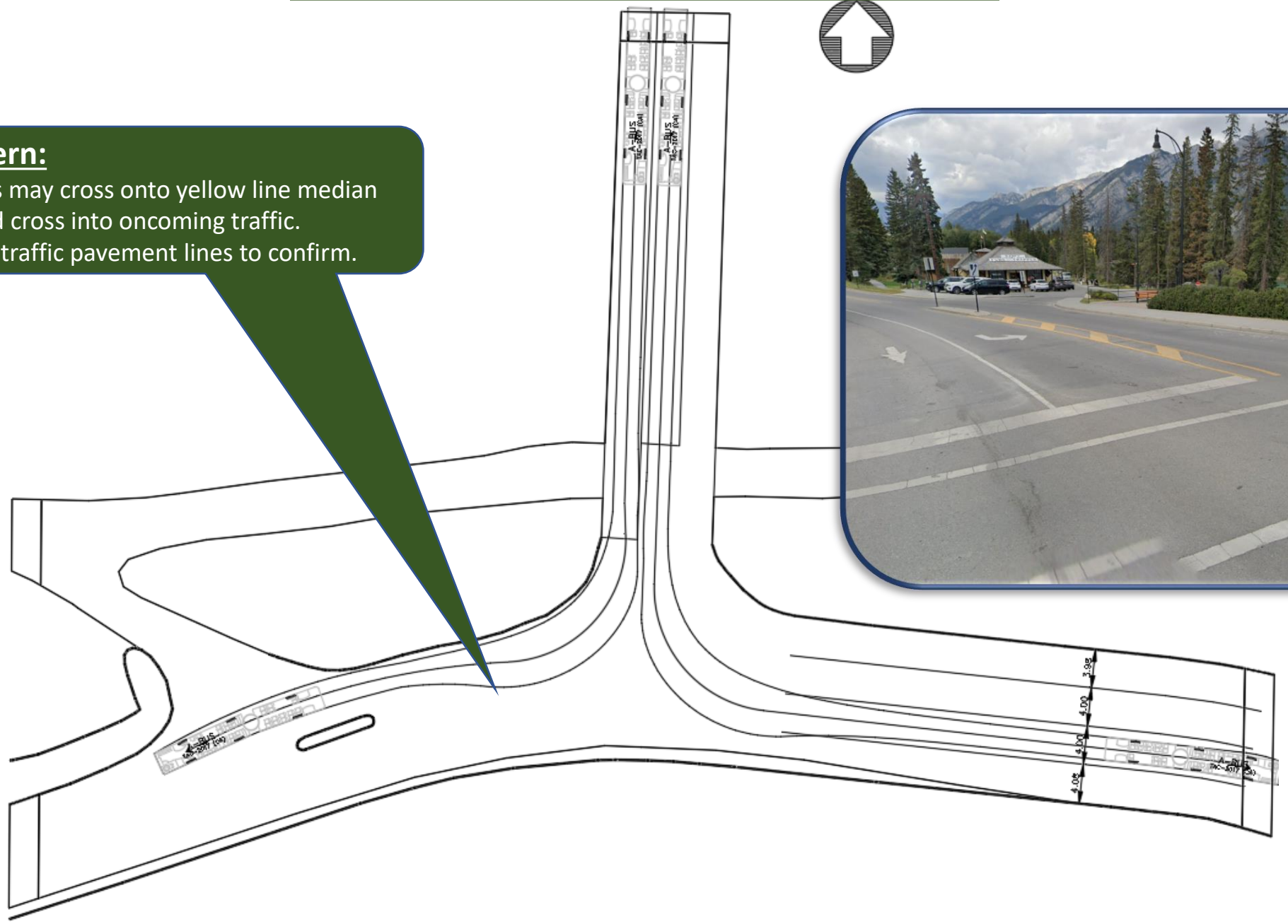
- Bus was noted to cross over into the south bound left hand turn lane by 2.26m.
- Bus may hit traffic calming measure in place
- Bus can not use advanced green due to oncoming traffic turning left.



South Bound Traffic

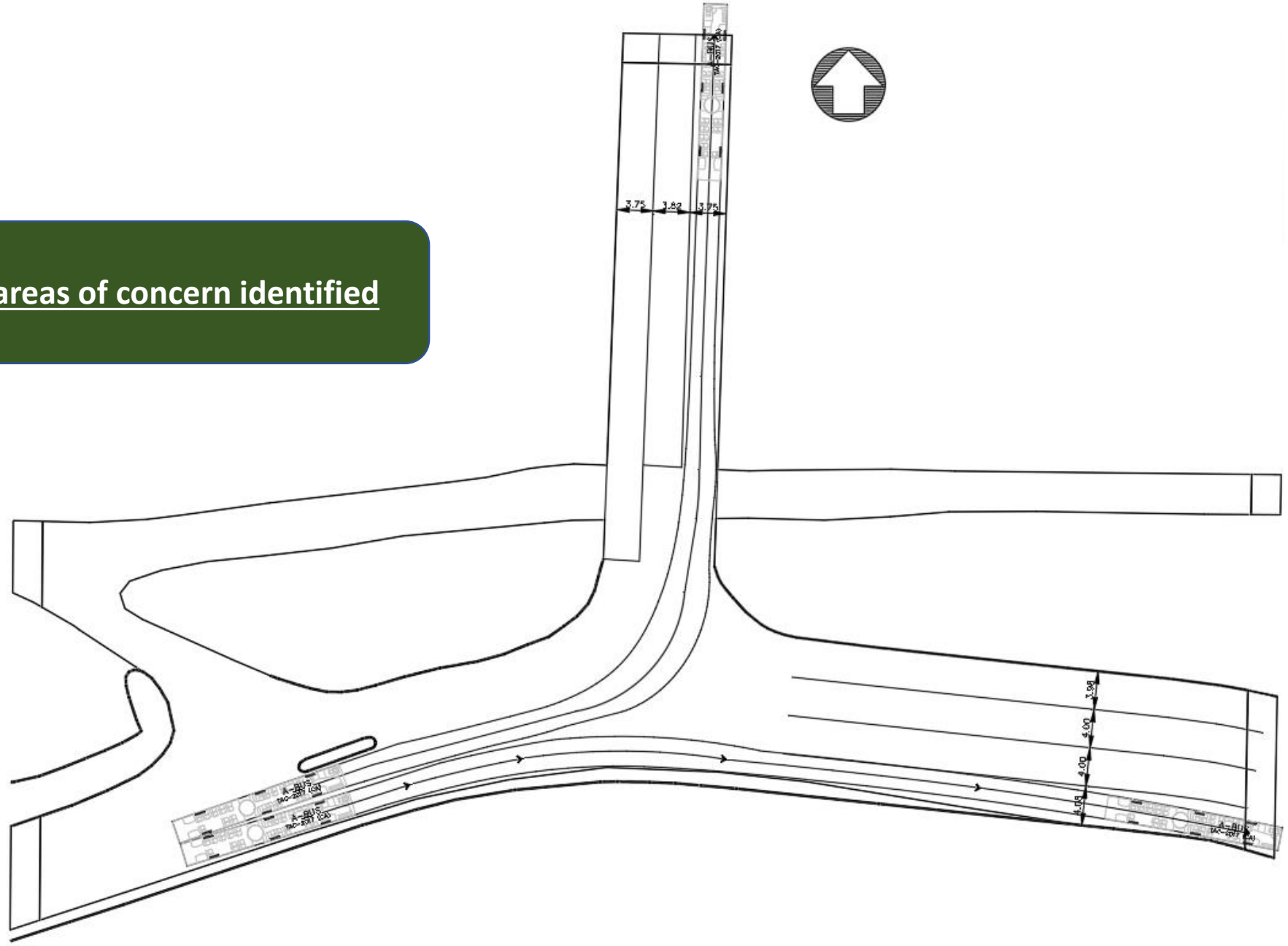
Concern:

- Bus may cross onto yellow line median and cross into oncoming traffic.
- No traffic pavement lines to confirm.

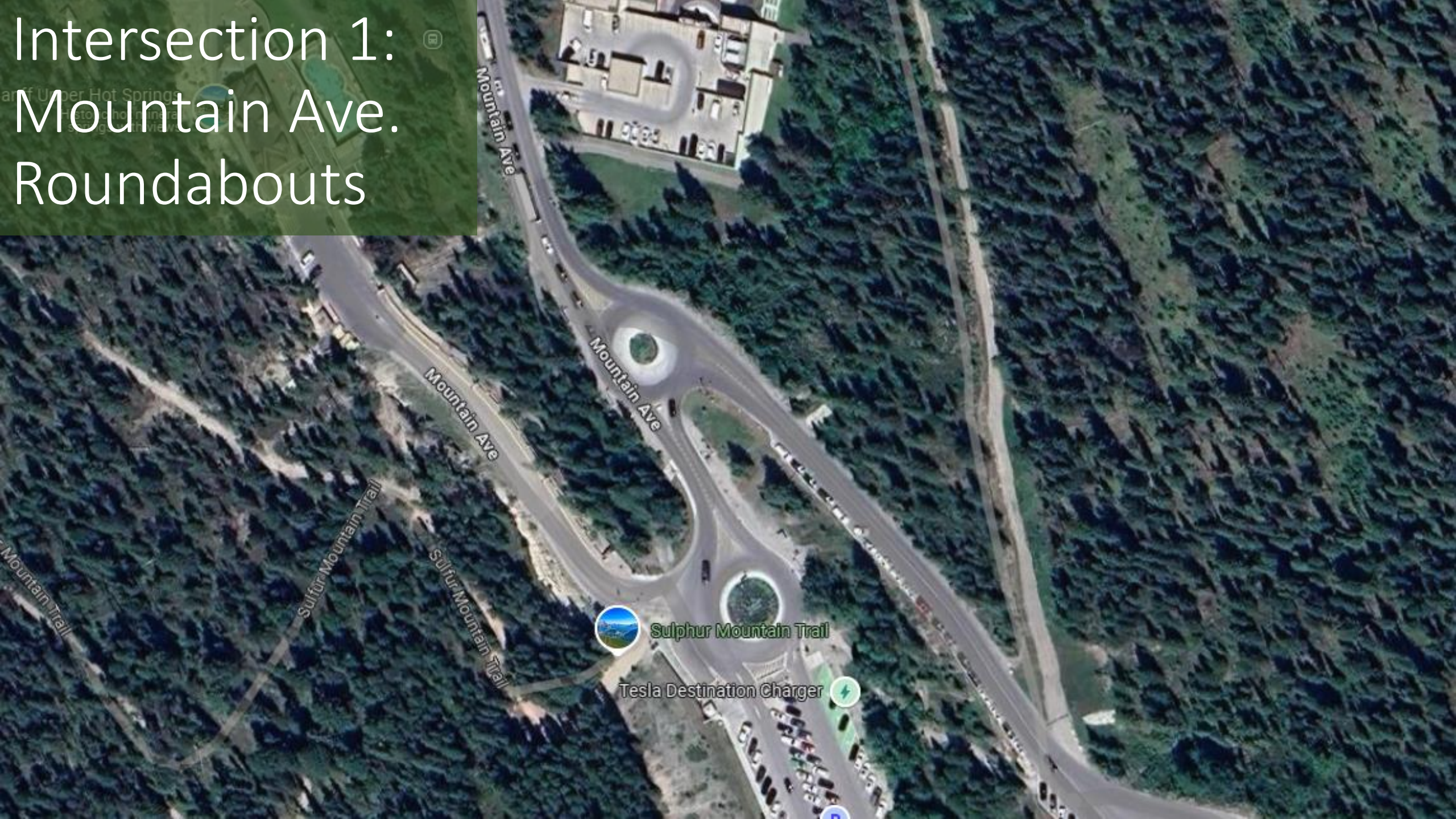


West Bound traffic

No areas of concern identified



Intersection 1: Mountain Ave. Roundabouts



Roundabout Movement

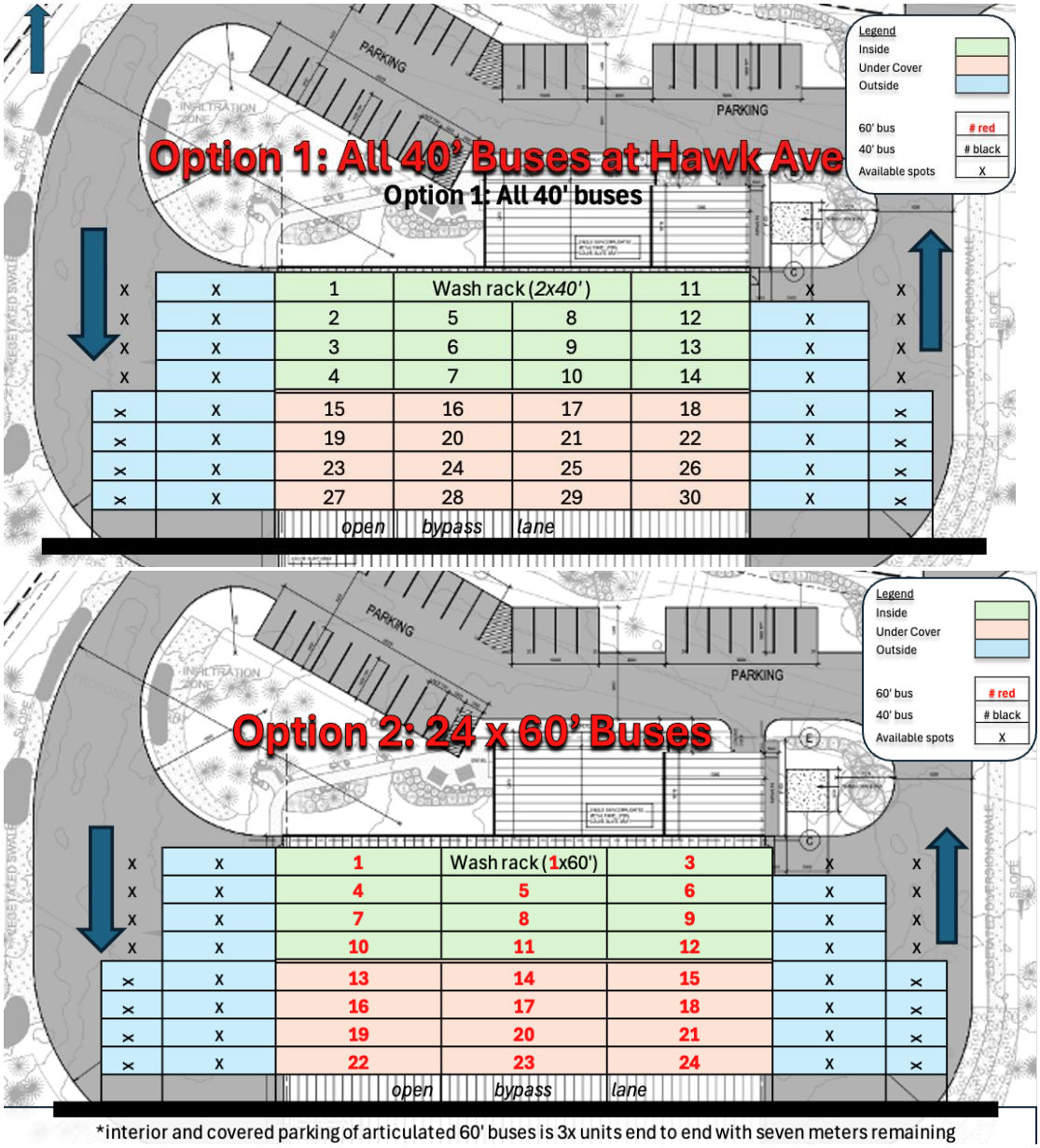
Concern:

- Bus may cross over concrete truck apron of smaller roundabout.
- Concrete truck apron already being crossed as evident by tire markings across it.
- No other concerns with turning were identified.

Appendix B

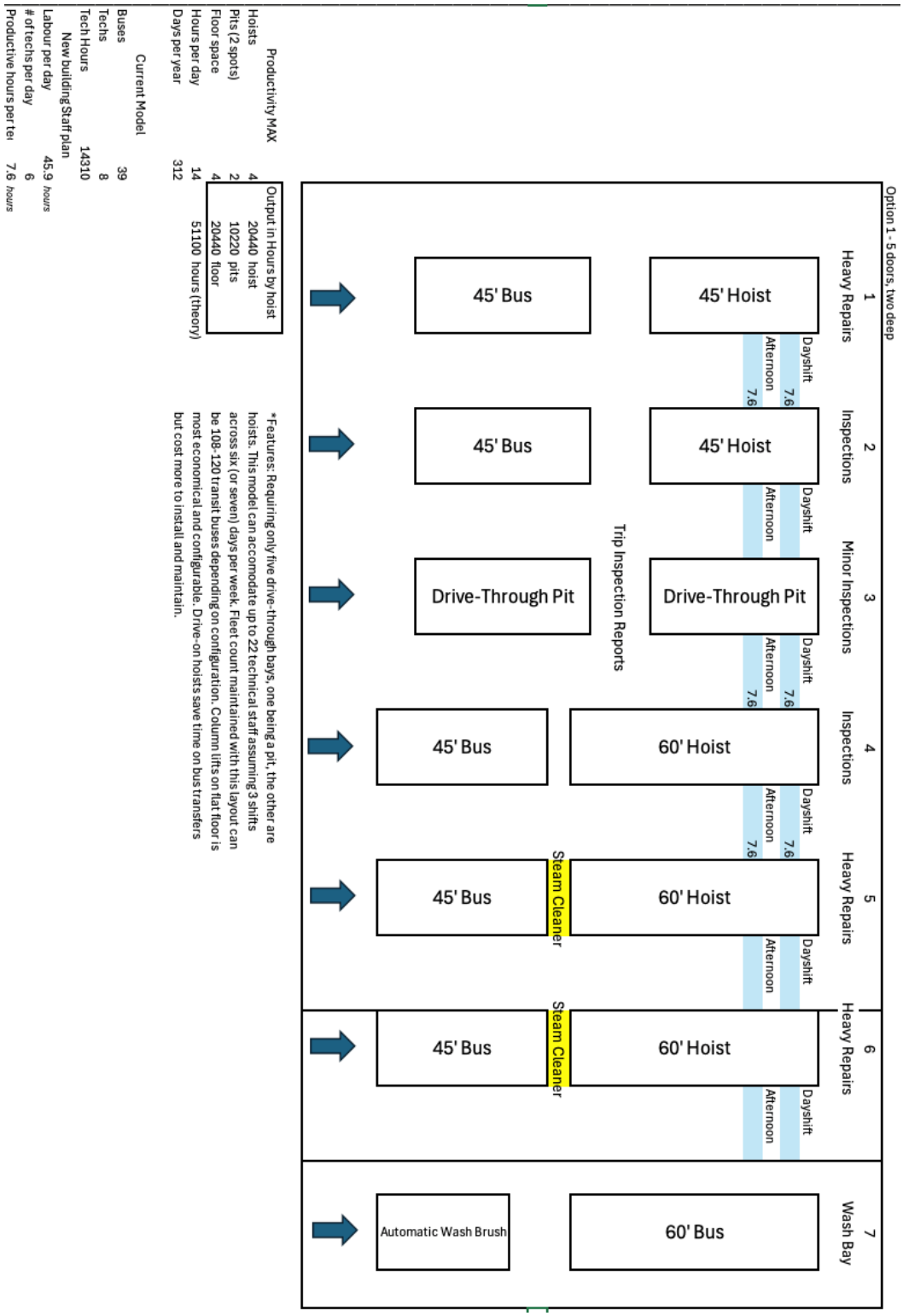
Facility Design Drawings

Figure B1: 111 Hawk Avenue Facility Storage Options



*It can be assumed that 20% of the fleet will be offsite for maintenance

Figure B2: New Facility Maintenance Bay Option

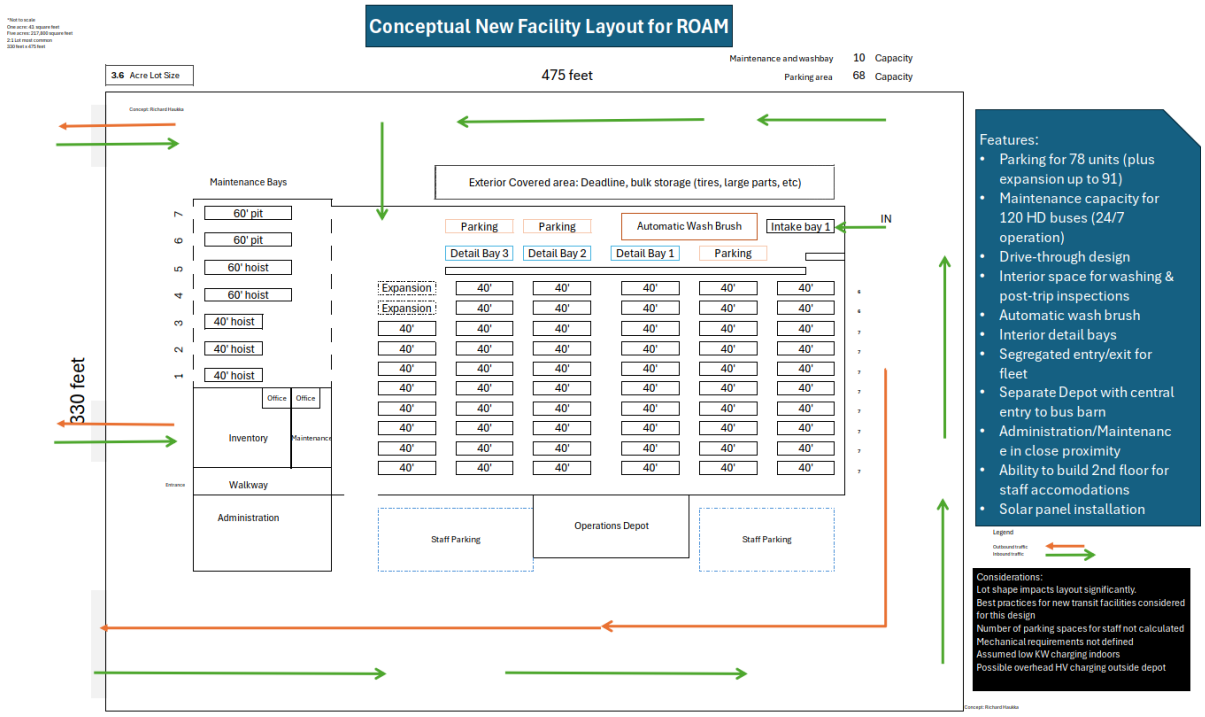


Productivity MAX		Output in Hours by hoist
Hoists	4	20440 hoist
Pits (2 spots)	2	10220 pits
Floor space	4	20440 floor
Hours per day	14	51100 hours (theory)
Days per year	312	

Current Model	
Buses	39
Techs	8
Tech Hours	14310
New building Staff plan	
Labour per day	45.9 *hours*
# of techs per day	6
Productive hours per tec	7.6 *hours*

*Features: Requiring only five drive-through bays, one being a pit, the other are hoists. This model can accomodate up to 22 technical staff assuming 3 shifts across six (or seven) days per week. Fleet count maintained with this layout can be 108-120 transit buses depending on configuration. Column lifts on flat floor is most economical and configurable. Drive-on hoists save time on bus transfers but cost more to install and maintain.

Figure B3: Conceptual New Facility Layout



Bow Valley Regional Transit Services Commission

Rural Transit Solutions Fund

Report to the Bow Valley Regional Transit Services Commission

Report 2025-02.01 Rural Transit Solutions Fund Application

February 03, 2025 – Report by Martin Bean

SUMMARY/ ISSUE

The BVRTSC was approved for funding under the first intake of the Federal Rural Transit Solutions fund to purchase both conventional and electric vehicles. This fund has successfully allowed Roam to add more highway coaches to our regional routes and in 2025, increased service on our Banff local routes through the addition of Nova electric buses. A new intake of funding is currently available under the Rural Transit Solutions fund to support qualifying agencies in their transit growth.

Administration Recommendation:

The Board consider the options below for an application or applications to the Rural Transit Solutions Fund for further discussion and a decision at least one week prior to the March 4th submission deadline.

INVESTIGATION

The current intake of the Federal Rural Transit Solutions Fund is now open, with the deadline for applications to be received being March 4, 2025. The limit for funding under this intake is $10 million per organization, which is an increase from the previous funding ($3 million for conventional and $5 million for zero emission).

The Bow Valley Regional Transit Services Commission has received the following funding to date under this program:

Project #86644 – Conventional Vehicles -$3,.000,000

Project #64007 – Zero Emission Vehicles and Charging Infrastructure - $3,938,000

As the conventional project is complete, with the final grant claim submission completed in the first week of February, this amount is eligible to be reapplied for.

From RTSF Guide:

"Eligible organizations with a minimum of two years of transit experience, including local government partnering with a transit organization, and/or that have completed a public transit feasibility study, can receive up to $10 million from the Rural Transit Solutions Fund. Eligible organizations with no prior transit experience and have not completed a public transit feasibility study may receive up to $250,000.
The Total Estimated Eligible Expenditures + Contingency is the amount used to calculate the Rural Transit Solutions Fund Contribution".

The total amount eligible under the RTSF for BVRTSC is anticipated to be $6,062,000.

- Vehicles providing service on Route 5 in Canmore and Route 11 in Lake Louise currently lack the capacity for significant expansion due to their size (Vicinity 30-foot buses on Route 5 and mini-bus used on Route 11). Demand on the routes is higher than the capacity. Additionally, the

reliability and maintenance costs of the Vicinity 30-foot buses is significantly worse than the 40-foot vehicles, necessitating the need for upgrades on the routes in the future.

- The Roam Training and Operation Centre is at capacity. The space for more vehicles is very limited (currently parking inside and out is for a total of 32 buses). Roam will have 43 buses in 2025, with 38 of them parked primarily in Banff. Roam's office space at 111 Hawk is also very limited, with the facility being built with two private offices and the training room. Currently staff are rotating through the training room and moving out when meetings or training are held.

Administration is proposing that two projects be applied for under this funding:

1. Purchase of additional Hybrid or Conventional buses to add capacity through replacing smaller buses with full size vehicles. Conventional vehicles are being proposed to ensure a balance of fleet mix for longer hours and routes that are unable to be completed by electric vehicles.

2. Renovations to building at 111 Hawk Avenue to allow for additional bus and staff parking and office space.

OPTIONS

For Discussion:

Option #1

Apply for building upgrades, including office space, enclosing the covered parking to be able to park an additional 20 buses inside, plus bypass lane and outside parking for an additional 20 buses. This would allow for the purchase of 1 additional bus.

Option #2

Apply for building upgrades including only the office space and the additional parking for 20 buses, plus the bypass lane but not enclosing the existing covered parking. This would allow for the purchase of up to 4 additional buses

BUSINESS PLAN/ BUDGET IMPLICATIONS

The funding for these project through the RTSF is designated at 80% Federal Funding. The estimated financial implications for these projects would be:

OPTION 1	Total Project Cost	Federal Funding	Municipal Funding
Vehicle Purchases (1 Hybrid or 1.5 Diesel)	$1,577,500	$1,262,000	$315,500
Building Upgrading	$6,000,000	$4,800,000	$1,200,000
Total Available Funding:	$7,577,500	**$6,062,000**	$1,515,500

OPTION 2	Total Project Cost	Federal Funding	Municipal Funding
Vehicle Purchases (4 diesel or 3 hybrid)	$4,877,500	$3,902,000	$975,500
Parking and Office Upgrading	$2,700,000	$2,160,000	$540,000
Total Available Funding:	$7,577,500	**$6,062,000**	$1,515,500

- The municipal funding for the vehicles is anticipated to be from the Town of Canmore if the application is submitted to replace the Vicinity 30-foot vehicles and ID9 would be included if the application includes one bus for Route 11 (LL Local).

- The municipal funding for the building is anticipated to be from the Town of Banff for the building at 111 Hawk Avenue and then recovered through long term lease payments from the Commission (added to the current lease).

Below is a list of maximum Rural Transit Solutions Fund funding limits based upon eligible organization type:

Eligible Organization	Maximum Rural Transit Solutions Fund contribution (% of eligible expenses)
• Recipient is located in the Territories • Recipient is an Indigenous community/organization • Territorial Governments	Up to 100%
• Recipient is located in a province	Up to 80%
• Provincial government or provincial crown corporation	Up to 60%

It is currently estimated that the expenses for these projects would be in 2026-27 or 2027-28. Funding does go until 2029-30, so timelines could be extended.

BRAND IMPACT

This funding ask complements the Roam Brand, through increase the ability to offer frequent and convenient transit service. Additionally, having more inside storage further aligns with the Brand through improved safety and work environment.

RISKS

- Financial risk associated with purchase of vehicles
- Construction cost risk for building
- Risk of partner Councils not approving projects/funding