

# WHISTLER COMPREHENSIVE TRANSPORTATION STRATEGY

SUMMARY REPORT

TRANSPORTATION ADVISORY GROUP  
RESORT MUNICIPALITY OF WHISTLER  
SEPTEMBER 1999



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# INTRODUCTION

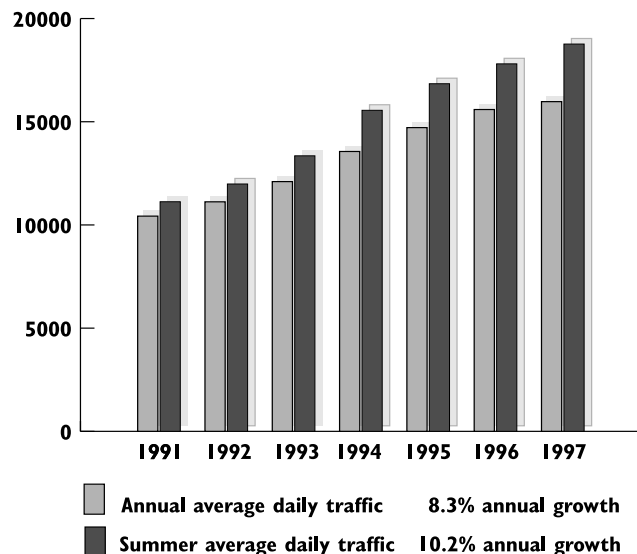
## ISSUES FOR THE MILLENNIUM

Whistler has achieved its goal of becoming a world-class, four-season resort. With this achievement, the municipality has also grown and changed. In addition to the new commercial and residential developments attracted to the valley, the most telling evidence of change has been a substantial increase in the demand for travel; in particular, the demand for travel by private automobile. During peak winter weekends, congestion through the Village and on Highway 99 south to Whistler creek has worsened, with delays at times reaching 30 minutes or more. This situation has affected the quality of life for Whistler residents as well as the quality of the resort experience for Whistler's guests. With the increase in summer visits and activities at Whistler, summer daily traffic is now higher than it is in the winter.

ONE OF THE FIRST ACTIONS OF TAG WAS TO DEVELOP A FUTURE VISION FOR TRANSPORTATION IN WHISTLER.

The Transportation Advisory Group, or TAG, was formed in the spring of 1996 to address transportation issues in Whistler. TAG is comprised of many diverse stakeholders, including local residents, councillors, municipal staff, representatives from Whistler-Blackcomb, Tourism Whistler, BC Transit, and the Ministry of Transportation & Highways. One of the first actions of TAG was to develop a future vision for transportation in Whistler, one which emphasized alternative travel modes and limited additional road capacity. TAG then engaged a consultant team to assist them in preparation of a long-range strategic plan which will realize the vision.

HIGHWAY 99 IN WHISTLER:  
TRAFFIC GROWTH 1991-1998



# KEY ISSUES

## THE IDENTIFYING PROCESS

Strategic plans respond to current and future issues facing a community. There were many sources and mechanisms for input to the process of identifying issues. Major stakeholders such as the municipality, Intrawest, Tourism Whistler, BC Transit and the Ministry of Transportation & Highways had input through TAG or through presentations to TAG. The public provided input through representation on TAG, attitudinal surveys, four Town Hall Meetings and two community meetings. The consultant team also identified important transportation issues for Whistler.

More than 100 issues were eventually documented. Then TAG, Council and public input was sought to determine issues which were most important, or the key issues. TAG, Council and the public provided the consultant team with ratings on the level of importance of each issue.

## KEY TRANSPORTATION ISSUES FACING WHISTLER TODAY

1. Congestion on Highway 99 and in the Village during peak winter afternoon periods is excessive. Traffic is growing steadily and this is expected to continue with increasing Whistler development. Congestion on Highway 99 and in the Village increases response time for all emergency services.
2. On average, 20 percent of Whistler employees live in Pemberton or Squamish and commute, primarily by car, putting more pressure on Highway 99. This percentage could grow, when the bed cap is reached and market housing becomes even more expensive.
3. Many people perceive public transit as unattractive. Local public transit, therefore, is not being used to the extent it could be.
4. Lack of services and daily needs shopping in Whistler Creek and Alpine Meadows/Emerald force people to drive elsewhere in Whistler for these needs.
5. The one train per day which could service regional trips does not leave or arrive at times convenient for skiers. The passenger rail system is not being fully utilized, with low numbers of regular users.

# T A G VISION

## QUALITY EXPERIENCE FOR RESIDENTS AND GUESTS

- Be able to move quickly and easily
- Have a safe system
- Retain scenic aspects we now have
- Ensure a high-quality design

## SHORT-TERM PLAN

- Facilitates goods and people moving.
- Is affordable, attractive and practical.
- Allows for future development.
- Utilizes incentives and deterrents to shape desired behavior.
- Recognizes that major stakeholders within Whistler must address transportation concerns.

## LONG-TERM PLAN

- Solutions and systems should be flexible.
- Solutions should be physically and financially practical.
- Pro-active versus re-active solutions.
- There should be integration of the Resort and Community.
- Ease of access.
- Should consider growth management.
- Facilitate increased capacities with efficient use of existing systems.
- Growth should not be accommodated simply with linear expansion of existing systems.
- Use creative and unique solutions.
- Ease congestion.
- Integrate transportation and recreation.

20 PERCENT OF EMPLOYEES LIVE IN SQUAMISH AND PEMBERTON AND COMMUTE, PUTTING MORE PRESSURE ON HIGHWAY 99.



# GOALS & OBJECTIVES

Six key goals, with their associated objectives, provided the foundation of the Whistler Comprehensive Transportation Strategy. TAG, Council and the public had direct and extensive input to the formation of both the goals and objectives. The goal and objective statements essentially form the policies for transportation in Whistler.

## QUALITY OF COMMUNITY AND RESORT EXPERIENCE

### GOAL NUMBER 1

**Transportation system plans, designs and facilities should be integrated with land use and recreation facility planning to accommodate growth.**

TAG wanted to ensure that the Whistler Comprehensive Transportation Strategy was integrated with existing and future land uses and recognized the impacts of additional lifts and new lift bases. It was important that the strategy balanced mountain skier capacity, bed unit capacity, and transportation systems.

### OBJECTIVES

- a. Plan land development to shorten travel distances and reduce vehicular travel demand.
- b. Reduce the need for long-distance employee commuting from Squamish and Pemberton.
- c. Reduce the need for daily services shopping by motor vehicle.
- d. Maximize the number of skiers who are able to stay within convenient walking distance or ski-in/ski-out distance from lift staging areas.
- e. Allow easy transfer between lift staging areas to encourage skiers to access the closest lift base and minimize vehicular travel distance.

- f. Plan and design all developments to minimize walking distances to transit, walkways and bicycle facilities and trails.
- g. Plan ski lift staging areas to minimize skier walking distances.
- h. Plan developments to maximize the number of ski-in/out trails.

## QUALITY OF COMMUNITY AND RESORT EXPERIENCE

### GOAL NUMBER 2

**The transportation system should reflect and enhance the natural and urban design features that make Whistler unique.**

TAG wanted physical improvements and services associated with Whistler to be different from other communities and in keeping with the resort experience. They did not want off-the-shelf solutions; nor solutions which marred the natural beauty of the valley or the special ambiance created by Whistler's urban designs.

### OBJECTIVES

- a. Plan new facilities and improvements to existing facilities to fit visually into the natural landscape.
- b. Encourage designs that are unique to Whistler and its recreational nature.
- c. Maximize retention of existing natural features and new landscaping opportunities in the planning and design of transportation facilities.

MOBILITY AND ACCESSIBILITY

GOAL NUMBER 3

The transportation system should consider and provide for the needs of all user types and contribute to the quality of life within the Whistler resort community.

There are many users of the transportation system: local permanent and seasonal residents, second home owners, guests and non-resident workers. TAG wanted to ensure that all these users are treated equitably. In particular, it was important to provide easy, barrier-free access for those with disabilities.

OBJECTIVES

- a. Impacts on, and benefits to all users of the transportation system should be considered, including seasonal and permanent residents, visitors, non-resident workers, second home owners, commercial delivery and emergency services.
- b. The transportation system should enhance, rather than compromise visitors' experience at the resort.
- c. Minimize visual impact and intrusion of transportation systems.
- d. Provide for easy, barrier-free access.
- e. Transportation facilities and services should be implemented to benefit more than one user, and should not create undue hardship for other users.
- f. Provide for the efficient delivery of goods to activity centres.

MOBILITY AND ACCESSIBILITY

GOAL NUMBER 4

The transportation system should provide efficient, multi-modal access for inter- and intra-municipal travel, as well as inter-regional travel. Attractive alternative modes to the single-occupant vehicle should be provided and encouraged.

While TAG recognized that the automobile will always be a popular mode of travel to and within Whistler and should be provided for, the focus of the Whistler Comprehensive Transportation Strategy is on promoting and providing alternative modes. Complete, continuous and convenient networks for all modes should be provided to encourage people to change their travel choices. Along with these incentives, disincentives for automobile use should be employed to remove the hidden subsidies of automobile travel. A shift of 15 percent of vehicle traffic demand to non-auto modes during peak travel periods was the TAG goal; however, TAG also desired flexibility in the Strategy in case the 15 percent shift was not achieved.

OBJECTIVES

- a. Provide vehicle, transit, bicycle, pedestrian, and other, non-motorized mode networks as part of the transportation system in Whistler linking all developed areas.
- b. Enhance transit routes, frequencies and service.
- c. Increase the convenience of alternative modes and the ease of transfer between different modes.
- d. Improve the regional bus system between Pemberton, Squamish, the Lower Mainland and Whistler to make it more competitive with automobile travel.
- e. Improve the rail link to the Lower Mainland, Pemberton and Squamish to make it more competitive with automobile travel.
- f. The transportation system should provide incentives for travel by modes other than the private automobile.



- g. Support commuting by cycling, walking and other non-motorized modes.
- h. The implications of auto dependence and the need to change travel behaviors should be communicated to the public.
- i. Alternative modes for travel to, from and within Whistler should be promoted and marketed.
- j. Improve the safety of the existing highway to Pemberton, Squamish and the Lower Mainland.
- k. Give physical priority to transit, cycling, walking and other alternative modes over the private automobile.
- l. Give priority to high-occupancy vehicles (HOVs) to make them more attractive with respect to travel time and cost.
- m. In combination with the above incentives, the transportation system should provide disincentives for automobile use, especially single-occupant vehicles, to encourage a change in travel mode choices.
- n. Remove some of the hidden subsidies of travel by private automobile, such as free parking.

## OBJECTIVES

- a. Design and operate transportation systems to maximize user safety.
- b. Reduce barriers to emergency response times within established agency targets.
- c. Design the transportation system to accommodate winter and summer average peak period conditions at reasonable levels of service to users, but accept some periods of congestion during peak seasonal periods.
- e. Shift travel demand away from critically congested links during peak periods.
- f. Shift discretionary travel times to outside the peak period of travel, when most skiers exit the mountain staging areas in order to reduce congestion.
- g. Seek cost-sharing opportunities with senior governments as much as possible.

## COST-EFFECTIVENESS, HEALTH AND SAFETY

### GOAL NUMBER 5

The transportation system should be cost-effective and safe for all users and all modes of travel.

It is important that the Whistler Comprehensive Transportation Strategy is cost-effective for visitors, taxpayers and private industry, by minimizing investment in costly capital projects which expand the road system. Ways of delaying or eliminating the need for costly projects by reducing peak traffic demands are a key component of the Strategy, as is acceptance of peak period congestion. User safety and emergency response are essential in transportation design and operations.



- h. Use new funding sources to support alternative modes.
- i. Use new financing methods for new or improved transportation facilities and programs, including new revenue sources, cost-sharing of transportation improvements with the private sector and user-pay systems.
- j. New sources of funding should not inequitably impact visitors to Whistler.
- k. Specifically target transportation demand management systems to address peak period users.
- e. Design all new transportation facilities to minimize runoff and impact on water quality.
- f. Minimize impact on wildlife habitats.

## ENVIRONMENTAL SUSTAINABILITY

### GOAL NUMBER 6

**The transportation system should be designed to minimize its environmental impact.**

Whistler residents value the environment. Transportation systems and facilities can dramatically impact air and water quality. If required, roads and other major facilities should be designed to minimize their impacts on natural or culturally significant areas.

### OBJECTIVES

- a. Reduce the amount and hours of travel by transportation modes which create air emissions.
- b. Support innovative technological advances which reduce air emissions.
- c. Minimize the amount of land required for new transportation facilities.
- d. Minimize impact of transportation systems on areas with social, environmental, recreational, historic, archeological or cultural significance.

# THE PLAN

THE PLAN IS DESCRIBED UNDER TWELVE MAJOR HEADINGS:

1. Communication and Monitoring
2. Land Use Plans and Policies
3. Whistler Transit
4. Transportation Demand Management
5. Bicycle/Pedestrian Networks & End-of-Trip Facilities
6. Parking Management
7. Whistler Road System
8. Regional Road System
9. Other Regional Improvements
10. Traffic Operations
11. Lift Systems and Mountain Operations
12. Fiscal Impacts

Each of these elements is described in detail on the following pages.



# COMMUNICATION & MONITORING

## PROMOTE AND ENCOURAGE TRANSIT USE, CARPOOLING, CYCLING, AND WALKING

Develop awareness and education programs designed and targeted for all users of the transportation system, including: residents, home owners, tourists and tour operators, developers and employees, which include incentives for the use of alternative modes. Products of such programs should be:

- Information packages for tour operators, travel agents, and visitors which communicate that:
  - A car is not necessary while in Whistler.
  - Regional bus services are available between Vancouver International Airport, Vancouver, and Whistler.
  - Whistler Village is pedestrian-oriented.
  - Whistler Resort is pedestrian and cyclist-friendly.
  - Cars must be equipped with winter tires during the ski season.
- Promotional campaigns for alternative modes, such as a “Walk/Bike/Carpool to School” or “Bike to Work Week” programs.
- Informational packages for commuter cyclists, including a Bike Map.
- Summer education programs for on-road and off-road cycling skills for children and adults.

## REPORT ON THE IMPLEMENTATION AND IMPACTS OF STRATEGY RECOMMENDATIONS

- Establish monitoring variables covering all aspects of the transportation system, such as:
  - Transportation supply (e.g., amount of infrastructure and services provided per capita).
  - Travel demand (e.g., traffic volumes, auto occupancy, transit ridership, mode split to alternative modes, parking demands).
  - Performance (e.g., congestion and delay).
  - Costs capital and maintenance/operating.
  - Develop a regular transportation monitoring program for the municipality and major employers.
- Report monitoring results to Council and to public at annual Town Hall meeting.
- Recognize and reward success:
  - Develop a community award program for employers practicing good Transportation Demand Management policies.
  - Stage an annual Clean Commute challenge.

## IMPROVE COMMUNICATIONS AND COORDINATION BETWEEN MAJOR STAKEHOLDERS IN TRANSPORTATION

- Coordinate the long-range transportation plans of Whistler municipality, Intranswest, Ministry of Transportation & Highways, BC Transportation Financing Authority, BC Transit, BC Rail, and the Squamish-Lillooet Regional District.
- Develop an organizational plan to implement the Strategy.

# LAND USE PLANS & POLICIES

## MINIMIZE TRAVEL DISTANCES TO WORK FOR WHISTLER EMPLOYEES

- Maximize the amount of employee housing provided within Whistler; service this housing with alternative transportation options (e.g. trail links, transit).
- Locate employee housing as close as possible to centres of major employment.
- Increase density of affordable employee housing close to centres of major employment.

## MINIMIZE TRAVEL DISTANCES FOR COMMON DAILY TRIPS

To create shorter vehicle trips, promote walking/cycling and allow residents to avoid congested areas:

- Plan for small neighbourhood centers providing daily shopping needs in closer proximity to residential areas.
- Locate a gas station north of the Village.
- Locate new schools near areas of growing resident population.
- Continue to locate tourist accommodation near or within commercial cores adjacent to ski lifts.
- Encourage the use of Whistler Creek base area by increasing après ski activities, tourist accommodation, restaurants and daily shopping opportunities there.

## MINIMIZE IMPACT OF NEW ROADS

- Future roads should not encroach into environmentally sensitive areas of the valley bottom, including Rainbow Park, Emerald Forest, River of Golden Dreams, and the Wildlife Reserve.

- Support alternative modes of travel that conserve natural resources and reduce or delay the need to build new roads.
- Require a noise and visual impact analysis and mitigation as part of the process in all transportation infrastructure design.

## PROTECT FUTURE RIGHTS-OF-WAY

Establish alignment and right-of-way corridors for possible future transportation facilities:

- Extensions of the Valley Trail.
- Areas for new rail heads/stations.
- A cabriolet lift system from the Central Village inter-modal centre to the Village lift bases.
- A new lift up Blackcomb Mountain from Day Skier Lot 4.
- The Nita Lake Parkway.
- Widening for up to four lanes on Highway 99 between Lorimer Road and the Nita Lake Parkway.
- The Whistler Bypass on the west side of Alta Lake, from Nita Lake Parkway to 16 Mile Creek.

## USE THE DEVELOPMENT PROCESS TO REDUCE FUTURE VEHICLE PARKING REQUIREMENTS AND ENCOURAGE ALTERNATIVE TRAVEL MODES

- Establish average, minimum and maximum parking supply requirements for all land uses, where minimum requirements reflect shared parking with the provision of effective TDM programs, and maximum requirements reflect the parking supply required for reserved parking.

- Encourage shared commercial parking operations in the Village area and discourage reserved parking.
- Encourage new commercial developments in the Village to provide a balance of both daily needs and consumer retail establishments so that individual parking lots are not over-used.
- Require all new and encourage existing developments to provide bicycle storage, showers and change-rooms, ski and clothing lockers for summer bicycle commuters and winter transit users.

### SUPPORT REGIONAL GROWTH MANAGEMENT

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Encourage a moratorium on corridor development in Squamish, Whistler, and Pemberton, outside of existing official community plans, until a Regional Growth Management Strategy is completed.

# WHISTLER TRANSIT

## IMPROVE AND EXPAND TRANSIT

- Expand hours and increase frequency for morning and evening transit service on peak days.
- Increase the frequency of transit service to the residential subdivisions.
- Provide an Emerald Estates to Whistler Village and Whistler Village to Function Junction express service on Highway 99, with no stops in the subdivisions.
- Expand and increase the frequency of the existing free Village Shuttle bus service during the winter to cover the major day skier lots and all major destination points in the Village area.
- Eventually, pending development of an alternative funding source, provide free transit service throughout Whistler.

- Provide local transit vehicles that permit better accessibility for the disabled
- Consider use of innovative transit vehicle types and sizes, including those which use alternative fuels.
- Create better connections between local transit and other modes.
- Develop an inter-modal transportation center within the central Village area, providing connections between local and regional transit, private transit, taxis and pedestrian/cyclist links.
- Provide high-quality bus shelters with transit maps and other amenities at all existing and future high-volume transit stops, with emphasis on key Village and Whistler Creek stops.
- Improve local transit connections from the train station to the lift bases and the future inter-modal transportation center.

## CREATE NEW TRANSIT SERVICES

- Expand free bus service outside of the Village area to include a frequent Village-to-Whistler Creek express bus, providing an alternate funding source is secured.
- Implement a lift system to better service those in Village North and day skier lots outside convenient walking distance to the Village lifts and other Village amenities.
- Expand transit service to include Black Tusk and Pinecrest subdivisions.

## IMPROVE VEHICLES TO MAKE TRANSIT MORE ATTRACTIVE

- Provide local transit vehicles with the capacity to carry bicycles in the spring, summer and fall months.

## REDUCE THE NEED TO CARRY LARGE ITEMS ON TRANSIT SYSTEM

- Create shared facilities in the Village and Whistler Creek, providing lockers and change rooms for employees who commute to store clothing and equipment.
- Provide low-cost, secure, short- and long-term locker rentals near the lift bases so regular visitors and residents can conveniently store their clothing and ski equipment.



# TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) refers to a variety of policies, programs and actions that collectively help to reduce the number of vehicles using the road system by providing individuals with viable transportation alternatives, accompanied by various incentives to use these alternatives. This is accomplished by introducing programs and policies designed to influence the mode of travel, the time of travel, and the need to travel by automobile. The success of the Whistler Comprehensive Transportation Strategy is highly dependent on the application of various TDM measures. The TAG goal is a 15 percent reduction in automobiles in peak hours (with the reduction being based on projected growth in traffic volumes as if no TDM measures were in place).

## FOCUS TDM PROGRAMS ON PEAK TRAVEL PERIODS

- Accept the transitory congestion periods on Highway 99 and adjust times of travel.
- Manage travel demands on peak skier days with a Peak Day Program that encourages alternative modes, and discourages use of the private automobile by:
  - Providing free transit service.
  - Implementing pay parking strategies.
- Explore modification of mountain operating hours on peak days to spread out traffic peaks along with more flexible ticketing options.

## DEVELOP LOCAL PROGRAMS, FACILITIES AND SERVICES TO SUPPORT USE OF ALTERNATIVE TRAVEL MODES

Establish and promote an Employer Trip Reduction program to encourage Whistler employees to take transit, carpool, or bike/walk to work. Consider such items as:

- Free/subsidized bus passes for employees.
- A range of options for combination transit/lift products, such as an optional combined lift ticket/transit pass during mountain operating hours to encourage skiers/boarders to use transit.
- Preferential parking for carpools.
- Pay parking for employees.
- Reduced or free parking for carpools.
- A travel bucks program, whereby employees collect points for using alternative modes which they can use to collect prizes.
- Encourage major employers to purchase more fleet vehicles to increase carpooling services.

## DEVELOP REGIONAL PROGRAMS, FACILITIES AND SERVICES TO SUPPORT CARPOOLING

- Organize a rideshare program for Whistler day visitors.
- Identify existing parking lots in the Lower Mainland which can be utilized as park-and-ride lots for those visiting Whistler.
- Provide a van/shuttle service from Vancouver to Squamish, Pemberton and Whistler.
- Implement a region-wide carpool program for employees between Squamish, Pemberton and Whistler.
- Establish employee park-and-ride lots for Whistler employees living in Pemberton and Squamish, and for Whistler residents working in Pemberton and Squamish.



# BICYCLE / PEDESTRIAN NETWORKS

## PROVIDE AN EXTENSIVE, OFF-ROAD, MULTI-PURPOSE TRAIL SYSTEM FOCUSED ON RECREATIONAL CYCLISTS

- Continue to expand and improve the Valley Trail system.
- Improve the linkage between the Valley Trail and the Village pedestrian walkways.
- Review the Valley Trail standards to provide minimum/desirable widths, horizontal and vertical curvature guidelines, painting and signing requirements.

## PROVIDE AN ON-STREET BICYCLE ROUTE SYSTEM FOCUSED ON COMMUTER CYCLISTS

- Create an on-street bicycle route on Highway 99 and establish a more frequent and regular shoulder maintenance program in the spring, summer and fall months.
- Establish operational procedures to provide joint use of Valley Trail system in the winter months for pedestrians and cross country skiers.
- Establish design standards for on-street biking and modify existing road standards to include bicycle facilities, signage and paint markings.

## IMPROVE PEDESTRIAN AND CYCLIST SAFETY AND SECURITY

- Provide additional lighting on the Valley Trail System.
- Widen the Valley Trail to allow better compatibility between users in areas demonstrating high speeds or substandard design.
- Consider additional pedestrian under/overpasses on Highway 99.

## IMPROVE PEDESTRIAN AND CYCLIST ACCESSIBILITY AND LINKS TO OTHER MODES

- Provide pedestrian and cyclist access through new and existing subdivisions, allowing direct routes to transit.
- Implement a barrier-free access program.

## PROVIDE END-OF-TRIP FACILITIES FOR COMMUTER CYCLIST TRIPS

- Develop a secure, shared use facility for employees of small businesses in the Village area for bicycle commuters, with showers, long term bicycle storage, and change-rooms.
- Adopt bylaws and standards for provision of end-of-trip facilities in new developments.



# PARKING MANAGEMENT

## MANAGE VILLAGE AREA PARKING MORE EFFECTIVELY

- Limit the total area provided for skier parking in the Village and Benchlands to existing levels, so there is no net gain in parking capacity, except through more efficient parking operations.
- Expand pay parking in Whistler to encourage use of alternative travel modes.
- Encourage employers to charge their employees for parking privileges and to provide incentives for use of alternative modes.
- Stop employees from parking in prime skier lot locations during winter peak season.
- Charge for parking in the day skier lots; provide lower cost/free stalls in the lots further away from the lifts and higher cost stalls close to the lifts.
- Charge for parking in the Conference Centre underground lot.
- Encourage pay parking by non-patrons in the Marketplace lot; allow free parking for store patrons with validated passes.
- Increase attractiveness of Village North parking for central Village employees and patrons, because the central Village has an under-supply of parking.

## LOCATE NEW SKIER LOTS SOUTH OF THE VILLAGE

- Increase skier parking supply at Whistler Creek to approximately 1,500 stalls.
- Investigate potential for a new southern satellite parking lot on Crown Lands near Function Junction for day skier and employee park-and-ride; provide free and frequent shuttle bus service to Whistler Creek and Village bases from new southern lot.
- Consider construction of new skier lot with future Whistler South staging area.

# ROAD SYSTEMS

## WHISTLER ROAD SYSTEMS

Develop an internal street system, where practical, to remove neighbourhood traffic from Highway 99.

- Continue to develop a collector road system which serves to relieve Highway 99 and supports improved transit and emergency response services.
- Continue to develop a local road system where practical, which provides road connections between neighbourhoods for local traffic, cyclists, pedestrians, transit and emergency vehicles.
- Discourage through traffic on local streets by:
  - Improving Highway 99.
  - Implementing traffic calming measures which retain neighbourhood accessibility.

## REGIONAL ROAD SYSTEM

Improve safety and maintain existing capacity of Highway 99 between the Lower Mainland and Whistler.

- Construct additional passing lanes on Highway 99 between Whistler and Vancouver.
- Improve horizontal and vertical geometry on Highway 99 at accident-prone locations.
- Maintain two-lane carrying capacity on Highway 99 through intersections between the North Shore and Whistler.

Increase highway capacity if other actions to reduce travel demand during peak periods have been implemented, and congestion still remains at unacceptable levels.

- Establish trigger points for consideration of Highway 99 capacity improvements within Whistler.

- Monitor congestion and delay on Highway 99 to determine when trigger points are reached.

Reduce congestion and improve safety on Highway 99 in Whistler during peak demand periods.

- Consider a southbound transit/HOV lane between the Village and Whistler Creek.
- To improve safety on Highway 99, consider an off-highway location for informal ride-sharing.

Plan for bypass routes to Highway 99 in Whistler.

- Consider possible construction of the Nita Lake Parkway bypassing Highway 99 on the west side, from just south of Function Junction to Nita Lake when trigger points are exceeded.
- Consider possible construction of an extra northbound lane on Highway 99 between the Nita Lake Parkway and Lorimer Road.
- In the very long term, consider construction of a full west side bypass of Whistler, connecting from the Nita Lake Parkway at Nita Lake to Sixteen Mile Creek, possibly integrated with Harrison/Mount Currie alternative route to Highway 99.



# T R A F F I C O P E R A T I O N S

## REDUCE CONGESTION IN WHISTLER BY IMPROVING TRAFFIC OPERATIONS

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On peak skier days during congested periods, manage traffic more efficiently:

- Improve communication between RMOW and Whistler/Blackcomb regarding days of peak skier demands so traffic control personnel can respond sooner and better.
- Control traffic better on Highway 99 to minimize delay to exiting southbound traffic.
- Consider conversion of Village Gate Boulevard, Blackcomb Way and/or Lorimer Road to one-way operation in order to reduce congestion in the Village area.
- Select timing and phasing plans for the existing traffic signals in Whistler to account for the unique peak period and seasonal demands encountered at the resort. Co-ordinate signals.
- Install new traffic signals only when warranted.
- Use flashing signals late at night in off-peak traffic hours to eliminate unnecessary delays on municipal roads.
- Consider application of modern roundabouts to minimize delays at key intersections within the municipality.

## IMPROVE TRANSPORTATION SYSTEM OPERATION THROUGH BETTER COMMUNICATION WITH USERS

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- Improve directional signage for roads, transit and trails.
- Implement Intelligent Transportation Systems (ITS) to better manage and control peak period traffic and parking demands, including changeable message signs to advise drivers of parking lot use.

## IMPROVE EMERGENCY RESPONSE TIMES DURING PEAK TRAFFIC

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- Allow emergency vehicles to utilize the transit/HOV southbound lane on Highway 99 between the Village and Whistler creek to respond faster to emergencies.
- Install fire pre-emption signals at egress points to fire station and medical clinic.
- Retro-fit signals with sound activation, in order to switch signal indication to four-way red when emergency vehicles sounds sirens.

## REDUCE SPEED OF TRAFFIC IN RESIDENTIAL AREAS TO IMPROVE LIVABILITY

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- Install traffic calming measures in residential areas experiencing problems with speeding, which are safe and effective in both winter and summer conditions.
- Consider emergency vehicles in traffic calming schemes and new road designs; balance practicality vs. aesthetics.

## REDUCE THE IMPACT OF TRUCKS IN THE VILLAGE

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- Improve existing loading/unloading areas and operations to minimize negative impacts of deliveries.
- Consider changes to the distribution of commercial goods within the Village, such as:
  - Restricted delivery hours
  - Central goods distribution center

# OTHER REGIONAL IMPROVEMENTS

## MAKE REGIONAL TRANSIT SERVICES MORE ATTRACTIVE

- Encourage transit providers to provide affordable family rates to travel from the airport by bus to Whistler.
- Lobby the provincial government, Vancouver International Airport, and the Motor Carrier Commission to remove monopolies on the regional bus operators.
- Provide bike racks on the transit vehicles coming from Vancouver, Squamish and Pemberton.

## IMPROVE AIR CONNECTIONS TO WHISTLER

- Upgrade the Pemberton airport to allow larger planes with direct connections to Vancouver International Airport and Seattle, with shuttle service to Whistler.

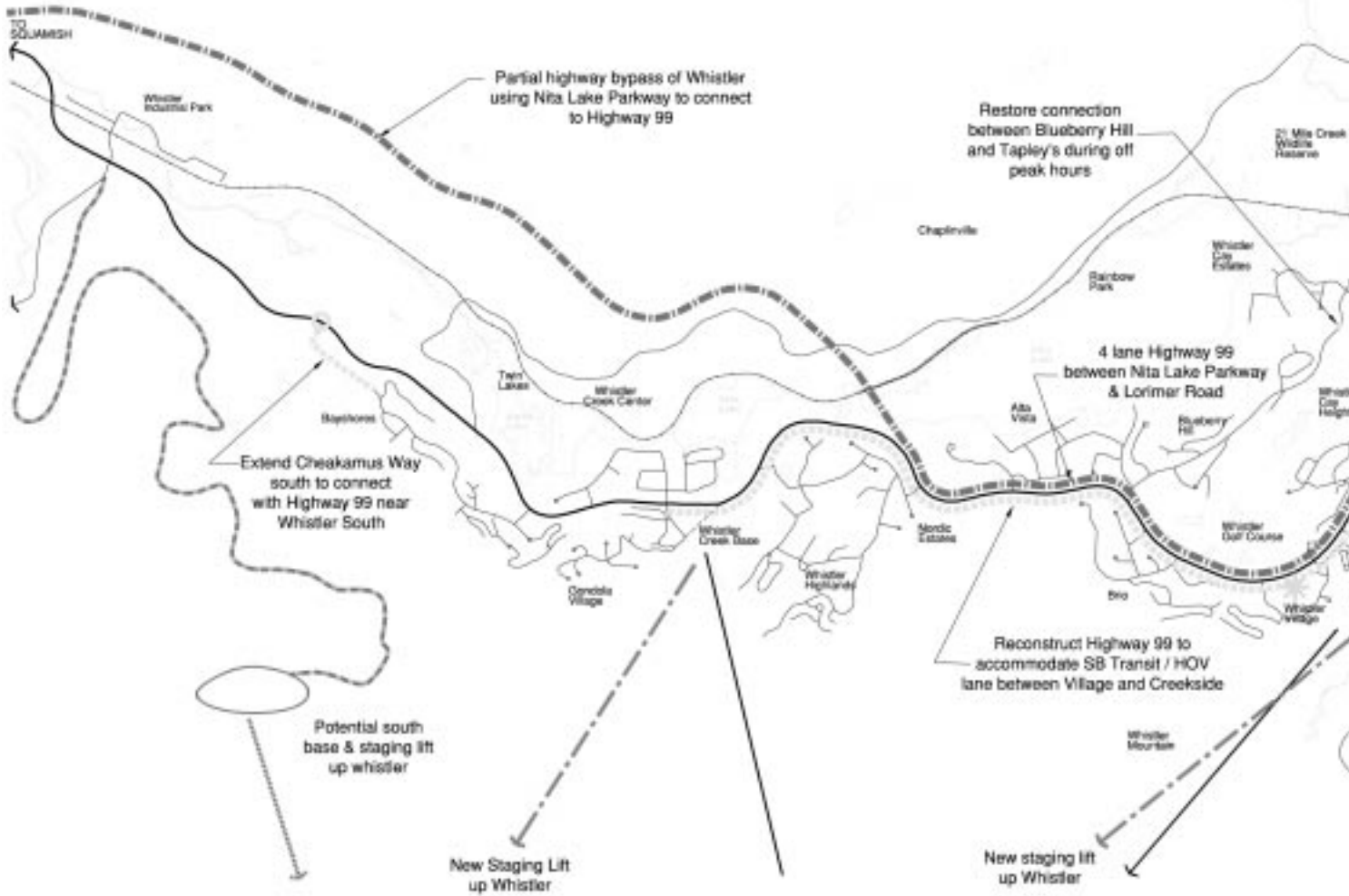
## MAKE THE USE OF RAIL MORE ATTRACTIVE

Increase the convenience of rail:

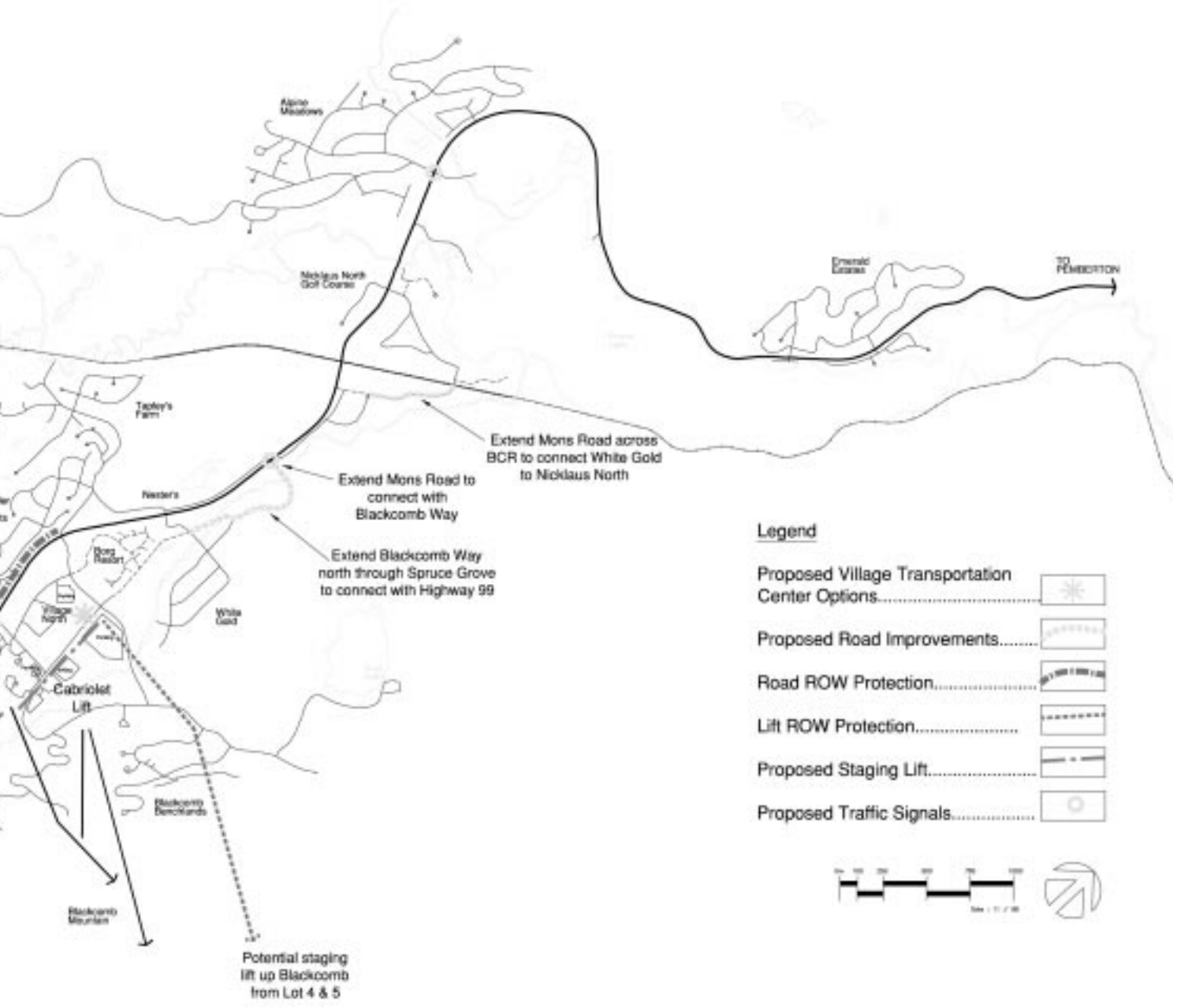
- Improve the frequency and schedule of the existing train service to Whistler.
- Provide a convenient shuttle bus between the Whistler Creek base and the existing train station.
- Locate a new rail station in a location which is attractive to skiers and allows convenient connections to other travel modes.
- In the long term, upgrade the rail line from the Lower Mainland to Pemberton to allow fast passenger trains.



# MAJOR ELEMENTS OF WHISTLER



# TRANSPORTATION STRATEGY



# LIFT SYSTEMS & MOUNTAIN OPERATIONS

PLAN AND IMPLEMENT NEW LIFT SYSTEMS TO MINIMIZE TRAVEL DISTANCES AND REDUCE CONGESTION IN THE VALLEY

- Install a new lift in the Village area to Whistler Mountain.
- Consider installation of a second access lift from Whistler creek to Whistler west side skiing.
- Consider installation of a new lift up Blackcomb Mountain from day skier lot 4.
- Consider development of the Whistler South base with lift systems to Whistler Mountain, as a possible alternative to other road improvements.

MINIMIZE MUNICIPAL AND PROVINCIAL TAXPAYERS' SHARE OF TRANSPORTATION COSTS BY ADOPTING USER PAY PRINCIPLES.





# FISCAL IMPACTS

## ENSURE TRANSPORTATION IMPROVEMENTS ARE AFFORDABLE

- Implement the transportation plan in phases to minimize costs to the community.
- Minimize municipal and provincial taxpayers share of transportation costs by adopting user pay principles and use revenues generated to support alternative modes of travel.
- Investigate and optimize use of capital cost-sharing programs.

## CREATE FUNDING PARTNERSHIPS

- Develop cost-sharing agreements with the MoTH/Transportation Finance Authority for implementing improvements on Highway 99 and bypass routes.
- Explore public/private partnership opportunities such as:
  - construction of the transportation centre as a public/private venture
  - subsidization of local transit by private sponsors
- Develop cost-sharing agreements with stakeholders to implement:
  - pay parking in day skier and Marketplace lots
  - new lifts
  - employee housing
  - new transit services
  - TDM programs
- Develop employer-funded TDM programs in cooperation with other major employers.

## TRIGGER POINTS

Implementation of the Whistler Comprehensive Transportation Strategy will depend on actual growth, funding availability and municipal staff resources. However, some plans, policies or physical improvements have higher priorities, or have already been committed. Since the focus of the strategy is to reduce automobile travel so that additional road capacity is not necessary, Transportation Demand Management programs and enhancements to transit and non-motorized modes should occur first. Costly road expansion projects should be deferred until the effect of the TDM measures is fully realized and systems for alternative modes are developed.

The success of the Whistler Comprehensive Transportation Strategy rests on the ability of TDM measures and alternative enhancements to significantly reduce travel demand by automobiles; TAG goal is a 15 percent reduction in automobiles in peak hours (with the reduction being based on projected growth in traffic volumes as if no TDM measures were in place). However, for the Whistler Comprehensive Transportation Strategy to maintain flexibility and be a prudent long-range plan, potential road expansion options have been identified for the longer term. In the strategy, the implementation of road improvements will not occur until specific trigger points are met and all TDM measures have been exhausted.

The Whistler Comprehensive Transportation Strategy indicates an acceptance of some congestion, so traditional trigger points, such as reaching a specified demand volume, are not applicable. To establish appropriate trigger points for Whistler, the nature of the congestion in Whistler must be fully understood, and measured. One of the first actions in implementing the strategy is the development of trigger points based on the duration, extent, intensity and predictability of the congestion experienced in Whistler, for both off-season and peak-season time periods.

In the spring of 1999, the Municipality contracted a traffic consultant to assist in the development of transportation trigger points. The consultant's reports: Transportation Trigger Points, Volume 1 – Summary Report, and Volume 2 – Technical Background (August 1999) are an integral component of TAG study. Eleven trigger points have been developed to monitor change in travel behavior within the community are summarized below.

- If the surveyed winter Saturday afternoon peak hour weighted vehicle occupancy rate on Highway 99 between Whistler Village and Whistler creek decreases from the previous year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to reverse the negative trend and to reach the goal of 2.5 persons per vehicle over 10 years.

Results of past vehicle occupancy studies conducted on Highway 99 reflect a positive trend. The surveyed occupancy rates have been increasing since 1989, and in 1998 the surveyed averaged 2.1 persons per vehicle. The long-range goal is 2.5 persons per vehicle by 2009.

- If the number of total skier visits is forecasted to exceed 20,000 for a given day, then the appropriate temporary TDM measures should be implemented to address the increase in demand.

A correlation between traffic volume and daily skier visits has determined that when 20,000 skier visits (depending on the number of day skiers) are reached on both Blackcomb and Whistler, significant motorist delay may occur on Highway 99. The 1997-98 ski season experienced only one of the 143 ski days with more than 20,000 skier visits. In the 1998-99 ski season, 17 of the 141 ski days had more than 20,000 skier visits. When a 20,000 total skier day is forecast, temporary

TDM and traffic control measures should be implemented to minimize the duration of congestion on Highway 99.

- If the number of day skier visits exceeds 6,000 per day more than 10 times in one season, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to address the increase in the overall demand.

Day skier visits are considered a more critical indication of traffic congestion on Highway 99 because day skiers tend to arrive and depart within a similar timeframe, and have the same destination (i.e. Vancouver). When day skier ticket sales exceed 6,000, congestion on Highway 99 can be expected. Day tickets sales data provided by Whistler-Blackcomb, indicate that the number of days exceeding 6,000 day tickets decreased from seven in 1997-98 to two in 1998-99.

- If the estimated travel time on Highway 99 from Village Gate Boulevard to Lake Placid Road is equal to or exceeds nine minutes at least 30 hours in one year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to reverse the negative trend.

When the travel time from Village Gate Boulevard to Lake Placid Road equals or exceeds nine minutes (equivalent to 30 km/hr) at least 30 hours in one year, additional TDM programs should be implemented to reverse this negative trend. In 1997, this threshold was exceeded 29 times, but decreased to 12 times in 1998.

- If the observed travel time from Base II to Function Junction is equal to or exceeds 30 minutes at least 10 hours in one year, then the appropriate implementation program(s) from the Whistler Transportation Strategy

should be considered to reverse the negative trend. At this time, only limited data has been collected; as additional travel time data becomes available, the threshold may change.

- If the observed travel time between Base II and Alpine Way is equal to or exceeds twenty minutes at least 10 hours in one year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to reverse the negative trend.

At this time, only limited data has been collected; as additional travel time data becomes available, the threshold may change.

## THE FOCUS OF THE STRATEGY IS TO REDUCE AUTOMOBILE TRAVEL SO THAT ADDITIONAL ROAD CAPACITY IS NOT NECESSARY.

- If the number of congestion events on Highway 99 lasting longer than two hours in duration occurs 35 or more times a year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered in order to reverse the negative trend.

Congestion is defined as capacity of the roadway. In this instance, Highway 99 congestion is defined as 1,300 vehicles per hour for a period of time greater than two hours at the MoTH permanent count station. When congestion lasting two hours or more occurs 35 or more times a year, then additional TDM measures should be implemented to reverse the trend. In 1996, congestion occurred 37 times; in 1998 and 1999, 30 and 27 events occurred, respectively.

- If the 30th highest hour of volume for a year exceeds 935 southbound (at the MoTH permanent count station) vehicles *and* this volume expressed as a percentage of the average annual daily traffic is less than 12 per-

cent, then the appropriate implementation program(s) from the Whistler Transportation strategy should be considered to reverse the negative trend.

The permanent count station located on Highway 99 near the Petro Canada gas station provides year-round vehicular count data. Using a combination of manual traffic count information and the data provided by the permanent count station, two relationships have been developed to trigger additional TDM. The first component of the trigger point is the traffic volume threshold, based upon the 30th highest hour of volume, which has been established as 985 vehicles per hour (equivalent to a

level of service D, or an average speed of 27 km/hr on Highway 99). The second component is the K ratio, which is a measure of the traffic volume threshold divided by the average annual daily traffic. When this ratio falls below 12 percent, Highway 99 is exhibiting urban conditions. Historical data from 1996 through 1998 indicates that the summer of 1997 was the only time that both of these components were breached. Annually and in the winter seasons, only one of the components was breached.

- If the overall level of service (LOS) of an intersection is D or worse for the intersection peak hours, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to bring the level of service back up to C or better.

The LOS for intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption and lost travel time. LOS range from A (excellent) to F (failing). The operational performance of intersections has been monitored since 1994, and currently all intersections are operating at a level of service of C or better.

- If the percentage of skiers who use the automobile (driver or passenger) increases from the previous year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to reverse the negative trend and reach the goal of 45 percent.

In 1997, surveys undertaken by TAG indicated that automobile users (drivers or passengers) constituted 60 percent of the skiers interviewed. TAG has set a goal to reduce automobile use by 15 percent from 1997 levels.

IN A 1997 SURVEY, 60 PERCENT OF SKIERS INTERVIEWED WERE AUTOMOBILE DRIVERS OR PASSENGERS.

The long-term goal is to reduce automobile use by 15 percent in the next 10 years through implementation of TDM, the communications program, and improvements to the transit system.

- If the surveyed winter Saturday weighted vehicle occupancy rate at the driveway accesses to Lots 1 through 4 decreases from the previous year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered to reverse the negative trend and to reach the goal of 2.5 persons per vehicle over 10 years.

In winter 1996, an occupancy survey of the Village parking lots found an average vehicle occupancy rate of 1.74 persons per vehicle. The 1997 survey found an average vehicle occupancy of 2.46 persons per vehicle. Though the results indicate an improvement, they cannot be measured at par. The municipality has undertaken the first summer Village lot occupancy survey to determine the travel patterns of the summer visitor. A winter survey will provide a comparison to the 1996 results. The long-term goal is to reach a vehicle occupancy of 2.5 person per vehicle over the next 10 years.

PROGRAM COMPONENTS & ESTIMATED COSTS

The following pages provide a summary of the plans, programs or physical/service improvements recommended for implementation. The cost estimates should only be considered as order of magnitude at this time. Programs and policies that are part of the strategy without a cost component have not been included in the table.

It must be recognized that the cost items and estimates included in this implementation program are meant to provide a direction and incentive to move forward. Many details and adjustments will be required along the way. Actual implementation could be later or sooner than indicated, depending on actual growth of the municipality, changing priorities, and success of the TDM measures implemented.

Some components included in the table may prove to be impractical, or may not be necessary (such as seven new traffic signals). The implementation program will be re-visited annually to monitor completed and outstanding items and to respond to changing conditions in the municipality.

Table A lists all the identified cost items (in 1999 dollars) and provides an estimated cost and description for each. The level of effort envisioned by the Strategy for the year 1999 through 2011 is indicated by the costs shown:

Total Annual Cost Component	\$3,403,000
Total Capital Cost Component	\$45,125,000

Annual costs will increase from \$250,000 in 1999 to \$3.4 million by 2011, and these costs are expected to continue beyond 2011. Capital costs over \$1 million will be amortized over 20 years and will continue beyond the year 2011 until paid.

Costs and funding arrangements for Whistler stakeholders and other stakeholders, such as the Transportation Finance Authority, BC Transit and BC Rail, will be an important element of the strategy implementation. The development of cost estimates is now complete and the cost implications are defined. Discussions among all stakeholders shall commence regarding funding options and partnerships.



**Whistler Comprehensive Transportation Strategy Summary of Implementation Program Cost Items**  
**Table A - Cost Item Description**

COST ITEM	START YEAR	COST		DESCRIPTION
		Annual Program	Capital Project	
<b>Communications and monitoring</b>				
Promote and encourage transit use, carpooling, cycling, and walking	1999	\$150,000		Develop awareness and education programs designed and targeted for all users of the transportation system, including: residents, home owners, tourists, tour operators, developers, and employers.
Monitoring Transportation System	1999	\$50,000		Establish monitoring variables covering all aspects of the transportation system, such as transportation supply, travel demand, performance, and costs.
<b>Transportation Demand Management</b>				
Develop a plan for regional/local carpooling program	2000		\$80,000	Free/subsidized bus passes for employees, and preferential parking for carpools.
Implement a local carpooling program	2001	\$100,000		Pay parking for employees, and reduced or free parking for carpools.
Implement a region-wide carpooling program	2001	\$160,000		Pay parking for employees, and reduced or free parking for carpools.
Organize rideshare program for visitors	2002	\$50,000		Organize a rideshare program for Whistler day visitors. Identify existing parking lots in the Lower Mainland which can be used for park and ride lots.
Establish park and ride lots	2003		\$75,000	Establish park and ride lots in Squamish, Pemberton, and Whistler.
Provide regional van/shuttle service for visitors	2004	\$10,000		Provide a van/shuttle service from Vancouver to Squamish, Pemberton, and Whistler.
Establish employee park and ride lots	2004	\$1,000		Establish employee park and ride lots for Whistler employees living in Squamish and Pemberton.
Maintain park and ride lots	2004	\$5,000		Annual costs for maintaining the park and ride lots
<b>Transit</b>				
Village to Whistler Creek Shuttle	1999			Provide bus service from the Village to Whistler Creek (included in the expansion plans of the transit fleet).
Bike Racks and Bus Painting	1999		\$25,000	Custom colors for Whistler buses for a distinctive transit system (already included in the AOA with Transit), and bike racks for all buses in the summer (one-time cost for all buses).

**Whistler Comprehensive Transportation Strategy Summary of Implementation Program Cost Items**  
**Table A - Cost Item Description**

COST ITEM	START YEAR	COST		DESCRIPTION
		Annual Program	Capital Project	
Expand transit service 16 buses to 19 buses	2000	\$219,000		Continue to expand the transit system to accommodate the community, as per the BC Transit AOA.
Expand transit service 19 buses to 23 buses	2001			Continue to expand the transit system to accommodate the community, as per the BC Transit AOA. Note: the increased cost of the expanded fleet is expected to be offset by revenues.
Village Transportation Center Construction	2001		\$1,040,000	Planning, engineering, and construction of a transportation center which will provide a central distribution of passengers and guests to taxis, lifts, hotel shuttles, storage lockers, and local transit.
Village Transportation Center annual subsidy	2002	\$30,000		Additional expenses for the VTC including maintenance.
Annual operating cost for BCR Shuttle	2002			Provide BCR train station service to Village (included in the expansion plans of the transit fleet).
Expand transit service 23 buses to 25 buses	2002	\$136,000		Continue to expand the transit system to accommodate the community, as per the BC Transit AOA.
Provide Emerald to Village to Function Junction Express Service	2002			Provide an express shuttle from Emerald to Function Junction with limited stops off the Highway (included in the expansion plans of the transit fleet).
Expand transit service 25 buses to 31 buses	2003	\$232,000		Continue to expand the transit system to accommodate the community, as per the BC Transit AOA.
Free service on 30 peak days	2003	\$440,000		Provide free bus service on the 30 peak days of the year.
Construct Cabriolet lift	2005		\$3,200,000	Construct cabriolet lift from Lot 4 to Village base area.
Cabriolet lift subsidy	2005	\$200,000		Maintenance of new lift.
Expand transit service 31 buses to 38 buses (AOA)	2007	\$336,000		Continue to expand the transit system to accommodate the community, as per the BC Transit AOA.
Expand transit service 38 buses to 49 buses (TAG)	2011	\$427,000		Continue to expand the transit system to accommodate the community, as per TAG.
Increased cost of bus shelter maintenance	2000	\$5,000		Increased maintenance cost of expanding bus shelters throughout the valley. Cost to increase as fleet size grows.
Increased cost of bus shelter maintenance	2005	\$13,000		
Increased cost of bus shelter maintenance	2011	\$9,000		

**Whistler Comprehensive Transportation Strategy Summary of Implementation Program Cost Items**  
**Table A - Cost Item Description**

COST ITEM	START YEAR	COST		DESCRIPTION
		Annual Program	Capital Project	
<b>Bicycle and Pedestrian Network</b>				
Expand Valley trail system	2000	\$200,000		Continue to expand the Valley trail system, develop standards for trail widths, vertical and horizontal curves, painting and signage.
Barrier free access program study	2000		\$25,000	Consultant study to determine this long-term program for the barrier-free access program.
Implement barrier-free access program	2000	\$20,000		Provide pedestrian and bicycle access in the Village and through new and existing subdivisions, allowing direct routes to transit.
Provide more lighting on the Valley Trail	2001	\$130,000		Provide additional lighting on the Valley Trail.
Plan & construct end-of-trip facilities for commuter cyclist	2002		\$200,000	Develop a secure, shared use facility for employees of small businesses in the Village for bicycle commuters, with showers, long-term storage, and change rooms.
Plan/construct a highway/street bicycle route for commuter cyclist	2003		\$75,000	Create a new on-street bicycle route on Highway 99.
Maintain end-of-trip facilities for commuter cyclist	2003	\$60,000		Maintenance of new end-of-trip facilities.
Maintain the highway/street bicycle route for commuter cyclist	2004	\$30,000		Street sweeping, signage and road markings for the on road cycling route.
Widen the valley trail to provide better compatibility between users	2004	\$50,000		Widen the Valley trail in areas which are subject to high speeds or substandard design.
Improve pedestrian and cyclist accessibility and links to other modes	2004	\$100,000		Improve accessibility from walking, biking to other modes of travel.
<b>Parking Management</b>				
Establish parking supply requirements	2004		\$75,000	Establish average, minimum, and maximum parking supply requirements for all land use types, where minimum rates reflect shared parking with the provision of effective TDM programs, and maximum rates reflect the parking supply required for reserve parking operations.
Plan & construct southern satellite parking	2008		\$1,000,000	Construction of satellite parking area.
<b>Local Roads</b>				
Develop/construct a continuous off-highway road network	2002		\$200,000	Connect neighbourhoods with local roads other than highway 99, such as Millars Pond with Springs Creek, White Gold with Spruce Grove.



**Whistler Comprehensive Transportation Strategy Summary of Implementation Program Cost Items**  
**Table A - Cost Item Description**

COST ITEM	START YEAR	COST		DESCRIPTION
		Annual Program	Capital Project	
<b>Regional Roads</b>				
Operating cost for shoulder lane	2002	\$150,000		Operating costs for the shoulder lane including staffing, barricades, estimated to be used 30 times a year.
Design 4-lane Highway 99–Nita Lake to Lorimer Road	2003		\$200,000	Design four-lane roadway from Village Gate Boulevard to Function Junction, construct second southbound lane initially, and second northbound lane in future.
Construct permanent second southbound lane, VGB to Nita Lake	2005		\$9,900,000	First phase of road improvements, the second southbound lane will be constructed from VGB to Nita Lake Parkway.
Construction of Nita Lake Parkway	2007		\$23,000,000	Planning, engineering, and construction of the Nita Lake Parkway.
Construct permanent second northbound lane, VGB to Nita Lake	2008		\$3,500,000	Second phase of improvements to Highway 99 is the construction of the second northbound lane from VGB to Nita Lake Parkway.
<b>Traffic Operations</b>				
Peak Day Traffic Management	1999	\$50,000		Improve communications between Mountain and RMOW to respond sooner and better to traffic problems. Manually control traffic signals to minimize delays to exiting southbound traffic.
Study and develop program to reduce speed of traffic in residential areas to increase livability	1999		\$75,000	Develop a traffic calming program and standards to improve the livability in residential areas.
Reduce the impact of trucks in the Village	2000		\$25,000	Improve existing unloading/loading areas and operations to minimize negative impacts of deliveries.
Study and implement changes to the distribution of commercial goods	2000		\$50,000	Restrict delivery hours, central goods distribution center.
Improve directional signage for roads, transit, and trails	2000	\$5,000		Install directional signage for roads, transit routes, and trails.
Residential traffic calming program	2000	\$20,000		Install traffic calming measures in residential areas experiencing problems with speeding, which are safe and effective in both winter and summer conditions.
Reduce congestion by improving traffic operations	2000		\$50,000	Use flashing signals late at night, in off-peak hours to eliminate unnecessary delays.
Install fire pre-emption signals	2001		\$30,000	Install fire pre-emption signals at egress points to fire station and medical clinic.
Roundabout planning study	2002		\$50,000	Study the application of modern roundabouts to minimize delays at key intersections on Highway 99.

**Whistler Comprehensive Transportation Strategy Summary of Implementation Program Cost Items**  
**Table A - Cost Item Description**

COST ITEM	START YEAR	COST		DESCRIPTION
		Annual Program	Capital Project	
Implement ITS including changeable message signs	2004		\$1,600,000	Implement Intelligent Transportation Systems to better manage and control peak period traffic and parking demands, including changeable message signs to advise drivers of parking lot utilization.
Maintenance of the Intelligent Transportation Systems	2004	\$15,000		
New traffic signals	2011		\$650,000	Maintenance of the ITS. Install traffic signal when warranted.
<b>Total Annual Cost Component</b>		<b>\$3,403,000</b>		
<b>Total Capital Cost Component</b>			<b>\$45,125,000</b>	

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