

# Transit Study Destination Silver Star

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# 1 INTRODUCTION

## 1.1 BACKGROUND

SilverStar is a mountain resort located in the Shuswap Highlands near the Silver Star Provincial Park (Figure 1), which has been a ski destination since 1958. It is located within Area C of the Regional District of North Okanagan, approximately 22 km northeast of Vernon. The resort is surrounded by the Monashee Mountains, and has over 13 square kilometres of skiable area. With 132 runs and a top elevation of over 6,000 ft, SilverStar has a lift capacity of 14,000 users per hour, serviced by approximately 170 employees. SilverStar also accommodates cyclists in the summer months, and is one of Canada's top-rated places to ski or cycle. Approximately 85% of the annual patrons visit in the winter months; the remaining 15% are in the summer months.

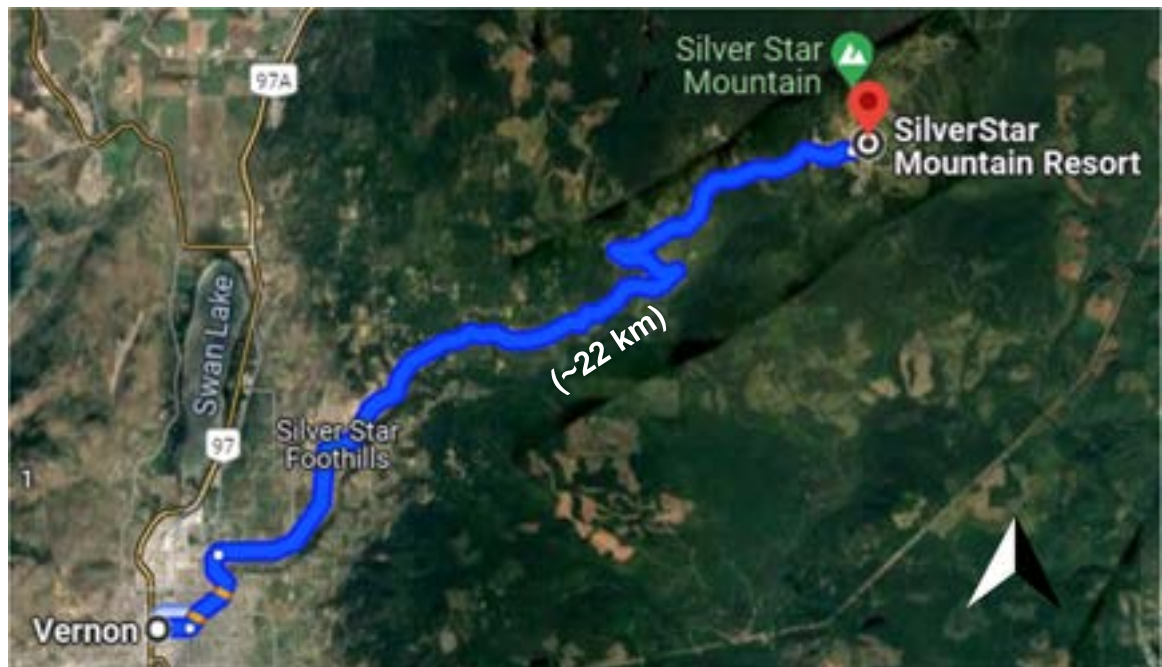


**Figure 1: SilverStar Resort**

The SilverStar Mountain Resort and community are supported by the City of Vernon. SilverStar is connected to Vernon by Silver Star Road, a two-lane paved rural arterial road with a posted speed of 60 km/h (Figure 2). The road includes some steep grades and sharp 180 degree curves (with 20 km/h advisory speeds), but is successfully negotiated daily by all types of vehicles – cars, buses, heavy trucks, etc.

As both Vernon and the Silver Star community grow in recreational and commercial activity (as well as residential population), the number of trips between the two areas increases. This has increased the demand for bus or shuttle services, both to provide transportation options for those without access to automobiles, and to reduce the growing parking congestion at Silver Star.





**Figure 2: Silver Star Road, Connecting Vernon to SilverStar Mountain Resort**

There are currently a number of shuttle services provided to, from, and within Silver Star. These services are generally limited to patrons and employees of the resort. However, the future of these services is uncertain due to the different parties and funding sources involved. A more established bus service is desired, which could be used by resort patrons, employees, and residents. The service would largely be required during the ski season (approximately November to March), and ideally in the summer months for cycling (approximately June to October). This would be a total of ten months of service per year.

Destination Silver Star (an association of the SilverStar Resort and local businesses) has commissioned a formal study to evaluate the feasibility of this bus service, and recommend options for service delivery. This report outlines the analysis and findings of that study.

## 1.2 OBJECTIVES

The objectives of the Destination Silver Star Transit Study are to:

1. Evaluate the current demand for transit service between Vernon and SilverStar Mountain Resort, and the existing shuttle services;
2. Explore options for providing an established transit service for all users, including patrons, employees, and residents; and
3. Recommend a preferred solution for delivering a regular, sustainable, and cost-effective transit service for consideration by Destination Silver Star.

## 2 LITERATURE REVIEW

The following documents were considered relevant to the Destination Silver Star Transit Study.

### 2.1 SILVERSTAR MOUNTAIN RESORT MASTER PLAN

The 2017 Master Plan for SilverStar Resort is the current guiding document for the resort development. The Plan explains that the current resort capacity at the time of the report was 5,550 skiers per day, but that this could be expanded to over 14,000 skiers per day, with another 4,800 per day in secondary attractions. The Plan discusses both the expansion of the winter attractions as well as the surrounding residential development and guest accommodations (focussing on mixed development and densification).



### 2.2 OFFICIAL COMMUNITY PLAN – RDNO AREAS B & C

The 2014 Official Community Plan (OCP) of the Regional District of North Okanagan (RDNO) Bylaw No. 2626 outlines a number of transportation objectives for Area C, in which Silver Star is located. Section 11.5.8(a) outlines a relevant policy to “...work with and/or partner with other agencies, stakeholders, and the community to achieve emission reduction targets and energy conservation goals by increased public transportation service within densely populated areas where transit can be supported.” The OCP also states in Section 15.1 that the “Regional District will continue to work with the Ministry of Transportation to encourage and accommodate for alternative modes of transportation within existing and future roadway networks.”

### 2.3 OFFICIAL COMMUNITY PLAN – SILVER STAR

The RDNO prepared a specific OCP for Silver Star in 2004 (Bylaw No. 1925; amended in 2016) which confirms that the Resort expressed interest in partnering with the RDNO and the BC Transit to establish a new bus service between Vernon and Silver Star.

### 2.4 REGIONAL GROWTH STRATEGY

The Regional District’s Regional Growth Strategy (Bylaw No. 2500; updated 2019) provides an integrated strategic policy framework for addressing growth management, economic development, transportation, and long-term regional sustainability, resilience, and prosperity. The most relevant policy is TI-2.2, which states the RDNO will work with BC Transit and member municipalities to create an efficient transit system that is an attractive alternative to the private automobile, complements compact communities, reduces environmental impacts, and is integrated with other land use and transportation plans. The document also stresses the importance of establishing inter-regional transportation systems.

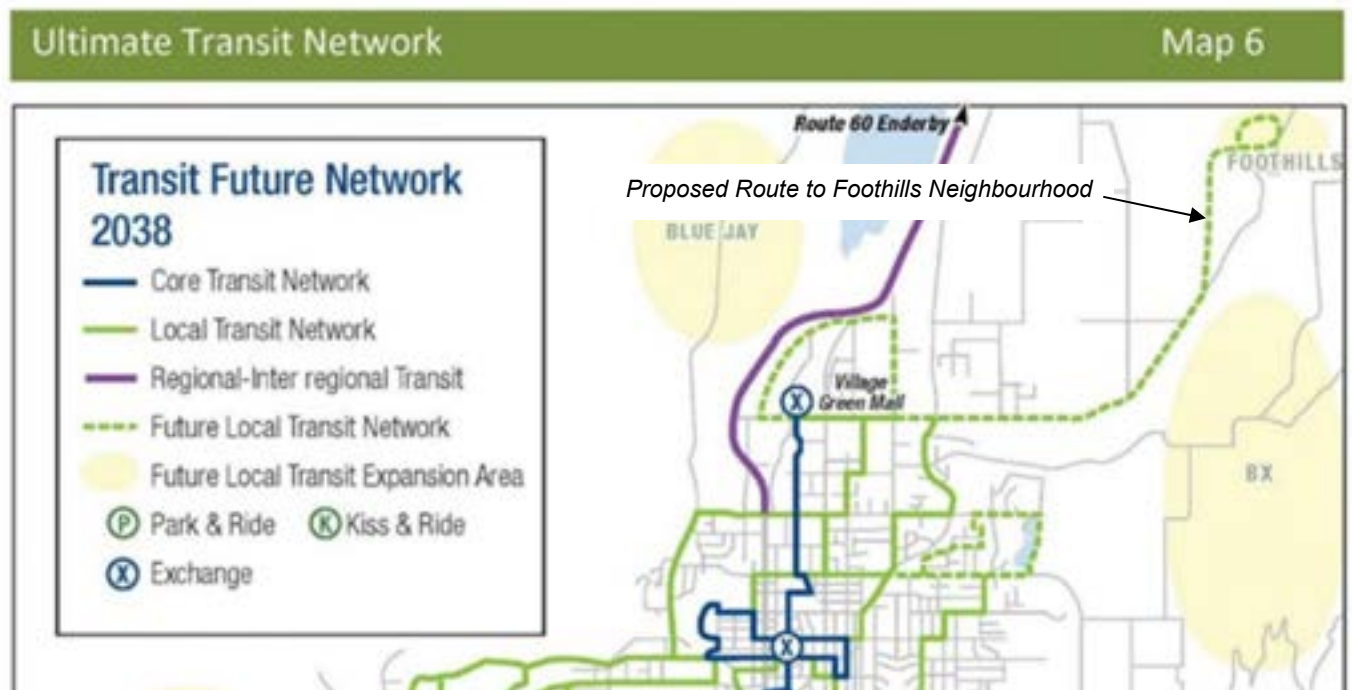
## 2.5 OFFICIAL COMMUNITY PLAN – CITY OF VERNON

The Official Community Plan Bylaw No. 5470 (2013) for the City of Vernon presents key policies and objectives for the development of the community, including relevant guidance on improvements for public transit and the integration of transportation investments with land use planning. The Official Community Plan also establishes guiding principles around safe, sustainable and youth-friendly transportation, which are high priorities for the City of Vernon. The OCP sets a 20% mode share target for walking, cycling, and transit use by 2040, and provides supporting policies such as:



- *11.5 Encourage transportation projects and initiatives that contribute to the long-term livability, vitality and viability of the City Centre, the neighbourhood centres and residential areas.*
- *11.9 Implement the transit routes and infrastructure identified and prioritised in the North Okanagan Transit Future Plan.*

One of these transit routes is proposed to be a service expansion to the Foothills Neighbourhood by 2038 (Figure 3). This route overlaps the first 6 km of the proposed service to Silver Star.



**Figure 3: Future Bus Service to Foothills Neighbourhood**  
Source: City of Vernon OCP (2013)

## 2.6 MASTER TRANSPORTATION PLAN – CITY OF VERNON

The City's 25 Year Master Transportation Plan encourages more trips to be made by walking, cycling, transit, and carpooling to reduce, delay, or defer the need for costly road network capacity improvements. The Plan's vision is to create an affordable multi-modal network that provides viable alternative travel choices, and connects neighbourhood centres by providing safe, convenient, and accessible facilities for pedestrians and cyclists. This is intended to protect the environment while supporting the health and quality of life of residents, local businesses, and the tourist industry.



The Plan also identifies the expansion of the Village Green bus exchange to four pullouts with new shelters and other amenities for customers. These improvements were completed, as envisioned (Figure 4).



**Figure 4: New Four-Bay Transit Exchange, Village Green Mall**  
(Source: Google Streetview, 2024)

## 2.7 NORTH OKANAGAN TRANSIT FUTURE ACTION PLAN



The 2021 North Okanagan Transit Future Action Plan is the result of collaboration between the City, the Regional District of North Okanagan, BC Transit, and First Canada – the local transit operating authority. The Plan proposes the future service to Foothills Neighbourhood (see Figure 3), and also includes the following objectives:

- Coordinated approach to make transit the preferred choice
- Emissions and congestion are reduced through increased transit use
- Development of transit to integrate with active modes
- Transit-supportive land use policies



## 3 COMMUNITY ENGAGEMENT

### 3.1 STAKEHOLDER MEETINGS

The transit study was supplemented by a series of meetings with key stakeholders, as outlined below.

#### 3.1.1 Destination Silver Star

Destination Silver Star (DSS) is an association representing and funded by the businesses in the Silver Star neighbourhood, and provides marketing services and other support for these businesses. Many of these businesses have expressed a strong interest in a more established bus service between Silver Star and Vernon, which would allow the hiring and retention of employees who don't have access to personal automobiles.

As a result, DSS has commissioned this transit study to explore options for a cost-effective and sustainable transit service between Silver Star and Vernon to replace and/or supplement the bus services currently in operation. In addition to providing more transportation alternatives for staff, patrons, and residents of the resort, the transit service will also offset the growing parking demand at Silver Star (Figure 5).

Winter is the peak season in terms of number of employees, which hovers around 600 at a maximum. The transit service could also be extended into the summer for cycling.



Figure 5: Current Parking at Silver Star

### 3.1.2 SilverStar Mountain Resort



The SilverStar Mountain Resort agrees with Destination Silver Star that a transit service between Vernon and the resort is justified. The existing shuttle service has a stop at the Foothills neighbourhood, an expanding residential area. They note that demand is continually increasing, and a stop at the Butcher Boys grocery store may also be useful. The shuttle provided during the winter months is for employees only; many patrons are turned away when attempting to catch a ride.

The SilverStar Resort has offered to relocate facilities or features to accommodate a permanent transit service. They also own many of the businesses at the mountain resort and can confirm the willingness of many to collaborate as well.

### 3.1.3 City of Vernon

The project team met with the City of Vernon on Friday, May 10, 2024. The City confirmed that they would not be able to extend the Vernon transit system to Silver Star, since it is outside the city limits. A public transit system would instead have to be administered through the Regional District.



The City is otherwise supportive of the proposed service, and would recommend connecting it at the transit exchange at the Village Green Mall on 48<sup>th</sup> Avenue. There are already four city bus routes connecting at this location, which would facilitate transfers to the rest of the system. However, the Silver Star bus service may invite park and ride issues, which would have to be managed in consultation with the mall.

### 3.1.4 BC Transit

The project team met with representatives from BC Transit on Friday, May 10, 2024. BC Transit is a provincial crown corporation that is responsible for coordinating the delivery of transit services in BC. BC Transit provides approximately 50% of the funding for each conventional transit system, with the other half being funded by fares and the community.



The BC Transit representatives confirmed that they would not be able to partner with a private entity, such as Destination Silver Star or the resort itself. Instead, an agreement could be created through the Regional District of North Okanagan, if they were willing. Subsequent to the meeting, BC Transit confirmed that there should be no concerns with buses accessing Silver Star, since the route is paved and is currently travelled by other buses and shuttles.

One potential concern could be the transport of rider equipment to the resort. During the ski season, riders have traditionally brought their equipment on the shuttle buses. This could continue with a public bus service. However, in the summer months, there would be limited space for the transport of bicycles. Bike racks can be provided on the outside of the bus, but additional storage (e.g. trailers) would not be practical.

### 3.1.5 *Regional District of North Okanagan*

The project team met with the Regional District of North Okanagan (RDNO) on Friday, May 17, 2024. The RDNO currently administers three regional bus routes from Downtown Vernon:



- Route 60 north to Enderby via Hwy 97A (~1 hour each way; five trips/day; \$2.50/ride),
- Route 61 east to Lumby via Hwy 6 (~30 minutes each way; five trips/day; \$2.50/ride),
- Route 90 south to UBCO via Hwy 97 (~1 hour each way; ten trips/day; \$5.00/ride).

BC Transit funds approximately 50% of these services (as is typical), and provides the bus fleet and other supporting services. The remainder of the operational costs are funded by the fares collected by riders and the tax base of the areas receiving the services.

Silver Star is within Area C of the regional district, which currently has no transit service provide by the RDNO. A new transit bylaw would be needed to extend the service to Silver Star, which would then allow BC Transit to fund 50% of the service. However, the challenge is in asking the tax payers in Area C to pay their share of this service, which would primarily be of benefit to the SilverStar Resort and businesses. If Destination Silver Star could pay the municipal share of the service, the bylaw would likely have support. The bylaw (or amendment to the existing bylaw) would require up to six months to prepare and pass.

If the shuttle service to SilverStar Resort was implemented, the RDNO could work with the City of Vernon to explore opportunities to combine the fare structure, such that a fare or day pass purchased in the City's transit system could be used on the RDNO's regional system.

### 3.1.6 *BC Ministry of Transportation and Infrastructure*

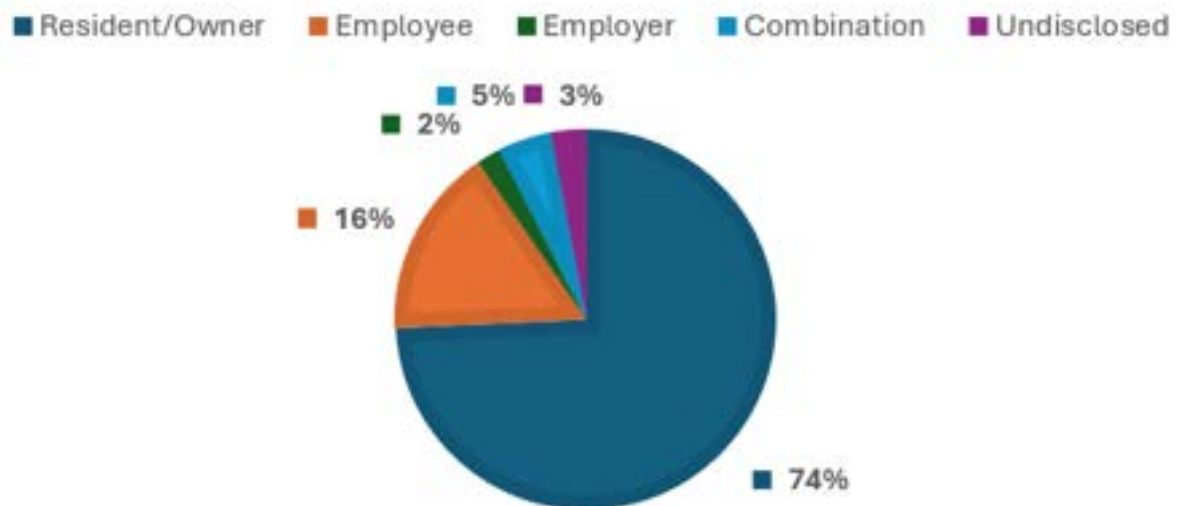
The project team met with the Okanagan-Shuswap District of the Ministry of Transportation and Infrastructure (MoTI) on Wednesday, May 15, 2024. MoTI is responsible for approximately 16 km of Silver Star Road, between Hitchcock Road in the Foothills Neighbourhood to the SilverStar Resort. While MoTI encourages the use of buses and shuttles to reduce the traffic demand on provincial roadways, they would not be directly involved with the proposed shuttle service to the resort. However, MoTI would be responsible for approving any new bus stops situated along the provincial portion of Silver Star Road, which might be needed by the shuttle service. For bus pullouts, the Regional District may also have to be involved.



## 3.2 DSS PUBLIC SURVEY

In addition to the stakeholder meetings, an online survey of the Silver Star community and affected users/guests was conducted by Destination Silver Star. The survey took place continuously throughout the summer and early autumn of 2024, and had 241 respondents. The answers were as follows:

1. Almost 75% of the respondents were residents and property owners, with another 16% employees at Silver Star (Figure 6).

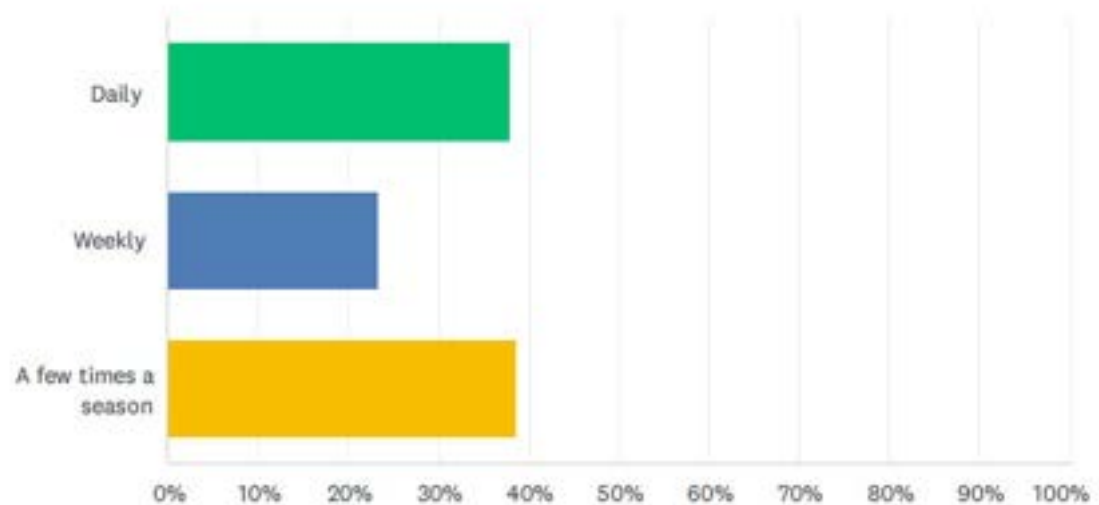


**Figure 6: Survey Respondents**

2. Of the respondents, 42% indicated they were in need of a regular bus service between Silver Star and Vernon.
3. Approximately 14% of the respondents indicated they would use the service more than three times per week, and another 21% who indicated they would use the service between one and three times per week. Approximately 20% indicated that they would use the service only once or twice a month, with the remaining 45% saying they would never expect to use the service.
4. Of the 36 respondents who identified as employers at Silver Star, almost none suggested a need for the bus service for their staff.
5. When respondents were asked what they would consider to be a reasonable fare for a bus ride between Silver Star and Vernon, the most common answer (54 responses) was \$5/trip, with the average being ~\$7/trip.
6. When asked to provide additional comments about the proposed transit service, ~20 respondents cited the benefits of a transit service to bring guests and staff to Silver Star, with another ~15 citing the benefits for residents and guests at Silver Star to travel to Vernon for shopping and entertainment. Another five expressed interest in having transit as a sustainable alternative to automobiles, and four others thought the bus service would reduce parking congestion at the resort. Lastly, a few respondents would appreciate the bus as an alternative to driving in winter conditions.



7. Approximately 77% of respondents said that they use the in-resort shuttle. The majority of respondents used the shuttle either daily (38%) or weekly (23%) (Figure 7).



**Figure 7: In-Resort Shuttle Service Use by Respondents**

8. Approximately 66% of the respondents were generally in favor of the in-resort shuttle being funded through resort association member fees.
9. The majority of the respondents suggested that the transit service between Silver Star and Vernon should start between 7:00 and 8:00 AM, every day of the week. The service should end between 7:00 and 9:00 PM Sunday to Thursday nights, with service finishing as late as 9:00 PM to Midnight on Friday and Saturday nights.
10. Regarding additional thoughts on the in-resort shuttle, four respondents said the service was essential, with another wondering if it should be user-pay. Two respondents asked for the service to extend later into the evening, for the benefit of restaurants and pubs around the resort. Another suggested the service could be improved with GIS tracking, so that the users could anticipate the length of the wait until the bus arrives.

### 3.3 TOTA PUBLIC SURVEY

Concurrent with the DSS survey, an online survey was conducted by the Thompson-Okanagan Tourism Association (TOTA) to invite the public's thoughts on inter-community transportation. The study was conducted between July 7 and September 12, 2024, and had a total of 924 responses. The relevant survey findings are summarized below, divided into the three groups of respondents:

Business Owners: (119 responses, almost half from the hospitality sector)

1. Approximately 96% of business owners felt there was a need for expanded inter-community transportation in the region.
2. Factors most strongly affecting regional travel choices were (in order of importance): Safety, Convenience, Travel Time, and Cost.
3. For commuting trips, business owners favoured electric tram/train and buses as their preferred mode of travel.

Residents: (702 responses)

1. Approximately 95% of residents felt there was a need for expanded inter-community transportation in the region.
2. Factors most strongly affecting regional travel choices were (in order of importance): Safety, Convenience, Access to Health Care, and Travel Time.
3. For trips to work and other activities, residents favoured electric tram/train and buses as their preferred modes of travel.
4. Approximately 59% of residents stated that they travel outside their community regularly (at least once per week), with another 25% travelling monthly.

Visitors: (102 responses)

1. The majority of visiting respondents (64%) were from BC, with another 22% from the rest of Canada. The remainder were from other countries.
2. Approximately 88% of the visiting respondents said that alternative transportation options were a necessity in the region.
3. For the 78% of the visitors arriving by automobile, the automobile was a comparable preference to the bus and tram/train options. However, for the 16% arriving by air, the bus and tram/train options were strongly preferred. The primary reasons for these choices were listed as (a) travel time, (b) improved access to other communities, and (c) transportation costs.

The survey analysis concluded that alternative modes of travel are strongly desired for inter-community travel within the region. Trams/trains were the preferred choice, followed by rapid buses.

## 4 TRANSIT DEMAND EVALUATION

### 4.1 CURRENT SHUTTLE AND BUS SERVICES

There are four different bus services offered at Silver Star, as outlined below. School bus trips were not included, as these have specific arrangements through the schools concerning insurance, driver training, flexibility in the schedules, etc.

#### 4.1.1 Employee Bus

Last season, the Resort provided a regular bus service during the winter months for approximately 100 employees being housed in Vernon. There were two trips in the morning (arriving at 6:30 and 7:30 AM), and two trips later in the day (departing at 4:00 and 11:00 PM) to accommodate the different shifts. This service has traditionally been provided using 48-seat school buses contracted through A1 Bus Ltd in Vernon and/or the Resort's own 24-seat shuttle buses. The demand for this service is expected to decrease this winter as more employees will be housed at the resort. But there is still expected to be a significant demand (30-50 assumed) from the remaining employees living in Vernon.

#### 4.1.2 Ski Pass Bus:

During ski season, SilverStar Mountain Resort offers a daily bus service to bring guests from the communities north of Vernon. The route begins at Salmon Arm at 7:00 AM, and proceeds south making stops in Enderby, Armstrong, and the Village Green Mall in Vernon. The bus arrives at Silver Star by 8:30 AM, and leaves Silver Star to return north at 4:00 PM. Single fare (\$28), round trips (\$44), and season passes (\$450) are available. Based on ridership data, there was an average of 55 riders in each direction per day over the different regional stops between December 2023 and February 2024. With cheaper fares and full-week service, the new transit service is assumed to generate in the order of 10-15 riders on weekdays, and 20-30 on weekends, to and from Vernon, especially if transfers to Enderby on Route 60 are allowed.

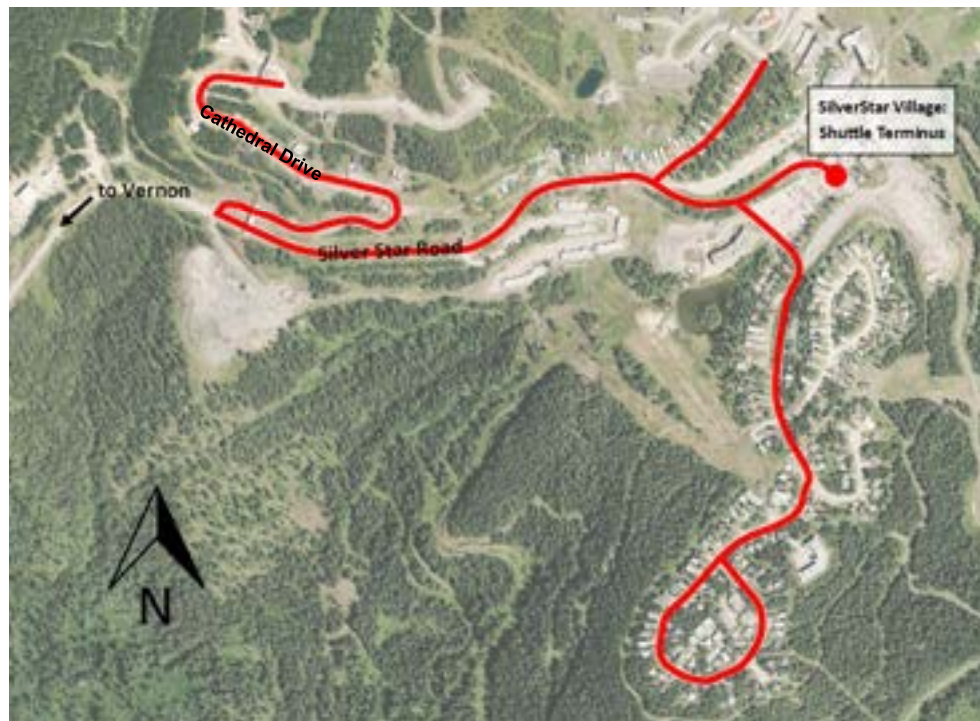
#### 4.1.3 In-Resort Shuttle:

The Resort also provides a complimentary shuttle to help guests get to and from their accommodations. The route begins and ends at the Village, and covers the main parking lots and neighbourhoods (e.g. Firelight, Tube Town, Knoll, Pinnacles Road, Alpine Meadows, Ridge, etc) over a ~30 minute trip (Figure 8). The recent service costs were ~\$60k per year.



The service is provided during the ski season, generally from November to April. Based on ridership data from January-February 2024, the following patterns were observed:

- Average of 69 riders per day between 8:00 AM and 12:00 Noon
- Average of 113 riders per day between 12:00 Noon and 5:00 PM
- Average of 42 riders per day between 5:00 PM and 8:00 PM
- Average of 145 riders for the whole day, 8:00 AM to 8:00 PM
- The highest ridership was on Saturdays, with an average of 300 riders/day.



**Figure 8: Silver Star In-Resort Shuttle Route for Guests**

There is a small potential that some of these shuttle riders could make use of a new transit service between Vernon and Silver Star, especially if the new route included coverage of some of the key residential neighbourhoods (e.g. Monashee Road). However, in general, both services would still be required due to the differences in the purpose and delivery. Specifically:

1. The shuttle provides frequent service around Silver Star, so that users do not have to wait long for their rides. Also, the shuttle is provided from the beginning until the end of the day, allowing for convenient trips between the recreational facilities, restaurants, and accommodations. And finally, by using a smaller vehicle, the shuttle can more easily negotiate the steeper routes (e.g. Cathedral Drive) to provide more coverage of the mountain.
2. A new transit service to and from Vernon would be much less frequent, with hourly service at most, and concentrated when demand is highest. Also, by using a larger bus, some roads may be too challenging for the bus to negotiate. Furthermore, the heavy buses would likely degrade the pavement on the local roads.

#### **4.1.4 Vernon Shopping Shuttle:**

As a pilot project, the Vernon Business Improvement Association (BIA) and DSS jointly commissioned a shuttle service between Downtown Vernon, Village Green Mall, and Silver Star for five Saturdays between January and February, 2024. The service used a 24-passenger bus to bring passengers from Vernon to Silver Star (and vice versa) in the morning, and return them in the afternoon. The service from Downtown Vernon to Silver Star averaged 5 passengers per round trip. The service from Silver Star to Downtown Vernon averaged 12 passengers per round trip. This ridership demand would directly transfer (and likely increase) to an established transit service between Vernon and Silver Star. The ridership is assumed to be 5-10 on weekdays and 10-20 on weekends.



## 4.2 OTHER POTENTIAL USERS

In addition to diverting the riders currently using the existing services outlined in Section 4.1, a new transit service between Vernon and Silver Star would also attract new ridership from the following sources:

### 4.2.1 Ski Club Members

There are two ski clubs at Silver Star:

The **Freestyle Club** is run by volunteers (not-for-profit), and offers programs in both skiing and snowboarding. There are approximately 40 coaches, 220 skiers, and 80 snowboarders. In an interview on August 28, 2024, one of the coaches advised that teenagers would be a significant market for the proposed transit service. This includes both students and younger coaching staff. An estimated 5-10 riders are assumed to use the new transit service on weekends.



The **Vernon Ski Club** (VSC) teaches competitive alpine skiing at Silver Star. The VSC offers its own shuttle service between 7:20 until 4:20pm using a 14 seat van. The van is also used for out-of-town club trips, and so is not always available for SilverStar users. A representative from VSC confirmed that a regular transit service for skiers would be well-used. An estimated 5-10 daily riders are assumed to use the new transit service on average.



### 4.2.2 Other Skiers and Snowboarders

SilverStar can currently host over 5,000 skiers per day, and this number could be doubled or tripled in the future for skiing, snowboarding, and the other mountain attractions. Therefore, a significant amount of recreational (non-club) skiers and tourists may be expected to take advantage of a regular transit service to Vernon. An estimated 20-30 riders are assumed to use the new transit service during the weekdays, and 40-60 riders on weekends.



Figure 9: Summit Express, SilverStar

### 4.2.3 Residents

There is a significant residential population along Silver Star Road that would benefit from regular transit service to Vernon. Between the Foothills neighbourhood and Silver Star, there are approximately 3,300 permanent residents according to the 2021 Census from Statistics Canada (Figure 10). This population would increase further in ski season, when resort employees are given seasonal accommodations at Silver Star. All these residents and employees would be able to use the transit service to access Silver Star, as well as come into Vernon for shopping, entertainment, appointments, and potentially school (e.g. college) and work. An estimated 10-20 residents are assumed to use the service daily.



**Figure 10: Population Along Silver Star Road (2021)**

The City of Vernon is already planning to extend its regular bus service to the Foothills neighbourhood (see Section 2.7). Therefore, a regional route to Silver Star could complement this future service.

### 4.2.4 Mountain Bikers

In the summer season, there is a growing demand for trail riding down the Silver Star mountain. In a discussion on April 17, 2024, a representative of the North Okanagan Trail Society explained that a regular transit service between Silver Star and Vernon would be popular with the teenage riders, and would save their parents two trips to Silver Star for drop-off and pick-up. Route stops would be desirable in Downtown Vernon, Village Green Mall, Pleasant Valley Rd/Butcher Boys, Foothills, Sovereign Road, and the Silver Star resort.

The key challenge is to provide sufficient storage for bicycles on the bus, with bike racks on the front of the bus limited to two bicycles. Only 10-20 daily riders may be assumed to use the summer service, unless more bike storage can be found.



**Figure 11: Mountain Biking at SilverStar**

## 4.3 SUMMARY OF ESTIMATED TRANSIT DEMAND

Based on the gross assumptions for ridership above, the low and high estimates of people using the transit service is summarized in Table 1.

**Table 1: Summary of Estimated Riders**

Ridership Type	Weekdays		Weekends	
	Low Estimate	High Estimate	Low Estimate	High Estimate
Employee Bus	30	50	30	50
Ski Bus Pass	10	15	20	30
In-Resort Shuttle	0	0	0	0
Shopping Shuttle	5	10	10	20
Ski-Club Members	0	0	10	20
Other Skiers/SBs	20	30	40	60
Residents (to Vernon)	10	20	10	20
<b>Total Daily Riders</b>	<b>75</b>	<b>125</b>	<b>120</b>	<b>200</b>

As each rider is generally assumed to use the service for travelling both to and from Silver Star, the actual number of fares would be twice the numbers shown in Table 1. Therefore, on weekdays, the new transit service is estimated to generate between 150 and 250 fares. On weekends, the transit service is estimated to generate between 240 and 400 fares. The number of fares will tend toward the higher side as more teenagers use the service, and as parking becomes problematic at the resort.

As these ridership estimates are gross assumptions (based on existing ridership using the existing bus services, the feedback from the survey summarized in Section 3.2, and the available markets), additional surveys and other research is recommended for the development of the business model.

## 5 SYSTEM PLANNING

### 5.1 PROPOSED ROUTES AND STOPS

Based on the analysis and considerations above, a regular transit service between Vernon and Silver Star should follow Silver Star Road as the most direct and (in some areas) the only connection to Silver Star. The road is paved for the full 22 km length. West of Pleasant Valley Road, the route would follow 48<sup>th</sup> Avenue to the Village Green Mall (Figure 12).

The bus stops along the proposed route are recommended as follows:

- **Village Green Mall, Vernon (Terminus):** There is a new bus exchange with four bays at the mall, and the City favours this location for the terminus. There is a potential for skiers to use the mall parking lot as a Park&Ride facility, which would have to be addressed with time-limited parking in the mall.
- **Pleasant Valley Road (Butcher Boys):** This is a key destination in Vernon, as well as a major junction in the road network and local transit system.
- **Foothills Neighbourhood:** One or two stops could be provided to serve the Foothills area. The stops could be at the Blackcomb Way and/or Phoenix Drive intersections. This would allow the City to provide preliminary bus service to the Foothills neighbourhood, as envisioned in their Official Community Plan.
- **Sovereign Road:** An optional stop could be considered at the Sovereign Road intersection for cross country skiing and cyclists. However, the value of this stop could be limited by the long distance between the intersection and the facilities.
- **SilverStar Resort (Terminus):** The route would end at the SilverStar resort, ideally at an upgraded bus stop (with shelters etc) shared with the shuttle bus.



*Figure 12: Proposed Route*

The route is not proposed to extend to Downtown Vernon since there are already multiple transit routes offering this connection, and the service hours would be better spent accommodating the ridership demand to Silver Star. However, to facilitate these connections, the fare to Silver Star should ideally be transferable to the City bus system.



## 5.2 POTENTIAL BUS SCHEDULE

The trip from the Village Green Mall in Vernon to Silver Star (uphill) is estimated to be approximately 50 minutes. The return trip (downhill) is estimated to be approximately 46 minutes. Additional time would be needed for potential stops along the way, and for loading and unloading (including ski equipment) at each end. With only one bus anticipated for the service for the foreseeable future, the round trip would need at least two hours.

To ensure the buses are of use to resort staff, the service would have to leave the Village Green Mall around 6:30 AM. The return trip leaving Silver Star at 7:30 AM could serve commuters coming into Vernon for the start of the work/school day.

The next bus leaving Vernon would be at 8:30 AM, which would arrive about one hour after the start of the ski lift operation. However, this may be an advantage in spreading out the demand at the lift ticket office, rental shops, and other services at the resort.

The buses leaving Vernon later in the day (4:30 and 6:30 PM) could serve commuters returning to Foothills and Silver Star after work/school.

After the ski day, skiers could either opt to leave Silver Star early on the 3:30 PM bus, later on the 5:30 PM bus, or after dinner on the 7:30 PM bus. According to the recent survey, respondents would prefer the service to extend later into the evening on weekends.

In general, there would be approximately seven round trips per day. An example schedule is shown in Table 2.

**Table 2: Sample Schedule for Vernon-Silver Star Bus Service**

Vernon (Village Green Mall)		SilverStar Resort	
Arriving	Departing	Arriving	Departing
-	6:30 AM	7:20 AM	7:30 AM
8:15 AM	8:30 AM	9:20 AM	9:30 AM
10:15 AM	10:30 AM	11:20 AM	11:30 AM
12:15 PM	12:30 PM	1:20 PM	1:30 PM
2:15 PM	2:30 PM	3:20 PM	3:30 PM
4:15 PM	4:30 PM	5:20 PM	5:30 PM
6:15 PM	6:30 PM	7:20 PM	7:30 PM
8:15 PM	-	-	-

If the arrival and departure times at Village Green Mall were aligned with those on the existing Route 60 bus route to Enderby, the Resort could potentially use this service to replace the ski pass bus program discussed in Section 4.1.2.

### 5.3 BUSES

To meet the expected rider demand for the proposed transit service (and provide extra space for the rider's ski equipment), larger buses are recommended. A 24-passenger vehicle (such as the in-resort shuttle) is not expected to meet the peak ridership demand.

If the service is provided in partnership with RDNO and BC Transit, a bus like the XN40 Xcelsior should be considered (Figure 13). This bus is 12.5 metres long, 2.6 metres wide, and 3.4 metres high, and provides space for 35 seated passengers (81 total with standing). A maximum capacity of 60 passengers is assumed including ski equipment.



**Figure 13: XN40 Xcelsior 35 Seat Bus, BC Transit**

Source: BC Transit

If the BC Transit service is not possible, a 48-seat school bus could be contracted through A1 Bus Ltd. (Figure 14), as has been provided by the resort for employees. A maximum capacity of 40 passengers is assumed including ski equipment.



**Figure 14: 48 Seat School Bus, A1 Bus Ltd.**

Source: A1 Bus Ltd.

## 6 SERVICE AND FUNDING MODELS

Based on the analysis and ridership projections, there are three potential service models for delivering an effective transit service between Silver Star and Vernon, as described below. In all cases, the winter service is proposed to be implemented first, since the largest demand is during the ski season. The service could be extended to the cycling season over time, especially if better options for the transport of bicycles become feasible.

### 6.1 BC TRANSIT AND REGIONAL DISTRICT SERVICE

By expanding the Regional District's current regional system to Silver Star, the transit service could be subsidized approximately 50% by BC Transit. This option would require an update to the RDNO's transit bylaw for Area C. However, as described in Section 3.1.5, the RDNO would not be able to fund the transit service directly, since the primary purpose of the bus route is to support Silver Star, and is of limited benefit to the tax base.

Based on 5,500 hours for daily transit service throughout the year, the total annual service cost is estimated to be between \$800k and \$1M (depending on the size of the bus). If the service was limited to the 19-week ski season only, the cost of the system would be reduced to \$290k to \$370k. Outside the ski season, the bus would then be available for other service in the Regional District's transit system.

Using the ridership projections estimated in Section 4.3 over the ski season (i.e. 23,400 and 39,000 riders) and the usual \$2.50 fare for BC Transit bus rides, the expected revenues for the season would be between \$58,500 and \$97,500. The actual revenues may be less, depending on the number of subsidized staff passes.

Based on these numbers, the estimated cost to Destination Silver Star to fund the transit service during the ski season would be between \$190k and \$310k.

### 6.2 CONTRACTED SERVICE

If an agreement with the RDNO and BC Transit is not possible, Destination Silver Star could contract a regular transit service from a local company (e.g. A1 Bus Ltd) using school buses. This service is assumed to cost \$900 per round trip between Vernon and Silver Star. With seven round trips per day (as proposed in Table 2) over a 19-week season, the cost would be in the order of \$838,000. The actual cost could potentially be negotiated to a lower amount with a large contract, and by reducing service to only peak periods.

As a contracted service would be separate from the BC Transit system, a higher fare could be charged. With an assumed \$5 fare per ride (as supported in the recent survey) and a seasonal ridership as above, the revenues would be between \$117k and \$195k. The remaining cost of \$640k to \$720k would have to be funded by Destination Silver Star.

### 6.3 HYBRID SERVICE

If the demand for a BC Transit service exceeded the bus capacity, a contracted service could be used to supplement the regular service during peak hours (e.g. for employees).

## 7 SUMMARY AND RECOMMENDATIONS

### 7.1 SUMMARY

SilverStar Mountain and Ski Resort is a popular winter destination with an existing residential population and thousands of visitors during the ski season. These numbers are expected to grow as the resort facilities, accommodations, and amenities expand over the coming years.

As a result of this growth, there is increasing demand for transportation between Silver Star and the City of Vernon, 22 km to the southwest. To manage this demand, and the resulting problems with parking at Silver Star, there are four separate bus / shuttle services currently provided. As a more sustainable solution, a regular, established bus system is desired between Silver Star and Vernon, at least during the ski season. This system would be supported by a number of local plans and policies (e.g. North Okanagan Transit Future Action Plan), and is desired by a large number of potential users (based on two surveys).

The proposed bus route is proposed to connect the Village Green Mall in Vernon to the Village at Silver Star along Silver Star Road (and 48<sup>th</sup> Avenue within Vernon). Additional stops could be provided at the Pleasant Valley Road intersection (Butcher Boys), the Foothills neighbourhood, and potentially Sovereign Road. The route is not recommended to continue around the Silver Star neighbourhood because (a) the existing resort shuttle is better able to provide the frequency and capacity needed for this service, and (b) many of the roads around the Silver Star neighbourhood would be too narrow and steep for the larger buses.

Based on gross assumptions, the estimated ridership is expected to generate between 150 and 250 fares on weekdays, and between 240 and 400 fares on weekends. These could be accommodated by seven round trips per day, assumed to be between 6:30 AM and 8:15 PM (with service extended later into the evening on weekends, as desired by survey respondents). With loading and unloading at each end, each round trip is expected to be approximately two hours in duration. The actual bus schedule would have to be determined based on resort employee shift requirements, the resort's operational hours, and potential connections with other routes in the regional transit system.

The new bus route could be delivered with either a subsidized service through BC Transit and the RDNO, or with contracted service with school buses through a private bus company (e.g. A1 Bus Ltd). During peak periods when ridership demand exceeds the bus capacity, the service could be supplemented with additional contracted service (especially for resort employees).

Based on the assumed ridership and a typical \$2.50 fare, the BC Transit service would cost Destination Silver Star in the order of **\$190k to \$310k** for a 19-week ski season. If a service through BC Transit and RDNO is not possible, a contracted service with a \$5.00 fare (as supported by most survey respondents) is estimated to cost Destination Silver Star in the order **\$640k to \$720k** per season.



## 7.2 NEXT STEPS

Following the receipt of this report, the next steps to implement the new transit service between Silver Star and Vernon are:

1. Supplement and verify the ridership projections with additional community engagement and surveys, as required.
2. Meet with the RDNO to confirm acceptance of the proposal in principle. If approved:
  - a) Request that BC Transit complete a study to determine the feasibility of the new route. The study would confirm the potential bus stop locations, identify the candidate bus vehicle(s) for the service, and provide an accurate estimate of the system costs over the ski season.
  - b) Coordinate the transit connections with the City of Vernon.
  - c) Develop a detailed plan outlining the route, bus stops, bus vehicle, schedule, and system costs.
  - d) Deliver the plan to Destination Silver Star, RDNO, and BC Transit for final approval.
  - e) Update the RDNO bylaw for transit service in Area C. This may require community engagement.
  - f) Implement and advertise the new system.
  - g) When the transit service is established (and more options are provided for the transport of bicycles), consider expanding the transit service into the summer cycling season.
3. If the transit service is not approved by the RDNO, a contracted service should be considered, to be negotiated with a private service provider.

## 8 CLOSURE

This study for the proposed transit service between Vernon and Silver Star has been prepared by McElhanney Ltd. ("McElhanney") for the benefit of Destination Silver Star. The information and data contained herein represent McElhanney's best professional judgment in light of the knowledge and information available to McElhanney at the time of preparation.

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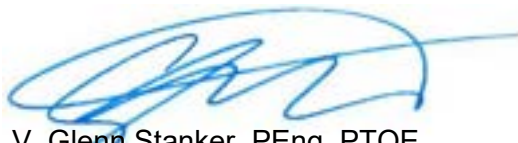
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