

WHISTLER

AGENDA

**REGULAR MEETING OF MUNICIPAL COUNCIL
TUESDAY, OCTOBER 6, 2015, STARTING AT 5:30 PM**

**In the Franz Wilhelmssen Theatre at Maurice Young Millennium Place
4335 Blackcomb Way, Whistler, BC V0N 1B4**

ADOPTION OF AGENDA

Adoption of the Regular Council agenda of October 6, 2015.

ADOPTION OF MINUTES

Adoption of the Regular Council minutes of September 15, 2015.

PUBLIC QUESTION AND ANSWER PERIOD

PRESENTATIONS/DELEGATIONS

Fire Prevention Week	A presentation by Geoff Playfair, Fire Chief, regarding Fire Prevention Week.
Mature Action Committee	A presentation by Sue Lawther, Chair of the Mature Action Committee, regarding an update on the Mature Action Committee.
SLRD Solid Waste and Resource Management Plan	A presentation by James Hallisey, Manager of Transportation and Waste Management for the Resort Municipality of Whistler, and Janis Netzel, Director of Utilities & Environmental Services for the Squamish-Lillooet Regional District (SLRD), regarding the SLRD Solid Waste and Resource Management Plan.

MAYOR'S REPORT

INFORMATION REPORTS

Second Quarter Financial Report Report No. 15-111 File No. 4527	<i>A presentation by municipal staff.</i> That Council receive Information Report No. 15-111 Quarterly Financial Report for the six months ended June 30, 2015.
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ADMINISTRATIVE REPORTS

DP 1430 – 4321 Village Gate Boulevard – Blue Shore Canopy Report No. 15-112 File No. DP 1430	<i>A presentation by municipal staff.</i> That Council approve the issuance of Development Permit DP 1430 for the Blue Shore Credit Union development to add two small weather protection canopies over existing condensing units located within the municipal road right of way, as per the architectural plans no. ASK 1-3 prepared by Atalier Pacific Architecture
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Inc., dated September 15, 2015, attached as Appendix B to Council Report No. 15-112, subject to the resolution of the following items to the satisfaction of the General Manager of Resort Experience:

1. Resolution of canopy colours to match the existing building colour scheme;
2. Adherence to the Whistler Village Construction Management Strategy; and,
3. Amendment of registered easement agreement BB1769869 to allow for the construction of the canopies on municipal property; and further,

That Council authorize the Mayor and Corporate Officer to execute the referenced encroachment agreement.

DVP 1111 - 3318
Panorama Ridge –
Variances to Building
Setbacks, Building
Height, Parking
Setbacks, and Parking
Stall Length
Report No. 15-113
File No. DVP 1111

That Council approve the issuance of Development Variance Permit DVP 1111 to remove the existing encroaching covered stairway from the road right of way, ratify the existing parking, and utilize the existing concrete retaining structure for a new carport and entry stairway located at 3318 Panorama Ridge by varying “Zoning and Parking Bylaw 303, 1983” as noted below:

1. Vary the front setback for an entry stairway and associated entry stairway roof support columns from 7.6 m to 1.05 m;
2. Vary the front setback for an entry stairway roof overhang from 6.1 m to 0.25 m;
3. Vary the Northeast side setback for an entry stairway from 3.0 m to 1.2 m;
4. Vary the Northeast side setback for an entry stairway roof overhang from 2.0 m to 0.8 m;
5. Vary the front setback for carport support columns from 2.0 m to 1.0 m;
6. Vary the front setback for a carport roof overhang from 1.0 m to 0.5 m;
7. Vary the maximum allowable carport height from 3.5 m to 4.0 m;
8. Vary the length for a covered parking stall from 5.5 m to 5.3 m;
9. Vary the front setback for surface parking from 1.5 m to 0.0 m;
10. Vary the front setback for upper floor balcony support columns from 7.6 m to 5.3 m;
11. Vary the front setback for the upper floor balcony overhang from 6.1 m to 5.0 m,

All as shown on Architectural Plans 1, 2, 3, 4, 5, and 6 prepared by Kat Sullivan Design and dated 26/7/15 and attached to Administrative Report No. 15-113 as Appendix B.

DVP 1107 – 8617
Lauren Woolstencroft
Way – Building Setback
Variances
Report No. 15-114
File No. DVP 1107

That Council approve the issuance of Development Variance Permit DVP1107 for the proposed development located at 8617 Lauren Woolstencroft Way to vary the setbacks as follows for a proposed detached dwelling:

- a) Vary the rear setback from 6 metres to 3 metres,
- b) Vary the rear roof overhang setback from 5 metres to 2.54 metres,

as shown on the plans prepared by Murdoch and Company Architecture and Planning Ltd, dated August 20, 2015, attached as Appendix B to Administrative Report No. 15-114.

Zoning Regulations For
Shipping Containers
Report No. 15-115
File No. RZ1107

A presentation by municipal staff.

That Council consider giving first and second readings to Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015; and further,

That Council authorize the Corporate Officer to schedule a public hearing regarding Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015 and to advertise for same in the local newspapers; and further,

That Council direct staff to undertake a proactive enforcement and notification approach for properties with containers that are not in compliance with RMOW bylaws.

Transportation Advisory
Group (TAG) Updated
Terms of Reference
Report No. 15-116
File No. 546

A presentation by municipal staff.

That Council adopt the updated Transportation Advisory Group (TAG) Terms of Reference dated October 6, 2015 attached to Administrative Report No. 15-116 as Appendix C;

That Council direct staff to advertise for applications for the three Citizen-at-Large positions on the TAG to be appointed by Council at the November 3, 2015 Closed meeting of Council;

That Council direct staff to contact the Whistler Chamber of Commerce, Tourism Whistler, Whistler Blackcomb, the Ministry of Transportation and Infrastructure and BC Transit to forward the names of their appointees to the Whistler Transportation Advisory Group by November 2, 2015; and further,

That Council direct the General Manager of Infrastructure Services to organize an inaugural meeting for TAG as soon as can be reasonably arranged.

Whistler Bear Working
Group - Proposed
Select Committee of
Council
Report No. 15-117
File No. 8396

A presentation by municipal staff.

That Council approve the Whistler Bear Working Group as a Select Committee of Council; and further,

That the committee be named the Whistler Bear Advisory Committee.

Comprehensive Water
Conservation and
Supply Plan Update
Report No. 15-118
File No. 220

A presentation by municipal staff.

That Council endorse the ongoing water conservation and supply plan described in Administrative Report No. 15-118.

Permissive Exemption
Report No. 15-119
File No. Bylaw 2094

That Council consider giving first three readings to Taxation Exemption for Not-For-Profit Organizations Amendment Bylaw No. 2094, 2015.

MINUTES OF COMMITTEES AND COMMISSIONS

May Long Weekend
Committee

Minutes of the May Long Weekend Committee meeting of August 12, 2015.

BYLAWS FOR FIRST AND SECOND READINGS

Zoning Amendment
Bylaw (Shipping
Containers) No. 2093,
2015
File No. RZ1107

The purpose of Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015 to amend the Zoning Bylaw to prohibit shipping containers in residential areas while allowing conventional shipping, industrial and commercial uses of shipping containers under specific circumstances.

BYLAWS FOR FIRST, SECOND AND THIRD READINGS

Taxation Exemption for
Not-For-Profit
Organizations
Amendment Bylaw No.
2094, 2015
File No. Bylaw 2094

The purpose of Taxation Exemption for Not-For-Profit Organizations Amendment Bylaw No. 2094, 2015 is to amend Taxation Exemption for No-For-Profit Organizations Bylaw No. 2011, 2012 to extend the exemption for the Squamish Lil'wat Cultural Centre to include the ten years from 2016 to 2025.

BYLAWS FOR ADOPTION

Parking and Traffic
Amendment (Speed
Limit) Bylaw No. 2095,
2015
File No. 512.12

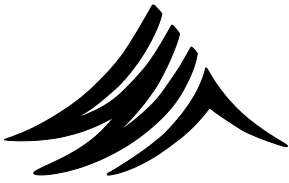
The purpose of Parking and Traffic Amendment (Speed Limit) Bylaw No. 2095, 2015 is to amend Parking and Traffic Bylaw No. 1512, 2001 to provide locations within Whistler where a lower speed limit has been designated on highways.

OTHER BUSINESS

CORRESPONDENCE

Spruce Grove Park Use File No. 8774	Correspondence from Greg McDonnell, dated September 20, 2015, regarding concerns with the noise and alcohol from the baseball league at Spruce Grove Park.
Bayly Park File No. 8241.01, 714	Correspondence from Joseph Farsang, dated September 21, 2015, regarding Bayly Park and the quarry and asphalt plant in Cheakamus Crossing.
Illegally Zoned Short Term Rental Accommodations File No. 3009	Correspondence from Keenan Moses, dated September 22, 2015, regarding illegally zoned short term rental accommodations.
Cement Association of Canada File No. 3009	Correspondence from Michael McSweeny, President and CEO of the Cement Association of Canada, dated September 30, 2015, requesting a meeting with Council and staff.
Waste Reduction Week File No. 3009.1	Correspondence from Jessie Christophersen, Information Services Assistant For the Recycling Council of British Columbia, dated September 14, 2015, requesting the proclamation of October 19th-25th, 2015 as National Waste Reduction Week.

ADJOURNMENT



WHISTLER

MINUTES

**REGULAR MEETING OF MUNICIPAL COUNCIL
TUESDAY, SEPTEMBER 15, 2015, STARTING AT 5:30 PM**

**In the Franz Wilhelmsen Theatre at Maurice Young Millennium Place
4335 Blackcomb Way, Whistler, BC V0N 1B4**

PRESENT:

Mayor N. Wilhelm-Morden

Councillors: S. Anderson, J. Crompton, J. Ford, J. Grills, A. Janyk,
S. Maxwell

Chief Administrative Officer, M. Furey
General Manager of Infrastructure Services, J. Paul
General Manager of Corporate and Community Services, N. McPhail
Acting General Manager of Resort Experience and Director of Planning,
M. Kirkegaard
Acting Corporate Officer, L. Schimek
Acting Manager of Communications, M. Darou
Senior Planner, M. Laidlaw
Engineering Technologist, J. Dunlop
Planner, A. Antonelli
Recording Secretary, A. Winkle

Whistler Housing Authority:
General Manager, M. Zucht

ADOPTION OF AGENDA

Moved by Councillor J. Ford
Seconded by Councillor J. Crompton

That Council adopt of the Regular Council agenda of September 15, 2015 as amended to include another item of business under "Other Business."
CARRIED

ADOPTION OF MINUTES

Moved by Councillor A. Janyk
Seconded by Councillor S. Maxwell

That Council adopt the Regular Council minutes of September 1, 2015.
CARRIED

PUBLIC QUESTION AND ANSWER PERIOD

There were no questions from the public.

PRESENTATIONS/DELEGATIONS

MAYOR'S REPORT

Mayor Wilhelm-Morden reported that the Resort Municipality of Whistler was recently recognized by the Province of British Columbia for achieving carbon neutrality in 2014. The municipality adopted a Carbon Neutral Operations Plan in 2009, which committed the organization to achieving carbon neutrality by 2010. She reported that the municipality is proud of this recognition by the Province and acknowledged staff and the community's efforts and contributions to reduce energy consumption and greenhouse gas emissions across the organization and Whistler. Find more information at whistler.ca/climateaction.

Mayor Wilhelm-Morden reported thanked the community for being part of the 40th anniversary celebrations on Sunday, September 6. The festivities marking the anniversary of the Resort Municipality of Whistler's official incorporation included face painting, crafts, artists in action, roving street animation and a performance by Spirit of the West. More than 4,500 people were in attendance over the course of the afternoon. The honour of Freedom of the Municipality was endowed upon three citizens: Sue Adams, Eric Martin and Jim Moodie. The 40th anniversary celebrations are continuing with a special exhibit "40 Years, 40 Stories" by the Whistler Arts Council at Millennium Place, which runs until October 12.

Mayor Wilhelm-Morden reported on the 6th annual RBC GranFondo Whistler last weekend. Over 3,000 cyclists pedaled from Vancouver to Whistler during the event. Whistler welcomed cyclists to the final 2015 Whistler Presents Summer Concert Series performance by Canadian rock band Trooper.

Mayor Wilhelm-Morden reported that the Whistler Public Library Board of Trustees is accepting applications until October 31. Appointments are for a two-year term and begin on January 1, 2016. The Whistler Public Library Board of Trustees is appointed by Whistler Council and manages the municipal library. Application forms are available at the Whistler Municipal Hall or the library or online at whistler.ca.

Mayor Wilhelm-Morden reported that residents of the Tapley's and Whistler Cay neighbourhoods are invited to an open house on September 23 from 6:30 p.m. to 8:00 p.m. to discuss three flood control options to protect private properties in these areas. Find more details at whistler.ca.

Mayor Wilhelm-Morden reported that the Whistler Fire Rescue Service and the Resort Municipality of Whistler hosted a Change of Command Ceremony last week for retiring Fire Chief Sheila Kirkwood and newly appointed Fire Chief Geoff Playfair. Mayor Wilhelm-Morden thanked Sheila Kirkwood for her 29 years of service to Whistler, and welcomed Geoff back to the Whistler Fire Rescue Service and congratulated him on his new appointment as chief.

Mayor Wilhelm-Morden reported that during the RMOW's 40th Anniversary Celebrations, MLA Jordan Sturdy presented Whistler with a Resort

Municipality Initiative funding cheque from the Province of British Columbia. RMI funding is a significant revenue source, which allows Whistler to invest in many important programs and services to support tourism since it was implemented in 2006. Funding for the program is confirmed on an annual basis, based on accommodation business generated in the previous calendar year, and subject to approval by the Province. We commend and thank the Province for their investment and commitment to the program toward building tourism in British Columbia.

Mayor Wilhelm-Morden reported that, thanks to the conservation efforts of Whistler residents and businesses and cooler rainy weather, Whistler will return to Level 1 water restrictions this Thursday. This means that residential sprinkling will be permitted from 4:00 a.m. to 9:00 a.m. and 7:00 p.m. to 10:00 p.m. two days per week. The Level 2 restrictions were implemented on August 20, as a result of unseasonably dry conditions. During Level 2 restrictions, the Resort Municipality of Whistler also reduced overall irrigation by 40 per cent. Learn more about sprinkling regulations and water conservation at whistler.ca/savewater.

Mayor Wilhelm-Morden reported that ICBC and the province are launching a month-long information campaign, targeting distracted drivers. ICBC says one in four deaths on B.C. roads involves distracted driving. This month, police officers will be at roadsides across B.C. looking for people on their phones, putting on makeup, eating, or even driving with pets in their laps. Residents can take a stand against distracted driving and display a “not while driving” decal as a reminder to leave phones alone. The decals are free at ICBC driver licensing offices and participating Autoplan broker offices.

Mayor Wilhelm-Morden reported that yesterday she met with newly appointed Minister of Education Mike Bernier, MLA Jordan Sturdy, Val Litwin of the Chamber of Commerce, representatives of the school district and various business representatives. They discussed matters of mutual concern, with discussion focusing on the labour shortage in Whistler. It was discussed how high school students can be encouraged to work in Whistler now, and to go away, get trained and return to work in Whistler again.

Mayor Wilhelm-Morden reminded everyone as we move into fall months that the local bear population is moving into the valley as the alpine berry crop is now gone and they are looking for food sources. She reminded everyone to ensure they keep outdoor barbecues clean, that garbage is not stored outside and not to have bear attractants, such as bird feeders, outside. A bear that is attracted to garbage is, sooner or later, a dead bear.

INFORMATION REPORTS

Whistler Housing
Authority's 2015
Employer Housing
Needs Assessment
Report No. 15-105
File No. 7724

Moved by Councillor J. Grills
Seconded by Councillor A. Janyk

That Council receive the Whistler Housing Authority's 2015 Employer Housing Needs Assessment attached as Appendix A to Council Information Report No. 15-105.

CARRIED

ADMINISTRATIVE REPORTS

New Whistler Housing
Authority Resident
Restricted Rental
Housing Development
Report No. 15-106
File No. 7724

Moved by Councillor J. Ford
Seconded by Councillor S. Anderson

That Council authorizes staff to support the Whistler Housing Authority's direction to develop a new Resident Restricted Rental Housing Development in Cheakamus Crossing.

CARRIED

DP 1454 - 4338 Main
Street – Activity Central
Canopy
Report No. 15-108
File No. DP 1454

Moved by Councillor J. Ford
Seconded by Councillor J. Crompton

That Council approve the issuance of Development Permit DP 1454 for a canopy over the Activity Central storefront in the Tyndall Stone Lodge per the architectural plans A1.0 and A2.1 prepared by Murdoch and Company Architecture and Planning, dated September 1, 2015 attached as Appendix B to Council Report No. 15-108 subject to the resolution of the following items to the satisfaction of the General Manager of Resort Experience:

1. Adherence to the Whistler Village Construction Management Strategy;
2. Tree pruning carried out by a landscape professional under RMOW supervision;
3. Registration of an encroachment agreement for the portion of the canopy located on municipal property; and,
4. Amendment of the patio license agreement for Dairy Queen; and further,

That Council authorize the Mayor and Corporate Officer to execute the referenced encroachment agreement and patio license agreement.

CARRIED

DP 1408 – 8413 Indigo
Lane - Indigo Villas
Report No. 15-107
File No. DP 1408

Moved by Councillor J. Crompton
Seconded by Councillor S. Anderson

That Council approve the issuance of Development Permit DP 1408 for the development of a 12-unit apartment complex, as per the site and architectural plans A000 – A810 prepared by Derek Venter Architectural Design, dated September 1, 2015, and landscape plans L1 – L3 prepared by Tom Barratt Ltd. Landscape Architects, dated August 28, 2015, attached as Appendices B and C to Council Report No. 15-107, subject to the resolution of the following items to the satisfaction of the General Manager of Resort Experience:

1. Provision of a letter of credit, or other approved security, in the amount of 135 percent of the costs of the hard and soft landscape works, as security for the construction and maintenance of these works; and,
2. Provision of a snow shed analysis verifying the safety of the design and adherence to Snow Shed Policy G-14.

CARRIED

DP 1463 – 1220/1224
Alpha Lake Road –
Phase 1 Light
Industrial/Commercial
Development
Report No. 15-109
File No. DP 1463

Moved by Councillor J. Crompton
Seconded by Councillor J. Ford

That Council approve the issuance of Development Permit DP 1463 for a new light industrial/ commercial development at 1220/1224 Alpha Lake Road per the architectural plans A1.0, A2.0, A2.1, A2.2, A3.0, A3.1, and A7.0 prepared by ATA Architectural Design Ltd., dated July 13, 2015 and landscape plan L1 prepared by Tom Barratt Landscape Architects Ltd, dated July 08, 2015 attached as Appendix B to Council Report No. 15-109, which includes the following variances to the Zoning Bylaw:

- a) Vary the rear setback to permit an existing retaining wall to be located 0.0 metres from the parcel line; and
- b) vary the south side setback from 3.0 metres to 2.4 metres to accommodate the southeast corner of the proposed building;

subject to the resolution of the following items to the satisfaction of the General Manager of Resort Experience:

1. Provision of a letter of credit, or other approved security, in the amount of 135 percent of the costs of the hard and soft landscape works as security for the construction and maintenance of these works;
2. Provision of a snow shed analysis by a professional engineer;
3. Finalization of signage details;
4. Provision of a detail for the application method of the wood detailing;
5. Finalization of the storm water management plan; and further

That Council authorize the Mayor and Corporate Officer to execute any legal documents required in conjunction with this Development Permit.

CARRIED

Parking and Traffic
Amendment (Speed
Limit) Bylaw No. 2095,
2015
Report No. 15-110
File No. 180.5, Bylaw
2095

Moved by Councillor S. Maxwell
Seconded by Councillor A. Janyk

That Council consider giving first, second and third readings to Parking and Traffic Amendment (Speed Limit) Bylaw No. 2095, 2015.

CARRIED

MINUTES OF COMMITTEES AND COMMISSIONS

Measuring Up Select
Committee

Moved by Councillor J. Ford
Seconded by Councillor J. Crompton

That minutes of the Measuring Up Select Committee meetings of November 5, 2014 be received.

CARRIED

BYLAWS FOR FIRST, SECOND AND THIRD READINGS

Parking and Traffic
Amendment (Speed
Limit) Bylaw No. 2095,
2015

Moved by Councillor A. Janyk
Seconded by Councillor S. Maxwell

That Parking and Traffic Amendment (Speed Limit) Bylaw No. 2095, 2015
receive first, second and third readings.

CARRIED

OTHER BUSINESS

Deputy Corporate
Officer Appointment

Move by Councillor J. Crompton
Seconded by Councillor J. Ford

That Council appoint Norm McPhail as Deputy Corporate Officer for the
purpose of executing and witnessing documents.

CARRIED

UBCM Resolution for
Syrian Refugees in
Canada

Moved by Mayor Wilhelm-Morden
Seconded by Councillor J. Grills

WHEREAS the ongoing crisis for Syrians has ignited a need for a
coordinated effort of aid from all levels of government in Canada,

AND WHEREAS Canada has a history of extending offers of settlement to
refugees for humanitarian reasons,

THEREFORE BE IT RESOLVED that UBCM urge the federal government to
act immediately to accelerate the process and to significantly increase federal
commitments to receive Syrian refugees in Canada matching or exceeding
historic levels.

CARRIED

CORRESPONDENCE

Green City Grow Lights
File No. 3009

Moved by Councillor J. Crompton
Seconded by Councillor J. Ford

That correspondence from Lew Mearns, dated August 31, 2015, regarding
Green City Glow Lights be received.

CARRIED

Sponsoring Refugees
File No. 3009

Moved by Councillor J. Grills
Seconded by Councillor S. Maxwell

That correspondence from Sue Stangel, dated September 7, 2015, regarding
interest in sponsoring a refugee family be received.

CARRIED

Lower Mainland Local
Government
Association (LMLGA)
File No. 2083

Moved by Councillor J. Crompton
Seconded by Councillor J. Ford

That correspondence from Corisa Bell, LMLGA President, dated August 28, 2015, requesting the opportunity to visit Council to introduce herself and learn more about the needs and challenges of the community be received and referred to staff.

CARRIED

Medal of Good
Citizenship
File No. 3009

Moved by Councillor A. Janyk
Seconded by Councillor J. Grills

That correspondence from Marc-André Ouellette, Honours and Awards Secretariat, dated August 27, 2015, regarding a call for nominations for the Province of British Columbia's new Medal of Good Citizenship be received.

CARRIED

ADJOURNMENT

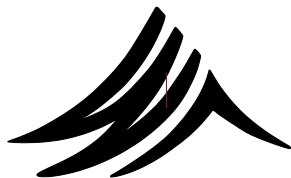
Moved by Councillor J. Ford

That Council adjourn the September 15, 2015 Council meeting at 6:50 p.m.

CARRIED

Mayor N. Wilhelm-Morden

Acting Corporate Officer:
L. Schimek



REPORT | INFORMATION REPORT TO COUNCIL

PRESENTED: October 6, 2015

REPORT: 15-111

FROM: Corporate and Community Services

FILE: 4527

SUBJECT: SECOND QUARTER FINANCIAL REPORT

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Corporate and Community Services be endorsed.

RECOMMENDATION

That Council receive Information Report No. 15-111 Quarterly Financial Report for the six months ended June 30, 2015.

REFERENCES

Appendix A – Quarterly Financial Report for the six months ended June 30, 2015.

PURPOSE

The purpose of the report is to provide council with a comparison of the annual budget amounts with year to date actual revenues and expenditures for operating departments and projects as of June 30, 2015.

DISCUSSION

Quarterly financial reporting is being prepared by the Resort Municipality of Whistler as a means to provide the community, council and the organization, with a regular overview of financial information. Quarterly financial reporting is a priority identified by council as part of its Council Action Plan priorities of fiscal responsibility and accountability.

Six months into the 2015 fiscal year overall operating revenues are at eighty four percent and divisional expenditures forty eight percent of their annual budgeted amounts. This compares to ninety percent and forty eight percent respectively in the prior fiscal year. A significant amount of revenue is accounted for by midyear primarily due to completion of the property tax and utility user fee billing cycle during the second quarter. Most revenue line items are about the same or greater than the prior year with the exception of Resort Municipality Initiative (RMI) amounts. RMI payments from the province are expected during the second half of the fiscal year.

Additional commentary and financial information is provided in the report attached as Appendix A.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Finance	Common evaluation criteria are used to assess actions.	A financial overview is reported and evaluated on a regular basis.

OTHER POLICY CONSIDERATIONS

None.

BUDGET CONSIDERATIONS

There are no direct external costs to prepare the quarterly financial report. All internal costs are accommodated within the annual operating budget of the municipality.

COMMUNITY ENGAGEMENT AND CONSULTATION

Financial information continues to be reported publicly on a regular basis.

SUMMARY

Municipal operating and project revenues and expenditures are reported with comparison to annual budget

Respectfully submitted,

Ken Roggeman
DIRECTOR OF FINANCE
for
Norm McPhail
GENERAL MANAGER, CORPORATE AND COMMUNITY SERVICES

SECOND QUARTER FINANCIAL REPORT

FOR THE SIX MONTHS ENDED JUNE 30, 2015

The Resort Municipality of Whistler | October 6, 2015

THE PREMIER MOUNTAIN RESORT COMMUNITY
MOVING TOWARD A SUSTAINABLE FUTURE



INTRODUCTION

Quarterly financial reporting is being prepared by the Resort Municipality of Whistler as a means of providing the community, council and the organization with a regular overview of financial information. Quarterly financial reporting is a priority identified by council as part of its Council Action Plan in the priority areas of fiscal responsibility and accountability.

The primary information provided in the quarterly report is a comparison of the annual budget amounts to actual revenues and expenditures for operating departments and projects. All financial information is based on preliminary, unaudited information reported from the municipal financial system as of the report date. Seasonal variations in municipal operations may affect the proportion of revenues achieved or expenditures incurred to date. This is particularly evident with projects as the project activity may not have commenced or may have incurred few actual expenditures as at the end of the reporting period.

This quarterly report provides information in four parts:

Commentary, pages 2-4

- Charts and comments

Summary of Operational Results, pages 5-6

- Summary of primary revenue categories
- Summary of expenditures by division
- Other expenditures and allocations

Operational results are revenues and expenses that the municipality normally carries out on an annual basis. Operational costs are paid for by current year revenues.

Statements of Operational Results, pages 7-14

- Revenues and expenditures by department

Statements of Net Project Expenditures, pages 15-22

- Summary of net project expenditures

Net project expenditures are project costs less funding, if any, from sources outside of the municipality. Projects are used to plan and account for transactions that do not take place every year. Examples are; construction of a bridge, infrastructure maintenance and one-time activities or events.

All amounts are presented on a non-consolidated basis which may give rise to some variations from amounts included in the actual Five-Year Financial Plan Bylaw. Non-consolidated means that subsidiary companies of the municipality (Whistler Housing Authority for example) are not included and, interdepartmental sales and purchases have not been removed. The Statements of Operational Results and, Net Project Expenditure are supplementary information and provide additional detail for readers. Quarterly financial reporting follows the fiscal year of the municipality which is January 1 through December 31.

Questions or comments about this report can be made by:

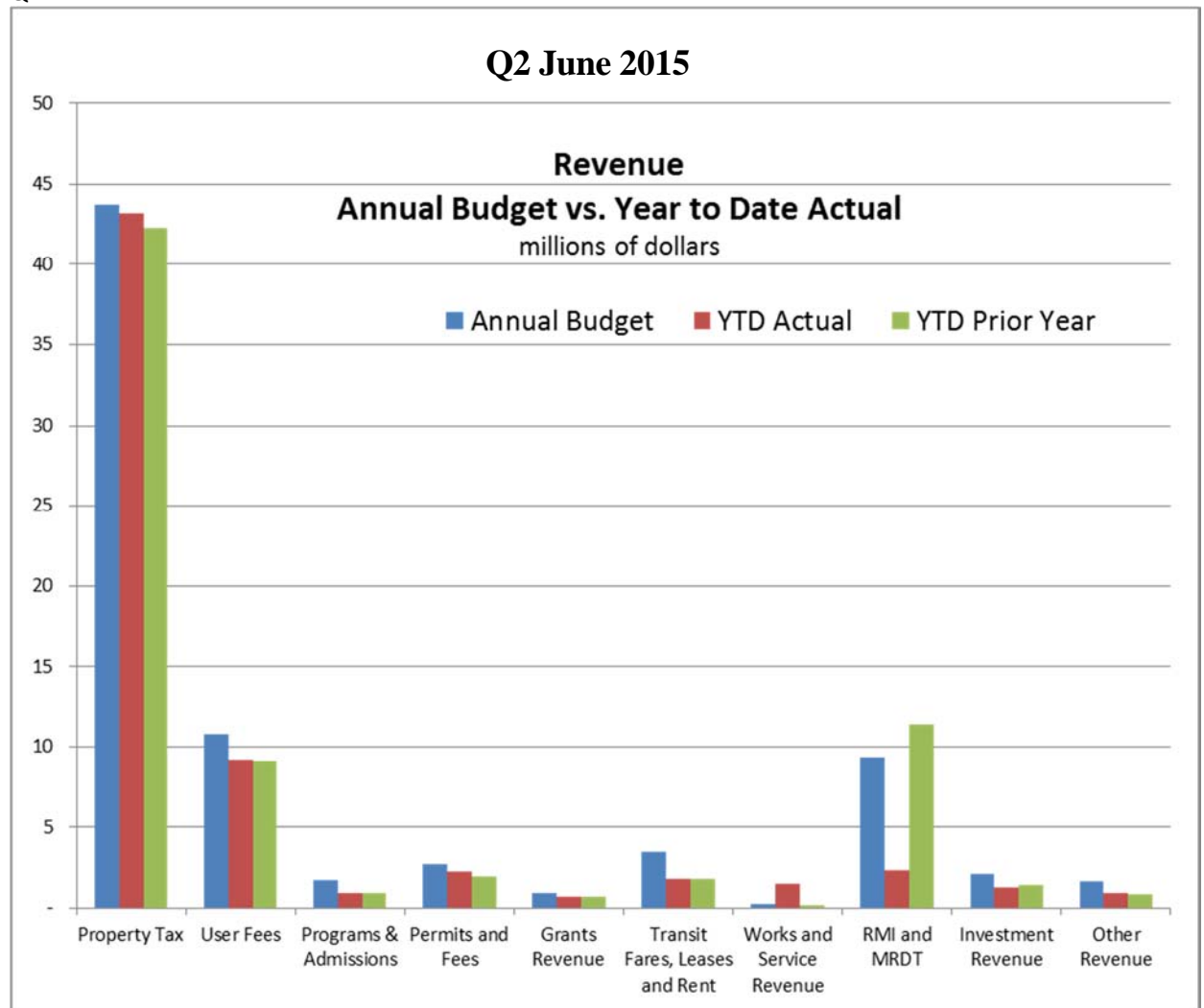
Email – budget@whistler.ca

Phone – 604-932-5535 (Toll free 1-866-932-5535)

COMMENTARY

Six months into the 2015 fiscal year overall operating revenues are at eighty four percent and divisional expenditures forty eight percent of their annual budgeted amounts. This compares to ninety percent and forty eight percent respectively in the prior fiscal year. A significant amount of revenue is accounted for by midyear primarily due to completion of the property tax and utility user fee billing cycle during the second quarter. Most revenue line items are about the same or greater than the prior year with the exception of Resort Municipality Initiative (RMI) amounts. RMI payments from the province are expected during the second half of the fiscal year.

Q2



Other factors that impact the proportion of revenue achieved as of the end of the reporting period include:

Municipal and Regional District Tax (MRDT – Hotel Tax)

- Year to date increase of sixty thousand or two point seven percent over the same period last year.

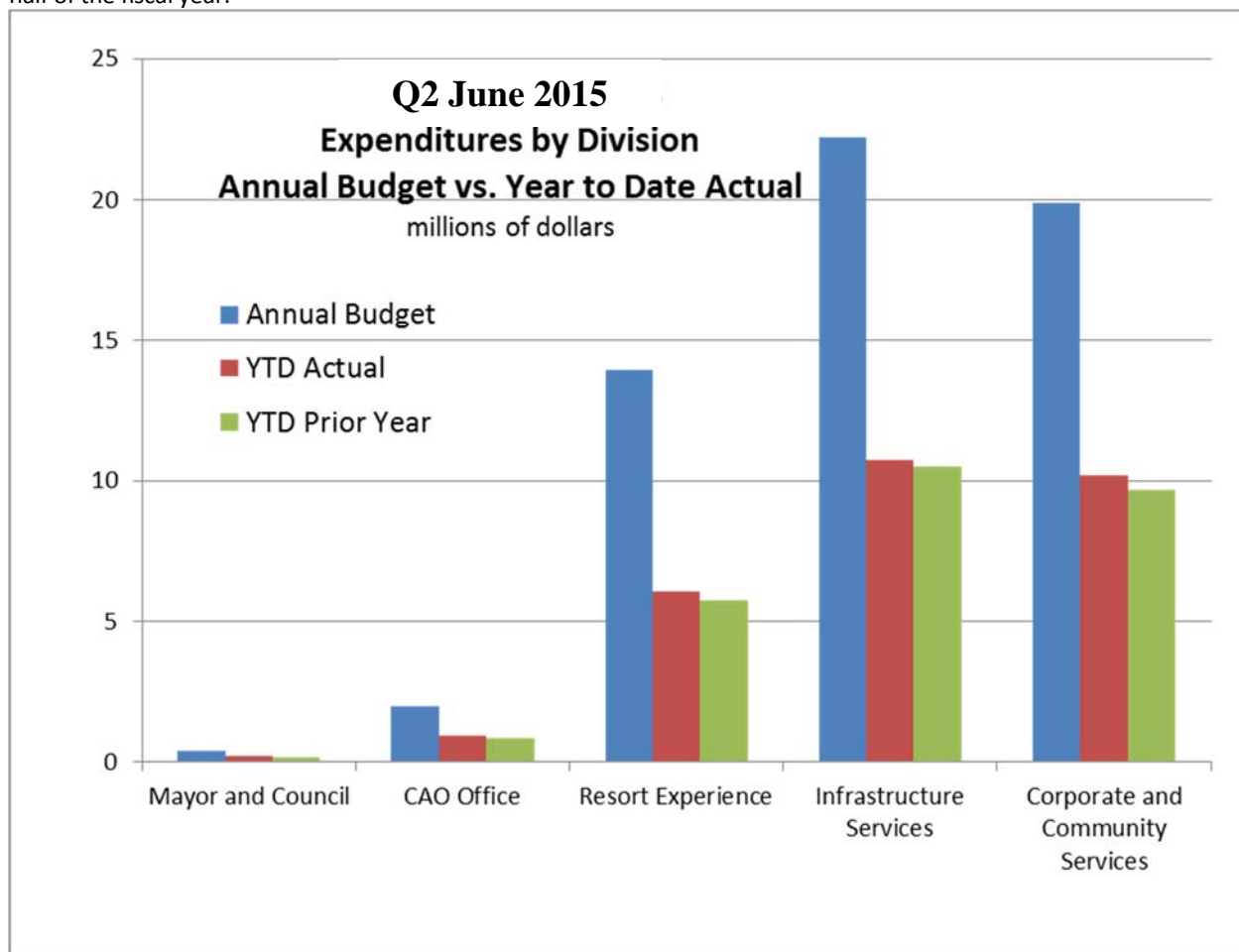
Permits and Fees

- Revenue from permits and fees have increased by more than three hundred and twenty thousand over to the same period last year due to increased user volume of pay parking and Building Department services. Building department revenues are already at one hundred twenty eight percent of budget revenue for the year.

Works and Service Revenue

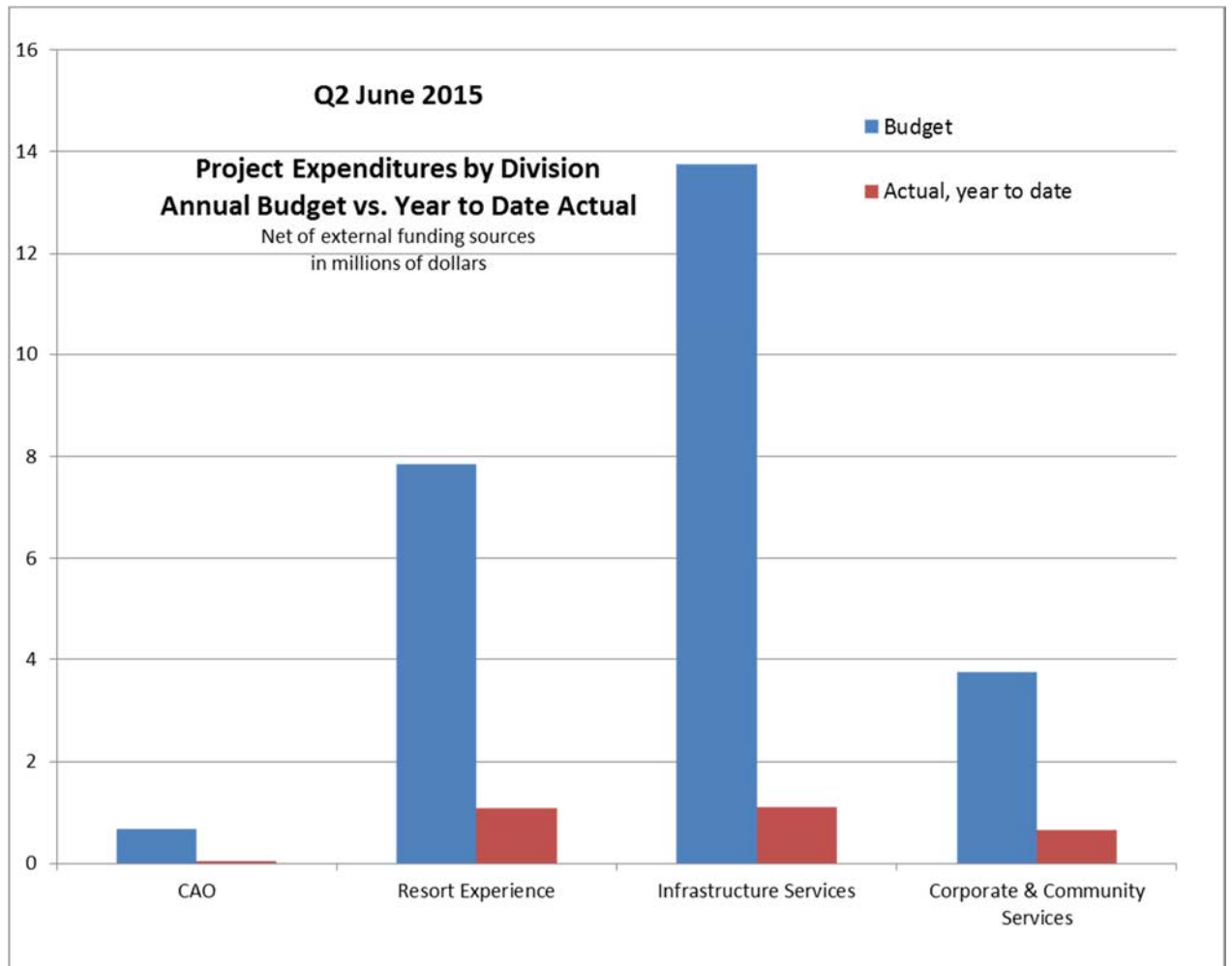
- Revenue is exceptionally greater than budget and prior year amounts. Related to increase in Building department revenues, this reflects the increased volume and value of construction in the municipality.

Six months into the 2015 fiscal year overall operating revenues are at eighty four percent and divisional expenditures forty eight percent of their annual budgeted amounts. This compares to ninety percent and forty eight percent respectively in the prior fiscal year. A significant amount of revenue is accounted for by midyear primarily due to completion of the property tax and utility user fee billing cycle during the second quarter. Most revenue line items are about the same or greater than the prior year with the exception of Resort Municipality Initiative (RMI) amounts. RMI payments from the province are expected during the second half of the fiscal year.



Total divisional operating expenditures for the six months ended June 30, 2015 are forty eight percent of annual budget and is the same proportion as the prior year. Operating expenditures increased by approximately one point one seven million over the the same period in the prior year. Year over year change in expenditures is comparable to the proportional change in annual revenue, excluding RMI, for the first half of the fiscal year.

Operating revenues and expenditures for individual departments can be found on the Statements of Operational Results.



As of June 30, 2015, actual net project expenditures are eleven percent of total budgeted expenditure for the year.

A significant amount of project costs are not received until later in the fiscal year, and not all budgeted project activities will necessarily take place during the fiscal year due to unplanned or unforeseen factors. As projects are usually funded from municipal reserves, financial resources not used during the year will remain in the reserves until required and this does not directly impact the operating surplus or deficit for future fiscal planning purposes.

Net expenditures by individual project can be found on the Statements of Net Project Expenditures.

Resort Municipality of Whistler
Summary of Operational Results
For the Quarter ended June 30, 2015, (Unaudited)

	Budget Annual	Actual Year to Date	% Budget	Prior Year Year to Date	Notes
Revenues					
Property Tax	43,734,399	43,207,766	99%	42,308,211	(1)
User Fees	10,763,675	9,211,191	86%	9,065,226	(1)
Programs & Admissions	1,709,010	917,626	54%	917,675	
Permits and Fees	2,728,824	2,242,406	82%	1,919,793	(2)
Grants Revenue	936,696	685,973	73%	709,094	
Transit Fares, Leases and Rent	3,429,191	1,797,772	52%	1,744,546	(3)
Works and Service Revenue	278,434	1,438,653	517%	137,164	
RMI and MRDT	9,293,739	2,302,034	25%	11,396,717	(4)
Investment Revenue	2,085,353	1,236,690	59%	1,420,264	
Other Revenue	1,622,462	909,468	56%	875,770	
	76,581,783	63,949,579	84%	70,494,459	
Divisional Operating Expenditures					
Mayor and Council	376,804	201,882	54%	169,739	
CAO Office	1,984,606	939,860	47%	834,787	
Resort Experience	13,958,164	6,080,561	44%	5,759,473	
Infrastructure Services	22,225,230	10,729,249	48%	10,500,717	
Corporate and Community Services	19,924,348	10,186,871	51%	9,703,309	
	58,469,151	28,138,423	48%	26,968,025	
Corporate Expenditures, Debt, Reserves and Transfers					
Internal Revenue Transfers	(4,002,846)	(2,001,423)	50%	-	(5)
Miscellaneous Services	95,000	34,919	37%	41,359	
Interest and Admin Costs	25,300	58,021	229%	13,438	
External Partner Contributions	3,280,217	1,963,835	60%	1,839,839	(6)
Internal Charges	50,000	52,500	105%	52,192	
Long Term Debt Principal	1,561,833	260,523	17%	(1,568,749)	(7)
Debt Interest	1,370,982	686,159	50%	681,492	
Transfers to Reserves	15,732,145	392,881	2%	404,840	(8)
	18,112,631	1,339,564	0	(482,418)	
Future Expenditures, Transfers, Reserve Contributions	0	34,471,592		44,008,851	

See next page for notes

Notes:

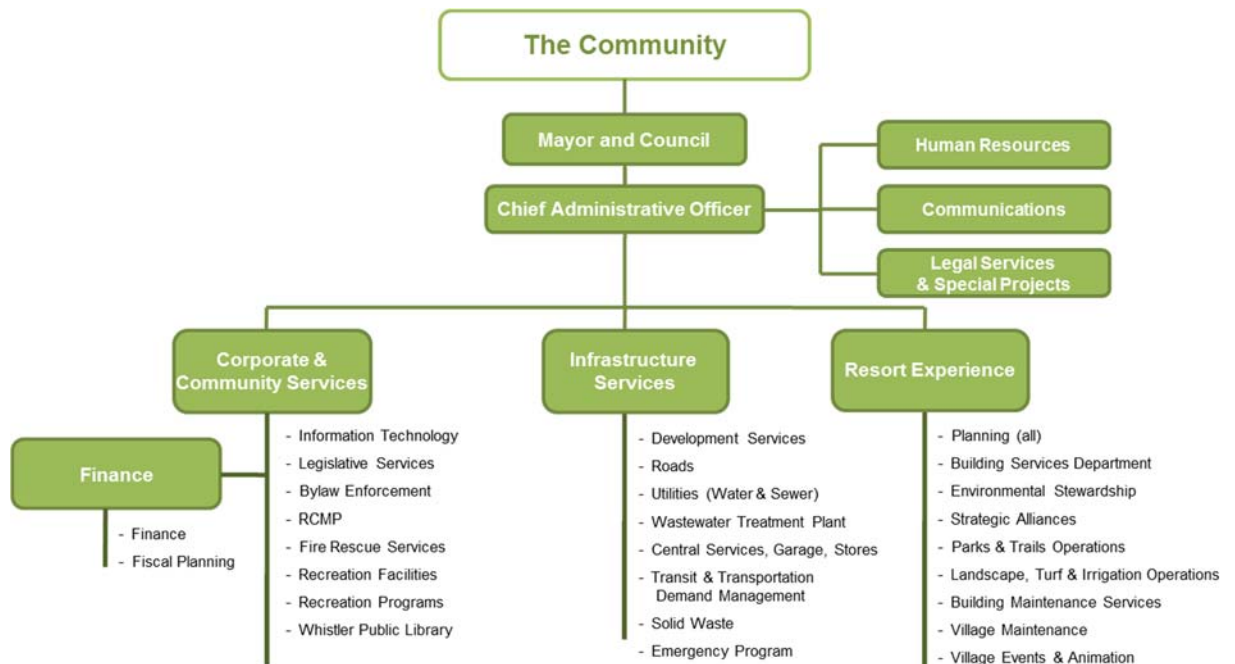
- (1) Virtually all property taxes and a significant portion of user fees for water, sewer and solid waste are billed on the annual property tax notice and accounted for during the month of May.
- (2) Most permit and fee revenue is tracking at greater than fifty percent of budget and, all business licence revenue is billed and accounted for at the beginning of the fiscal year.
- (3) Works and service revenue is directly related to the timing of development and construction, is not known in advance and, is tracking well above budgeted amounts.
- (4) As of June 30, 2015 RMI payments have not yet been received from the province.
- (5) This amount reflects internal recoveries to offset internal charges included in the divisional operating expenditures reported above. Internal revenues are not included in the revenue section.
- (6) External partner expenditures are primarily made up of Municipal and Regional District Tax (MRDT) paid to Tourism Whistler and Community Enrichment Program grants and fee for service agreements.
- (7) Long term debt in the current year includes only payments. Prior year amount included the receipt of loan proceeds, resulting in the negative amount.
- (8) Transfers reserves are mostly accounted for at the end of the fiscal year.

STATEMENTS OF OPERATIONAL RESULTS

Information is categorized by division and reported for each department within the division.

Revenues and expenses are reported separately for each department.

The diagram below illustrates the RMOW's organizational structure.



Resort Municipality Of Whistler
Statement of Operational Results by Department
For the six months ended June 30, 2015 (unaudited)

Division 1100	Annual	Actuals	% Budget	Notes
Mayor and Council	Budget	YTD	Used to Date	
Mayor & Council				
Expenses	376,804	201,882	54%	
Total	376,804	201,882		
Mayor and Council Total	376,804	201,882		

Resort Municipality Of Whistler
Statement of Operational Results by Department
For the six months ended June 30, 2015 (unaudited)

Division 1200	Annual	Actuals	% Budget	Notes
CAO Office	Budget	YTD	Used to Date	
Administrator				
Expenses	1,164,229	528,924	45%	
Total	1,164,229	528,924		
Policy & Program Development				
Expenses	0	5,724	0%	(1)
Total	0	5,724		
Human Resources				
Revenues	0	0	0%	
Expenses	820,377	405,212	49%	
Total	820,377	405,212		
CAO Office Total	1,984,606	939,860		

(1) Policy & Program Development
Labour cost miscoded. To be corrected.

Resort Municipality Of Whistler
Statement of Operational Results by Department
For the six months ended June 30, 2015 (unaudited)

Division 5000 Resort Experience	Annual Budget	Actuals YTD	% Budget Used to Date	Notes
Strategic Alliances				
Revenues	(83,241)	0	0%	(1)
Expenses	172,170	81,679	47%	
Total	88,929	81,679		
Village Events and Animation				
Revenues	(3,776,264)	(29,355)	1%	(1)
Expenses	3,890,366	1,384,907	36%	
Total	114,102	1,355,552		
Division Administration				
Revenues	(100,000)	0	0%	(1)
Expenses	431,025	214,583	50%	
Total	331,025	214,583		
Resort Operations				
Revenues	(1,704,544)	(329,295)	19%	(2)
Expenses	6,656,670	3,027,260	45%	(3)
Total	4,952,126	2,697,965		
Planning (ALL)				
Revenues	(67,750)	(48,959)	72%	(4)
Expenses	1,559,713	708,529	45%	
Grants & Contributions	(98,000)	(87,567)	89%	(4)
Project Expenditures	62,500	90,142	144%	(4)
Total	1,456,463	662,145		

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Resort Experience continued

Environment Stewardship				
Revenues	(10,000)	(9,443)	94%	
Expenses	276,949	149,831	54%	
Total	266,949	140,388		
Building Department Services				
Revenues	(686,874)	(877,139)	128%	(5)
Expenses	908,772	423,630	47%	
Total	221,898	(453,509)		
Resort Experience Total	7,431,491	4,698,803		

Notes:

- (1) Most budgeted revenue is Resort Municipality Initiative (RMI) funding that will be allocated at the end of the fiscal year.
- (2) A significant amount of budgeted revenue is MRDT and RMI funding that will be allocated at the end of the fiscal year.
- (3) Summer seasonal expenditures not yet incurred as of June 30.
- (4) The Planning Department includes contributions and costs resulting from development applications. Cost of processing development applications are recovered from the applicant. Timing and amount of costs and contributions is dependent on the timing and number of development applications received. Volume and value has been greater than budget.
- (5) Building Department revenues are significantly greater in volume and value than budget.

Resort Municipality Of Whistler
Statement of Operational Results by Department
For the six months ended June 30, 2015 (unaudited)

Division 6000 Infrastructure Services	Annual Budget	Actuals YTD	% Budget Used to Date	Notes
General Manager				
Expenses	410,981	187,028	46%	
Total	410,981	187,028		
Development Services/Energy Mgmt				
Revenues	(8,500)	(11,207)	132%	
Expenses	572,681	255,759	45%	
Total	564,181	244,553		
Transportation				
Revenues	0	(17,044)	0%	
Expenses	2,315,617	1,065,625	46%	
Total	2,315,617	1,048,581		
Central Services				
Revenues	(2,771,794)	(1,180,176)	43%	
Expenses	2,223,761	959,361	43%	
Total	(548,033)	(220,815)		
Environmental Operations				
Revenues	(2,306,686)	(1,102,749)	48%	(1)
Expenses	2,306,686	1,102,749	48%	(1)
Total	0	0		

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Infrastructure Services continued

Solid Waste					
Revenues	(5,320,345)	(3,444,854)	65%	(2)	
Expenses	4,908,379	2,408,978	49%		
Total	(411,966)	(1,035,876)			
Transit					
Revenues	(3,789,000)	(1,341,409)	35%	(4)	
Expenses	6,365,400	3,200,786	50%		
Total	2,576,400	1,859,377			
Water Fund					
Revenues	(6,556,679)	(6,453,246)	98%	(2)	
Expenses	3,071,172	1,183,922	39%	(3)	
Total	(3,485,507)	(5,269,324)			
Sewer Fund					
Revenues	(7,432,433)	(7,159,112)	96%	(2)	
Expenses	4,591,764	2,046,266	45%	(3)	
Total	(2,840,669)	(5,112,845)			
Infrastructure Services Total	(1,418,994)	(8,299,321)			

Notes:

- (1) All expenditures of the Environmental Operations Department are allocated to the Water and Sewer Funds.
- (2) All or most of these revenues are billed on the annual property tax notice in the second quarter of the fiscal year.
- (3) Budgeted expenditures include administration costs allocated from the operating fund and are not accounted for until the end of the fiscal year.
- (4) A greater proportion of the transit revenues are earned during the first and last quarters of the fiscal year.

Resort Municipality Of Whistler
Statement of Operational Results by Department
For the six months ended June 30, 2015 (unaudited)

Division 7000 Corporate and Community Services	Annual Budget	Actuals YTD	% Budget Used to Date	Notes
Finance				
Revenues	(91,500)	(40,003)	44%	
Expenses	1,779,996	1,280,936	72%	(1)
Total	1,688,496	1,240,933		
Legislative Services				
Revenues	(12,800)	(7,044)	55%	
Expenses	1,094,472	529,383	48%	
Total	1,081,672	522,339		
Information Technology				
Revenues	(25,000)	(32,400)	130%	
Expenses	1,336,502	641,738	48%	
Total	1,311,502	609,338		
Bylaw				
Revenues	(2,126,250)	(1,396,893)	66%	(2)
Expenses	1,319,190	656,618	50%	
Total	(807,060)	(740,275)		
RCMP				
Revenues	(441,089)	(301,736)	68%	
Expenses	3,872,150	1,880,268	49%	
Total	3,431,062	1,578,532		

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Corporate and Community Services continued

Fire Rescue Service				
Revenues	(71,500)	(8,794)	12%	
Expenses	3,842,071	1,855,555	48%	
Total	3,770,571	1,846,762		
Whistler Public Library				
Revenues	(150,800)	(109,554)	73%	
Expenses	1,055,289	541,118	51%	
Total	904,489	431,564		
Recreation				
Revenues	(1,142,088)	(534,171)	47%	
Expenses	1,940,498	950,174	49%	
Total	798,410	416,004		
Meadow Park Sports Centre				
Revenues	(1,585,600)	(889,239)	56%	
Expenses	3,280,953	1,735,942	53%	
Total	1,695,353	846,703		
Corporate and Community Services General				
Expenses	403,227	115,139	29%	(3)
Total	403,227	115,139		
Corporate and Community Services Total	14,277,721	6,867,037		

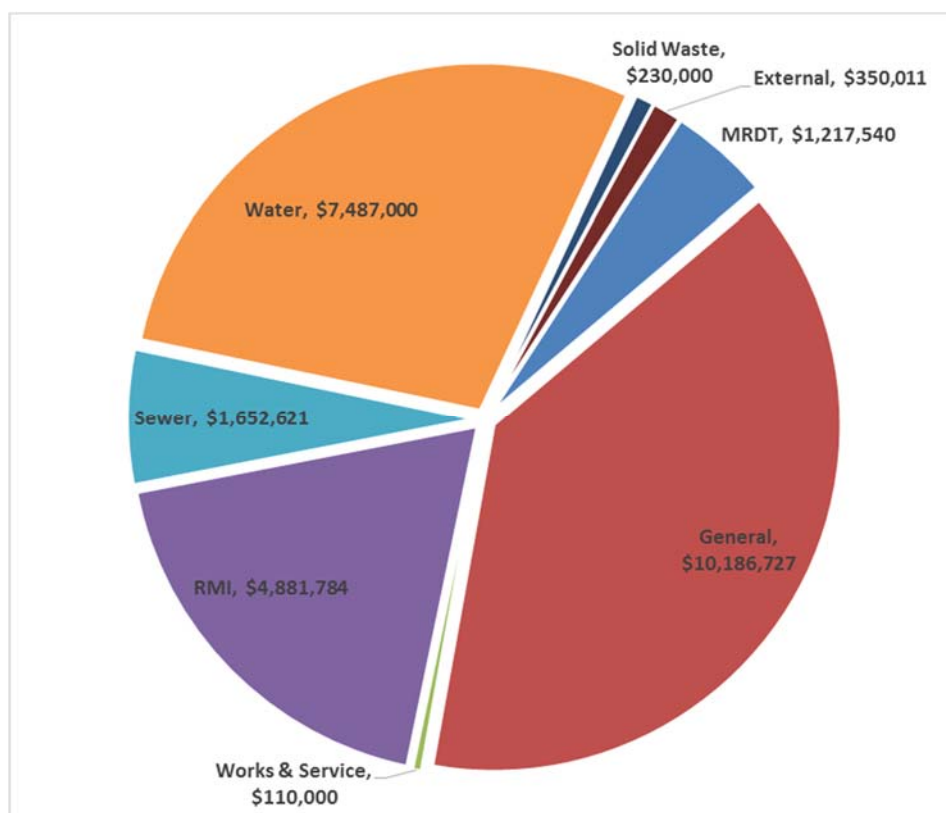
Notes:

- (1) A larger proportion of costs are incurred during the first and second quarters due to external audit and insurance expenditures.
- (2) Parking revenues have been greater than budget and most business license fee revenue is accounted for during the first quarter of the fiscal year.
- (3) Less than half of the budget has been utilized due to Customer Service Counter budget and operations beginning after June 30.

STATEMENTS OF NET PROJECT EXPENDITURE

Projects are used to plan and account for transactions that do not take place every year and are most often funded from municipal reserves. Projects can vary in size and carry over many years. At any given time, a division may have several projects in progress. Current policy is to allocate an annual budget to the project based on the work anticipated for the coming year.

For 2015 the budgeted amount to be funded from reserves and external sources is twenty six point one million. The chart below provides a breakdown of funding sources for projects in 2014 and the amount that each will be contributing.



Projects are sorted by division and categorized as follows:

Annual Recurring Projects

Projects that are carried out on a regular, periodic basis but the type and scope of the work may change. Maintenance and reconstruction projects for example.

Continuing Projects

Projects that were planned for a prior year and will continue into the next year.

New Projects

Projects that have a start and end date within the five year financial plan and, are not an annual recurring project.

Other Projects

Projects that have been included in prior financial plans and are subject to discussion with senior levels of government.

Resort Municipality of Whistler

Statement of Project Position

For the six months ended June 30, 2015, (unaudited)

DIVISION 1200	Annual	Actuals	% Budget
CAO Office	Budget	YTD	YTD
Annual Recurring Projects			
Website	47,000	3,091	7%
Corporate Communications	10,000	3,625	36%
Collective Bargaining	36,000	5,300	15%
Continuing Projects			
Home Energy Assessment Rebate	28,000	8,600	31%
Community Energy & Climate Action Plan	65,000	0	0%
Learning and Education Initiatives	95,000	1,212	1%
Conference Centre Expansion Study	50,000	0	0%
Spearhead Hut Project Support	150,000	0	0%
Village Gate and Taxi Loop Enhancement	0	975	0%
New Projects			
Large Group & Conference Growth	130,000	23,900	18%
Whistler 40th Anniversary Celebration	40,000	0	0%
EPI Model Update	20,000	1,980	10%
CAO Office Total	671,000	48,683	

Resort Municipality of Whistler

Statement of Project Position

For the six months ended June 30, 2015, (unaudited)

DIVISION 5000	Annual	Actuals	% Budget	Notes
Resort Experience	Budget	YTD	YTD	
Annual Recurring Projects				
Olympic Plaza Enhancements	60,000	49,392	82%	(1)
Conference Centre Improvements	323,284	(32,000)	-10%	
General Improvements - Environment	30,000	15,583	52%	
Village Enhancement	150,000	47,299	32%	
Parks Accessibility Program	25,000	0	0%	
Community Wildfire Protection	685,200	142,267	21%	
Bear Management Program	30,000	2,446	8%	
Valley Trail Reconstruction	110,000	1,643	1%	
Air Quality Management Plan	5,000	0	0%	
Annual Building Maintenance	90,000	30,593	34%	
Cheakamus Community Forest / Forestry Cc	7,000	859	12%	
Recreation Trail Program	50,000	11,114	22%	
Park Operations General Improvement	200,000	75,053	38%	
Ecosystem Monitoring Program	25,000	4,144	17%	
Building Asset Replacement Program	150,000	4,456	3%	
WVLC Parkade Rehabilitation Program	158,400	4,920	3%	
Annual Electrical Maintenance	45,000	0	0%	
Continuing Projects				
Games Legacy Art	150,000	64,983	43%	
Recreation Leisure Master Plan	10,000	2,279	23%	
Village Square & Mall Rejuvenation	1,125,000	154,559	14%	
Valley Trail Mons RR Xing to Cypress Pl	1,009,000	5,062	1%	
Building Department File Scanning	139,000	0	0%	
Cultural Connector	600,000	40,752	7%	
REX GIS Project	15,000	0	0%	
Skate Park Rejuvenation Plan	807,600	6,685	1%	
Cheakamus Bridge Sea to Sky	0	4,304	0%	
Alpine Trail Program	300,000	60,891	20%	
Municipal Hall Continuing Improvements	185,000	46,541	25%	
Blackcomb Way Valley Trail Lights	10,000	2,923	29%	
Emerald Valley Trail Segmented Retaining V	309,890	253,800	82%	
Former Hostel Site Improvements	110,000	68,513	62%	
Train Wreck Pedestrian Bridge	30,000	0	0%	

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Resort Experience continued

New Projects

Public Art Project	0	110	0%	
Park and Trail Summer Survey	0	37	0%	
Games Cauldron Repair	40,000	0	0%	
Meadow Park Sport Field	15,000	0	0%	
WOPL Washroom Expansion	15,000	0	0%	
Valley Trail cycling Review	20,000	0	0%	
Artificial Turf Field & Structure	45,000	0	0%	
Environmental Bylaw Amendment	10,000	0	0%	
Lost Lake Park North Bridge Replacements	0	(72,217)	0%	(2)
Fitzsimmons Creek Trail Upgrades	0	6,005	0%	
Alta Vista Works Yard Upgrade	89,100	1,147	1%	
BMX Track	95,000	13,971	15%	
Irrigation Central Control Upgrade	231,000	0	0%	
Lost Lake Light Replacement	110,000	0	0%	
Lost Lake Special Events	58,400	43,943	75%	
Rainbow Park Volleyball Court	20,000	19,898	99%	
Public Works Yard Mechanics Shop HVAC	50,000	0	0%	
MYMP Waterproofing & Landscape Repair	100,000	0	0%	
Resort Experience Total	7,842,874	1,081,954		

(1) Conference Centre Improvements

Reconciliation and adjustment of prior year costs.

(2) Lost Lake Park North Bridge Replacements

\$75,000 grant received in 2015 for prior year project.

Resort Municipality of Whistler

Statement of Project Position

For the six months ended June 30, 2015, (unaudited)

DIVISION 6000	Annual	Actuals	% Budget	Notes
Infrastructure Services	Budget	YTD	YTD	
Annual Recurring Projects				
Water Annual Reconstruction	260,000	55,805	21%	
Water Loss Reduction Program	100,000	0	0%	
Sewer Annual Reconstruction	537,500	301,064	56%	
WWTP Annual Reconstruction	445,000	52,458	12%	
Environmental Monitoring - Cheakamus Riv	40,000	0	0%	
Reservoir Upgrades	50,000	0	0%	
Fire Hydrant Maintenance	90,000	7,300	8%	
Benchmarking Water	11,000	0	0%	
Reservoir Cleaning	100,000	0	0%	
Solid Waste Annual Reconstruction	150,000	84,543	56%	
Groundwater Monitoring for Final Capital	26,000	0	0%	
Workplace Safety-Maint. and Oversight - W/	20,000	0	0%	
LWMP Review	50,000	14,199	28%	
Water Conservation Program	22,000	101	0%	
Annual Reconstruction - Roads	150,000	5,252	4%	
Fitz Creek Gravel Removal	370,000	31,940	9%	
Bridge Reconstruction Program	110,000	8,160	7%	
Fleet Replacement	2,327,018	150,556	6%	
Central Services Annual Reconstruct	75,000	1,226	2%	
Continuing Projects				
WWTP Process - Energy Optimization	0	(15,304)	0%	(1)
West Side Alta Lake Sewers	207,954	0	0%	
Zone 775 Water Infrastructure Update	450,000	11,886	3%	
Major Water Infrastructure Renewal Program	4,966,000	13,247	0%	
PLC Replacement Program	100,000	0	0%	
Cross Connection Prevention Program	92,362	8,617	9%	
Long Term Water Supply Plan Update	5,000	0	0%	
Infra. Capacity Analysis-GFA Exclusions Wa	20,000	0	0%	
Infra. Capacity Analysis-GFA Exclusions Sev	20,000	0	0%	
Workplace Safety-Maint. and Oversight - SE	60,000	14,733	25%	
Master Sewer Plan	70,000	44,642	64%	
Function or 21 Mile Supply Well	280,000	0	0%	
Alpine Reservoir Level Control	200,000	12,733	6%	
SCADA Site Telemetry & Alarms	20,000	0	0%	
Emerald Well Water Quality	750,000	10,688	1%	
Fortis Site Master Plan	40,000	12,480	31%	
Mapping Updates - Orthophotos and LiDAR	39,413	0	0%	
Earthquake Hazard Mitigation	15,000	0	0%	
Fitz Creek Debris Barrier & Sediment Basin	25,000	1,530	6%	
Flood Plain Mapping	30,000	0	0%	
Bus Shelter - Cheakamus Lake Rd at Hwy 9	35,000	32,308	92%	
Rebuild PWY Stores/Reception Area	85,000	26,950	32%	

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Infrastructure Services continued

New Projects

DES Boiler Replacement	235,000	177,962	76%
Gateway Loop Reconstruction	600,000	0	0%
Biosolids Disposal Options Assessment	40,000	0	0%
21 Mile Creek Source Water Protection Proj	25,000	1,014	4%
DES Energy Efficiency Study	40,000	0	0%
Whistler Cay Entrance Reconstruction	85,000	0	0%
Development Services Renovations	30,000	272	1%
Pedestrian Crossing Light - Alta Lk Road	0	15,000	0% (2)
Air Quality Equipment	50,000	0	0%
Highway Intersection Capacity Analysis	50,000	0	0%
LED Streetlight Assessment	15,000	0	0%
Tapley's Flood Protection Options Assessm	33,000	24,355	74%
Traffic Studies to support reactivation of TAC	50,000	7,750	16%
Transit Tracking APP	50,000	0	0%
Infrastructure Services Total	13,747,247	1,113,468	

(1) WWTP Process - Energy Optimization

\$15,000 grant received in 2015 for prior year project.

(2) Pedestrian Crossing Light - Alta Lk Road

Reconciliation and adjustment to prior year ICBC Road Safety funding.

Resort Municipality of Whistler

Statement of Project Position

For the six months ended June 30, 2015, (unaudited)

DIVISION 7000	Annual	Actuals	% Budget	
Corporate and Community Services	Budget	YTD	YTD	Notes
Annual Recurring Projects				
Municipal Elections	0	314	0%	
Computer Systems Replacement	214,424	130,392	61%	
Library Furniture and Equipment	98,750	(35,054)	-35%	(1)
Library Collection	100,000	55,113	55%	
Recreation Equipment	184,750	39,129	21%	
Recreation Infrastructure Replacement	1,190,350	80,033	7%	
Recreation Accessibility Upgrades	15,000	0	0%	
Recreation Services Equipment	0	836	0%	
Recreation Services Infrastructure Replacen	0	614	0%	
Whistler Olympic Plaza Ice Rink	20,000	9,630	48%	
Firefighting Equipment Replacement	50,000	2,140	4%	
Fire Smart Neighbourhood Program	84,895	0	0%	
Project Fires Record Management System	48,860	2,431	5%	
Continuing Projects				
Financial Systems Modifications	0	37,367	0%	(2)
Property Appraisal Insurance Purposes	13,600	4,388	32%	
Whistler Coat of Arms	8,500	608	7%	
Customer Service Strategy	375,000	65,489	17%	
Reserve Policy Planning	17,420	0	0%	
GIS Platform Change to ESRI	152,500	22,446	15%	
Local Infrastructure & Server Room	212,250	39,208	18%	
Corporate Software	437,178	89,653	21%	
Fiber-Optic Network Improvements	40,000	5,415	14%	
Strategic Planning	5,000	24,232	485%	(3)
Asset Inventory Audit	5,000	0	0%	
RCMP Facility Maintenance	67,930	9,731	14%	

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Corporate and Community Services continued

New Projects

Supplies Cupboard for Front Reception	5,000	1,509	30%
Postage Machine	10,000	0	0%
PS Building Space Utilization - Fire Bylaw IT	0	6,464	0%
Council Camera Flute COTW	18,400	21,219	115%
Library Website Feasibility Study	10,000	0	0%
Technical Rescue Program	161,140	14,899	9%
Fire Hall Infrastructure Improvements	100,000	0	0%
Alta Lake Station House Envelope Repair	105,000	24,400	23%
Corporate and Community Services Total	3,750,947	652,605	

Notes

(1) Library Furniture and Equipment

	Budget	Actual
Grants & Contributions	-	(52,750)
Project Expenditures	98,750	17,696
Library Furniture and Equipment	98,750	(35,054)

External funding has been accounted for but project expenditures not yet fully realized.

(2) Financial Systems Modifications

IT support costs to be allocated to other projects.

(3) Strategic Planning

Project budgets to be reallocated.



THE RESORT MUNICIPALITY OF WHISTLER

Host Mountain Resort
2010 Olympic and Paralympic
Winter Games

4325 Blackcomb Way
Whistler, BC Canada V0N1B4
www.whistler.ca

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REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015

REPORT: 15-112

FROM: Resort Experience

FILE: DP 1430

SUBJECT: DP 1430 – 4321 VILLAGE GATE BOULEVARD – BLUE SHORE CANOPY

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION

That Council approve the issuance of Development Permit DP 1430 for the Blue Shore Credit Union development to add two small weather protection canopies over existing condensing units located within the municipal road right of way, as per the architectural plans no. ASK 1-3 prepared by Atalier Pacific Architecture Inc., dated September 15, 2015, attached as Appendix B to Council Report No. 15-112, subject to the resolution of the following items to the satisfaction of the General Manager of Resort Experience:

1. Resolution of canopy colours to match the existing building colour scheme;
2. Adherence to the Whistler Village Construction Management Strategy; and,
3. Amendment of registered easement agreement BB1769869 to allow for the construction of the canopies on municipal property; and further,

That Council authorize the Mayor and Corporate Officer to execute the referenced encroachment agreement.

REFERENCES

Owners:	Blue Shore Credit Union and RMOW
Location:	4321 Village Gate Boulevard
Legal Description:	Common Property, Strata Plan VR2076, Strata Lot 1, DL 1902
Current Zoning:	CC1 (Commercial Core One)
Appendices:	'A' Location Map 'B' Architectural Drawings

PURPOSE OF REPORT

This report seeks Council's approval of Development Permit DP 1430, which proposes two protective canopies over the Blue Shore condensing units located within the Village Gate Boulevard road right of way (municipal property).

The development permit is eligible for approval by the General Manager as the proposed canopy covers an area less than 20 square metres, however, a portion of the canopy would encroach over municipally owned lands and requires Council authorization to amend the existing encroachment agreement.

DISCUSSION

In July 2009 the General Manager of Resort Experience approved the issuance of Development Permit No. 1056 for exterior renovations and energy efficiency upgrades to the building, subject to Council's consideration of an encroachment agreement to locate two air-cooled condensing units to within the Village Gate Boulevard road right of way. Council authorized the agreement which was registered as BB1679869.

Clause 9(c) of the encroachment agreement states that the strata owners agree not to undertake any other construction on the easement area, therefore the agreement must be amended to accommodate the two protective canopies proposed by DP 1430.

Proposed Development

Detailed development permits drawings are attached as Appendix B. The two canopies are 7' 7" tall, with a gently sloping roof. One canopy is 10' 6" in length and the other is 19' 6" in length, plus two foot overhangs on each side. The canopies are designed to shelter the condensing units, while allowing sufficient air circulation around the units (48" of clearance is required). The height of the canopies has been minimized with the top of the sloping roof will be one foot above the adjacent walkway railing. This will allow for full solar access to the covered walkway and adjacent windows.

The existing building is painted blue and beige, with a grey metal roof as shown in Figure 1. Given the relatively hidden location of the canopy, the applicant's preference is for complementary colours rather than the same colours with a proposed dark green metal roof and clear-stained timbers. Staff recommend that the canopies should complement the existing building with a matching colour scheme. The two canopies will be, for the most part, not visible from Village Gate Boulevard, the stroll, or the Gateway Loop. The surrounding trees and shrubs will not require removal.

Figure 1. Blue Shore Financial (south and west aspects)





ADP Review

The Advisory Design Panel did not review this project because of the minor nature of the structure.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Description of success that resolution moves us toward	Comments
Built Environment	The built environment is attractive and vibrant, reflecting the resort community's character, protecting viewscales and evoking a dynamic sense of place.	The design allows for full solar access to the covered walkway and adjacent windows, and views out from the covered walkway
	Building design, construction and operation is characterized by efficiency, durability and flexibility for changing and long-term uses.	Materials proposed are durable. The canopy provides protection for the mechanical system.
Visitor Experience	The resort is comfortable, functional, safe, clean and well-maintained.	The canopy will complement the recent upgrades to the exterior façade of the building under DP 1056.

W2020 Strategy	AWAY FROM Description of success that resolution moves away from	Comments
		Proposal not moving away from description of success.

OTHER POLICY CONSIDERATIONS

Zoning Analysis

The Blue Shore Financial building is located in the Commercial Core One (CC1) zone. The proposed amendment to the encroachment agreement will regulate the size, height, and location of the two canopies.

OCP Development Permit Area Guidelines - The subject lands fall within Development Permit Area #1 – Whistler Village. The DP designations include guidelines for form and character of commercial development, the protection of development from hazardous conditions, and protection of the natural environment. The proposed canopies and encroachment agreement are consistent with the guidelines. In summary, the development achieves the following:

- Landscaping installed as part of DP 1056 remains in place to ensure the condensing units and canopies are mostly screened from view.
- Building materials and colours are complementary to adjacent buildings.
- Building materials will be sufficiently durable to withstand Whistler's harsh climate.

Whistler Village Design Guidelines - The canopy proposal and encroachment agreement are in keeping with Whistler Village Design Guidelines:

Policy No.	Whistler Village Design Guidelines	Comments
5.5 BUILDING MATERIAL SELECTION	1. Materials must be complementary to those of adjoining buildings. 2. Primary exterior materials include stone, wood, stucco and textured concrete. 3. All building materials are to be sufficiently durable and shall be detailed to withstand Whistler's harsh climate.	Durable materials that are complementary to adjoining buildings are proposed (timber and metal).
6.0 SNOW MANAGEMENT	5. Building projections must be durable - Roofs dumping snow onto a series of lower roofs or onto a lower roof from great height can cause extreme snow loads or impact loads respectively.	The canopy is designed to withstand falling snow and protect the condensing units.

Legal Encumbrances

The proposed canopy encroaches on RMOW property and requires Council approval for an amendment to the existing encroachment agreement prior to construction. The design complies with all other legal encumbrances on title.

Green Building Policy

The applicant has submitted a green building checklist. In summary, the development achieves the following:

1. Renewable and recyclable materials are proposed.
2. Disturbance to soil and vegetation is minimized.

BUDGET CONSIDERATIONS

DP application fees provide for recovery of costs associated with this application. Building Permit fees will be charged at the time of Building Permit. No works and services charges will be payable with this renovation. The original encroachment agreement compensates the Municipality in the amount of \$3.15 per square foot per annum. This rate is subject to annual adjustments based on the Vancouver CPI and an appraisal report.

COMMUNITY ENGAGEMENT AND CONSULTATION

An information sign has been posted at the subject property per Development Permit application requirements.

Notice of the proposed encroachment will be placed in two consecutive issues of the local newspaper per Section 26 of the *Community Charter*.

SUMMARY

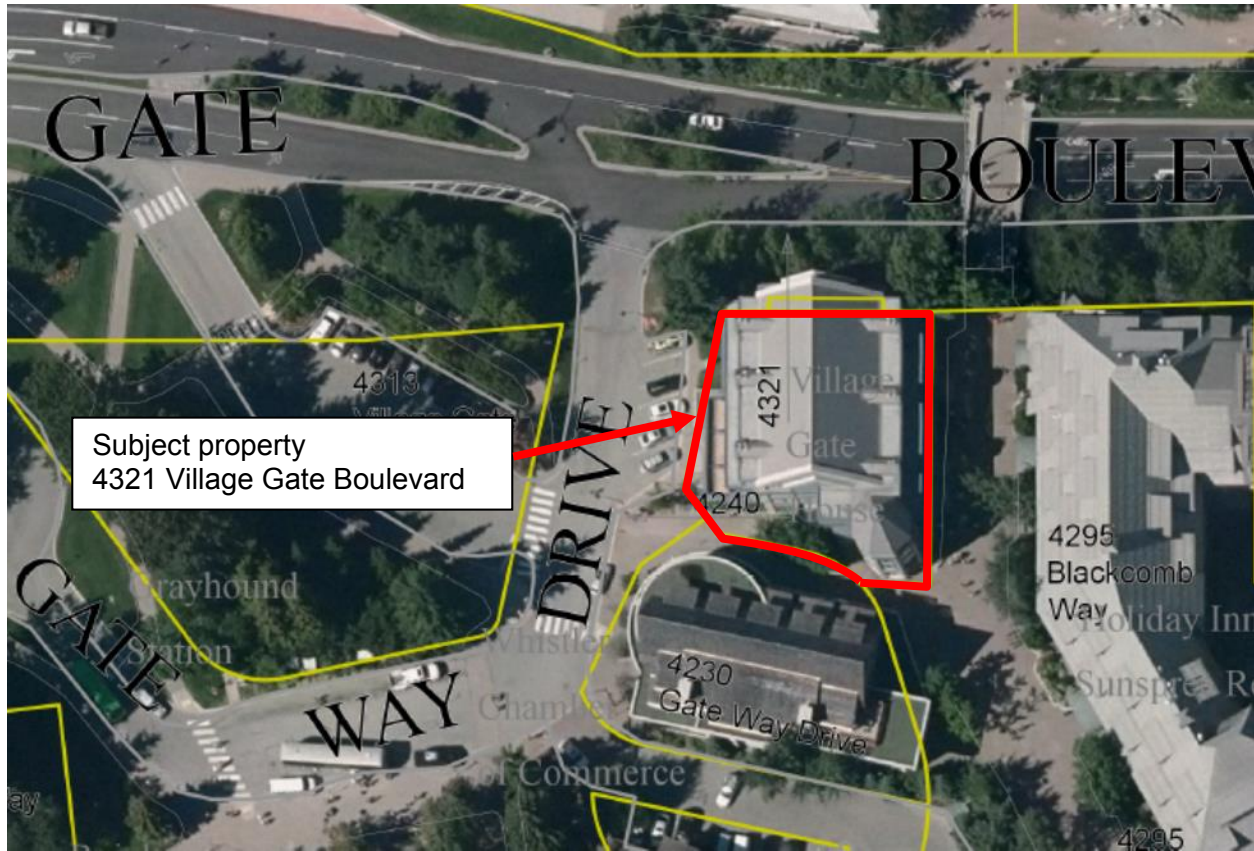
This report seeks Council's approval of Development Permit DP 1430, which proposes two protective canopies over the Blue Shore condensing units located within the Village Gate Boulevard road right of way (municipal property).

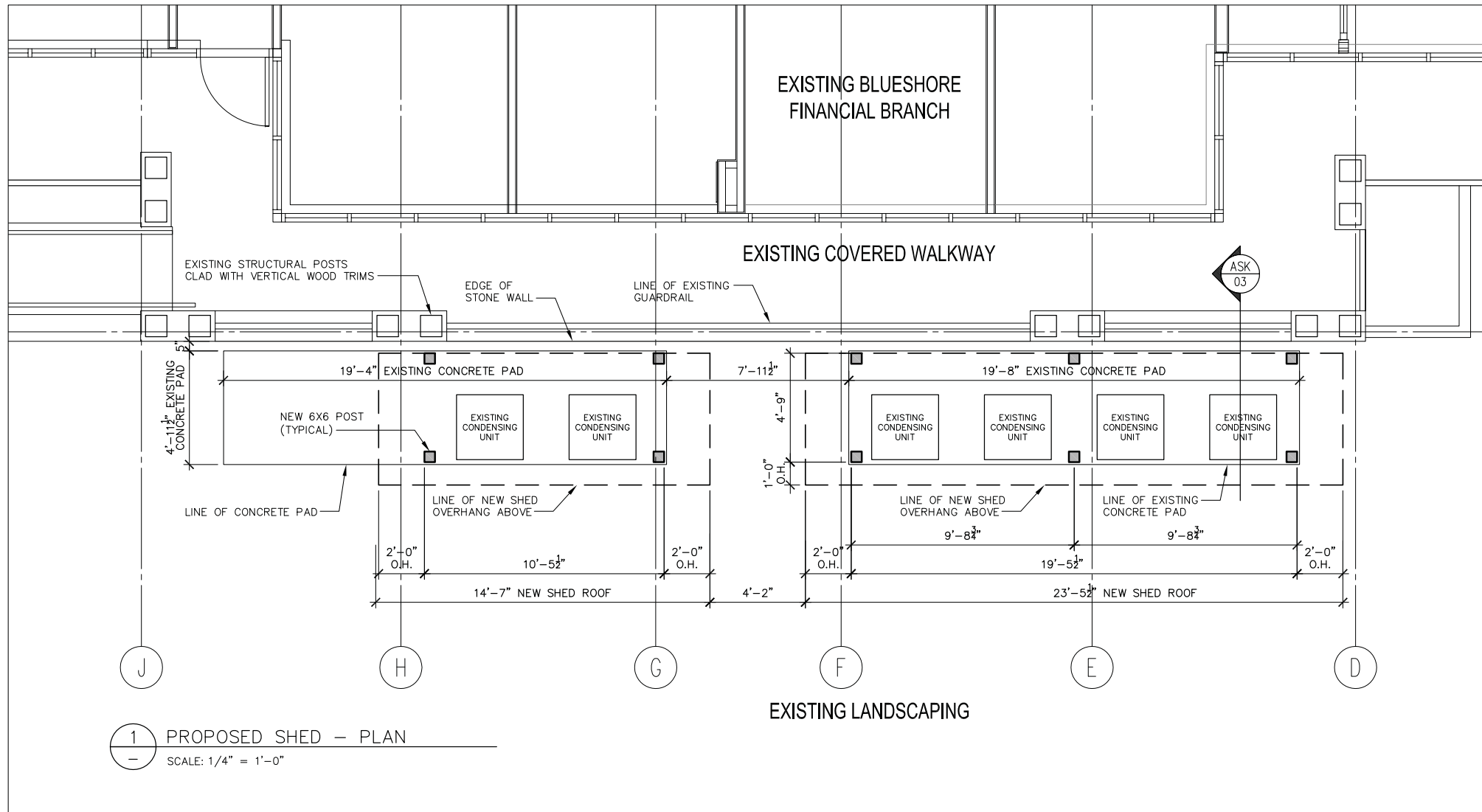
The development permit is eligible for approval by the General Manager as the proposed canopy covers an area less than 20 square metres, however, a portion of the canopy would encroach over municipally owned lands and requires Council authorization to amend the existing encroachment agreement.

Respectfully submitted,

Amica Antonelli
PLANNER
For
Jan Jansen
GENERAL MANAGER OF RESORT EXPERIENCE

Location Map





atelier pacific
architecture inc.

BLUESHORE - WHISTLER
4321 VILLAGE GATE BOULEVARD, WHISTLER, B.C.
for BLUESHORE FINANCIAL

Drawing Title
**PROPOSED OUTDOOR
CONDENSING UNIT SHED - PLAN**

Drawn By:
UP

Date:
SEPT.15.2015

Rev. No.

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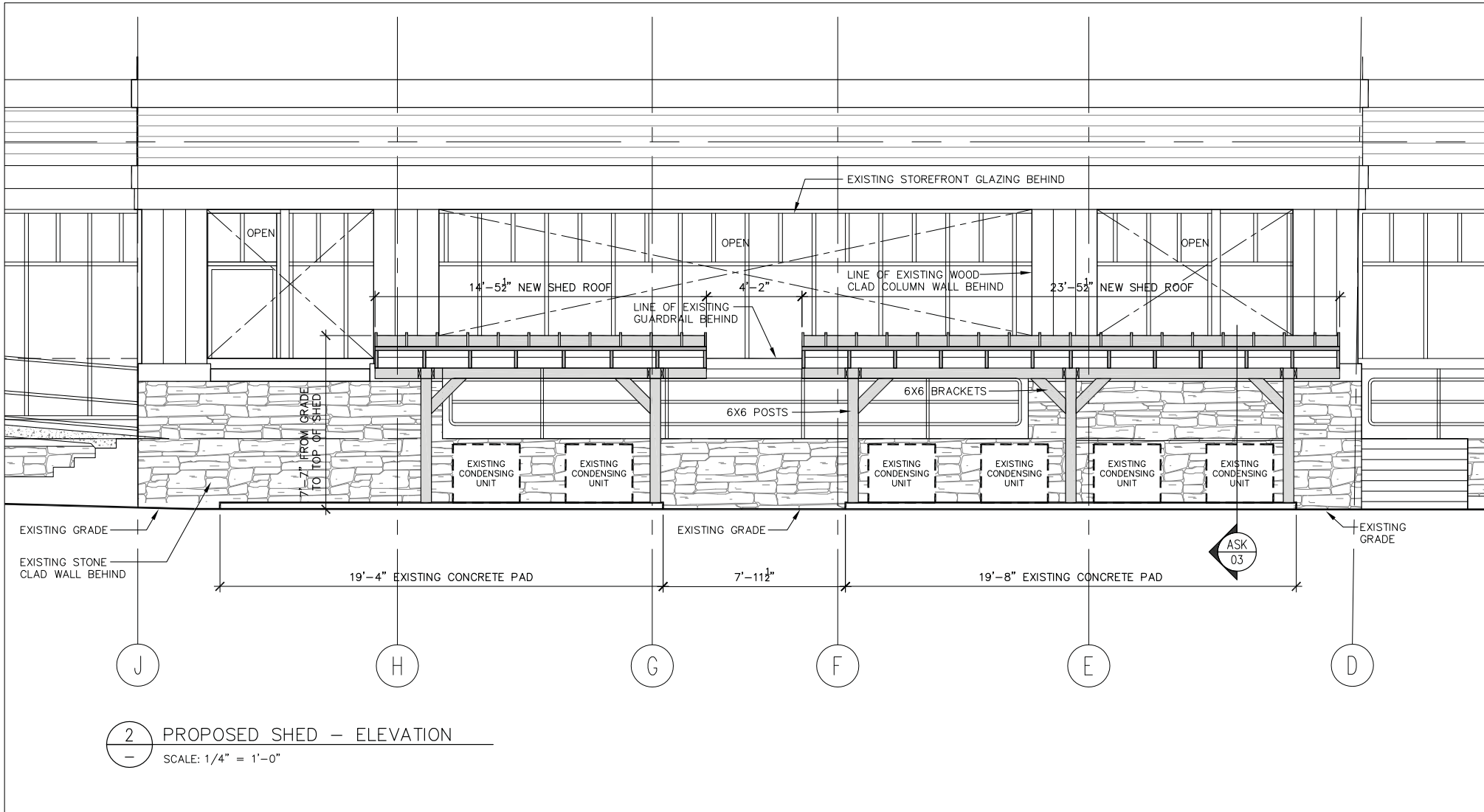
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Project. No.
28124

Drawing No.

ASK-01





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V8B 4K3 info@atelierpacific.com

BLUESHORE - WHISTLER
4321 VILLAGE GATE BOULEVARD, WHISTLER, B.C.
for BLUESHORE FINANCIAL

Drawing Title
**PROPOSED OUTDOOR
CONDENSING UNIT SHED - ELEVATION**

Drawn By:
UP
Date:
SEPT.15.2015

Rev. No.

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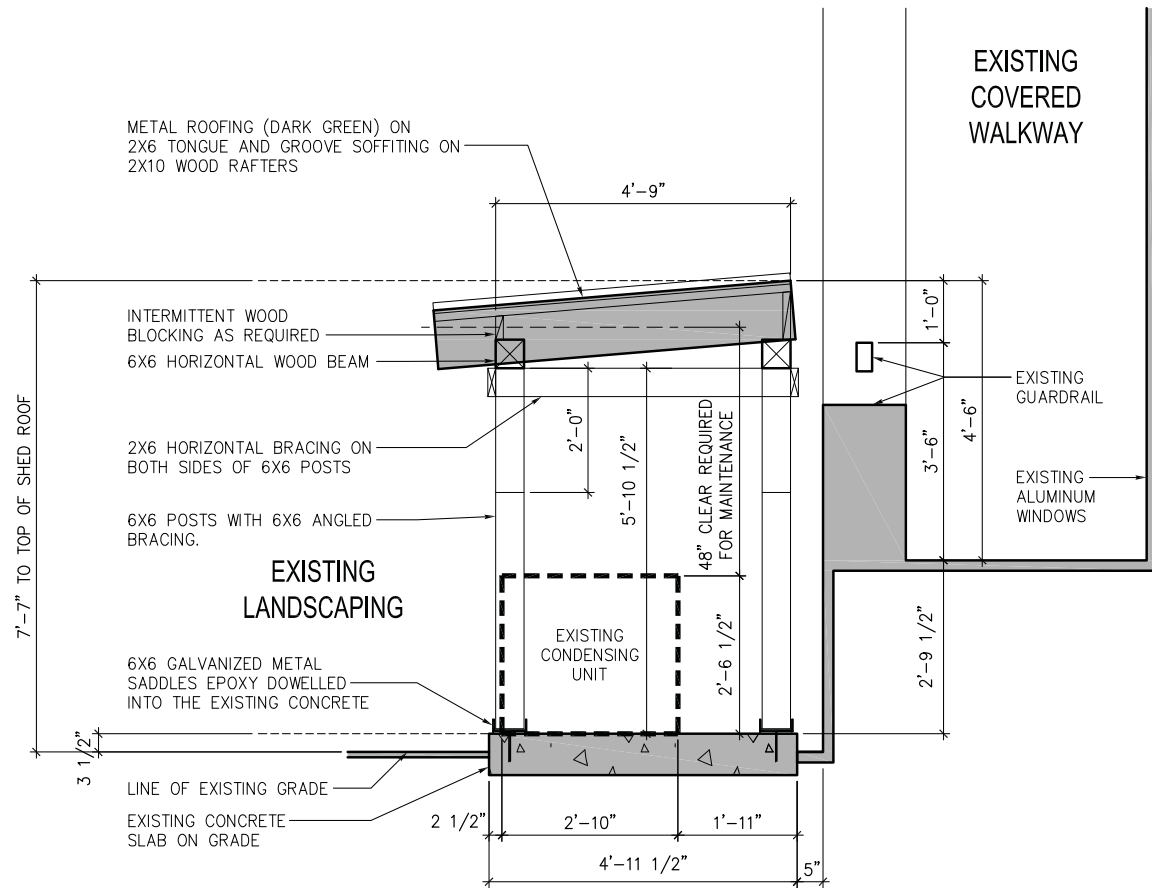
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Project. No.
28124

Drawing No.

ASK-02





3 PROPOSED SHED - SECTION
SCALE: 1/2" = 1'-0"



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BLUESHORE - WHISTLER
4321 VILLAGE GATE BOULEVARD, WHISTLER, B.C.
for BLUESHORE FINANCIAL

Drawing Title
PROPOSED OUTDOOR
CONDENSING UNIT SHED - SECTION

Drawn By:
UP

Date:
SEPT.15.2015

Rev. No.

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Scale:
1/4"=1'-0"

Project. No.
28124

Drawing No.

ASK-03





REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015
FROM: Resort Experience
SUBJECT: DVP 1111 - 3318 PANORAMA RIDGE – VARIANCES TO BUILDING SETBACKS, BUILDING HEIGHT, PARKING SETBACKS, AND PARKING STALL LENGTH

REPORT: 15-113
FILE: DVP 1111

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION

That Council approve the issuance of Development Variance Permit DVP 1111 to remove the existing encroaching covered stairway from the road right of way, ratify the existing parking, and utilize the existing concrete retaining structure for a new carport and entry stairway located at 3318 Panorama Ridge by varying “Zoning and Parking Bylaw 303, 1983” as noted below:

1. Vary the front setback for an entry stairway and associated entry stairway roof support columns from 7.6 m to 1.05 m;
2. Vary the front setback for an entry stairway roof overhang from 6.1 m to 0.25 m;
3. Vary the Northeast side setback for an entry stairway from 3.0 m to 1.2 m;
4. Vary the Northeast side setback for an entry stairway roof overhang from 2.0 m to 0.8 m;
5. Vary the front setback for carport support columns from 2.0 m to 1.0 m;
6. Vary the front setback for a carport roof overhang from 1.0 m to 0.5 m;
7. Vary the maximum allowable carport height from 3.5 m to 4.0 m;
8. Vary the length for a covered parking stall from 5.5 m to 5.3 m;
9. Vary the front setback for surface parking from 1.5 m to 0.0 m;
10. Vary the front setback for upper floor balcony support columns from 7.6 m to 5.3 m;
11. Vary the front setback for the upper floor balcony overhang from 6.1 m to 5.0 m,

All as shown on Architectural Plans 1, 2, 3, 4, 5, and 6 prepared by Kat Sullivan Design and dated 26/7/15 and attached to Administrative Report No. 15-113 as Appendix B.

REFERENCES

Civic Address: 3318 Panorama Ridge
Legal Description: Lot 5, Block O, District Lot 3898, Plan 17871
Zoning: RS1 (Single Family Residential One)
Owners: Callum Beveridge and Elaine Grotefeld

Appendix A – Location Plan

Appendix B – Plans of Proposed Variances

Appendix C – Site Photos of Existing Conditions

PURPOSE OF REPORT

This report seeks Council's consideration of Development Variance Permit Application DVP 1111, a request for variances to "Zoning and Parking Bylaw 303, 1983" at 3318 Panorama Ridge in order to ratify existing surface parking and to allow for the development of a carport structure and access stairway utilizing an existing concrete retaining structure.

DISCUSSION

The property at 3318 Panorama Ridge is a steeply sloping uphill parcel that was originally developed under Building Permit 2601-89 (issued September 6, 1989). The existing dwelling is located well up the hill from the street and is accessed by an existing covered stairway that extends into the road right-of-way. An existing surface parking retaining structure, located at the front of the property, was approved under Building Permit 2601-89.

Development Variance Permit DVP1111 proposes the following:

- A. Remove the existing covered stairway from the road right-of-way and replace with a revised covered stairway configured to be contained wholly on the subject property;
- B. Construct a flat roof on the existing parking retaining structure to create an open air carport;
- C. Ratify the location of the three existing surface parking stalls; and
- D. Extend the existing upper floor balcony on the dwelling toward the front of the parcel.

In order to achieve this, certain variances to "Zoning and Parking Bylaw 303, 1983" are required as described further in this report and shown in Appendix B. All new work will be contained entirely within the subject parcel.

A. Replace Existing Nonconforming Stairway with Revised Stairway

As noted, there is an existing covered access stairway located on the Southwest side of the property. Unfortunately, this stairway encroaches 1.03 m into the road right-of-way. DVP1111 proposes to remove this stairway and replace it with a new stairway on the Northeast side that will be entirely on the subject property. The revised stairway would take advantage of the existing parking retaining structure to form its foundation. This would require the following variances:

1. Vary the front setback for the entry stairway and associated entry stairway roof support columns from 7.6 m to 1.05 m;
2. Vary the front setback for the entry stairway roof overhang from 6.1 m to 0.25 m;
3. Vary the Northeast side setback for the entry stairway from 3.0 m to 1.2 m;
4. Vary the Northeast side setback for the entry stairway roof overhang from 2.0 m to 0.8 m;

B. Add a Flat Roof to the Existing Parking Retaining Structure

DVP1111 proposes to redevelop the existing parking retaining structure by constructing a flat roof on the existing concrete walls thereby creating a carport. The location, size, and height of the existing parking retaining structure govern the carport design. Therefore, the proposed carport requires the following variances:

5. Vary the front setback for the carport support columns from 2.0 m to 1.0 m;
6. Vary the front setback for the carport roof from 1.0 m to 0.5 m;
7. Vary the maximum allowable carport height from 3.5 m to 4.0 m;

C. Ratify the Location of the Three Existing Surface Parking Stalls

The Zoning Bylaw requires covered parking stalls to be 5.5 metres long by 2.5 m wide. The bylaw further requires stalls to be located 1.5 m from any parcel line. This is not possible, given the location of the existing concrete retaining structure. Therefore, DVP1111 proposes the following:

8. Vary the allowable parking stall length from 5.5 m to 5.3 m for the three stalls contained within the carport;
9. Vary the required front setback for these parking stalls from 1.5 m to 0.0 m.

D. Extend the Existing Upper Floor Balcony on the Dwelling

The existing dwelling incorporates a balcony on the second level of the front façade. DVP1111 proposes to extend this balcony forward resulting in the following variances:

10. Vary the required front setback for the upper floor balcony support columns from 7.6 m to 5.3 m;
11. Vary the required front setback for the upper floor balcony overhang from 6.1 m to 5.0 m.

Whistler 2020 Analysis

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Built Environment	Limits to growth are understood and respected.	The existing stairway encroaches into the road right-of-way. The revised stairway would correct this situation.
“	The built environment is attractive and vibrant, reflecting the resort community's character, protecting viewscales and evoking a dynamic sense of place.	The new carport and stairway will add warmth and interest to the existing bare concrete wall resulting in a more attractive streetscape.
“	Building design, construction and operation is characterized by efficiency, durability and flexibility for changing and long-term uses.	Conversion of the existing retaining structure can be considered consistent with this description of success.
W2020 Strategy	AWAY FROM Descriptions of success that resolution moves away from	Mitigation Strategies and Comments
	None	

OTHER POLICY CONSIDERATIONS

DVP Criteria

The Resort Municipality has established criteria for consideration of development variance permits.

The proposed variances are considered to be consistent with these criteria as described in the table below:

Potential Positive Impacts	Comment
Complements a particular streetscape or neighbourhood.	Converting the bare concrete retaining wall to a carport can be considered an improvement to the streetscape. Replacing the existing encroaching stairway with a stairway that respects the property boundaries is likewise an improvement.
Works with the topography on the site, reducing the need for major site preparation or earthwork.	This proposal utilizes the existing retaining structure removing the need for major site works despite the difficult topography.
Maintains or enhances desirable site features, such as natural vegetation, trees and rock outcrops.	This proposal will not affect existing natural features.
Results in superior siting with respect to light access resulting in decreased energy requirements.	Not Applicable.
Results in superior siting with respect to privacy.	Not Applicable.
Enhances views from neighbouring buildings and sites.	The finished carport can be considered an improvement over the existing bare concrete retaining structure. It introduces wood elements to create warmth and interest.

Potential Negative Impacts	Comments
Is inconsistent with neighbourhood character.	The design of the carport and new covered stair is consistent with the character of the Brio neighbourhood, and Whistler in general.
Increases the appearance of building bulk from the street or surrounding neighbourhood.	The carport increases the perceived massing at the front of the parcel; however the front parcel line is well back from the street (11.6 m) reducing this impression. Any perceived increase in massing is offset by the improvement in the streetscape.
Requires extensive site preparation.	This proposal cleverly utilizes existing concrete retaining walls and their foundations thereby circumventing the need for extensive site works.
Substantially affects the use and enjoyment of adjacent lands (e.g. reduces light access, privacy, and views).	The proposal does not affect the use and enjoyment of adjacent lands. The front parcel line in this case is 11.6 m back from the edge of pavement.
Requires a frontage variance to permit greater gross floor area, with the exception of a parcel fronting a cul-de-sac.	Not Applicable.
Requires a height variance to facilitate gross floor area exclusion.	Not Applicable.

Results in unacceptable impacts on services (e.g. roads, utilities, snow clearing operations).	The proposal does not affect municipal services. The front parcel line in this case is 11.6 m back from the edge of pavement.
--	---

BUDGET CONSIDERATIONS

Development Variance Permit application fees provide for recovery of costs associated with processing this application. Building permit fees will be applicable at the time of construction.

COMMUNITY ENGAGEMENT AND CONSULTATION

A Development Variance Permit sign has been posted on the property since August 16th, 2015. Notices were sent to surrounding property owners on September 4th, 2015. As of September 24th, 2015 no responses have been received.

SUMMARY

Development Variance Permit DVP 1111 proposes to convert an existing concrete retaining structure to a carport, revise the existing access stairway location, and extend one second floor balcony on the existing dwelling. A sign has been posted on site and notifications were sent to neighbours. No concerns have been raised. Therefore, this application has the support of municipal staff.

Respectfully submitted,

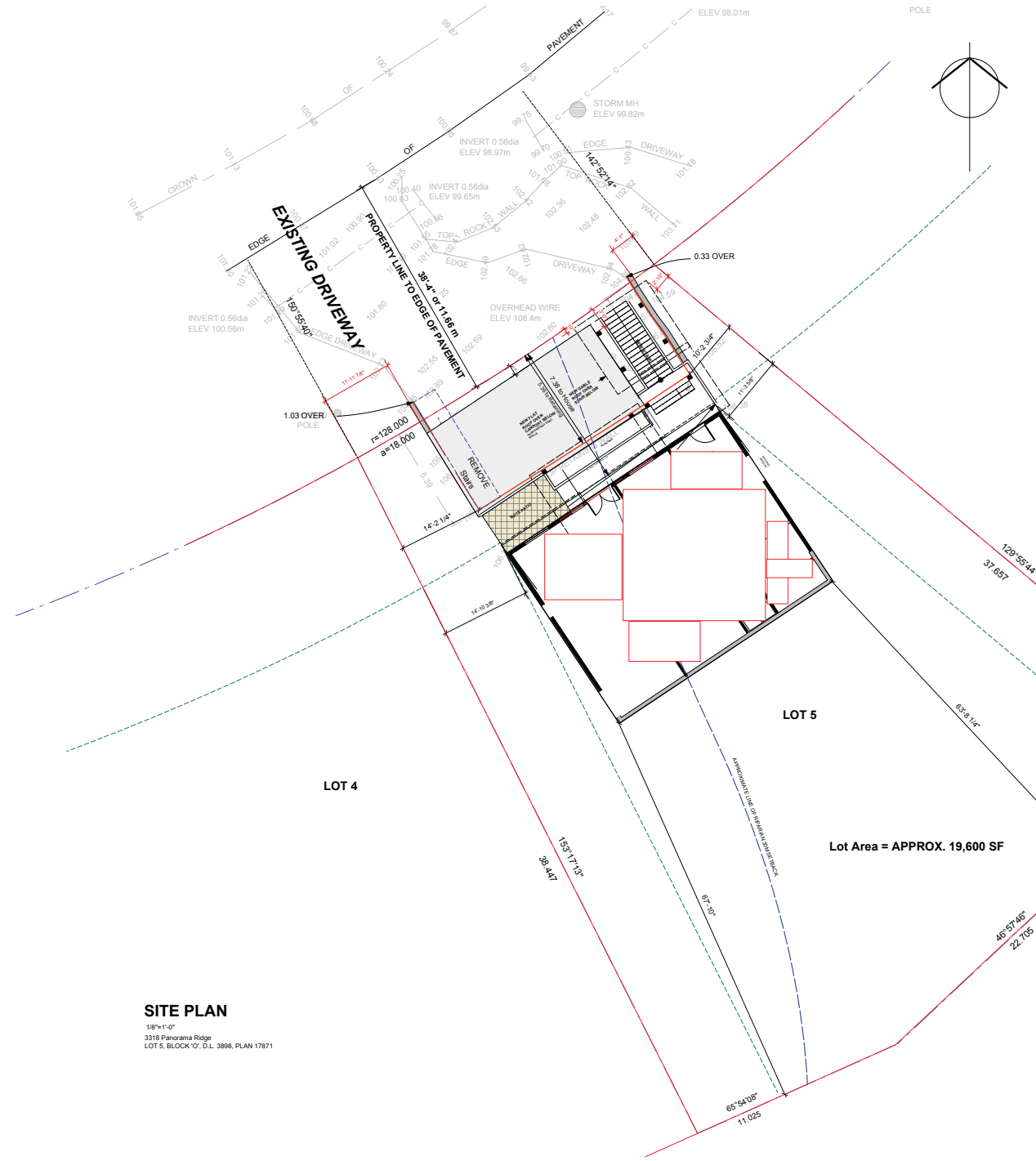
Roman Licko
PLANNING TECHNICIAN
for
Jan Jansen
GENERAL MANAGER OF RESORT EXPERIENCE

Location Plan



Subject Lands
3318 Panorama Ridge

APPENDIX B



SITE PLAN
1/8"=1'-0"
3318 Panorama Ridge
LOT 5, BLOCK 'Q', D.L. 3898, PLAN 17871

SITE INFORMATION		JULY 2015	
OWNER:	BEVERIDGE RESIDENCE		
CIVIC:	3118 PANORAMA RIDGE		
LEGAL:	LOT 5, BLK 'Q' DL 3898, PLAN 173871		
ZONING:	RS1 LOT AREA = 19600 SF		
	Required/permited	Proposed	
DENSITY	UNCHANGED	UNCHANGED	
GROSS FLOOR AREA	UNCHANGED	UNCHANGED	
SITE COVERAGE	MAX. 35%	15%	
SUITE	UNCHANGED	ONE - EXISTING	
SETBACKS	Front	7.6 M	SEE VARIANCE REQUESTS
	Sides	3.0 M	SEE VARIANCE REQUESTS
	Rear	3.0 M	35 m
Carport front Setback	Front	2.0m	1.0m
Carport Height		3.5m	<3.5M
HEIGHT		7.6 M	< 7.6 M
PARKING	3 REQUIRED	3 PROVIDED	
Carport	70 M2 OR 753 SF	514 SF	
RAR	YES	Report to be provided	
		PER RMOW MAPPING	

VARIANCES REQUESTED:
FRONT SETBACK TO PARKING (EXISTING PARKING ENCROACHES OVER FRONT PROPERTY LINE) Variance of 1.5m (from 1.5m to 0.0m)
PARKING STALL LENGTH: Variance of .14m (from 5.5m to 5.36m)
FRONT SETBACK TO CARPORT ROOF: Variance of 0.5m (from 1m to .5m)
FRONT SETBACK TO CARPORT SUPPORTS: Variance of .1m (from 2m to 1m)
FRONT SETBACK TO ENTRY STAIR SUPPORTS: Variance of 6.65 m (from 7.6m to 1.05m)
FRONT SETBACK TO ENTRY STAIR ROOF: Variance of 5.85 m (from 6.1m to .25m)
FRONT SETBACK TO UPPER FLOOR DECK SUPPORTS: Variance of 2.3m (from 7.6m to 5.3m)
FRONT SETBACK TO UPPER FLOOR DECK OVERHANG: Variance of 1.1m (from 6.1m to 5.0m) (Minor overhang proposed for weather protection.)
SIDE SETBACK TO ENTRY STAIR + EXISTING RETAINING: Variance of 1.8m (from 2m to 1.2m)
SIDE SETBACK TO ENTRY STAIR ROOF OVERHANG: Variance of 1.2m (from 2m to .8m)
CARPORT ROOF HEIGHT: Variance of .5 m (from 3.5m to 4.0 m)

THIS IS A PART 9 BUILDING OF RESIDENTIAL 'C' OCCUPANCY.
ALL WORK IS TO CONFORM TO BCBC 2015.

2	26/7/15	FOR DVPA	
1	19/5/15	FOR REVIEW	
No.	Date		Issue Notes

kat sullivan
DESIGN

Project Name: KAT SULLIVAN DESIGN
8401 Matterhorn Drive
Whistler BC V0N 1B8
kat.s@shaw.ca 604-932-6055

By using this document the client agrees that the consultant's liability for services is limited to the value of fees paid. The client agrees to indemnify and defend the consultant in the event of third party claims arising from negligence and/or errors as a result of services rendered.

Project Title: BEVERIDGE RESIDENCE
3318 PANORAMA RIDGE
WHISTLER

Sheet Title: **SITE PLAN**

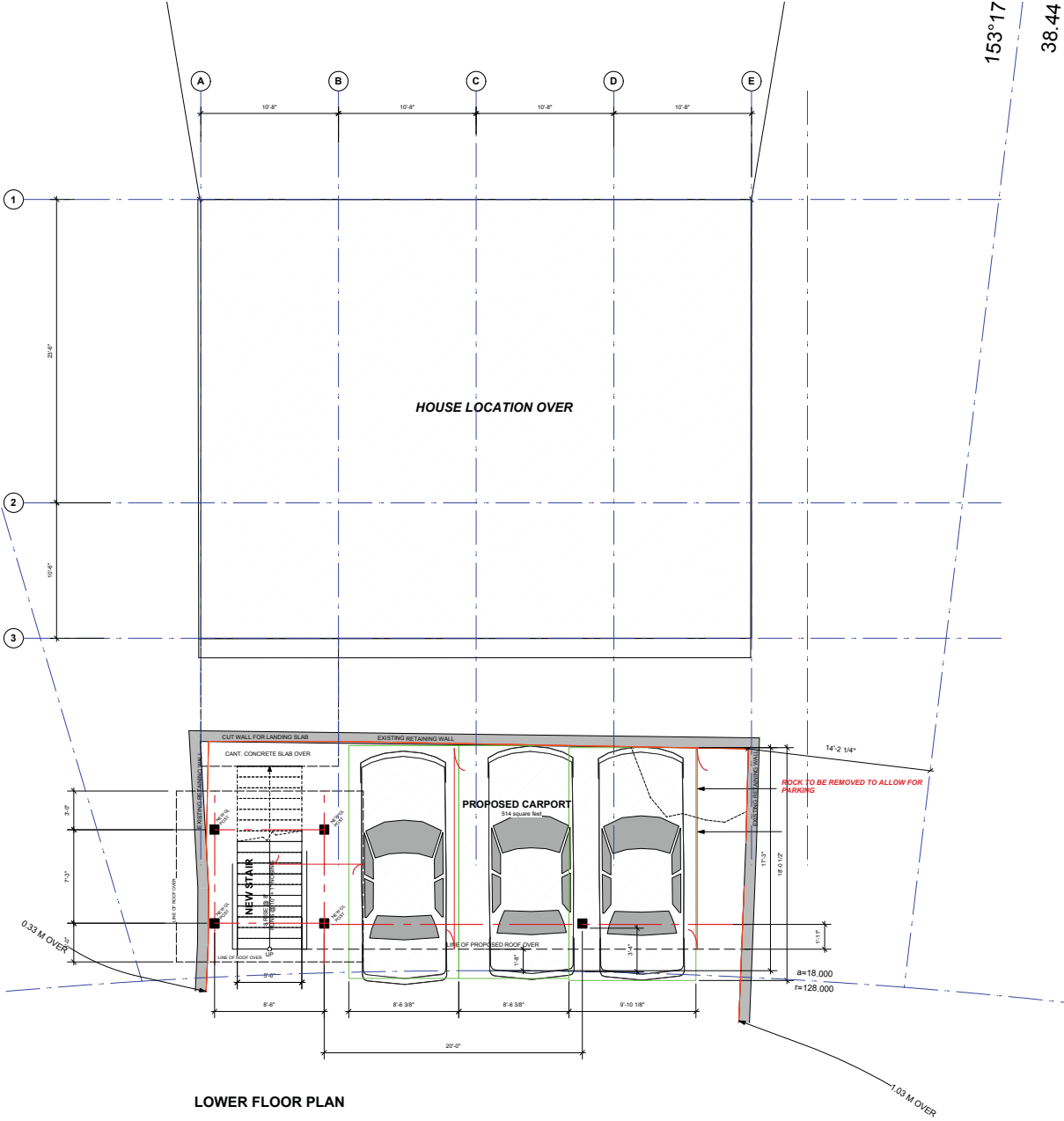
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Drawn By: KS	Scale	1/4" = 1'-0"
Checked By:	Sheet No.	1 of 6
Date: MAY 2015		
Plot Date: 09-02 BEVERIDGE		

THIS PLAN IS FOR VARIANCE APPLICATION ONLY.

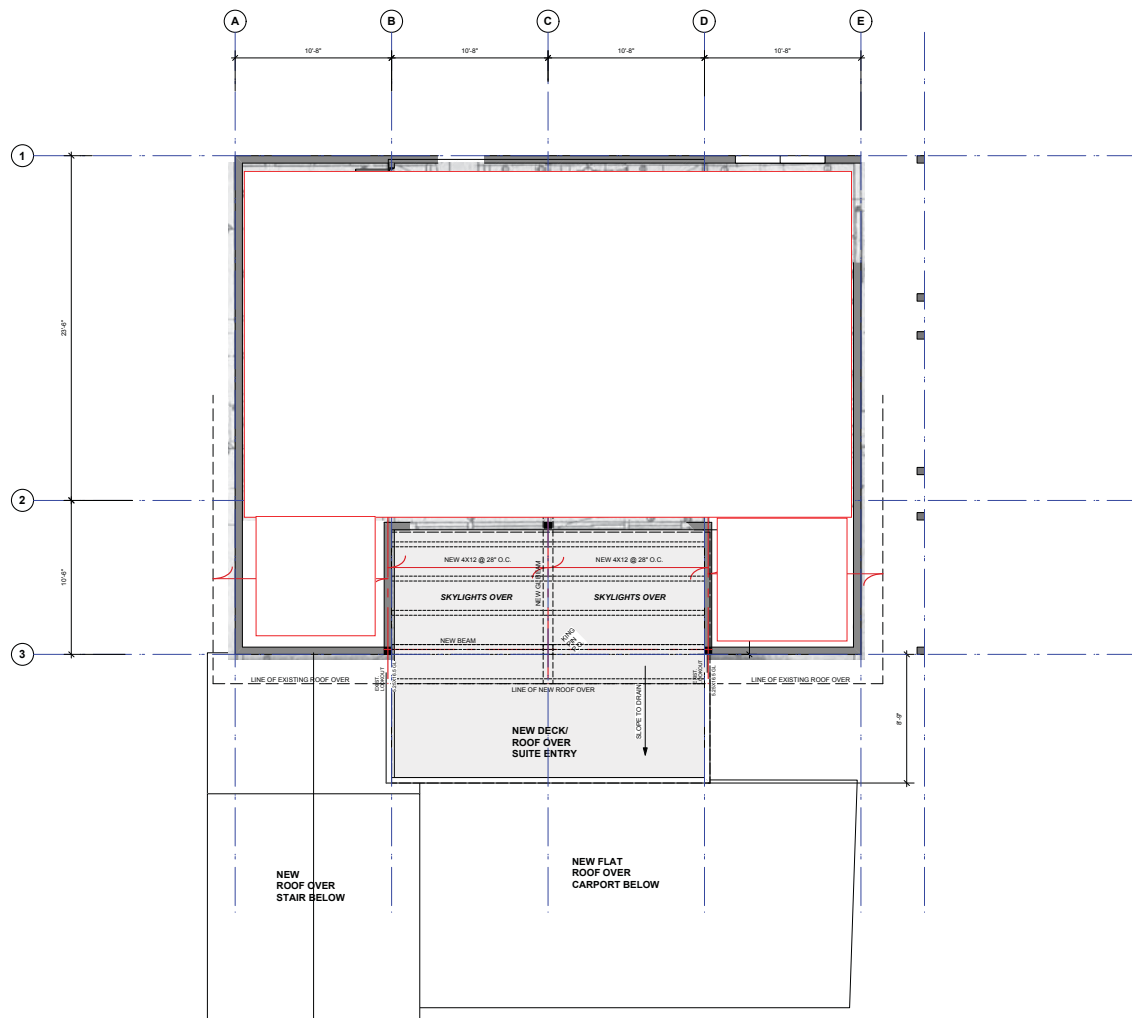
LOT 4

THIS IS A PART 3 BUILDING OF RESIDENTIAL 'C' OCCUPANCY.
ALL WORK IS TO CONFORM TO NBC 2015.

2	28/7/15	FOR DVPA	
1	19/5/15	FOR REVIEW	
No.	Date	Issue Notes	
<div>kat sullivan</div> <div>D E S I G N</div>			
KAT SULLIVAN DESIGN 8401 Matterhorn Drive Whistler BC V0N 1B8 kat.s@shaw.ca 604-932-6055			
By using this document the client agrees that the consultant's liability for services including negligence and omissions is strictly limited to the value of fees paid. The client agrees to indemnify and defend the consultant in the event of third party claims alleging negligence and/or injury as a result of services rendered.			
Project Title BEVERIDGE RESIDENCE 3318 PANORAMA RIDGE WHISTLER			
Sheet Title LOWER FLOOR PLAN			
Project Manager		Project to 09-02	
Created By KS		Scale 1/4" = 1'-0"	
Reviewed By		Sheet No.	
Date MAY 2015		2	
Last Modified 09-02 BEVERIDGE		6	



LOWER FLOOR PLAN

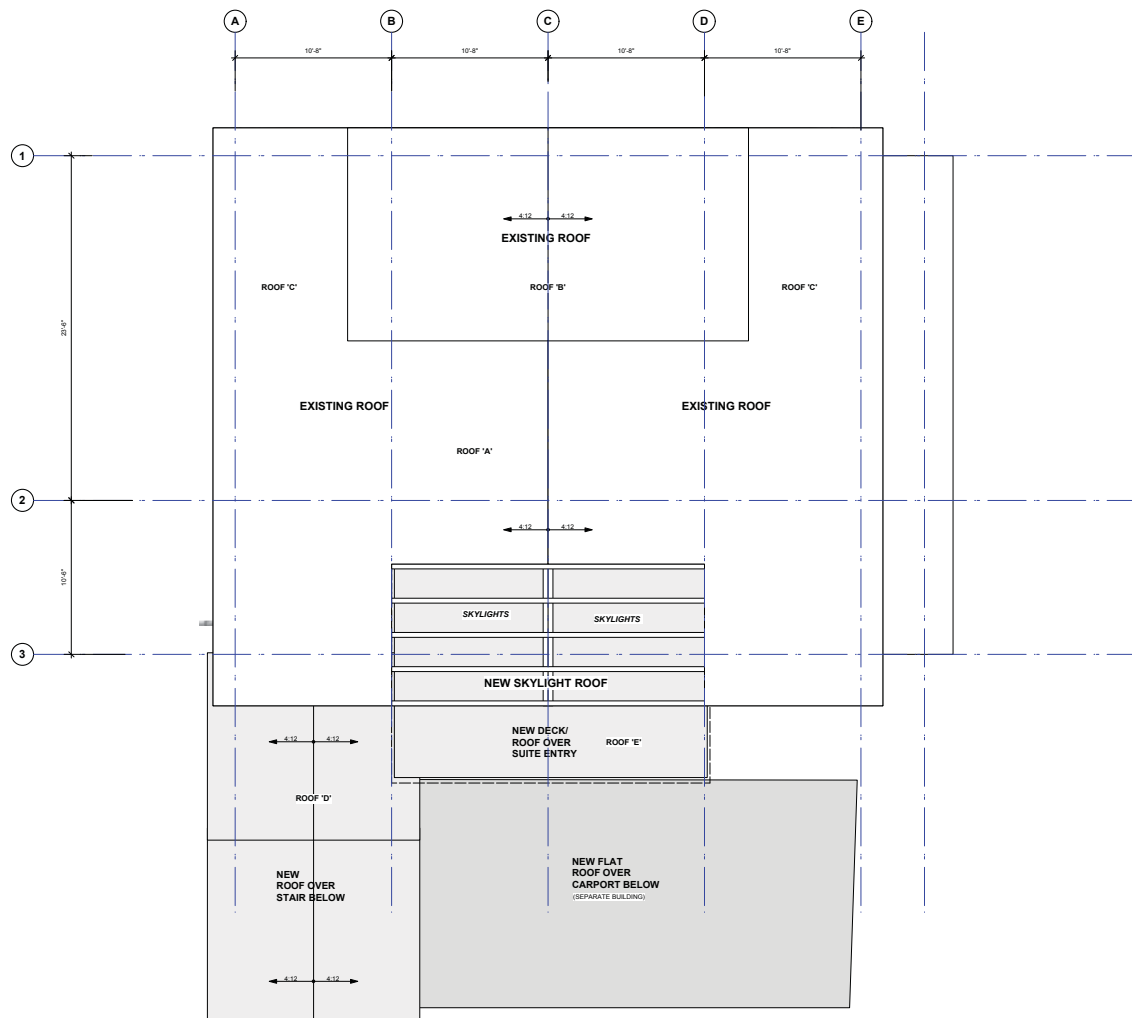


UPPER FLOOR PLAN

THIS PLAN IS FOR VARIANCE APPLICATION ONLY.

THIS IS A PART 3 BUILDING OF RESIDENTIAL 'C' OCCUPANCY.
ALL WORK IS TO CONFORM TO NBC 2015.

2	28/7/15	FOR DVPA
1	19/5/15	FOR REVIEW
No.	Date	Issue Notes
kat sullivan DESIGN		
Design Firm KAT SULLIVAN DESIGN 8401 Matterhorn Drive Whistler BC V0N 1B8 kat.s@shaw.ca 604-932-6055		
By using this document the client agrees that the consultant's liability for services, including negligence and omissions, is strictly limited to the value of fees paid. The client agrees to indemnify and defend the consultant in the event of third party claims arising from negligence and/or errors as a result of services rendered.		
Project Title BEVERIDGE RESIDENCE 3318 PANORAMA RIDGE WHISTLER		
Sheet Title UPPER FLOOR PLAN		
Project Manager	Project to 09-02	
Drawn By KS	Date	1/4" = 1'-0"
Reviewed By	Sheet No.	4
Date MAY 2015	of 6	
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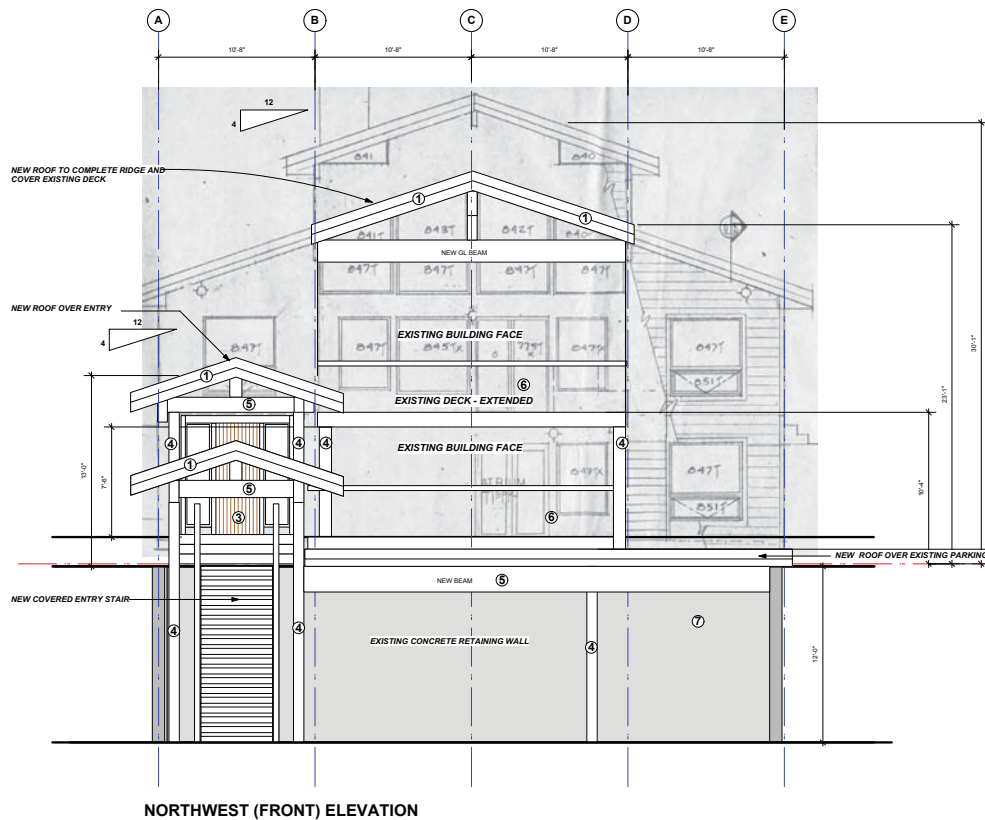


ROOF PLAN

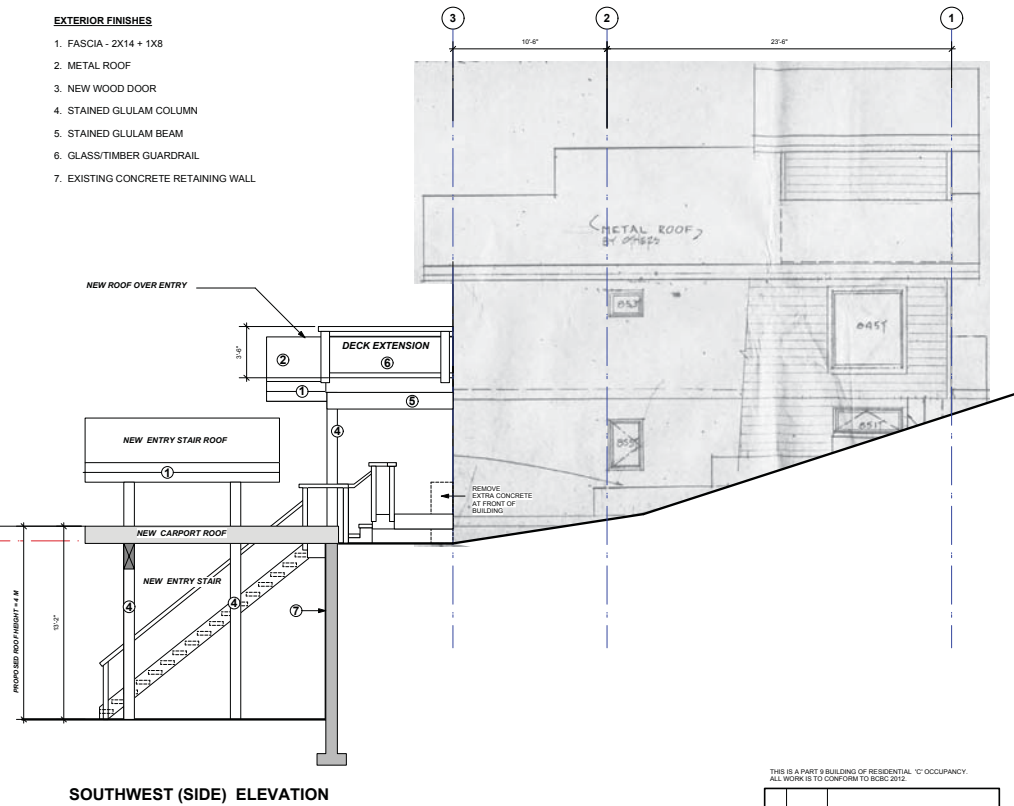
THIS PLAN IS FOR VARIANCE APPLICATION ONLY.

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ALL WORK IS TO CONFORM TO NBC 2015.

2	28/7/15	FOR DVPA	
1	19/5/15	FOR REVIEW	
No.	Date	Issue Notes	
kat sullivan D E S I G N			
Design Firm: KAT SULLIVAN DESIGN 8401 Matterhorn Drive Whistler BC V0N 1B8 kat.s@shaw.ca 604-932-6055			
By using this document the client agrees that the consultant's liability for services, including negligence and omissions, is strictly limited to the value of fees paid. The client agrees to indemnify and defend the consultant in the event of third party claims arising from negligence and/or errors as a result of services rendered.			
Project Title: BEVERIDGE RESIDENCE 3318 PANORAMA RIDGE WHISTLER			
Sheet Title: ROOF PLAN			
Project Manager:		Project ID: 09-02	
Drawn By: KS	Date:	Scale: 1/4" = 1'-0"	
Reviewed By:	Sheet No.:	5	
Date: MAY 2015		of 6	
Calc. Date: 09-02 BEVERIDGE			



- EXTERIOR FINISHES**
1. FASCIA - 2X14 + 1X8
 2. METAL ROOF
 3. NEW WOOD DOOR
 4. STAINED GLULAM COLUMN
 5. STAINED GLULAM BEAM
 6. GLASS/TIMBER GUARDRAIL
 7. EXISTING CONCRETE RETAINING WALL



EXISTING (FRONT) PHOTO

THIS IS A PART 8 BUILDING OF RESIDENTIAL 'C' OCCUPANCY.
ALL WORK IS TO CONFORM TO NBC 2015.

2	20/7/15	FOR DVPA	
1	19/5/15	FOR REVIEW	
No.	Date	Issue Notes	
<div>kat sullivan</div> <div>D E S I G N</div>			
KAT SULLIVAN DESIGN			
8401 Matterhorn Drive			
Whistler BC V0N 1B8			
kat.s@shaw.ca 604-932-6055			
By using this document the client agrees that the consultant's liability for services including negligence and omissions is strictly limited to the value of fees paid. The client agrees to indemnify and defend the consultant in the event of third party claims alleging negligence and/or injury as a result of services rendered.			
BEVERIDGE RESIDENCE			
3318 PANORAMA RIDGE			
WHISTLER			
ELEVATIONS			
Project Manager		Project ID	
		09-02	
Drawn By		Scale	
KS		1/4" = 1'-0"	
Reviewed By		Sheet No.	
		6	
Date		_____ of _____	
MAY 2015		6	
CMT 10/2/2016			
09-02 BEVERIDGE			

Site Photos of Existing Conditions
DVP 1111 – 3318 Panorama Ridge





REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015
FROM: Resort Experience
SUBJECT: DVP 1107 – 8617 LAUREN WOOLSTENCROFT WAY – BUILDING SETBACK
VARIANCES

REPORT: 15-114
FILE: DVP 1107

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION

That Council approve the issuance of Development Variance Permit DVP1107 for the proposed development located at 8617 Lauren Woolstencroft Way to vary the setbacks as follows for a proposed detached dwelling:

- a) Vary the rear setback from 6 metres to 3 metres,
- b) Vary the rear roof overhang setback from 5 metres to 2.54 metres,

as shown on the plans prepared by Murdoch and Company Architecture and Planning Ltd, dated August 20, 2015, attached as Appendix B to Administrative Report No. 15-114.

REFERENCES

Location: 8617 Lauren Woolstencroft Way
Legal: Strata Lot 11, District Lot 4755, Strata Plan EPS210, NWD
Owner: Jean Catafard
Zoning: RM55 zone (Residential Multiple Fifty-Five)

Appendices: "A" Location Map
"B" Proposed Plans
"C" Landscape Plan

PURPOSE OF REPORT

This report seeks Councils consideration for variances to "Zoning and Parking Bylaw 303, 1983" for rear setback variances for a proposed detached dwelling at 8617 Lauren Woolstencroft Way.

Section 922 of the *Local Government Act* allows Council to vary regulations contained in a zoning bylaw by way of a development variance permit.

DISCUSSION

The property that is the subject of the variance requests is located at 8617 Lauren Woolstencroft Way in the Baxter Creek subdivision (Appendix A). The lot is currently undeveloped. The intent of the variance requests is to have a more consistent setback condition to match adjacent properties and to avoid a narrow dwelling that would be created by adhering to the RM55 zone setbacks.

The subject property is at the end of a lane with a short “panhandle” condition adjacent to the road. This short section is considered the front of the lot. The lot is long and narrow with the south side adjacent to a street below. There is no vehicle access to the lot from the street below. The west side of the lot is adjacent to Baxter Creek and is completely situated outside of the Streamside Protection and Enhancement Area. The larger rear setback of 6 metres required by the zoning on the west side (Baxter Creek side) only serves to stretch out the building envelope forcing the home owner to spread the house footprint over longer steeper terrain. The longer narrower building envelope is not consistent with any of the other lots and it promotes building across a longer footprint rather than a more compact design.

The “frontage determination” determines what is considered the “front parcel line” in Zoning Bylaw 303. The front parcel line for any parcel having two road frontages, as is the case with the subject property, is the “shortest boundary of a corner parcel abutting on a highway.” The short panhandle access is considered to be the front parcel line.

The requested variances are described in the table below and illustrated on the proposed plans in Appendix B.

Variance Request	Zoning and Parking Bylaw No. 303, 1983 regulation												
1. Vary the setbacks as follows for the proposed detached dwelling: a) Vary the rear setback from 6 metres to 3 metres. b) Vary the rear roof overhang setback from 5 metres to 2.54 metres.	Section 12.55.6 <u>Setback</u> 55.6 The minimum permitted building setbacks from parcel boundaries are as follows: <table><tr><th>Type of building</th><th>Front</th><th>Rear</th><th>Side</th></tr><tr><td>Detached or duplex dwelling</td><td>7.6 metres</td><td>6 metres</td><td>3 metres</td></tr><tr><td>Townhouse</td><td>7.6 metres</td><td>7.6 metres</td><td>7.6 metres</td></tr></table> Section 5.7.1(a) The following features are permitted in setback areas: (a) eaves, gutters, cornices, sills, belt courses, chimneys, heating or ventilating equipment provided such projections do not project more than 1 metre, measured horizontally, into a required setback area: (Bylaw No. 916)	Type of building	Front	Rear	Side	Detached or duplex dwelling	7.6 metres	6 metres	3 metres	Townhouse	7.6 metres	7.6 metres	7.6 metres
Type of building	Front	Rear	Side										
Detached or duplex dwelling	7.6 metres	6 metres	3 metres										
Townhouse	7.6 metres	7.6 metres	7.6 metres										

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Built Environment	The built environment is attractive and vibrant, reflecting the resort community's character, protecting viewscales and evoking a dynamic sense of place	The proposed variance requests will help protect viewscales and be consistent with the existing neighbourhood character.
	Limits to growth are understood and respected	The front and side setbacks are respected. There are rear setback variance requests.

W2020 Strategy	AWAY FROM Descriptions of success that resolution moves away from	Mitigation Strategies and Comments
	N/A	

OTHER POLICY CONSIDERATIONS

DVP Criteria

Staff have established criteria for consideration of development variance permits. The proposed variances are considered to be consistent with the criteria as described in the table below.

Potential Positive Impacts	Comment
Complements a particular streetscape or neighbourhood.	Staff consider that this project will fit with the character of the neighbourhood. This property is at the end of a street and backs onto Baxter Creek. The lot frontage restricts the building envelope to be long and narrow but with the variance requests the building envelope would be more consistent with the existing streetscape.
Works with the topography on the site, reducing the need for major site preparation or earthwork.	It is a sloped site so it assumed that earthworks will be required. No retaining wall variances are requested and the client will work with existing zoning regulations with regard to site preparation or earthwork.
Maintains or enhances desirable site features, such as natural vegetation trees and rock outcrops.	Landscaping proposed on western edge of subject property to create a vegetative barrier adjacent to Baxter Creek (Appendix C).
Results in superior siting with respect to light access resulting in decreased energy requirements.	N/A
Results in superior siting with respect to privacy.	The dwelling respects the required building setbacks on the sides and front of the property.
Enhances views from neighbouring buildings and sites.	Proposed rear variance request will allow for a more compact design rather than a long and narrow building envelope.

Potential Negative Impacts	
Is inconsistent with neighbourhood character.	N/A
Increases the appearance of building bulk from the street or surrounding neighbourhood.	Staff do not consider that the building bulk from the street or surrounding neighbourhood will increase significantly.
Requires extensive site preparation.	No extensive site preparation required.
Substantially affects the use and enjoyment of adjacent lands. (e.g. reduces light access, privacy, and views.	Staff do not consider that this dwelling will substantially affect adjacent lands. The front and side setbacks are respected and the proposed dwelling will not move closer to adjacent developed lots. Views of Green Lake and Whistler/Blackcomb are to the southeast.
Requires a frontage variance to permit greater gross floor area, with the exception of a parcel fronting a cul-de-sac.	N/A
Requires a height variance to facilitate gross floor area exclusion.	N/A.
Results in unacceptable impacts on services (e.g. roads, utilities, snow clearing operations.	No impact to roads, snow clearing operations or utility services.

Riparian Areas Regulation

The proposed variance requests respect the *Riparian Areas Regulation*. Cascade Environmental Resource Group has provided a riparian assessment and the report states that the entire subject property is outside of the Streamside Protection Enhancement Area (SPEA) and it has no concerns regarding the alteration of the setbacks within the property boundary.

ZONING AND PARKING BYLAW 303

The requested variances to “Zoning and Parking Bylaw 303, 1983” are described in the Discussion section of this report. The proposed development meets all other regulations of “Zoning and Parking Bylaw 303, 1983.”

The floodproofing setback of 15 metres and the flood construction level for proposed detached dwelling on the subject property are being met.

BUDGET CONSIDERATIONS

There are no significant budget implications with this proposal. Development Variance Permit application fees provide for recovery of costs associated with processing this application.

COMMUNITY ENGAGEMENT AND CONSULTATION

A sign describing DVP 1107 is posted on the property.

Notices were sent to surrounding property owners on September 4, 2015. At the time of writing this report no letters have been received from neighbours.

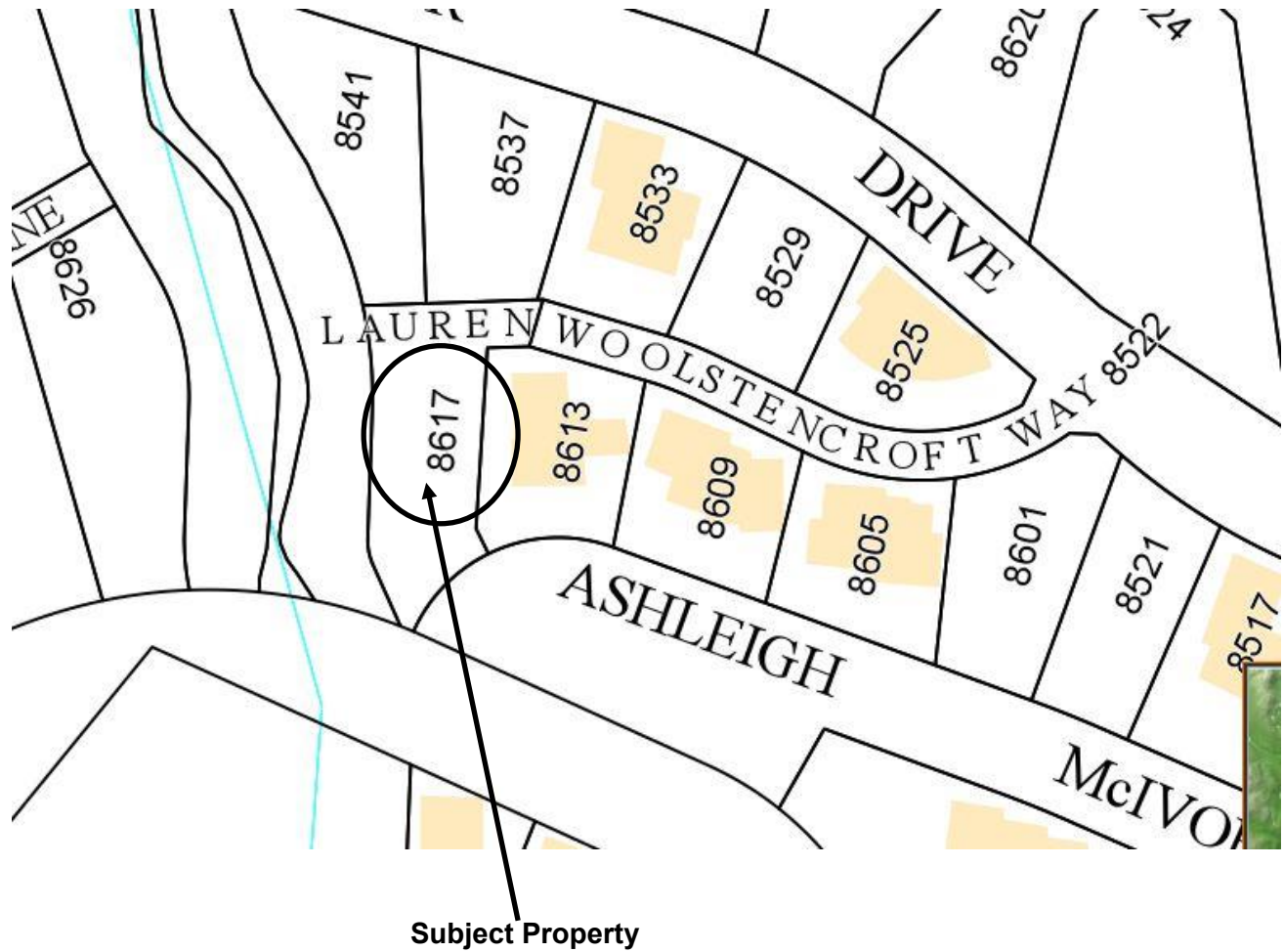
SUMMARY

Development Variance Permit DVP 1107 proposes variances to “Zoning and Parking Bylaw 303, 1983” for rear setback variances at 8617 Lauren Woolstencroft Way.

Respectfully submitted,

Kevin Creery
PLANNING ANALYST
for
Jan Jansen
GENERAL MANAGER OF RESORT EXPERIENCE

LOCATION MAP



PROJECT DIRECTORY

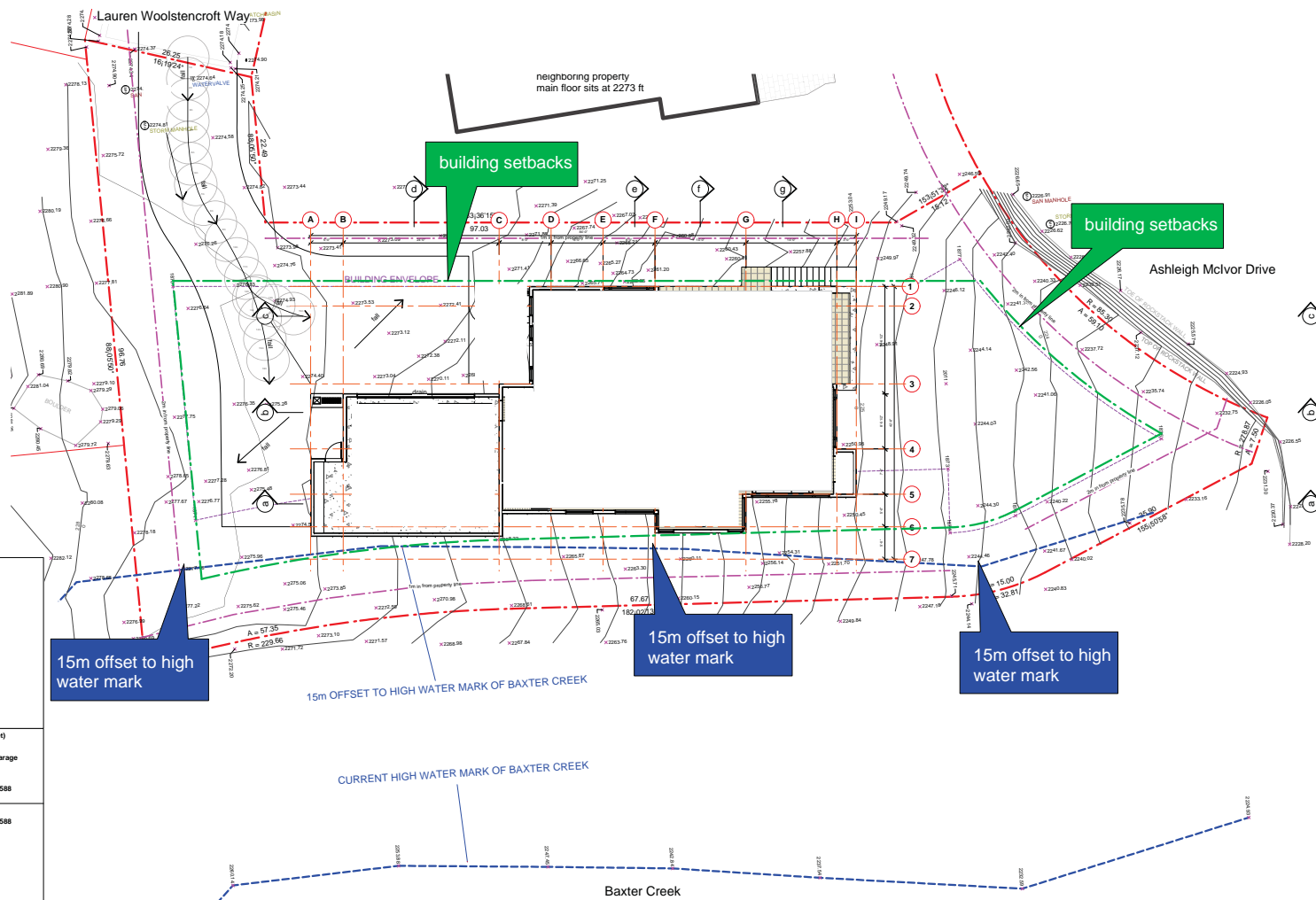
Client:
Jean Catafard

Project Architect:
Murdoch + Co.
#106-4319 Main St.
Whistler, B.C.
V0N 1B0
Brent Murdoch

Surveyor:
Doug Bush
18-1370 Alpha Lake Road
Whistler, B.C.
V0N 1B1

(T) (604) 905-6992
(E) murdoch@telus.net

(T) (604) 932 3314



DEVELOPMENT STATS

Occupancy : Residential Group C
Civic Address: 3617 Lauren Woolstencroft Way, Whistler, B.C.
Legal: LOTS 16-20, BLOCK 4, DL486, GP1, NWD, PLAN 3960
Zone: RM 55

Designed Under Part 9 2012 BC Building Code

Site Area: 10049 sf
Gross Floor Area Permitted: 3517.15 sf
site area x 0.35

Area calculation for MUNICIPAL GROSS FLOOR AREA only (measured in square feet)

	Residential	Mechanical	Garage
Lower Floor	1204	excluded	177
Main Floor	1903	27	588
Upper Floor	935		

TOTAL GFA: 2438 204 588

Building Area at Main Floor 2570

Site Coverage 25.575 %

MAX allowed 35%

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Issued For: Date:
DVP - 20 August 2015

No: Revision: Date:

CONSTRUCTION LEVELS

UPPER FLOOR
top of sheathing
+2281.542 ft

MAIN FLOOR
top of sheathing
+2271.5 ft

LOWER FLOOR
top of slab
+2262.458 ft



Title
SITE PLAN

Project
CATAFARD RESIDENCE
8617 LAUREN WOOLSTENCROFT WAY., WHISTLER, BC

MURDOCH + COMPANY
ARCHITECTURE + PLANNING LTD.
#106-4319 Main Street
P.O. Box 1394
Whistler, B.C. V0N 1B0
Ph. 905-6992 Fax 905-6993
e-mail murdoch@telus.net

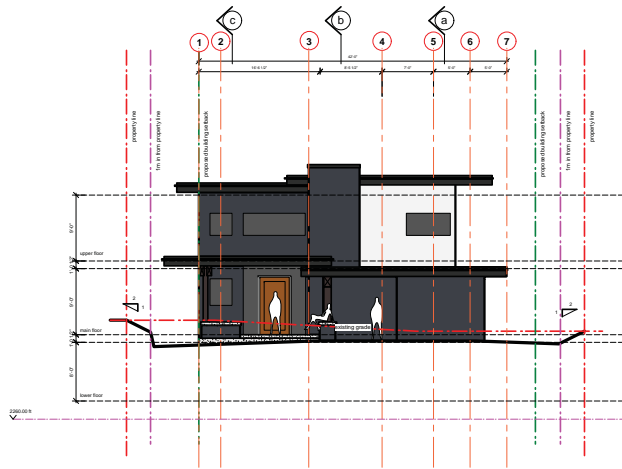
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Drawn By: Scale:

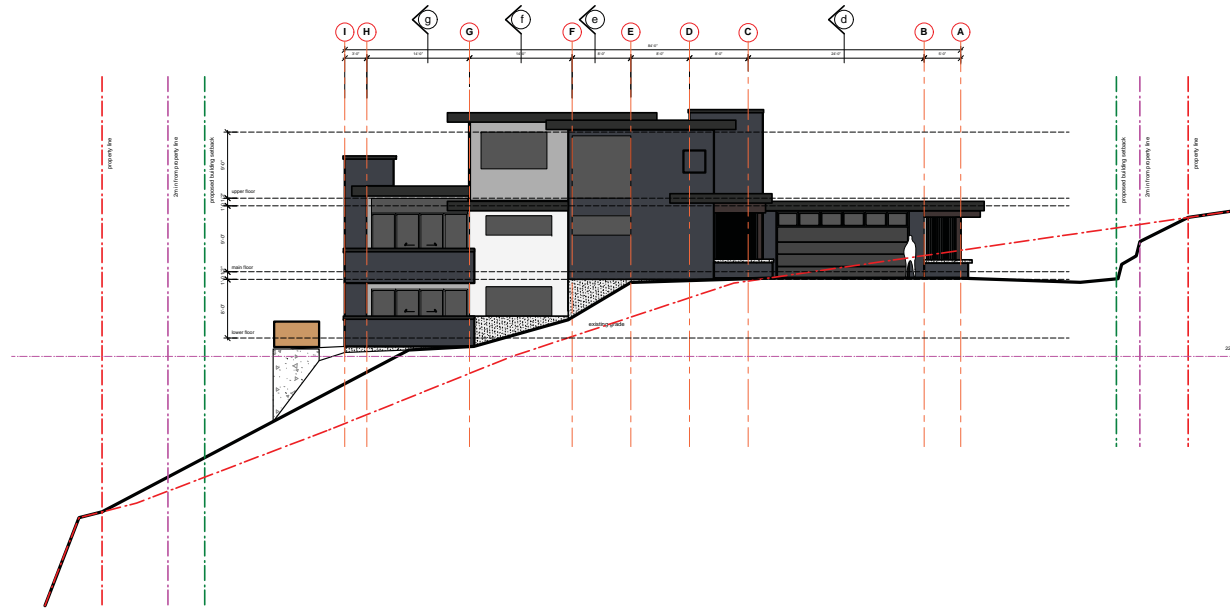
BM/DS as shown

Project No: Sheet No:

15.07 **A-1.1**



1 North Elevation
1/2" = 1'-0" imperial



1 East Elevation
1/2" = 1'-0" imperial

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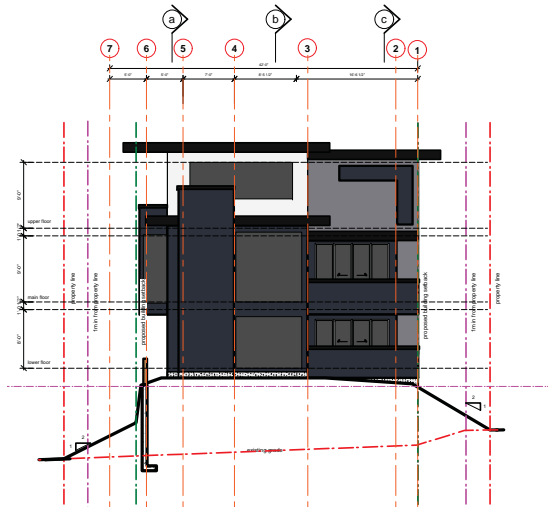
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Title
ELEVATIONS
Project
CATAFARD RESIDENCE
8617 LAUREN WOOLSTEN, WHISTLER, BC

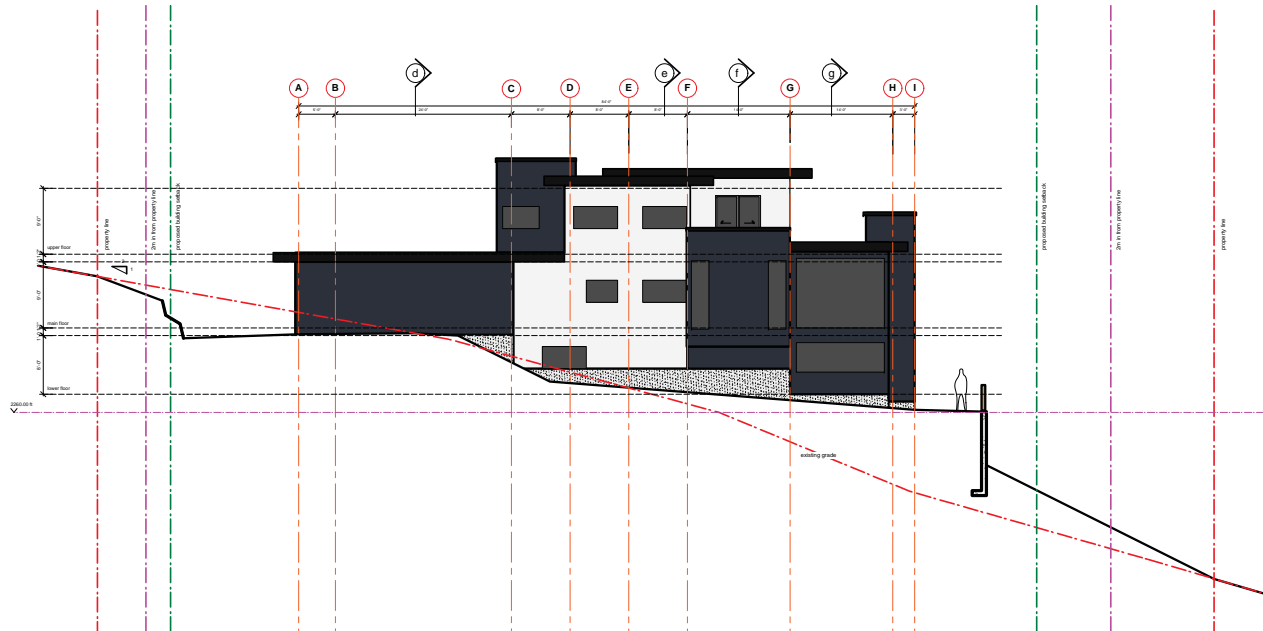
MURDOCH+COMPANY
ARCHITECTURE + PLANNING LTD.
#106-4319 Main Street
P.O. Box 1394
Whistler, B.C. V0N 1B0
Ph: 905-6992 Fax 905-6993
e-mail: murdoch@telus.net

Sealed By: _____

Drawn By:	Scale:
BM/ DS	as shown
Project No:	Sheet No:
15.07	A-3.1



1 South Elevation
1/2" : 1'-0" Imperial



1 West elevation
1/2" : 1'-0" Imperial

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DVP - 20 August 2015

No: _____ Revision: _____ Date: _____

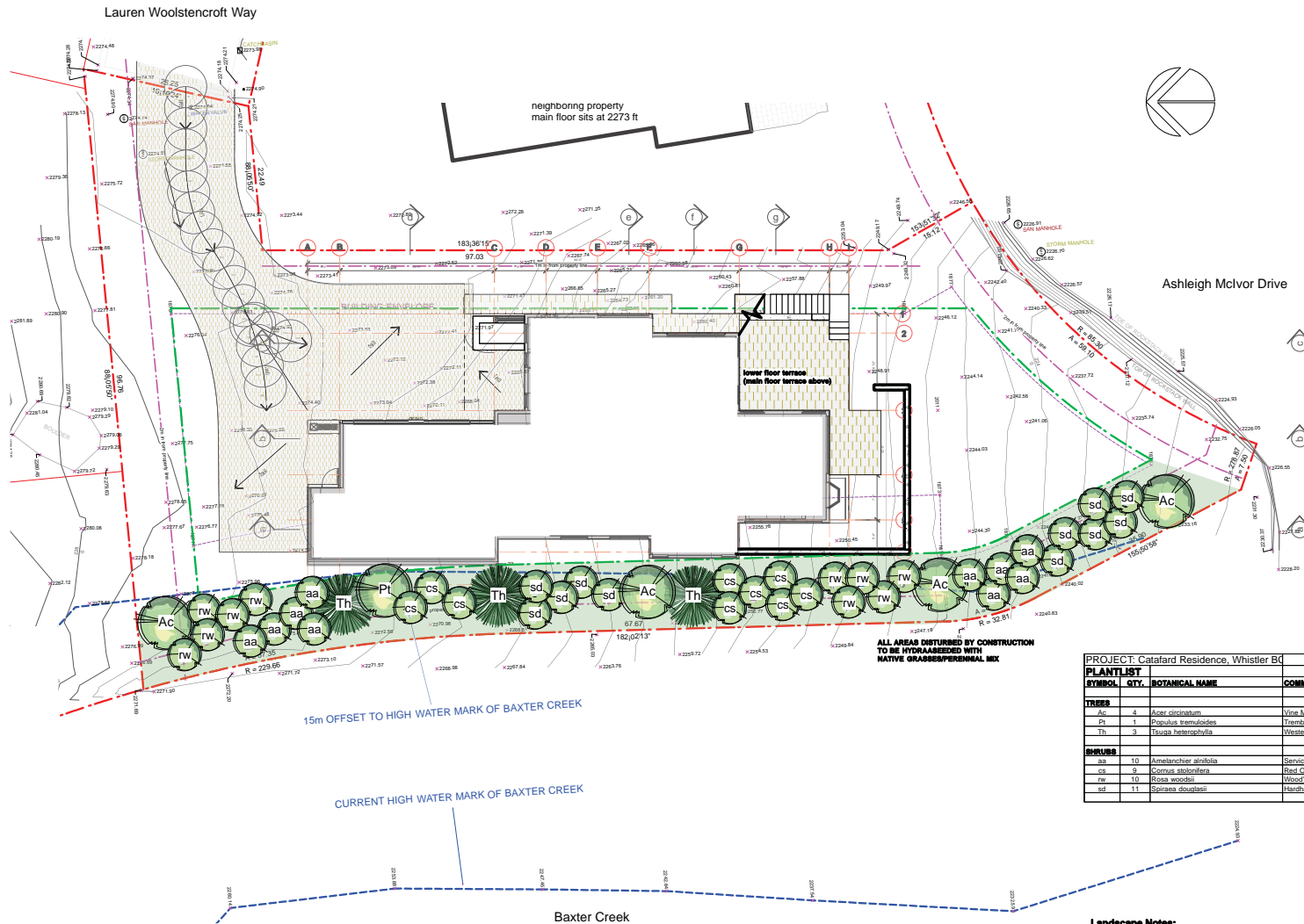
△

Title
ELEVATIONS
Project
CATAFARD RESIDENCE
8617 LAURENWOOLSTENCROFT WAY, WHISTLER, BC

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e-mail murdoch@blue.net

Sealed By: _____

Drawn By:	Scale:
BM/ DS	as shown
Project No:	Sheet No:
15.07	A-3.2



PROJECT: Catafard Residence, Whistler BC					SEPT. 17, 2016
PLANTLIST					
SYMBOL	SITY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING NOTES
TREES					
Ac	4	Acer circinnatum	Vine Maple (multistem)	1.25 m ht.	3 trunk min.
Pi	1	Populus tremuloides	Trembling Aspen	15 cm cal.	
Th	3	Thuja heterophylla	Western Hemlock	2.5 m ht.	
SHRUBS					
Ba	10	Amelanchier alnifolia	Servicberry	#2	native
Cs	9	Cornus stolonifera	Red Osier Dogwood	#2	native
Rv	10	Rosa woodsii	Wood's Rose	#2	native
sd	11	Spiraea douglasii	Hardhack/Steepshrub	#2	native

Landscape Notes:
1. All landscape plant material and landscape installation to BC Landscape Standards. See itemized Plant List.
2. All landscape construction to conform to the current edition of the BC Landscape Standards. Maintain a copy on site.
3. Irrigation system to be installed to the current edition of ISIRC available at: <http://www.irrigation.com>. Maintain a copy on site.
4. Plant quantities in the plant list are for convenience only. **Contractor is responsible for material quantities for all areas indicated on plan as specified site and spacing.**
5. Landscape architect to receive 48 hour notice for review of planting layout prior to installation.

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DVP 18 Sep 2015

No: _____ Revision: _____ Date: _____

CONSTRUCTION LEVELS
UPPER FLOOR
top of sheathing
+2281.542 ft
MAIN FLOOR
top of sheathing
+2271.5 ft
LOWER FLOOR
top of slab
+2262.458 ft

Title LANDSCAPE PLAN (WEST SIDE YARD)
Project **CATAFARD RESIDENCE**
8617 LAUREN WOOLSTENCROFT WAY., WHISTLER, BC

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e-mail murdoch@telus.net

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Drawn By: _____ Scale: _____
BM/DS as shown
Project No: _____ Sheet No: _____
15.07 **L-1.1**



REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015

REPORT: 15-115

FROM: Resort Experience

FILE: RZ1107

SUBJECT: ZONING REGULATIONS FOR SHIPPING CONTAINERS

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION

That Council consider giving first and second readings to Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015; and further,

That Council authorize the Corporate Officer to schedule a public hearing regarding Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015 and to advertise for same in the local newspapers; and further,

That Council direct staff to undertake a proactive enforcement and notification approach for properties with containers that are not in compliance with RMOW bylaws.

REFERENCES

Administrative Report 15-066: Council Report from May 12, 2015 (not attached).

PURPOSE OF REPORT

The purpose of this report is to present Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015 to Council for consideration of first and second readings, to authorize a public hearing and to direct staff to undertake a proposed proactive enforcement approach. The proposed bylaw amends the municipality's Zoning Bylaw to prohibit shipping containers in all residential neighbourhoods within the municipality, with the exception of limited temporary use for active construction and moving. The bylaw also proposes to add a general requirement for container venting to address safety concerns with container use.

DISCUSSION

Background

At the May 12th, 2015 Council meeting, Council passed a resolution directing staff to prepare a zoning amendment bylaw to prohibit the use of shipping containers in residential zones and regulate the use of shipping containers in other zones for conventional shipping and storage uses. The report presented to Council, Administrative Report 15-066 provided background information on the use of containers, specifically issues related to neighbourhood compatibility, health and safety, and existing municipal regulations governing their use.

This report presents the zoning amendment bylaw that has been prepared as directed by Council, for Council's consideration. It is based on further review of existing containers, their location and use, zoning classifications in the RMOW, building and fire code considerations, review of regulations of other communities, and legal review.

Proposed bylaw

The proposed bylaw has been prepared to focus on prohibition of shipping containers in all residential neighbourhoods in Whistler. The bylaw prohibits this use in the following zones which are primarily zoned for residential and accommodation uses:

1. SECTION 11 RESIDENTIAL ZONES
2. SECTION 12 MULTIPLE RESIDENTIAL ZONES
3. SECTION 14 TOURIST ACCOMMODATION ZONES
4. SECTION 15 TOURIST PENSION ZONES
5. SECTION 16 LANDS NORTH ZONES

The proposed bylaw allows certain temporary uses of containers as follows:

- Containers for construction-related storage that are placed on active construction sites where such construction is authorized under a valid building permit.
- A single container, owned by a licensed moving company to facilitate moving a household or business for up to 14 days.
- Containers placed on a parcel or highway to be used in conjunction with the construction or repair of public infrastructure.
- Containers placed on a parcel or highway to be used temporarily as part of an RMOW-approved special event.

Staff has reviewed and is not proposing to change the use of shipping containers in any other zones from currently existing regulations.

Safety regulations

Containers are already subject to a number of regulations in the BC Building Code and Fire Code. The Zoning Bylaw also prohibits installing services, such as wiring or plumbing, in shipping containers. These rules will not change with the adoption of the proposed bylaw. Additionally, a new rule requiring containers to be vented is proposed. This rule is a precautionary measure intended to prevent containers from exploding by allowing the release of vapours through the vent..

Enforcement

After the May 12th Council meeting staff began collecting information on existing containers in Whistler. To date a number of containers have been identified many of which are in violation of existing zoning and/or health and safety rules.

Staff recommends that Council direct staff to take a proactive enforcement and compliance approach to pursue removal of containers from areas where they are not a permitted use, are in violation of existing bylaws or where safety infractions exist. Staff are proposing that property owners be given a reasonable period of time to address these violations.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Built Environment	The built environment is attractive and vibrant, reflecting the resort community's character, protecting viewsapes and evoking a dynamic sense of place.	New regulations for shipping containers will protect the visual aesthetic of residential areas.
Built Environment	Building design, construction and operation is characterized by efficiency, durability and flexibility for changing and long-term uses	Encouraging proper use of containers will contribute to properly constructed and durable building stock.
Built Environment	The new and renovated built environment has transitioned towards sustainable management of energy and materials.	Proposed regulations will still allow for responsible, creative and properly designed uses and recycling of shipping containers.
Built Environment	Streamlined policies, regulations and programs have helped to efficiently and effectively achieve green development.	
Health and Social	The resort community is safe for both visitors and residents, and is prepared for potentially unavoidable emergency events.	New venting rule will reduce hazards associated with shipping containers

OTHER REGULATIONS: OCP

OCP Policy	Comments
<p>4.4.1 The Municipality requires light industrial sites to support its local economy. Uses for a site or sites are to be suitable and appropriate to the resort. Industrial sites that are to be designated should:</p> <ul style="list-style-type: none"> - Be in close proximity to Highway 99. - Have little or no adverse visual impacts to adjacent properties or the Highway. - Have been previously disturbed with similar uses. - Be for light industry purposes and do not create adverse circumstances with adjacent and non-industry properties such as noise, obnoxious odours, glare, vibration, dust, or similar nuisance. 	The Zoning Bylaw reinforces this policy by prohibiting shipping containers in residential areas.

BUDGET CONSIDERATIONS

All costs of preparing the bylaw, and notifying property owners can be covered under the existing department budgets.

COMMUNITY ENGAGEMENT AND CONSULTATION

A public hearing will be required prior to adoption of the bylaw. Property owners with containers that are currently in violation of RMOW bylaws will be notified and given a period of time in which they must remove their containers.

SUMMARY

The proposed zoning amendment bylaw will uphold built form and health and safety objectives of Whistler 2020 and the Official Community Plan. Further, pursuing enforcement of existing bylaws against existing containers will address significant health and safety issues and reduce the number of undesired containers in Whistler. Staff recommend endorsing the recommendations in this report as proposed.

Respectfully submitted,

Jake Belobaba
SENIOR PLANNER
for
Jan Jansen
GENERAL MANAGER OF RESORT EXPERIENCE



REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015

REPORT: 15-116

FROM: Infrastructure Services

FILE: 546

SUBJECT: TRANSPORTATION ADVISORY GROUP (TAG) UPDATED TERMS OF REFERENCE

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Infrastructure Services be endorsed.

RECOMMENDATION

That Council adopt the updated Transportation Advisory Group (TAG) Terms of Reference dated October 6, 2015 attached to Administrative Report No. 15-116 as Appendix C;

That Council direct staff to advertise for applications for the three Citizen-at-Large positions on the TAG to be appointed by Council at the November 3, 2015 Closed meeting of Council;

That Council direct staff to contact the Whistler Chamber of Commerce, Tourism Whistler, Whistler Blackcomb, the Ministry of Transportation and Infrastructure and BC Transit to forward the names of their appointees to the Whistler Transportation Advisory Group by November 2, 2015; and further,

That Council direct the General Manager of Infrastructure Services to organize an inaugural meeting for TAG as soon as can be reasonably arranged.

REFERENCES

Appendix A – Whistler Comprehensive Transportation Strategy – Summary Report, 1999

Appendix B – Transportation Trigger Points Volume 1 – Summary Report, 1999

Appendix C – Transportation Advisory Group (TAG) Updated Terms of Reference

PURPOSE OF REPORT

The purpose of this report is to provide Council with updated Terms of Reference for the Transportation Advisory Group (TAG) and for staff to seek authorization to advertise for the Citizen-at-Large positions for TAG.

DISCUSSION

In the late 1990s the Resort Municipality of Whistler (RMOW) formed the Transportation Advisory Committee (TAG) to address transportation issues in the resort community. TAG was comprised of diverse stakeholders including local residents, municipal councillors, municipal staff, representatives from Whistler-Blackcomb, Tourism Whistler, BC Transit and the Ministry of Transportation and Infrastructure (previously called Ministry of Transportation and Highways). One of TAG's first actions was to develop a vision for the future of Whistler's transportation network, one which emphasized preferred travel modes, using existing infrastructure more

efficiently, and limited additional road capacity. This vision developed into the Whistler Comprehensive Transportation Strategy (WCTS), a 350 page document delivered in two phases with input from the Whistler community and extensive review from TAG over a three year period. Attached as Appendix A, is the brief 30 page Whistler Comprehensive Transportation Strategy Summary Report.

In the WCTS report, it was stated that its implementation would depend on actual growth (development, skier visits, traffic and congestion), funding availability, and municipal staff resources. Accurately measuring growth was critical to its goals. It is also important to note that the WCTS accepted some level of congestion, so traditional transportation trigger points such as reaching a specified demand volume were not applicable. Therefore, one of the first actions in implementing the WCTS was to develop a suite of transportation trigger points and proposed thresholds based on the duration, extent, intensity, and predictability of the congestion experienced in Whistler, for both off-season and peak-season periods. Eleven trigger points were developed to monitor change in travel behaviour within the community. See Appendix B – Transportation Trigger Points Volume 1 – Summary Report.

Since the WCTS and the Trigger Points were adopted in 2000 there have been many changes to Whistler's infrastructure:

- The Sea-to-Sky Highway from Vancouver to Whistler has received 600 million dollars in safety upgrades which included adding passing lanes and increasing speed limits resulting in increased vehicle capacity
- Major commercial redevelopment in Whistler Creek has occurred, including the construction of a parking garage for 1,300 day skier vehicles (covered and free to the user) in addition to the parking stalls required for the two new hotels in the area
- The upgrade of Village Skier Day Lots 1-5 including
 - implementing 700 user pay parking stalls in Lots 1, 2 and 3 closest to the mountain base
 - retaining 1,100 free stalls in lots 4 and 5, an extra 3-5 minute walk from the mountain base
- The addition of two major hotels (the Pan Pacific Village Centre and the Four Seasons) in the Village
- The addition of four new residential neighbourhoods (Spring Creek, Rainbow Estates, Nita Lake Estates, and Cheakamus Crossing) that are primarily resident-restricted housing projects
- The overall expansion and redesign of the local Whistler Transit System
- The addition of the Peak to Peak Gondola
- The hosting of many spring/summer/fall events and festivals leading to record breaking summer visitation numbers.

Finally, over five years that have passed since Whistler hosted the 2010 Olympic and Paralympic Games, the resort community has settled into a new rhythm, making this an ideal time to re-examine the traffic monitoring program and recalibrate the transportation models.

The Transportation Advisory Group has not met since 2012. Staff are recommending that TAG should be reconvened. In preparation for the inaugural meeting of the 2015 TAG, staff have retained their engineering consultants from Parsons (formerly Delcan) to recalibrate Whistler's transportation model with a study area extending from Horseshoe Bay to Pemberton.

Staff have updated the TAG Terms of Reference (attached as Appendix C) and reformatted the document using the Economic Partnership Initiative (EPI) Committee Terms of Reference as a template.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Transportation	<p>Transportation preferences and options are developed, promoted and supported so that inter-community mobility minimizes the negative impacts of traditional modes of travel.</p> <p>Residents, businesses and visitors are increasingly aware of the importance and benefits of preferred transportation choices.</p> <p>The transportation system efficiently meets both the short and long-term needs of all users.</p>	<p>Transportation congestion to, from within Whistler is once again becoming an issue both in the winter and in the summer. Transportation infrastructure and policy affect almost all parts of the resort community. The purpose of reconvening the Transportation Advisory Group, which is composed of a group of diverse stakeholders, is to review the current issues and advise Council on the assessment of, planning for and implementation of strategic options to resolve transportation-related issues affecting the community from a social, environmental and economic point of view. This will move us towards many of the descriptions of success outline in Whistler 2020.</p>
Partnership	Partners work together to achieve mutual benefit.	
Economic	<p>Effective partnerships with government and tourism organizations support economic health.</p> <p>The Whistler community shares resources and works together to compete in the destination resort market.</p> <p>Whistler is an integral part of the region's economy and works collaboratively with stakeholders.</p>	
Finance	<p>Senior levels of government recognize the value of the resort community and support its success.</p> <p>The long-term consequences of decisions are carefully considered.</p>	
Visitor Experience	Communications, travel and services are accessible, seamless and convenient at all phases of visitors' trips, from prior to departure until after returning home.	
Health and Social	Whistler is accessible and inclusive for community members and visitors with disabilities.	

Resident Affordability	Residents have access to affordable goods and services that meet their needs.	
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W2020 Strategy	AWAY FROM Descriptions of success that resolution moves us away from	Comments
Finance	Whistler lives within its financial means.	There are administration and staff costs associated with committees. However, these are considered minor compared to the benefits gained from a shared vision.

BUDGET CONSIDERATIONS

The administrative cost associated with starting up the Transportation Advisory Group will be covered through existing Infrastructure Services budget.

COMMUNITY ENGAGEMENT AND CONSULTATION

Staff are seeking Council authorization to advertise publically for applications for the three Citizens-at-Large positions. It is proposed that all applications received will be forwarded to Council for consideration at the November 3, 2015 Closed Council meeting. Council will then appoint the three Citizens-at-Large positions as outlined in the TAG Terms of Reference.

SUMMARY

The Transportation Advisory Group (TAG) was first formed in 1996 by the Council of the day to help address transportation issues in the resort community. TAG was comprised of diverse stakeholders including local residents, municipal councillors, municipal staff, representatives from Whistler-Blackcomb, Tourism Whistler, BC Transit and the Ministry of Transportation and Infrastructure (previously called Ministry of Transportation and Highways). TAG has not met since 2012. Staff are seeking Council authorization to update the TAG Terms of Reference and to reconvene the group in 2015.

Respectfully submitted,

Emma DaSanto
TRANSPORTATION DEMAND MANAGEMENT COORDINATOR
for
JOE PAUL, ASCT
GENERAL MANAGER OF INFRASTRUCTURE SERVICES

WHISTLER COMPREHENSIVE TRANSPORTATION STRATEGY

SUMMARY REPORT

TRANSPORTATION ADVISORY GROUP
RESORT MUNICIPALITY OF WHISTLER
SEPTEMBER 1999

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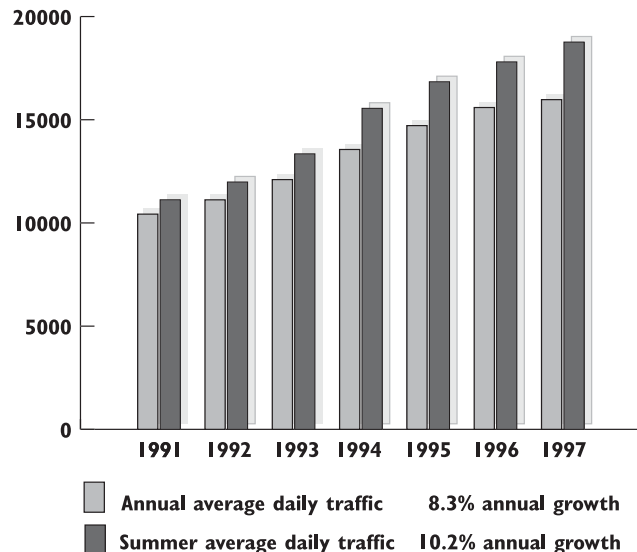
INTRODUCTION

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.

HIGHWAY 99 IN WHISTLER:
TRAFFIC GROWTH 1991-1998



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.

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.

TAG 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

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

- Plan and design all developments to minimize walking distances to transit, walkways and bicycle facilities and trails.
- Plan ski lift staging areas to minimize skier walking distances.
- 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

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

GOALS & OBJECTIVES

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.



GOALS & OBJECTIVES

- 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

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.

W H I S T L E R T R A N S I T

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 a 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.



TRAFFIC OPERATIONS

REDUCE CONGESTION IN WHISTLER BY IMPROVING TRAFFIC OPERATIONS

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

- 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

- 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

- 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

- 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:

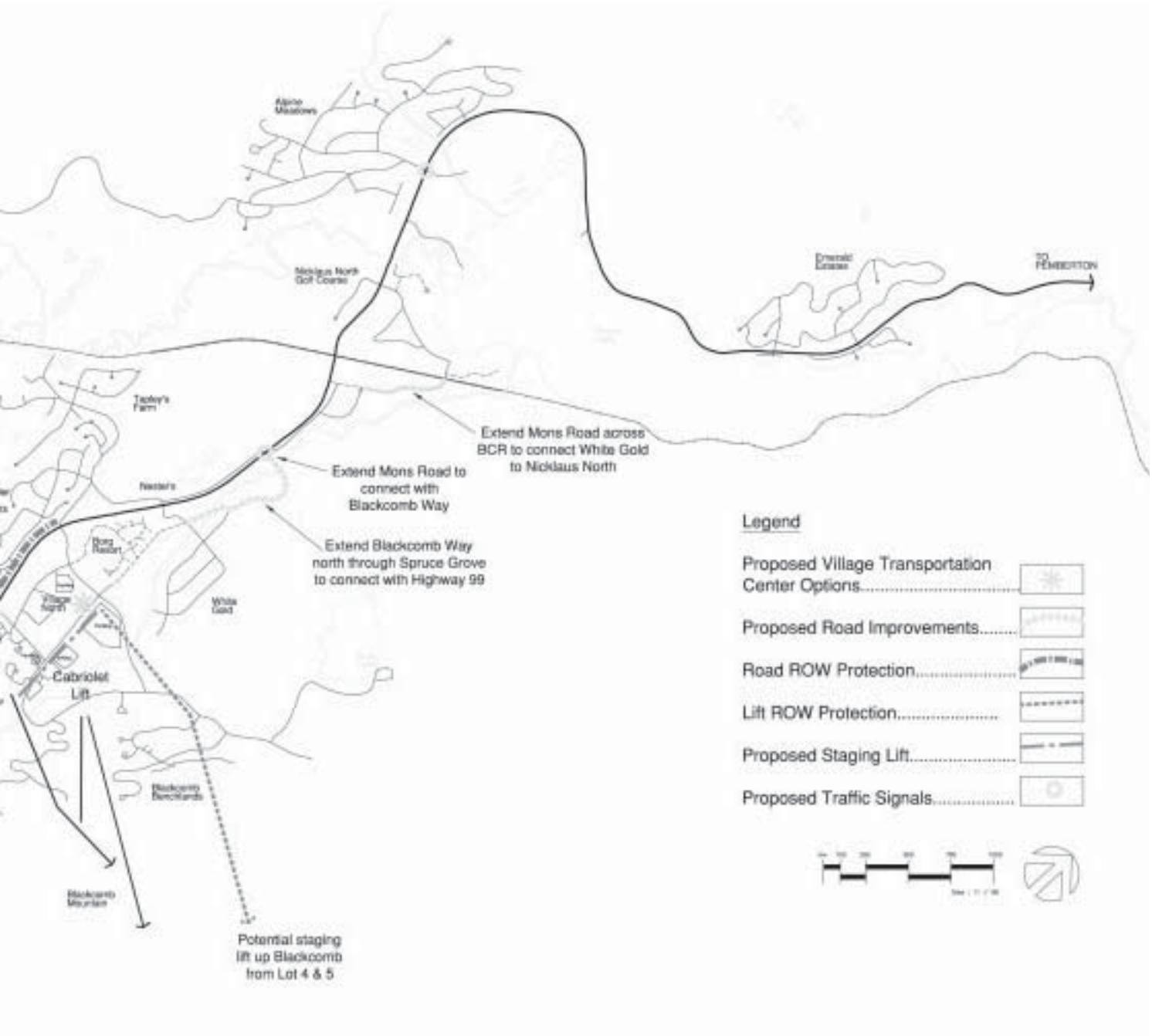
- Improve the frequency and schedule of the existing train service to Whistler.
- Provide a convenient shuttle bus between the Whistler Creek base and the existing train station.
- Locate a new rail station in a location which is attractive to skiers and allows convenient connections to other travel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



COMPREHENSIVE TRANSPORTATION STRATEGY • SUMMARY REPORT



TRANSPORTATION STRATEGY

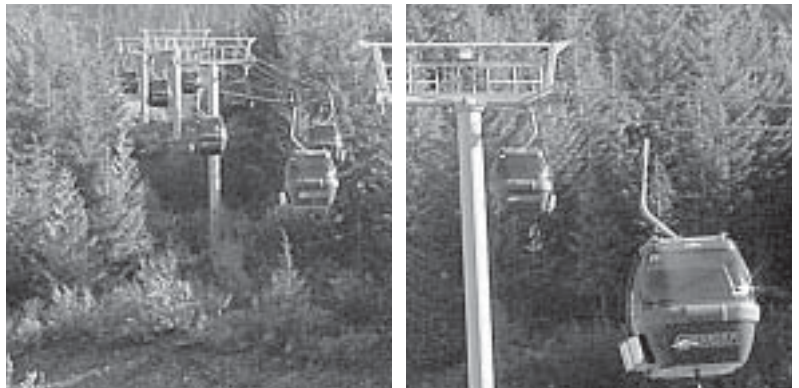


LIFT SYSTEMS & MOUNTAIN OPERATIONS

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.

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.

TRIGGER POINTS

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	
Communications and monitoring				
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.
Transportation Demand Management				
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
Transit				
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	
Bicycle and Pedestrian Network				
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			Provide additional lighting on the Valley Trail.
Plan & construct end-of-trip facilities for commuter cyclist	2002	\$130,000	\$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.
Parking Management				
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.
Local Roads				
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	
Regional Roads				
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.
Traffic Operations				
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 medical clinic.	Install fire pre-emption signals at egress points to fire station and
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	Annual Program	COST Capital Project	DESCRIPTION
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		Maintenance of the ITS.
New traffic signals	2011		\$650,000	Install traffic signal when warranted.
Total Annual Cost Component		\$3,403,000		
Total Capital Cost Component			\$45,125,000	

ACKNOWLEDGEMENTS

The Resort Municipality of Whistler wishes to thank the Transportation Advisory Group for their valuable input in the preparation of the Whistler Comprehensive Transportation Strategy.

Bill Murray, Whistler Connection

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Arthur DeJong, Doug Forseth, Whistler/Blackcomb

Barrett Fisher, Tourism Whistler

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TRANSPORTATION TRIGGER POINTS

WHISTLER COMPREHENSIVE
TRANSPORTATION STRATEGY

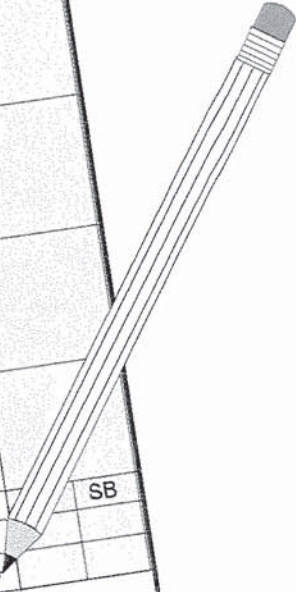
Prepared for:

**TRANSPORTATION
ADVISORY GROUP**

Volume 1: Summary Report



NAME	THRESHOLD	YEAR			
		1996	1997	1998	1999
VEHICLE OCCUPANCY RATE	Persons/vehicle < 2.07		2.03		2.07
TOTAL SKIER VISITS FOR BOTH MOUNTAINS	# of days with total daily skiers > 20,000		1	17	
DAY SKIER VISITS FOR BOTH MOUNTAINS	# of days where skiers exceed 6,000 > 10		7	2	
TRAVEL TIME (AUTOMATIC)	Average Hourly Travel time > 9 min. for 30 hours of the year	45	29	12	
DURATION OF CONGESTION	# of congestion events >=35	36	30	27	
		NB 916	SB 1131	NB 982	SB 1099
TRAFFIC VOLUME	HV30 (vph) >935	11.9	14.7	12.1	14
	K ₃₀ (%) <12				
INTERSECTION PERFORMANCE	# of intersections with LOS "D" or worse	1	1		
					0



Prepared for:

CTS CREATIVE
TRANSPORTATION
SOLUTIONS LTD.

Transportation Engineering &
Planning Consultants

August 1999

TRANSPORTATION TRIGGER POINTS

WHISTLER COMPREHENSIVE TRANSPORTATION STRATEGY

Volume 1: Summary Report

Prepared for:

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25 August 1999

CTS

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1.0 INTRODUCTION

Creative Transportation Solutions Ltd. (CTS) was retained by the Resort Municipality of Whistler (RMOW) on 15 February 1999 to assist in the development of transportation trigger points. The purpose of the trigger points is to identify when the implementation programs for the *Whistler Comprehensive Transportation Strategy*, as stated in the summary report by the Transportation Advisory Group (TAG) of RMOW are warranted. The primary objectives of this study were:

- ✓ To research current theories and applications of congestion measurement methods;
- ✓ To develop trigger points which examine a broader range of determinants than conventional vehicular traffic;
- ✓ To develop trigger points that are technically valid and reflect the resort nature of Whistler;
- ✓ To use the trigger points to indicate when implementation and augmentation of transportation demand management (TDM) measures are warranted to reverse a negative trend in travel behavior in Whistler Valley;
- ✓ To use the trigger points to indicate when capital transportation improvements may be required after TDM measures have first been attempted; and
- ✓ To document the findings and recommended trigger points for implementation.

The final report consists of the following two volumes:

VOLUME 1 Summary Report

VOLUME 2 Technical Background

Volume 1 summarizes the proposed trigger points and their current status. Volume 2 provides a more detailed perspective of the methodologies used to develop the proposed trigger points.

2.0 BACKGROUND

2.1 History

Traffic congestion has become a major transportation system concern in the Resort Municipality of Whistler (RMOW). On peak ski days, travel times of up to 45 minutes to travel from the ski parking lots in Whistler Village to Function Junction (a distance of only 8.2 kilometres) have been observed. The continuing growth of both the municipality as a resort and the record breaking skier visits only exacerbate the problem.

The congestion problem has been examined and reported in great detail with several recent documents including *the Whistler Comprehensive Transportation Strategy – Phase 2 Report* and the *Summary Report* by TAG. The establishment of transportation trigger points was one of many components advocated by the initiative. This integral action is the first step to the implementation of the plan. The following possible Highway 99 and municipal roadway improvement objectives have been included in the transportation strategy endorsed by the TAG:

- 1) Implement transportation demand management (TDM) principles such as high occupancy vehicle (HOV) lanes, "Park & Ride" programs and premium pricing for parking and lift tickets in related policies, programs and actions;
- 2) Promote multi-modal travel by expanding Whistler Transit fleet size and route system;
- 3) Widen the existing shoulder lane of Highway 99 to accommodate a southbound transit/ carpool lane between Whistler Village and Creekside;

- 4) Protection of a right of way for the Nita Lake Parkway on the west side of the valley;
- 5) Construction of an extra northbound lane on Highway 99 between Nita Lake Parkway and Lorimer Road;
- 6) For the long term, secure right-of-way for the potential construction of the Highway 99 Whistler bypass on the west side of the valley;
- 7) Extend Blackcomb Way north through Spruce Grove to connect with Highway 99; and
- 8) Extend Mons Road across the B.C. Rail line to connect White Gold with Nicklaus North.

2.2 What is a Trigger Point?

Trigger points are used as thresholds to indicate when a condition reaches an unacceptable level. When a trigger point has been met, a series of events may unfold. For example, implementation of one of the transportation demand management, transit, parking supply and/ or road system related programs in TAG's summary report might be considered. If the condition is not mitigated by the improvement action(s), then capital alternatives may be explored. It is recognized that the proposed transportation trigger points address transportation-related programs which represent only a portion of the Whistler Comprehensive Transportation Strategy.

The determination of feasible trigger points that can be easily monitored by RMOW is a technical and quantitative process. However, the selection of a specific threshold value is generally qualitative in nature and should be made by the community and/or their representatives. These threshold values should reflect the policies of RMOW on what is an acceptable level of traffic congestion for the community.

3.0 THE TRIGGER POINTS

The descriptions, thresholds and current status of each of the proposed transportation trigger points for Whistler are summarized in **TABLE 3.0**:

TABLE 3.0: PROPOSED TRANSPORTATION TRIGGER POINTS

TRIGGER #	NAME	DESCRIPTION OF FACTORS	THRESHOLD		YEAR									
					1996		1997		1998		1999		2000	
1	VEHICLE OCCUPANCY RATE	Average number of persons per vehicle observed during winter count program, positive trend (GOAL= 2.5)	Persons/ vehicle	< 2.07				2.03				2.07		
2	TOTAL SKIER VISITS FOR BOTH MOUNTAINS	20,000 daily total skier visits forecasted for Blackcomb and Whistler Mtns.	# of days with total daily skiers	> 20,000				1		17				
3	DAY SKIER VISITS FOR BOTH MOUNTAINS	# of days in a season with 6,000 day skier visits recorded for Blackcomb and Whistler Mtns.	# of days where skiers exceed 6,000	> 10				7		2				
4	TRAVEL TIME (AUTOMATIC)	LOS D travel time between Village Gate Blvd. & Lake Placid Rd. on Hwy. 99 (Free flow= 4 min.)	Average Hourly Travel time	> 9 min. for 30 hours of the year	45			29		12				
5	TRAVEL TIME (MANUAL)	Travel time between Base II & Function Junction (Free flow= 11 min.)	Average Hourly Travel time	> 30 min. for 10 hours of the year	TENTATIVELY PROPOSED									
6		Travel time between Base II & Alpine Way (Free flow= 6 min.)	Average Hourly Travel time	> 20 min. for 10 hours of the year										
7	DURATION OF CONGESTION	# of congestion events (where at least 935 vph are observed for 2 or more consecutive	# of congestion events	>=35	36		30		27					
8	TRAFFIC VOLUME	30th highest hourly volume for the year (HV30) and K ₁₀₀ observed at perm. count stn.			NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
			HV30 (vph)	>935	916	1131	982	1099	945	1046				
			K ₁₀₀ (%)	<12	11.9	14.7	12.1	14	12.5	14.4				
9	INTERSECTION PERFORMANCE	LOS rating of each individual signal	# of intersections with	LOS "D" or worse	1		1				0			
10	SKIER MODAL SHIFT	Percentage split between auto-users and non auto-users as surveyed at both mountains, positive trend (GOAL=45%)	% of auto-users	> 60%			60%							
11	VEHICLE OCCUPANCY RATE (at village lots)	Average number of persons per vehicle observed during winter count program, positive trend (GOAL= 2.5)	Persons/ vehicle	< 2.46	1.74		2.46							

N.B.: shaded area indicates that data was unavailable at the time of assessment.

3.1 TRIGGER POINT #1: Vehicle Occupancy Rate

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

The results from past vehicle occupancy studies conducted on Highway 99 in Whistler reflect a positive increasing trend (2.1 persons per vehicle in 1999). A long-term (10 years) target was discussed with RMOW and a vehicle occupancy rate of 2.50 is recommended for RMOW. The surveyed vehicle occupancy rates have been increasing since 1989. Currently, trigger point #1 is not being met.

3.2 TRIGGER POINT #2: Total Skier Visits

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 in order to address the increase in demand.

A review of both Highway 99 traffic data and daily mountain skier data determined that 20,000 skier visits was a threshold for when significant motorist delays may begin to occur in Whistler Valley, depending on the level of day skier activity (see Trigger Point #3). The 1997/ 1998 ski season experienced only 1 (or 0%) of the 143 ski days with a skier visit total of 20,000 or more. In the 1998/ 1999 ski season, the number of days increased to 17 (or 12%) of the 141 ski days. Because a 20,000+ total skier visit day does not necessarily indicate a potential for an at-capacity situation along Highway 99, it is recommended that temporary measures first be considered.

3.3 TRIGGER POINT #3: Day Skier Visits

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 in order to address the increase in overall demand.

"Day skier" visits are considered a more critical indication of traffic congestion on Highway 99 than total skier visits because "day skiers" tend to arrive and depart in their automobiles within a similar timeframe. They also tend to have similar origins and destinations (i.e. Vancouver). Based on "day skier" data, the number of estimated days that the southbound capacity on Highway 99 was reached has decreased from 7 days during the 1997/ 98 ski season to 2 days during the 1998/ 99 ski season (-71%). The 1998/ 99 ski season was the busier of the two seasons on the mountains, but that was not reflected by the vehicular traffic in Whistler Valley. Currently, trigger point #3 is not being met.

3.4 TRIGGER POINT #4: Vehicular Travel Time (Calculated) between Whistler Village and Creekside

If the estimated travel time on Highway 99 from Village Gate Blvd. to Lake Placid Road is equal to or exceeds 9 minutes at least 30 hours in one year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered in order to reverse the negative trend.

The number of times the travel time threshold of 9 minutes was exceeded dropped from 29 times in 1997 to 12 times in 1998. Currently, trigger point #4 is not being met.

3.5 TRIGGER POINT #5: Vehicular Travel Time (Measured) between Base II and Function Junction

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 in order to reverse the negative trend.

The thresholds for trigger point #5 are tentative pending availability of more actual travel time data. The trigger point currently proposed is based on a limited amount of manually collected data and engineering judgement.

3.6 TRIGGER POINT #6: Vehicular Travel Time (Measured) between Base II and Alpine Meadows

If the observed travel time from Base II to Alpine Way is equal to or exceeds 20 minutes at least 10 hours in one year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered in order to reverse the negative trend.

The thresholds for trigger point #6 are tentative pending availability of more actual travel time data. The trigger point currently proposed is based on a limited amount of manually collected data and engineering judgement.

3.7 TRIGGER POINT #7: Duration of Congestion

If the number of congestion events on Highway 99 lasting longer than 2 hours in duration occurs 35 or more times in a year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered in order to reverse the negative trend.

Both the overall number of events (from 30 to 27) and number of hours (from 89 to 71) of congestion are down in 1998 from 1997 respectively. Currently, trigger point #7 is not being met.

3.8 TRIGGER POINT #8: Vehicular Traffic Volumes

If the 30th highest hour of volume (HV30) for a year exceeds 935 southbound (@ MoTH permanent count station) vehicles AND this volume expressed as a percentage of the average annual daily traffic (AADT) is less than 12%, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered in order to reverse the negative trend.

The volume criterion of the threshold should be breached with relative ease in comparison with the K criterion. The analysis has revealed that no capacity improvements are currently warranted.

YEAR	CRITERIA	THRESHOLD	SUMMER ONLY		WINTER ONLY		ENTIRE YEAR	
			North bound	South bound	North bound	South bound	North bound	South bound
1998	HV30 (vph)	>935 vph	905	890	819	992	945	1046
	K (%)	<12%	10.6	11.5	11.1	13.2	12.5	14.4

Note: shaded area indicates a breach of proposed threshold.

However, as the hourly traffic volumes become more consistent (graphically, less *spiking*), the K value will drop. Currently, trigger point #8 is not being met.

3.9 TRIGGER POINT #9: Intersection Performance

If the overall level of service 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.

Currently, all intersections are operating at a level of service C or better. However, the following intersections have a 1999 level of service of C and may require improvements in the future:

1. Highway 99 & Village Gate Boulevard
2. Highway 99 & Lake Placid Road
3. Highway 99 & Function Junction (signalized Summer 1999)

3.10 TRIGGER POINT #10: Modal Shift

If the surveyed percentage of automobile users (driver or passenger) increases from the previous year, then the appropriate implementation program(s) from the Whistler Transportation Strategy should be considered in order to reverse the negative trend and to reach the goal of 45%.

In 1997, surveys were undertaken for TAG, which determined that the automobile users (ie. driver or passenger) constituted 60% of the skiers interviewed. TAG has set a goal to reduce the automobile users percentage by 15%, however no target year had been defined. From trigger #1, it was agreed that a long-term goal could ideally be achieved in 10 years. The current status (for 1999) of trigger point #10 is not yet known.

3.11 TRIGGER POINT #11: Vehicle Occupancy Rate at Village Lots

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 in order to reverse the negative trend and to reach the goal of 2.5 persons per vehicle over 10 years.

A weighted average vehicle occupancy rate of 1.74 persons per vehicle was found at the village lots during a count survey conducted during the winter of 1996 while interviews conducted in the lots during the winter of 1997 derived a rate of 2.46 persons per vehicle.

Although it appears that the rate has improved over the course of one year, the two results cannot be measured at par. The interview survey may yield a bias result depending on the sampling methods and the truthfulness of the answers given. A vehicle occupancy count survey (as a component of a detailed parking lot study) is scheduled for village lots 1 through 4 on 21 August 1999, but it must be recognized that summer and winter traffic behaviour in Whistler are not consistent.

To monitor the trend properly, it is recommended that a winter vehicle occupancy rate be determined through a count survey and compared to the rate found in the 1996. Currently, trigger point #11 is not being met.

5.0 CONCLUSIONS & RECOMMENDATIONS

5.1 Study Conclusions

The major findings of the traffic analysis and development of the trigger points were as follows:

- 1) The winter vehicle occupancy rate on Highway 99 in Whistler has been increasing over the last 10 years reflecting a positive trend in that more people are ridesharing.
- 2) It was determined that 6,000 "day skier visits" in a day generates sufficient southbound traffic on Highway 99 just south of Village Gate Blvd. during the afternoon peak hour to bring the facility to capacity and result in significant queue spillbacks into Whistler Village. The estimated capacity of Highway 99 through Whistler Valley was determined to be 1300 vehicles per hour per lane. The number of days where the "day skier" visits exceeded 6,000 was 7 in the 1997/1998 season and 2 in the 1998/1999 season.
- 3) It was determined that 20,000 total skier visits in a day generates a potential for congestion on the road network, especially within Whistler Village. The number of days where the total skier visits exceeded 20,000 was 1 in the 1997/1998 season and 17 in the 1998/1999 season.
- 4) Road and intersection operational performance are usually described by a level of service, which range from "A" (excellent) to "F" (failing). A level of service "D" was determined to be a suitable standard for all transportation-related thresholds in RMOW. This standard is a compromise between recognizing the resort nature of Whistler and the associated lower tolerance for excessive delay and congestion by

locals and tourists versus the desire by the community not to undertake major road network improvements.

- 5) The Ministry of Transportation & Highways have a permanent count station on Highway 99 just north of the Petro Canada gas station where traffic volumes are counted on an hourly basis by direction throughout the year. The historical data was instrumental in developing mathematical models for Whistler Valley to predict the level of congestion in past years.

5.2 Study Recommendations

This study developed transportation trigger points for Whistler Valley in order to identify when transportation demand management measures and/ or major capital transportation improvements are warranted. The success of the proposed transportation trigger points depends entirely on them being monitored on an annual basis. However, it is recognized that the proposed transportation trigger points may require refining as more data becomes available. Therefore, it is recommended that RMOW:

- 1) Conduct a vehicle occupancy survey at least once every winter on Highway 99 just north of the Petro Canada gas station and that summer surveys be considered;
- 2) Monitor skier visit data from Blackcomb and Whistler Mountain to determine the frequency of 20,000+ skier visit days AND 6,000+ "day skier" days in a season;
- 3) Utilize the Ministry of Transportation & Highways permanent count station data on Highway 99 just north of the Petro Canada gas station to monitor traffic volumes, the duration of congestion and to estimate travel times throughout the year;

- 4) Conduct a travel time survey every Saturday and Sunday for a whole year during the morning and afternoon peak periods (07:00-09:00 & 15:00-18:00) in order to finalize the two travel time trigger point thresholds requiring manual data parameters;
- 5) That RMOW consider setting up their own permanent count stations utilizing existing roadway detector loops at signalized intersections under their control and/ or installing dedicated roadway detector loops to collect only traffic volumes;
- 6) Conduct intersection counts regularly at all locations surveyed during the 1999 Whistler Traffic Monitoring Program;
- 7) Conduct interview and/ or postcard surveys at lift tickets kiosks at both mountains to determine the mode of transportation used by skiers for that season; and
- 8) Conduct a vehicle occupancy survey every summer and winter at Village lots 1, 2, 3, and 4 (includes 4a).

Transportation Advisory Group (TAG)

UPDATED - Terms of Reference

October 6, 2015

1 DEFINITION

1.1 TAG – Transportation Advisory Group

- a) The TAG¹ is comprised of appointed local stakeholder organizations and community representatives – each in a unique position to contribute to the planning of Whistler’s transportation future.
- b) The Group will be advising on transportation matters within Whistler’s boundaries while considering the implications of transportation infrastructure within the Sea to Sky corridor and how it affects Whistler.

2 PURPOSE OF THE TRANSPORTATION ADVISORY GROUP (TAG)

The purpose of the Transportation Advisory Group (TAG) is to identify transportation related issues to, from, and within Whistler, and to then provide Whistler Council with advice and recommendations regarding the assessment of, planning for, and implementation of strategic options to resolve these transportation related issues affecting the Resort Community from a social, environmental and economic point of view.

3 RESPONSIBILITIES

3.1 TAG is responsible for meeting on a regular basis in order to:

- a) Consider municipal policies with respect to transportation planning, facilities, regional services, parking, movement of goods, high occupancy vehicle priority options, guest arrival and in-resort experience, taxis, innovative funding sources and partnership especially for preferred modes of transport to, from and within the Resort, new services such as ride sourcing, etc.
- b) Assist the municipality with the development of policies and programs that reduce the number of vehicles using the road network, enhance transportation demand management (TDM) initiatives and have the added benefit of reducing greenhouse gas (GHG) emission and improving the Resort’s environmental performance.
- c) Monitor, discuss and assess transportation operational issues with a focus on reducing peak time traffic congestion reducing GHG emissions and moving towards Whistler’s environmental targets.

4 GUIDING PRINCIPLES

- a) Transportation system plans, designs and facilities should be integrated with land use and recreation facility planning to accommodate growth.
- b) The transportation system should reflect and enhance the natural and urban design features that make Whistler unique.

¹ Originally established by Council resolution February 1996 for the purposes of developing a Whistler Comprehensive Transportation Strategy which was completed in 1999.

- c) The transportation system should consider all user types and contribute to the quality of life within the Whistler resort community.
- d) The transportation system should provide efficient, multi-modal access for inter- and intra-municipal travel. Attractive alternative modes to the single occupant vehicle should be provided and encouraged.
- e) The transportation system should be cost-effective and safe for all users and all modes of travel.
- f) The transportation system should be designed to minimize its environmental impact.
- g) The Transportation Advisory Group (TAG) will dialogue with the Economic Partnership Initiative (EPI) Committee and/or EPI Working Group to ensure that recommendations from the TAG align with the objectives, goals and actions of EPI report.

5 COMPOSITION OF THE TRANSPORTATION ADVISORY GROUP (TAG)

Participation on the Transportation Advisory Group is as follows:

5.1 TAG Members

- a) Voting
 - i. Two (2) representatives from Whistler Council
 - ii. Resort Municipality of Whistler's Chief Administrative Officer (CAO)
 - iii. One (1) representative from the Whistler Chamber of Commerce
 - iv. One (1) representative from Tourism Whistler
 - v. One (1) representative from Whistler Blackcomb
 - vi. Three (3) Citizens-at-Large
- b) Non-Voting
 - vi. One (1) representative from the Ministry of Transportation and Infrastructure (MoTI)
 - vii. One (1) representative from the BC Transit (BCT)
 - viii. Resort Municipality of Whistler's General Manager of Infrastructure Services
 - ix. Resort Municipality of Whistler's General Manager of Resort Experience
 - x. Resort Municipality of Whistler's Transportation Demand Management Coordinator
- c) The Chair shall be selected by the Group members on an annual basis.
- d) The General Manager of Infrastructure Services is the primary staff liaison for TAG and shall ensure there are adequate resources for meetings and that meeting minutes are properly recorded and submitted to Council.
- e) Changes to the participation in the TAG will need to be approved by RMOW Council.

5.2 Corridor Partners

- a) District of Squamish (DOS)
- b) Lil'Wat Nation
- c) Squamish Lillooet Regional District (SLRD)
- d) Squamish Nation
- e) Village of Pemberton (VOP)

5.3 Other Stakeholders

- a) Local Not-For-Profits
 - i. Association of Whistler Area Residents for the Environment (AWARE)
 - ii. Mature Action Committee (MAC)
 - iii. Whistler Cycling Club
 - iv. WORCA
- b) Private carrier companies (scheduled and non-scheduled providers)
- c) Other Provincial ministries
- d) Measuring Up Select Committee of Council
- e) Royal Canadian Mounted Police (RCMP)
- f) Whistler Transit System operating company

- g) Vancouver Airport Authority (YVR)
- h) Whistler Housing Authority (WHA)
- i) Hotel Association of Whistler (HAW)
- j) Restaurant Association of Whistler
- k) Whistler Fire and Rescue Services
- l) Whistler Ambulance Services
- m) School District 48
- n) Local taxi companies
- o) BC Ferries
- p) TransLink

6 TERM

6.1 Council Members

- a) TAG members representing Council has shall be appointed by the Mayor and will serve a two-year term running concurrently with their election to Council, or until determined otherwise by the Mayor. One Councillor shall be the Whistler appointee to the Squamish Lillooet Regional District (SLRD) Board so as to provide a direct link to regional issues.

6.2 Representatives of External Organizations

- b) External organizations shall appoint their respective TAG representative. There is no minimum or maximum time period for representation from an external organization.

6.3 Citizens-At-Large

- c) Members that have been appointed as a “Citizen-at-Large” will serve a two year term. These members shall reapply to Council at the end of their term if they wish to remain on the TAG. There is no maximum time period for a Citizen-at-Large on the Committee, subject to reappointment by Council.
- d) Any Citizen-at-Large vacancies will be advertised by the Municipality. Council will review the applications and select the required new members. Citizens-at-Large shall be selected based on their qualifications and experience pertaining to the matters which will be addressed by the Group. Also, Council shall consider the applicant’s ability to provide knowledgeable and professional advice and recommendations to Council on the matters that will be considered by the Transportation Advisory Group. The candidates shall be selected by Council resolution.

7 SUB-COMMITTEES

- a) The Transportation Advisory Group (TAG) may convene Sub-Committees to deal with specific transportation related issues. The Chair may invite representatives that are not part of the TAG to participate on a Sub-Committee. Sub-Committees report to Council through TAG.

8 MEETING PROCEDURES

8.1 Transportation Advisory Group

- a) The proceedings of the Transportation Advisory Group will be of a working session format and will follow the agreed upon meeting agenda
- b) Corridor Partners and other stakeholders may be invited to participate in a portion, or all of a TAG meeting as determined by the Transportation Advisory Group members.

8.2 TAG Sub-Committee

- a) The proceedings of a TAG Sub-Committee will be of a working session format and will follow the agreed upon meeting agenda
- b) In addition to regular meetings, substantial Sub-Committee activity will be completed independently and shared digitally with other Sub members-Committee members.

9 MEETINGS

Transportation Advisory Group shall meet quarterly or as required by the Chair.

10 QUORUM

- a) Five voting members of TAG shall constitute quorum.
- b) Recommendations of the TAG shall be made by consensus of members in attendance at a meeting, provided a quorum is present at the meeting.
- c) If consensus cannot be reached, a majority opinion will form the recommendation of the Transportation Advisory Group. Dissenting views will be noted and presented alongside the recommendation.

11 CONFLICT OF INTEREST

- a) TAG members, partners and stakeholders are expected to adhere to standard conflict of interest policies.
- b) Council members must adhere to the RMOW's conflict of interest policies consistent with Council Policy A-21.

12 CODE OF CONDUCT

- a) Each participant of the Transportation Advisory Group and any TAG Sub-Committee must at all times fully comply with applicable federal, provincial and municipal laws and should avoid any situation, which could be perceived as improper or unethical.
- b) All participants are expected to be sufficiently familiar with any legislation and bylaws that apply to their position on TAG.
- c) All participants will ensure that the confidentiality of confidential information is maintained.
- d) All participants must not engage in any financial transactions, contracts, or private arrangements for personal profit, which accrue from or are based upon confidential or non-public information, which the member gains by reason of his/her position as a participant on TAG.
- e) Confidential information that members receive through their position on the TAG and/or a TAG Sub-Committee must not be divulged to anyone other than persons who are authorized by Council to receive the information. A member of TAG or a TAG Sub-Committee must not use information that is gained due to his or her position or authority, which is not available to the general public, in order to further the participant's private interest. Participants must not offer such information to spouses, associates, immediate family, friends, or persons with whom the member is connected by frequent or close association.

13 ADMINISTRATIVE DUTIES AND RESPONSIBILITIES

13.1 Transportation Advisory Group

- a) The RMOW will be primarily responsible to provide administrative support to the Transportation Advisory Group including:
 - i. Prepare the agenda for each meeting
 - ii. Keep the minutes of all meetings and proceedings. Minutes will list meeting attendees, a general summary of discussions, resolutions of TAG and next steps
 - iii. Provide each participant with notice of meetings and the agenda for the meeting
 - iv. Provide each participant with a copy of the minutes

- v. On behalf of the Transportation Advisory Group, receive all correspondence, write all letters and communiques, and carry out duties typically performed by a secretary

13.2 TAG Sub-Committees

- a) The RMOW will be responsible to provide simple administrative support to the TAG Sub-Committees including:
 - i. Prepare the agenda for each meeting
 - ii. Keep the minutes of all meetings and proceedings. Minutes will list meeting attendees, a general summary of discussions, resolutions of TAG Sub-Committee and next steps
 - iii. Provide each participant with notice of meetings and the agenda for the meeting
 - iv. Provide each participant with a copy of the minutes

Committee Terms of Reference

Authorized by:

Council resolution on February 19, 1996.

Revised by Council on April 21, 2009.

Revised by Council on _____, ____.



REPORT

ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015

REPORT: 15-117

FROM: Resort Experience

FILE: 8396

SUBJECT: WHISTLER BEAR WORKING GROUP – PROPOSED SELECT COMMITTEE OF COUNCIL

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION

That Council approve the Whistler Bear Working Group as a Select Committee of Council; and further,

That the committee be named the Whistler Bear Advisory Committee.

REFERENCES

Appendix A – Whistler Bear Advisory Committee – Proposed Terms of Reference

PURPOSE OF REPORT

The purpose of this report is to request that Council support formalizing the Whistler Bear Working Group as a Select Committee of Council.

DISCUSSION

The first Whistler Bear Working Group (WBWG) was formed in 1996 to provide a coordinated approach to minimizing human-bear conflicts in the Resort Municipality of Whistler (RMOW). The membership currently consists of agencies and businesses including the RMOW, Get Bear Smart Society, the Conservation Officer Service, Carney's Waste Services, Whistler Blackcomb, and the RCMP.

The members of the Whistler Bear Working Group strive to:

- Develop and help implement creative community-based solutions for minimizing human-bear conflicts;
- Provide a forum for sharing information and resolving divergent views, and enabling coordinated responses to requests for information;
- Participate in the evaluation of non-lethal bear management techniques and provide feedback to the partners; and
- Provide a coordinated approach to community outreach and communications regarding the activities of the Working Group.

Many positive outcomes have been achieved towards the goal of minimizing human-bear conflicts. In 2011, Whistler was recognized by the Ministry of Environment as one of the first Bear Smart

Communities in the province. With this recognition comes ongoing responsibilities and obligations. From a tourism point of view, bears are synonymous with Whistler and many visitors actively pursue opportunities to view bears, and consider a sighting to be a highlight of their trip. Minimizing negative interactions and media coverage is beneficial to the perception of Whistler by our residents and tourists.

As the RMOW's involvement with bear management has increased, it has relied heavily on the input, support and individual efforts of the WBWG to deliver messaging and actions which in effect support RMOW policy and programs. For example, the Get Bear Smart Society has played a key role in public education and Carney's has made countless improvements to the community waste management system at the request of the WBWG. The RMOW provides funding related to bear management, some of which is directed at projects that the WBWG decides upon or has significant input to such as the priorities of the RMOW Bear Smart Program Assistant.

The RMOW Environmental Stewardship Manager is the co-chair of the WBWG, and starting with Councillor Tom Thomson, a councillor has been selected to sit on the committee even though it is not a recognized committee. In this situation, even though the RMOW is very embedded, the WBWG is not fully accountable to the RMOW or in a position to provide regular updates to Council.

It is recommended that the WBWG become a Select Committee of Council in order to provide more opportunity for municipal oversight, adherence to RMOW communications protocol, and to formalize a working group that has been in existence for almost 20 years that delivers programs related to a topic very important to the residents and visitors of Whistler.

If the WBWG becomes a Select Committee of Council, members of the committees could comment as representatives of their organization (for example, the Conservation Officer), but the official voice for the overall initiative and group would be the Mayor and Council representative, and the staff representative would make reports back to Council. It is recommended that the group be renamed the Whistler Bear Advisory Committee in alignment with the naming of other advisory committees.

The Environmental Stewardship Manager discussed the idea with Senior Managers in July 2015 where it received support and was given the go-ahead to present to Council.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Partnership	Partners work together to achieve mutual benefit	
	Decisions consider the community's values as well as short and long-term social, economic and environmental consequences	

W2020 Strategy	AWAY FROM Descriptions of success that resolution moves away from	Mitigation Strategies and Comments
	N/A	

OTHER POLICY CONSIDERATIONS

Formalizing the WBWG as a Select Committee of Council meets municipal policy regarding strengthening partnerships, and is in alignment with overall RMOW management priorities.

BUDGET CONSIDERATIONS

There are no budget implications to the proposal.

COMMUNITY ENGAGEMENT AND CONSULTATION

The idea has not been brought to the wider public as there will be no difference in delivery of programs as a result of making the group a Select Committee of Council. The members of the WBWG are unanimous in support of the change.

SUMMARY

The WBWG has been striving to reduce human-bear conflicts for almost 20 years and many successes have been achieved. Given the importance of bears to both residents and visitors, it is incumbent on the RMOW as a Bear Smart Community to formally take the lead on bear management. Formalizing the WBWG as a Select Committee of Council recognizes both the RMOW's commitment as well as the individual member agencies, and provides Council with a direct connection to the group's management.

Respectfully submitted,

Heather Beresford
ENVIRONMENTAL STEWARDSHIP MANAGER
for
Jan Jansen
GENERAL MANAGER RESORT EXPERIENCE

Whistler Bear Advisory Committee Terms of Reference

Terms of Reference

To minimize human-bear conflicts in the Resort Municipality of Whistler (RMOW) and to advise Council on matters related to bear management in the Whistler area. The Whistler Bear Advisory Committee:

- (a) Provides a forum for sharing information and enabling coordinated responses;
- (b) Evaluates new community based solutions and maintain best practices for minimizing human-bear conflicts and prepare implementation plans for delivery;
- (c) Provides a coordinated approach to community outreach;
- (d) Ensures effective communication between the Whistler Bear Advisory Committee members;
- (e) Delivers a coordinated approach to non-lethal bear management; and
- (f) Ensures a high priority is placed on compliance supported by adequate enforcement tools.

Authorized and Appointed by Council.

Comprised Of

The Whistler Bear Advisory Committee will be comprised of representatives from:

- RMOW – Environmental Stewardship (1, Co-Chair), Bylaw Services (1), Councillor (1)
- Get Bear Smart Society (1, Co-Chair)
- Conservation Officer Service
- Royal Canadian Mounted Police
- Whistler/Blackcomb
- Waste Industry Representative
- Members at large (2)

Sub-Committees

The Committee may convene sub-committees to deal with specific issues and invited participants are not required to be members of the Committee.

Term

All are permanent members, except the Members at Large will fill a two-year renewable term.

Chair

The committee is co-chaired by the RMOW Environmental Stewardship representative and the Get Bear Smart Society representative.

Recording Secretary

To be arranged by the RMOW staff representative. Minutes submitted monthly to Council.

Meetings

Once monthly, on the second Wednesday, with additional meetings as required.

Quorum

Quorum is 5 members in attendance.

Communications

The Whistler Bear Advisory Committee communicates with Council and makes recommendations through its monthly meeting minutes in all cases. The Mayor is the spokesperson for the committee as per RMOW policy, while member organizations retain their ability to speak directly to the media.



REPORT

ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015
FROM: Infrastructure Services
SUBJECT: COMPREHENSIVE WATER CONSERVATION AND SUPPLY PLAN UPDATE

REPORT: 15-118
FILE: 220

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Infrastructure Services be endorsed.

RECOMMENDATION

That Council endorse the ongoing water conservation and supply plan described in Administrative Report No. 15-118.

REFERENCES

- Appendix A – Comprehensive Water Conservation and Supply Plan 2015 Update Report, September 28, 2015
- Appendix B – Water Conservation and Supply Plan, Council Report 13-011, February 2013
- Appendix C – Consolidated Water Use Regulation Bylaw No. 1538, 2001 as amended
- Appendix D -- Long Term Water Supply Plan – presented to Council June 7, 2004
- Appendix E -- Whistler2020 Water Strategy – adopted by Council January 8, 2007
- Appendix F -- Water Conservation Program – presented to Council February 2, 2004

PURPOSE OF REPORT

To operate as a successful resort community, it is essential Whistler has sufficient, high quality water at all times. The Comprehensive Water Conservation and Supply Plan 2015 Update Report (“the Report”) describes the multiple paths available to achieving this objective in a sustainable manner and provides in-depth discussion of:

- Current supply vs. supply requirements at build-out
- Supply under drought maximum-demand conditions
- The role of the 21-Mile Creek supply
- The differences between resort and residential usage
- Whistler 2020 sustainability objectives
- Historic water conservation initiatives
- Progress on and updated plans for water conservation and supply initiatives that have been pursued for the past several years
- Prioritized lists of further water conservation programs and infrastructure projects that will assure Whistler of a reliable water supply sufficient to meet long-term needs.

The purpose of this Administrative Report is to summarize the discussion and findings found in the Report, and provides recommendations for Council consideration.

DISCUSSION

1 Whistler's Drinking Water Supply

Whistler drinking water supply system consists of one surface water source (21 Mile Creek) and 15 water wells. The supply system has two major, physically separate water supply systems, Whistler Main and Emerald, as reflected in the operating permits Vancouver Coastal Health has issued to Whistler. The Whistler Main system has three sub-systems which are separated from each other by valves. These are the Core (which includes the Village, Creekside, Bayshores, Brio, Alta Vista, etc.), Alpine-Rainbow, and Cheakamus Crossing.

1.1 Key Concepts

"Annual Average Population" is permanent residents plus estimated overnight visitors as reported by Tourism Whistler. While Annual Average Population doesn't include day visitors, the effect of the day visitors on demand is already built into all consumption measures.

"Maximum Day Demand" is the amount of water actually provided to the Whistler community on the highest-use day of the year (for example, during Crankworx), divided by the number of occupied and built bed units in existence on that day.

"Design Maximum Day Demand" is the amount of water forecast to be required at build-out on the Maximum Day, assuming 100% occupancy.

The "Whistler2020 Water Use Target": Through the Whistler 2020 process, a community vision was established to reduce the amount of water removed from the natural environment for community use. As a result, a target of reducing water consumption to 425 litres per capita per day, based on the Annual Average Population for Whistler.

The "Whistler Community Performance Indicator", which is reported annually, is used to determine progress toward the Water Use Target. It is defined¹ as the actual amount of non-potable water removed from natural sources by the Whistler community in a given year, and then divided by the annual average population.

It is important to note that the Whistler 2020 Water Use Target and Whistler Community Performance Indicator are not related to the Design Maximum Day Demand, because they're based on annual average use, not maximum day use. The water supply system must be designed for maximum day use, not average annual use.

1.2 Water System Principals

Six principals have been consistently applied to the development of Whistler's water system development:

1. Provide safe drinking water in accordance with the Canadian Drinking Water Standards and in compliance with Provincial Regulation
2. Provide sufficient water to meet all instantaneous domestic and fire flow demands at all times
3. Use 21 Mile Creek as much as possible to minimize costs and provide highest available drinking water aesthetic quality

¹ From <http://www.whistler2020.ca/whistler/site/indicator2.acds?instanceid=11159057&context=11158627>

"Indicator Definition: Total water consumption (potable and non-potable RMOW water flows)

"Calculation: Sum the water flows entering all RMOW water treatment plants and the flows used for RMOW non-potable uses."

4. Accommodate periods when 21 Mile Creek supply is off-line, using groundwater to satisfy all demands
5. Work towards integrating and simplifying the supply system in order to increase system resilience and minimize long-term costs
6. Both Conservation and Supply plans can be used to satisfy future demand growth. These will be implemented in the most cost effective manner.

1.3 Supply Volume Design Criteria

Developed bed units (“BU”) are a theoretical measure used in Whistler for planning purposes. Whistler long-term supply requirements are established by determining the current Maximum Day Demand, then multiplying the result by the number of BU expected at build-out. This approach provides a consistent and uniform measure of demand for forecasting purposes. Examples of the theoretical BU values are:

- Single family home or Duplex unit = 6 BU
- Hotel Room = 2 BU
- Employee housing = 1 BU per person
- Multi-Family = 2 to 6 BU, based on size

The RMOW implements new supply and conservation measures in a gradual manner, and monitors progressive changes to Maximum Day Demand to adjust future demand forecasts.

Over time, as the community has developed, conservation measures implemented, and monitoring systems improved, Maximum Day Demands have declined.

The resulting decline in Design Demand has proceeded as follows:

pre-1990's:	1000 L/BU/day
post-1990's:	700 L/BU/day
2015:	530 L/BU/day ²

All the changes that were implemented starting in the early 1990's (see section 3) have thereby enabled downward movement in Design Maximum Day Demand, with corresponding reductions in actual and planned spending.

2 Need for Water Conservation

Whistler's 2014/2015 low-snowpack winter and subsequent 2015 regional drought conditions have made the importance of water conservation under such conditions very clear to Whistler residents. However, given that Whistler is surrounded by rivers, lakes, and glaciers, and has a high proportion of resort visitors, it is difficult for many to understand and support the water conservation and supply issues that are important here at all times.

The natural hydrologic cycle evaporates water from oceans, lakes, and rivers, and deposits the water in our local mountains in the form of both rain and snow. The water that runs off the mountains fills our rivers and creeks, and over time replenishes the below-ground aquifers. The RMOW's water supply and distribution system temporarily interrupts this cycle, but most of the water we “use” is treated and returns to the natural environment further downstream.

Whistler has established a Whistler 2020 Water Use Target, which is shown with yearly estimated per capita consumption in Figure 2-1 below.

Were one to set aside Provincial and Whistler 2020 environmentally-oriented water use objectives,

² (Draft) Potable Water Supply Plan 2014 Update D-17984.00, Opus Daytonknight, June 2015

water conservation would remain important for financial reasons: there are significant costs associated with expanding and operating our water and wastewater systems as required to meet increases in flow. Reducing the average amount of water used in Whistler is important as that would result in reduced maintenance and operating costs for our water and wastewater systems. Reducing the peak (maximum day) amount of water use can be even more financially significant as lowering this peak water usage can delay or even reduce the scope of needed supply and conservation programs.

British Columbia's Water Plan "Living Water Smart" was rolled out by the provincial government in 2009 and includes two key goals relevant to water conservation in Whistler:

1. Fifty percent of new municipal water needs will be acquired through conservation by 2020
2. By 2020, water use in British Columbia will be 33 percent more efficient

Meeting the first provincial goal would require that for each additional unit of water demand, only half should be provided by expanded water infrastructure, with the other half to be provided by conservation. This is a challenging objective to meet.

Meeting the second provincial goal is also challenging: no definition of "efficiency" is provided, nor any allocation of required efficiency gains to each affected organization.

In acknowledging the challenges inherent in these high level provincial goals, it's also important to understand that the Province³ requires a "water demand management plan" be established by local governments as a requirement for applying for water-related Provincial infrastructure funding. The attached Plan is intended to ensure the continuing fulfillment of this requirement.

Prior to the creation of Provincial goals, the Whistler community established, through the Whistler 2020 process, a Water Use Target of reducing annual average water consumption to 425 litres per capita per day (based on Whistler's annual average population).

³ http://www.cscd.gov.bc.ca/lqd/infra/infrastructure_grants/

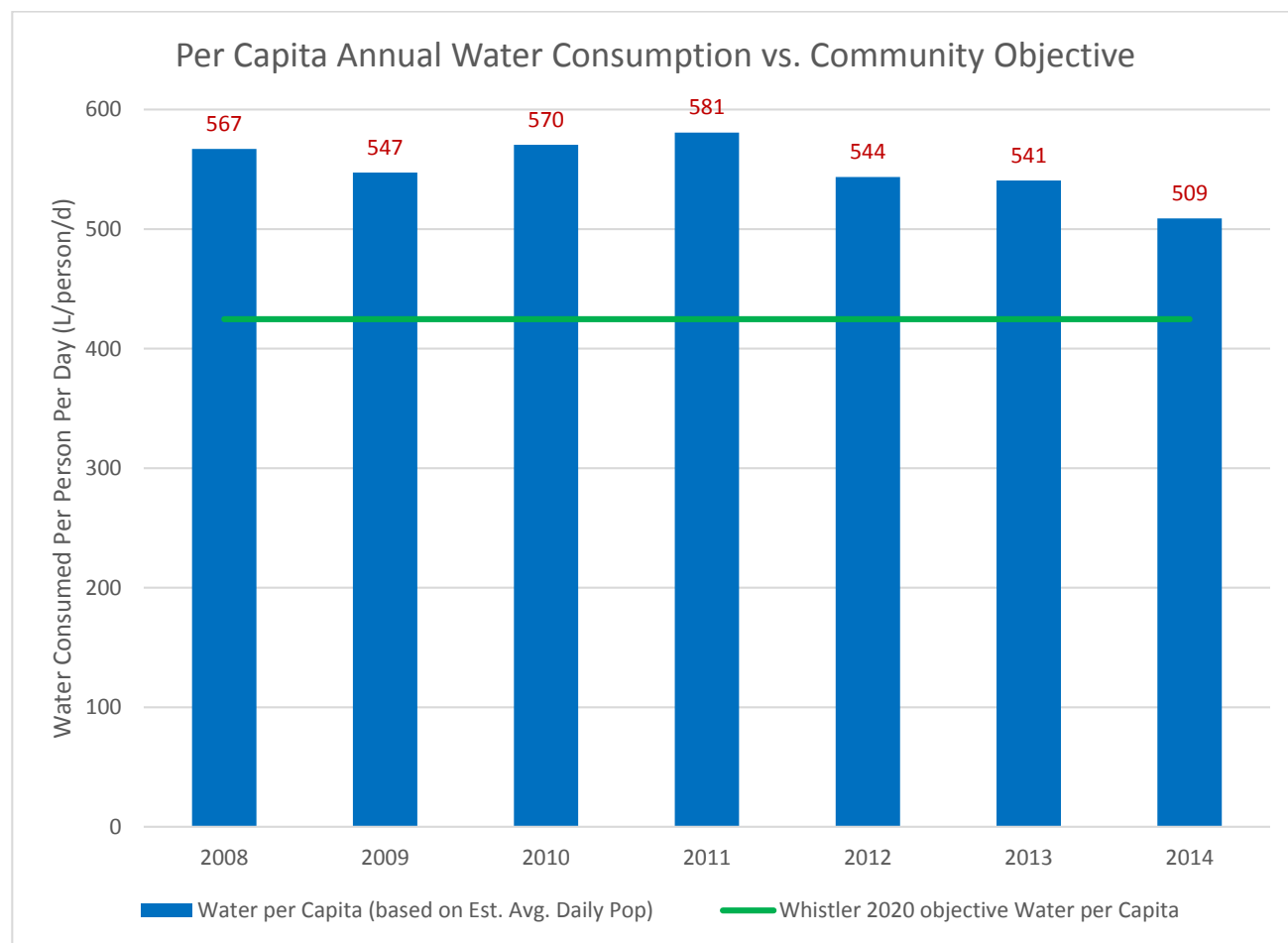


Figure 2-1 per Capita Water Consumed vs. W2020 Water Use Target

As can be seen in Figure 2-1, in 2014 the average daily drinking water supplied to the community was measured at 509 litres per capita, a significant improvement over prior years, but 17% higher than the 425 litre sustainability goal. Per capita water consumption will have to drop by 3% per year in the six years 2015 to 2020 to achieve the Whistler 2020 Water Use Target, requiring significant improvements to water conservation.

Per capita consumption will have to decline 3% per year to 2020 if Whistler is to achieve its' Whistler2020 Water Use Target.

3 Background – Historic Water Conservation in Whistler

Between the 1990's and 2010, municipal staff implemented various water conservation projects and programs throughout the municipality. Initially, these projects and programs were the obvious first steps (the low-hanging-fruit) and provided high returns in regards to cost savings. The results of these conservation programs can be seen in Figure 3-1 (note the significant leveling of demand in the late 1990s and early 2000s).

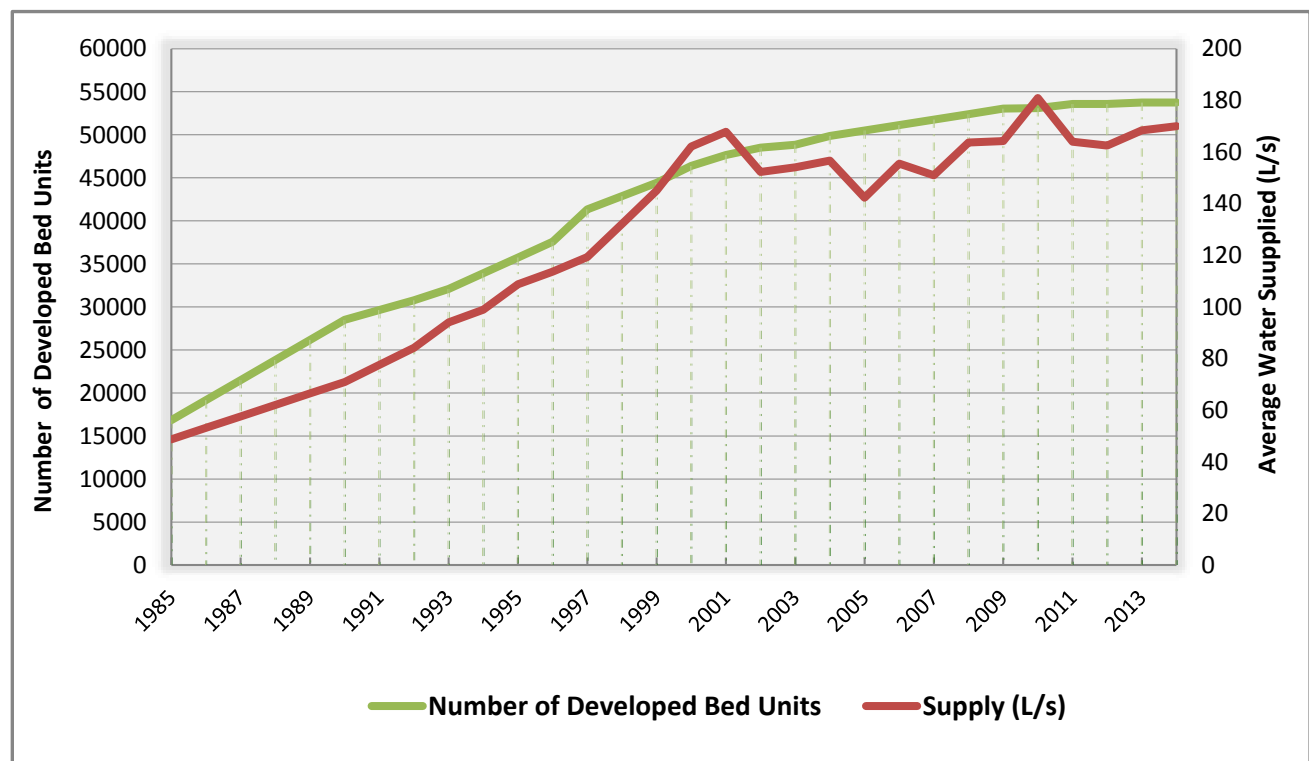


Figure 3-1 Number of Developed Bed Units vs Average Annual Supply Flow

The significant pre-2011 water conservation programs which were implemented by the RMOW are as follows:

3.1 Whistler Golf Course Irrigation Systems

In the late 1990's, the municipality partnered with the Whistler Golf Course on the development of an independent irrigation (non-potable) well. This resulted in a significant decrease in municipal water use for the operation of the golf course. All three golf courses in Whistler now use untreated water for irrigation.

3.2 Hydrant Use Permitting Process

In 1999, the Public Works (now Infrastructure Services) Department launched a program that regulated the use of fire hydrants by the private sector. A hydrant use permit and backflow preventer must be obtained from RMOW Utilities before a contractor can use a fire hydrant. This change significantly reduced the inappropriate use of fire hydrants for non-emergency services. In 2015, the Hydrant Use Permit process is being leveraged to afford additional water saving opportunities and will be used to improve construction-related water consumption data tracking on an ongoing basis.

3.3 Irrigation/Sprinkling Bylaw

In 2001, municipal council approved a bylaw to regulate and restrict lawn irrigation and other miscellaneous uses of water. These regulations are similar to those in the lower mainland and allow residents to water their lawns every other day during early morning and evening hours. Further restrictions on irrigation can be implemented under this bylaw if the municipality declares a "water emergency".

3.4 Low Flow Plumbing Fixture Bylaw

In 2003, municipal council approved a bylaw that requires low flow toilets, showerheads and other

fixtures for all new construction that involves a plumbing permit. Recent changes to the BC Building Code have incorporated fixture efficiency requirements within the BCBC (similar to, and in place of our local bylaw), and have incorporated incremental efficiency requirements for low flow fixtures (esp. toilets).

3.5 Independent Municipal Parks Irrigation

In 2003 and 2004, the municipality constructed independent irrigation (non-potable) wells at Rainbow Park, Spruce Grove Park and Myrtle Phillip Community School.

3.6 Water Leakage Reduction

Since 2009 the municipality has had an ongoing program to detect and fix water leaks.

4 Current Water Supply and Consumption Conditions

4.1 Water Supply Infrastructure

Whistler's water supply system is relatively complicated due to the nature of how Whistler developed in isolated neighborhoods and our geography. The RMOW draws drinking water from 14 water wells and one surface water source to supply water our water distribution systems. On an annual basis, around half of the RMOW's water is supplied from the surface water source, Twenty-One Mile Creek, but during the months of March through June and October to November this water supply is periodically unavailable due to high turbidity or low UV transmittance. Turbidity usually occurs when sediment enters the creek from localized slope erosion or other activity in the watershed. Low UV transmittance usually occurs due to either turbidity or colour staining in the water resulting from organic matter. Even during hot July and August weather, when the maximum daily water demands normally occur, the turbidity occasionally exceeds the drinking water guidelines, thereby making the Twenty-One Mile Creek source temporarily unusable. This is usually caused by an intense, short duration summer rainfall event. This problem can be currently be temporarily managed for a few hours by our water storage reservoirs, with some fire storage risks. With the initiatives in this Plan, if we lose 21 Mile Creek Supply, sufficient water will be available even during peak season by using the groundwater supplies (Refer to S. 1.2 Water Supply Principals, Principal No. 4).

The 2015 Alpine Reservoir Level Control Project (E108) will increase the interconnectedness of Whistler's water system by automating the movement of water between the Village zone and the Alpine-Rainbow zones. This project will further improve Alpine-Rainbow water quality, reduce ongoing power costs and reduce demand on the Alpine water wells, thus preserving their peak capacity for times of greater need. The project will also facilitate automation of movement of water from Alpine to the Village Zone in the future, as may be required in an emergency.

4.2 Sufficiency of Supply

Figure 3-1 showed that although the demand for more water has leveled off significantly due to Whistler conservation efforts, overall demand continues to grow in alignment with our community growth. Total demand for water will likely continue to grow into the future as we reach build-out. Our continued success as a resort is reliant on reliable supply to meet this increased demand.

Whistler has established and continues to adhere to specific water supply system principals and water quality criteria, as follows:

- 1) Provide safe drinking water in accordance with the Canadian Drinking Water Standards and in compliance with Provincial Regulation. Our operating Permit also specifically requires the following:
 - a. Do not use 21 Mile Creek when Turbidity NTU > 1
 - b. Do not use 21 Mile Creek when UV Transmittance (UVT) insufficient to remove pathogens
- 2) Provide sufficient water to meet all domestic and fire flow demands at all times

- 3) Use 21 Mile Creek as much as possible to minimize costs and provide highest available drinking water aesthetic quality
- 4) Accommodate periods when 21 Mile Creek supply is off-line, using groundwater to satisfy all demands
- 5) Work towards integrating isolated sub-systems in the Core sub-system to increase system resilience and minimize long-term costs
- 6) Minimize costs by implementing conservation programs and supply projects in order of most to least cost-effective

Currently, the maximum available supply flow from all sources is 30 cubic-meters per minute (m3/min) including the new W219 well in Rainbow Park. If Twenty-One Mile Creek were unavailable for an extended period, the maximum available supply would be 21 m3/min (a reduction of 9 m3/min or 30%). 21 m3/min is substantially lower than Whistler core area's recent 2015 peak observed demand⁴ of 28 m3/min. It is therefore clear that a supply gap currently exists during our busiest summer period if 21 Mile Creek were to go off line.

A supply gap currently exists during our busiest summer period when 21 Mile Creek is off line. At build-out, Whistler is forecast to face a 5 m3/min shortfall during maximum day demand.

As can be seen from Table 1, Whistler's is forecast to face a shortfall of 5 m3/min at build-out peak day demand with 21 Mile Creek off-line.

Where?	Current Max Day Demand (m3/min)	Build-Out Demand ⁵ (m3/min)	Current Supply (m3/min)	Supply Gap at Build-Out (m3/min)
Alpine	2.0	2.9	4.6	1.7
Cheakamus	0.47	1.3	4.5	3.2
Core Area	14	18	12	(5.4)
Emerald	0.63	0.76	1.5	0.72
All Whistler Sub-Total	18	23	23	0.17

Table 1 Summer Supply Shortfall

4.3 Other Factors

An initiative is underway to establish a climate change adaptation strategies for the RMOW. A subsequent update to this report will take the outcomes of that initiative into account.

Staff and Council may also subsequently consider changes to planting and irrigation policies as they apply to the RMOW itself.

4.4 Water Consumption Design Conditions

The design criteria used to design our waterworks infrastructure is based on bed units. While most municipalities use population as the unit for water use estimations, using bed units in Whistler makes sense as there is a significant water use associated with a developed bed unit. For example, once a hotel is built, water is consumed for irrigation, ice makers, and the swimming pool whether the hotel is occupied or not. In addition, the number of developed bed units can be relatively easily

⁴ Peak day demand for Whistler plus Whistler South excluding Cheakamus occurred July 3, 2015

⁵ Assumes 90% occupancy on Maximum Day Demand day

measured, while determining an accurate daily average population in Whistler is difficult, is only an annualized estimate, and is still not an exact comparison for water consumption purposes as the large visitor population does not use water in the same way as our resident population. Using bed units as the unit for water design criteria is common for resort communities.

The maximum demand design value is the measure of the maximum foreseeable demands that the water system will need to accommodate during the most challenging weather and demand conditions that will likely occur. In most of the world, including in Whistler, that situation will invariably arise during the hottest days of summer: in the discussion following only summer maximum demand will be considered.

Design for this relatively conservative criterion is the accepted standard, and a reasonable standard in light of the consequences of water supply system failure which can include pressure decreases, depletion of available firefighting supplies, or water supply interruptions. Whistler's previously established maximum demand design criterion of 700 litres per bed unit per day (L/BU/day) in the summer anticipated maximum foreseeable residential usage, maximum hotel occupancy, full irrigation demands and a margin of safety.

Under current build-out conditions, summer maximum demand of 700 L/BU/day would translate to 26 m³/min, which is significantly higher than Whistler's currently available supply: this difference had raised the question of whether the design standard is too high, or whether maximum demand conditions simply haven't occurred. In order to answer this question staff commissioned a technical review of the 700 L/BU/day design standard.

A resulting recent (June 2015) update to the RMOW long-term water supply plan⁶ and subsequent staff work have provided new insight into the observed maximum annual demands for the years 2013-2015. It has been found the actual amounts recently consumed to be different (significantly less than) the aforementioned design criteria. Additionally, Whistler is much closer to build-out than it has been historically, so there are fewer unknowns adding uncertainty to supply planning. Engineering practice under such conditions is to revise the design criteria downward to reflect current (as opposed to historical) usage patterns, but to retain a safety margin reflective of remaining unknown factors, for example, the actual number of bed units available in the current maximum demand period, and the likelihood of further tourism growth beyond 2014 and 2015's record levels.

A staff review of maximum day supply volumes established that the historical maximum demand of occurred for the Core Area⁷ on July 3, 2015. Based on this finding, staff have accepted the consultant's recommendation the RMOW's maximum demand standard be reduced from 700 to 530 L/BU/day.

In 2015, the RMOW's design maximum demand standard was reduced from 700 L/BU/day to 530 L/BU/day

In 2014, approximately 5.4 million cubic meters were supplied to Whistler's potable water system from the surface and groundwater sources. The following two charts show historical water use in Whistler. Figure 4-1 shows peak daily water consumption per bed unit in Whistler's core area. Figure 4-2 shows average daily water consumption per bed unit. Comparing these two figures reveals that while 2014 had an annual average demand of 271 L/BU/day, peak day demand rate was 468 L/BU, significantly larger than the annual average. Understanding the peak demand is

⁶ (Draft) Potable Water Supply Plan 2014 Update D-17984.00, Opus Daytonknight, June 2015

⁷ Whistler Village, White Gold, and South Whistler, excluding Cheakamus Crossing

critical for designing infrastructure components to deal with these annual peak events.

The trend in Figure 4-1 reflects Whistler's transition from a mostly winter resort to a year-round destination resulting in a significantly increased maximum water demand in the 1990's. The decrease in maximum demand starting in 2000 shows the effectiveness of the water conservation measures that were implemented at that time. 2010 was an exceptional year, and has been removed for clarity. 2013 and 2014 show only a slight increase in average water use, possibly indicating the record-level tourism in those years was counter-balanced by effective conservation measures.

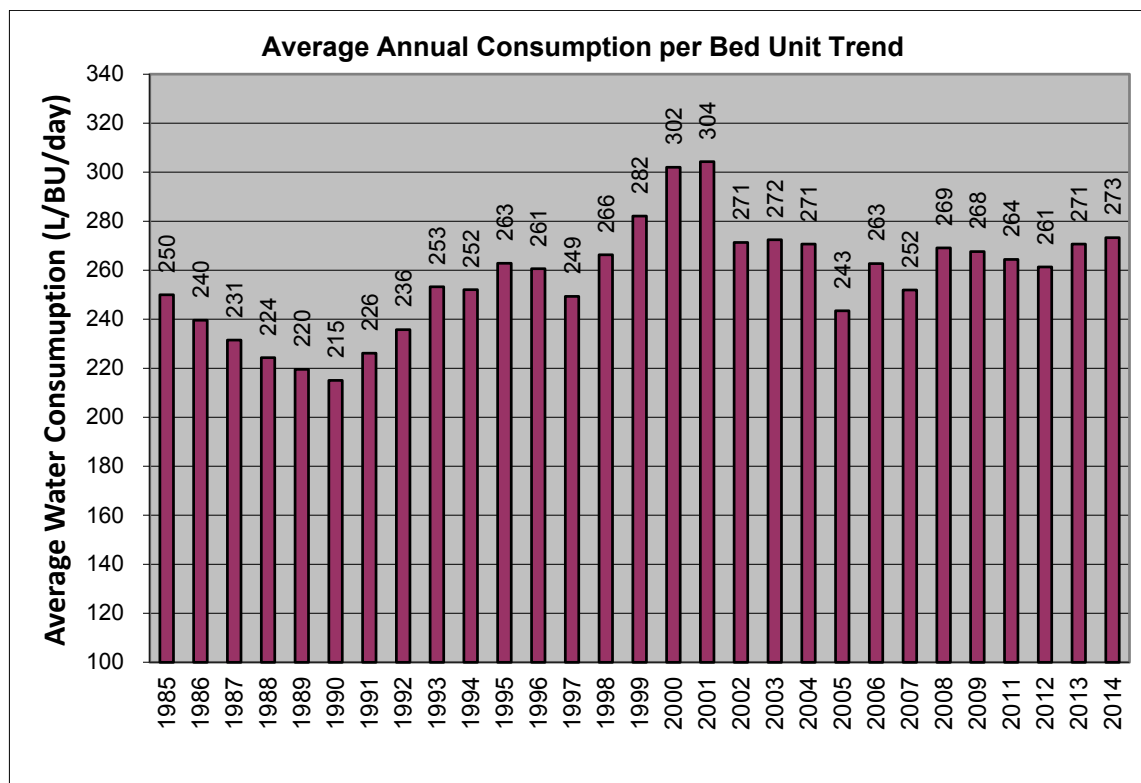


Figure 4-1 Average Consumption per Bed Unit Trend

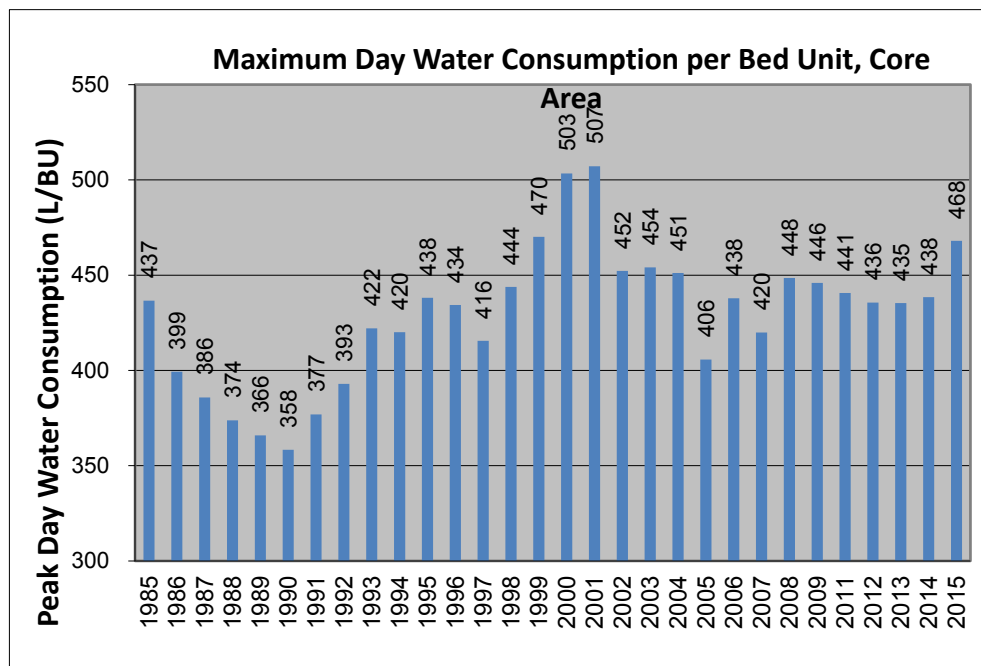


Figure 4-2 Water Consumption Per Bed Unit Trend, Core Area

2015's peak day as seen in Figure 4-2 was significantly counter-trend, and 2015 has had higher consumption overall. 29 of the 38 weeks to-date in 2015 had higher consumption than 2014. As a result, 2015 is currently forecast to have 10% higher overall consumption than 2014: 2015's conditions show that per Bed Unit maximum demand trends and annual maximum consumption are subject to significant change: seemingly steady patterns may not hold true in the future without significant additional focus on conservation efforts, particularly in summer.

Figure 4-3 shows weekly consumption in the summer of 2015 compared with the 2011-2014 period. 2015 brought a combination of drought, high temperatures, and record tourism. In this example, until water use restrictions began to be enforced in 2015, consumption had exceeded 2014 consumption by 11%, with consumption in the non-irrigation period still up significantly due to increased 2015 tourism. With summer water use outreach and communication, consumption dropped significantly beginning the week of July 28th, and total 2015 consumption had trended back down to 8% higher than 2014 by the week of August 11th. By September, with cooler and wetter weather, and irrigation restrictions still in place, consumption was about equal to prior years’.

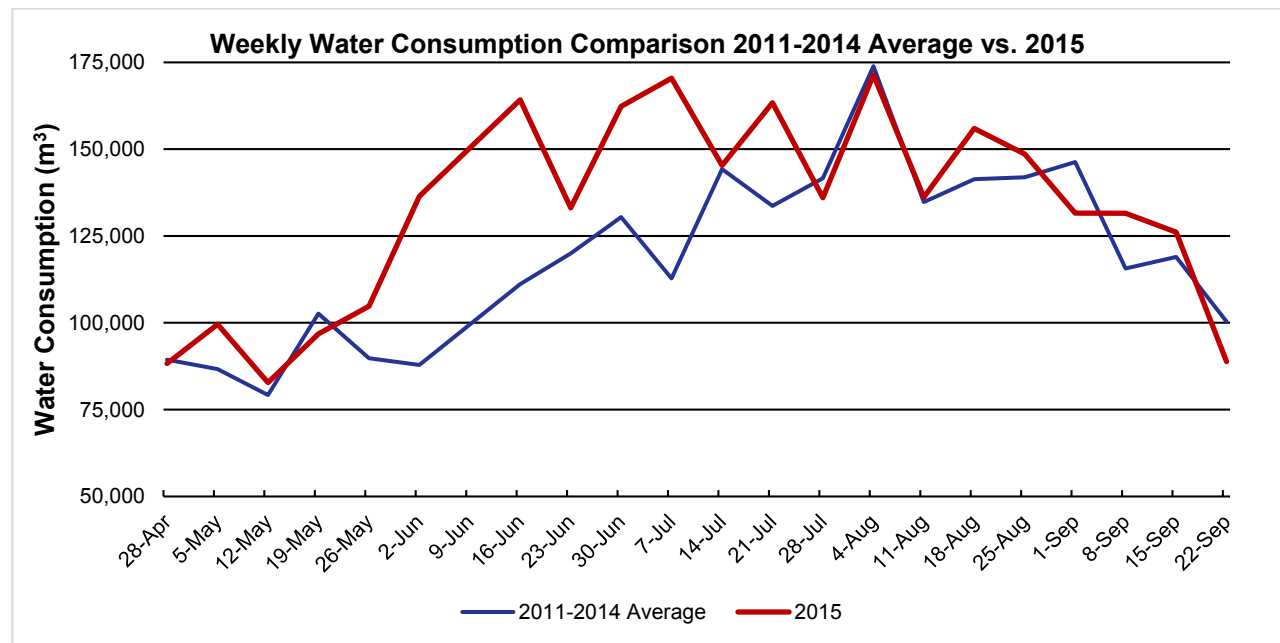


Figure 4-3 Weekly Summer Water Consumption 2015 vs. Recent Years

4.5 Residential vs. Other Consumption

There are significant differences in Whistler between residential and other uses. In general residential consumption per bed unit is much lower than for Whistler as whole. For example, in the week of August 31, 2015, Cheakamus Crossing consumption was 111 L/BU/day, *much* lower than the Whistler 2020 objective. Permanent resident areas are known to consume much less water per capita than the community as a whole, due to the effect of resort usage patterns.

4.6 Whistler Core Water Zone

Despite the RMOW water system as a whole having surplus supply in some zones, the locations of the supplies do not always match the areas of demand. For example, both Emerald Estates and Cheakamus Crossing have water supplies that exceed the local demand, but currently there are no connections that allow water from these areas to be pumped to the Village area – the area of highest demand.

The Whistler Core water zone (generally the area from Creekside through to Nesters), has sufficient water supply when Twenty-One Mile Creek water is available, but has a deficiency at maximum day demand if Twenty-One Mile Creek cannot be used. Since it is foreseeable that Twenty-One Mile Creek may not be available during maximum day demand periods, further water conservation programs or infrastructure development will be required to close the gap between available supply and maximum day demand when Twenty-One Mile Creek is offline.

4.7 Supply and Demand Summary

Normally water supply improvements are triggered when maximum day demand approaches the supply capacity. When that level is reached, the municipality has the choice to build additional water supply sources or to implement additional conservation programs if such programs can be relied upon to close the supply gap.

As explained above, the Village water zone does have supply deficiencies during maximum demand if Twenty-One Mile creek water is unavailable. The difference between supply and demand at build-out is approximately 5.4 m³/min⁸, and the lowest cost method (either water conservation programs or infrastructure improvements, or a combination of both) must be pursued to correct this shortcoming otherwise there is a risk of water supply interruptions or firefighting storage shortfalls.

5 Recommendations

Delivering 5.4 m³/min equivalent of supply and conservation is the long term goal, as noted previously. Recommended timing and prioritization will be presented to Council for consideration in the next five year plan.

The identified long-term supply gap to be addressed by the supply and conservation programs is 5.4 m³/min. In order to address this gap, programs totaling 5.4 m³/min minimum must be implemented. Table 5 below shows the programs which will be required to fulfill this requirement. These programs comprise the programs recommended by staff to Council for ongoing inclusion in the RMOW's five-year financial plan.

Table 2 Recommended Supply and Conservation Programs

Priority ⁹	Program Name ¹⁰	Capital Cost Estimate ¹¹	Total Annual Cost/Savings Estimate ¹²	Estimated Max Flow Benefit (m ³ /min) ¹³	Max Flow-Weighted Benefit (\$/m ³ /min) ¹⁴
C1	Once-Through Water Use By-law		(\$27,000)	0.28	(\$6,000)
C2	Update Comprehensive Water Usage bylaw		(\$5,000)	0.06	(\$6,000)
C3	Water Use bylaw - Outreach		\$17,000	2.5	\$1,000
C4	Water Leakage Reduction Program	\$380,000	\$12,000	1.4	\$1,000
C5	Public Education		\$11,000	0.09	\$8,000
S1	Spring Creek Booster Station	\$480,000	\$35,000	2.6	\$1,000
RECOMMENDED PROGRAM TOTAL		\$860,000	\$43,000	6.9	\$374

The recommended programs are each already identified in the 2015-2019 financial plan, with only minor adjustments required for the 2016-2020 plan.

The first five programs shown in Table 5 provide significant, economical supply reduction through conservation. Over the *long term* C1 – C5 are expected to reduce average water consumption by

⁸ Opus Dayton & Knight, Whistler Potable Water Supply Plan 2014 Update (draft)

⁹ Priority identifier. Programs starting with "S" are supply projects. The Projects have been ranked from S1 to S6, with S1 being the highest priority.

¹⁰ These descriptive names may not precisely match project and program names included in the 2015-2019 five year plan.

¹¹ An estimate of the total capital costs associated with a program over the program life.

¹² Average annual cost minus annual conservation savings (if any) for the first ten years of the program. The annual costs include first-year one-time costs, ongoing annual O&M costs, and amortized capital depreciation.

¹³ An estimate of the peak day flow reduction provided by the program. Peak day flow reductions result in reduced future infrastructure expenses, and are therefore important in determining which programs to implement.

¹⁴ The Total Annual Cost/Savings Estimate divided by Estimated Max Flow Benefit. This provides a measure of cost or saving per unit of flow, and helps with comparing the cost-effectiveness of the various programs.

approximately 4.3 m³/min. These programs will make a significant contribution towards Whistler's goal of reducing water consumption to 425 litres per person per day.

In order to provide the necessary 5.4 m³/min required to meet maximum future demand, however, more than these conservation programs will be required. The next best choice is a booster station at Spring Creek, to bring surplus Cheakamus Crossing water north. This project is straightforward, has a flow-weighted cost equivalent to conservation programs, and provides many other operational benefits.

Staff recommend continuing with the six programs and projects identified in Table 5, which will close supply gap with a small margin of safety, by providing an overall flow benefit of 6.9 m³/min.

Staff recommend a Comprehensive Volumetric Metering Options Review be commissioned and presented to Council in 2016.

Staff recommend including in the 2016-2020 five year plan an investigation as to the costs and benefits of an *Efficient Irrigation / Landscaping Program*.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Water	All potable water is used sparingly and only used to meet appropriate needs.	Implementation of water conservation programs will ensure that Whistler moves towards this description of success.
Water	With respect to water resources, capital and long-term costs are managed in a financially prudent and fiscally responsible manner.	Only developing further water supplies or implementing conservation programs in a prioritized order and as required will ensure that long-term costs are managed.
Water	Water supply is distributed reliably, equitably and affordably – and is managed proactively within the context of effective and efficient emergency preparedness.	Pursuing conservation programs or additional water sources in advance of when they will be required will ensure that Whistler's water supply remains reliable.

W2020 Strategy	AWAY FROM Descriptions of success that resolution moves away from	Mitigation Strategies and Comments
Water	None.	

OTHER POLICY CONSIDERATIONS

As indicated in the above plan, a number of Bylaw or policy updates are required to reduce water use in Whistler, specifically:

- 1) The draft 2009 Once-Through Water Use by-law is to be updated and presented to Council in 2015
- 2) An update to the Water Use Regulation Bylaw No. 1538, 2001 as amended is to be developed and brought forward to Council in 2016

BUDGET CONSIDERATIONS

The total capital expenditure of approximately \$860,000 which will be required to proceed with items C4 and S1 are already included in the 2015-2019 five-year plan. The identified annualized net cost of the six identified priority programs and projects is already included in the 2015-2019 five-year plan.

A new project costing approximately \$50,000 will be required to complete an ICI meter inventory and Comprehensive Volumetric Metering Options Review. Staff will include this new project in the 2016-2019 five-year plan.

COMMUNITY ENGAGEMENT AND CONSULTATION

Individual programs within this plan will involve public consultation as required when those programs are implemented, for example, the planned update to the water use by-law will include consultation with industry stakeholders.

SUMMARY

With the current water sources, and current measured maximum day demand, there is a low but distinct probability for the Whistler Village water zone to experience water supply interruptions in the future. All other areas in Whistler have supplies in excess of the measured demands.

In order to reduce the risk of water supply interruptions, staff recommend a combination of conservation programs and water supply improvement projects to eliminate the risk of water supply interruptions in the Whistler Village water zone. The conservation programs and water supply projects have been evaluated on the basis of cost effectiveness, and a combined list provide to Council illustrates the lowest cost method to reduce this risk.

The five recommended conservation programs will make a significant contribution to Whistler's goal of reducing per capita water consumption to 425 litres per day.

Going forward, the maximum day and average water consumption in Whistler will continue to be monitored annually, and additional items from the prioritized list of conservation programs and infrastructure projects will proceed if required to ensure a reliable water supply for Whistler.

Respectfully submitted,

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Utilities Group Manager
for
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GENERAL MANAGER, INFRASTRUCTURE SERVICES

COMPREHENSIVE WATER CONSERVATION AND SUPPLY PLAN 2015 UPDATE REPORT

The Resort Municipality of Whistler | September 28, 2015



THE RESORT MUNICIPALITY OF WHISTLER

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PURPOSE

To operate as a successful resort community, it is essential Whistler has sufficient, high quality water at all times. This report will discuss the multiple paths available to achieving this objective in a sustainable manner, and will address complexities, principles and action plans related to:

- Current supply vs. supply requirements at build-out
- Supply under drought maximum-demand conditions
- The role of the 21-Mile Creek supply
- The differences between resort and residential usage
- Whistler 2020 sustainability objectives

The purpose of this report is to document progress on and update plans for water conservation and supply initiatives that have been pursued for the past several years, and identify a prioritized list of further water conservation programs and infrastructure projects that will assure Whistler of a reliable water supply sufficient to meet long-term needs.

DISCUSSION

1 WHISTLER'S DRINKING WATER SUPPLY

Whistler drinking water supply system consists of one surface water source (21 Mile Creek) and 15 water wells. The supply system has two major, physically separate water supply systems, Whistler Main and Emerald, as reflected in the operating permits Vancouver Coastal Health has issued to Whistler. The Whistler Main system has three sub-systems which are separated from each other by valves. These are the Core (which includes the Village, Creekside, Bayshores, Brio, Alta Vista, etc.), Alpine-Rainbow, and Cheakamus Crossing.

1.1 Key Concepts

"Annual Average Population" is permanent residents plus estimated overnight visitors as reported by Tourism Whistler. While Annual Average Population doesn't include day visitors, the effect of the day visitors on demand is already built into all consumption measures.

"Maximum Day Demand" is the amount of water actually provided to the Whistler community on the highest-use day of the year (for example, during Crankworx), divided by the number of occupied and built bed units in existence on that day.

"Design Maximum Day Demand" is the amount of water forecast to be required at build-out on the Maximum Day, assuming 100% occupancy.

The "Whistler2020 Water Use Target": Through the Whistler 2020 process, a community vision was established to reduce the amount of water removed from the natural environment for community use. As a result, a target of reducing water consumption to 425 litres per capita per day, based on the Annual Average Population for Whistler.

The "Whistler Community Performance Indicator", which is reported annually, is used to determine progress toward the Water Use Target. It is defined¹ as the actual amount of non-potable water removed from natural sources by the Whistler community in a given year, and then divided by the annual average population.

¹ From <http://www.whistler2020.ca/whistler/site/indicator2.acds?instanceid=11159057&context=11158627>

"Indicator Definition: Total water consumption (potable and non-potable RMOW water flows)

"Calculation: Sum the water flows entering all RMOW water treatment plants and the flows used for RMOW non-potable uses."

It is important to note that the Whistler2020 Water Use Target and Whistler Community Performance Indicator are not related to the Design Maximum Day Demand, because they're based on annual average use, not maximum day use. The water supply system must be designed for maximum day use, not average annual use.

1.2 Water System Principals

Six principals have been consistently applied to the development of Whistler's water system development:

1. Provide safe drinking water in accordance with the Canadian Drinking Water Standards and in compliance with Provincial Regulation
2. Provide sufficient water to meet all instantaneous domestic and fire flow demands at all times
3. Use 21 Mile Creek as much as possible to minimize costs and provide highest available drinking water aesthetic quality
4. Accommodate periods when 21 Mile Creek supply is off-line, using groundwater to satisfy all demands
5. Work towards integrating and simplifying the supply system in order to increase system resilience and minimize long-term costs
6. Both Conservation and Supply plans can be used to satisfy future demand growth. These will be implemented in the most cost effective manner.

1.3 Supply Volume Design Criteria

Developed bed units ("BU") are a theoretical measure used in Whistler for planning purposes. Whistler long-term supply requirements are established by determining the current Maximum Day Demand, then multiplying the result by the number of BU expected at build-out. This approach provides a consistent and uniform measure of demand for forecasting purposes. Examples of the theoretical BU values are:

- Single family home or Duplex unit = 6 BU
- Hotel Room = 2 BU
- Employee housing = 1 BU per person
- Multi-Family = 2 to 6 BU, based on size

The RMOW implements new supply and conservation measures in a gradual manner, and monitors progressive changes to Maximum Day Demand to adjust future demand forecasts.

Over time, as the community has developed, conservation measures implemented, and monitoring systems improved, Maximum Day Demands have declined.

The resulting decline in Design Demand has proceeded as follows:

pre-1990's:	1000 L/BU/day
post-1990's:	700 L/BU/day
2015:	530 L/BU/day ²

All the changes that were implemented starting in the early 1990's (see section 3) have thereby enabled downward movement in Design Maximum Day Demand, with corresponding reductions in actual and planned spending.

2 NEED FOR WATER CONSERVATION

Whistler's 2014/2015 low-snowpack winter and subsequent 2015 regional drought conditions have made the importance of water conservation under such conditions very clear to Whistler residents. However, given that Whistler is surrounded by rivers, lakes, and glaciers, and has a high proportion of resort visitors, it is difficult for many to understand and support the water conservation and supply issues that are important here at all times.

The natural hydrologic cycle evaporates water from oceans, lakes, and rivers, and deposits the water in our local mountains in the form of both rain and snow. The water that runs off the mountains fills our rivers and creeks, and over time replenishes the

² (Draft) Potable Water Supply Plan 2014 Update D-17984.00, Opus Daytonknight, June 2015

below-ground aquifers. The RMOW's water supply and distribution system temporarily interrupts this cycle, but most of the water we "use" is treated and returns to the natural environment further downstream.

Whistler has established a Whistler 2020 Water Use Target, which is shown with yearly estimated per capita consumption in Figure 2-1 below.

Were one to set aside Provincial and Whistler 2020 environmentally-oriented water use objectives, water conservation would remain important for financial reasons: there are significant costs associated with expanding and operating our water and wastewater systems as required to meet increases in flow. Reducing the average amount of water used in Whistler is important as that would result in reduced maintenance and operating costs for our water and wastewater systems. Reducing the peak (maximum day) amount of water use can be even more financially significant as lowering this peak water usage can delay or even reduce the scope of needed supply and conservation programs.

British Columbia's Water Plan "Living Water Smart" was rolled out by the provincial government in 2009 and includes two key goals relevant to water conservation in Whistler:

1. Fifty percent of new municipal water needs will be acquired through conservation by 2020
2. By 2020, water use in British Columbia will be 33 percent more efficient

Meeting the first provincial goal would require that for each additional unit of water demand, only half should be provided by expanded water infrastructure, with the other half to be provided by conservation. This is a challenging objective to meet.

Meeting the second provincial goal is also challenging: no definition of "efficiency" is provided, nor any allocation of required efficiency gains to each affected organization.

In acknowledging the challenges inherent in these high level provincial goals, it's also important to understand that the Province³ requires a "water demand management plan" be established by local governments as a requirement for applying for water-related Provincial infrastructure funding. The attached Plan is intended to ensure the continuing fulfillment of this requirement.

Prior to the creation of Provincial goals, the Whistler community established, through the Whistler 2020 process, a Water Use Target of reducing annual average water consumption to 425 litres per capita per day (based on Whistler's annual average population).

³ http://www.cscd.gov.bc.ca/lgd/infra/infrastructure_grants/

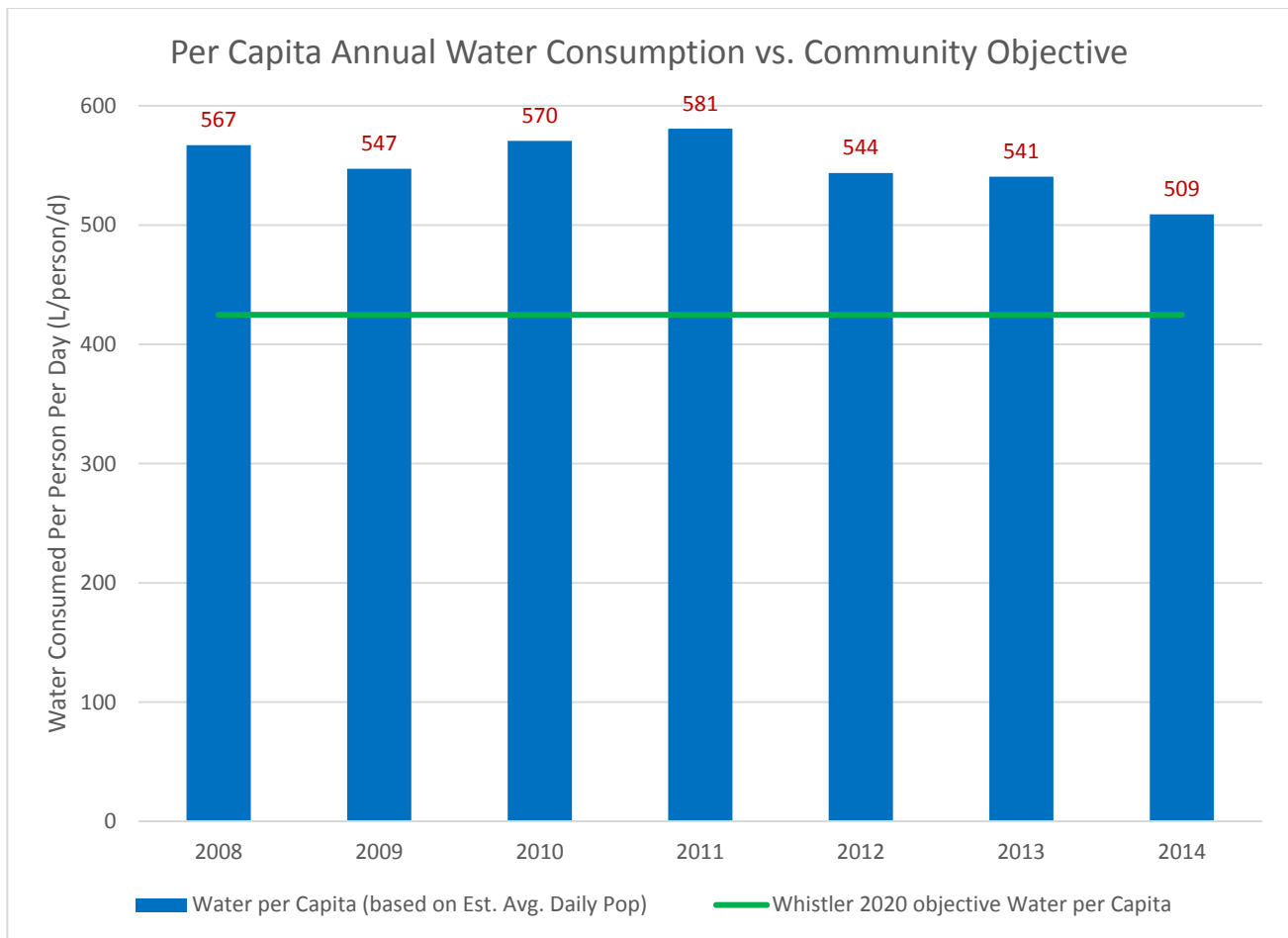


Figure 2-1 per Capita Water Consumed vs. W2020 Water Use Target

As can be seen in Figure 2-1, in 2014 the average daily drinking water supplied to the community was measured at 509 litres per capita, a significant improvement over prior years, but 17% higher than the 425 litre sustainability goal. Per capita water consumption will have to drop by 3% per year in the six years 2015 to 2020 to achieve the Whistler 2020 Water Use Target, requiring significant improvements to water conservation.

Per capita consumption will have to decline 3% per year to 2020 if Whistler is to achieve its' Whistler2020 Water Use Target.

3 BACKGROUND – HISTORIC WATER CONSERVATION IN WHISTLER

Between the 1990's and 2010, municipal staff implemented various water conservation projects and programs throughout the municipality. Initially, these projects and programs were the obvious first steps (the low-hanging-fruit) and provided high returns in regards to cost savings. The results of these conservation programs can be seen in Figure 3-1 (note the significant leveling of demand in the late 1990s and early 2000s).

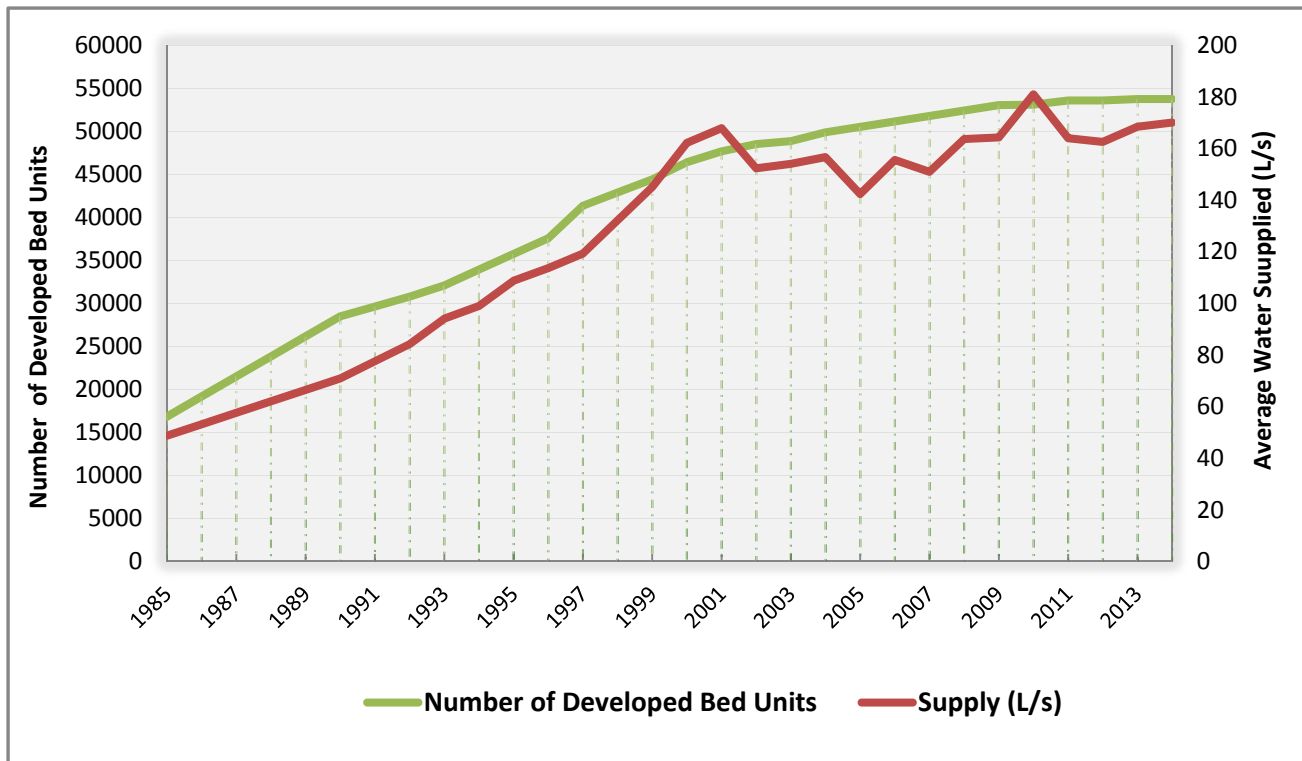


Figure 3-1 Number of Developed Bed Units vs Average Annual Supply Flow

The significant pre-2011 water conservation programs which were implemented by the RMOW are as follows:

3.1 Whistler Golf Course Irrigation Systems

In the late 1990's, the municipality partnered with the Whistler Golf Course on the development of an independent irrigation (non-potable) well. This resulted in a significant decrease in municipal water use for the operation of the golf course. All three golf courses in Whistler now use untreated water for irrigation.

3.2 Hydrant Use Permitting Process

In 1999, the Public Works (now Infrastructure Services) Department launched a program that regulated the use of fire hydrants by the private sector. A hydrant use permit and backflow preventer must be obtained from RMOW Utilities before a contractor can use a fire hydrant. This change significantly reduced the inappropriate use of fire hydrants for non-emergency services. In 2015, the Hydrant Use Permit process is being leveraged to afford additional water saving opportunities and will be used to improve construction-related water consumption data tracking on an ongoing basis.

3.3 Irrigation/Sprinkling Bylaw

In 2001, municipal council approved a bylaw to regulate and restrict lawn irrigation and other miscellaneous uses of water. These regulations are similar to those in the lower mainland and allow residents to water their lawns every other day during early morning and evening hours. Further restrictions on irrigation can be implemented under this bylaw if the municipality declares a "water emergency".

3.4 Low Flow Plumbing Fixture Bylaw

In 2003, municipal council approved a bylaw that requires low flow toilets, showerheads and other fixtures for all new construction that involves a plumbing permit. Recent changes to the BC Building Code have incorporated fixture efficiency requirements within the BCBC (similar to, and in place of our local bylaw), and have incorporated incremental efficiency requirements for low flow fixtures (esp. toilets).

3.5 Independent Municipal Parks Irrigation

In 2003 and 2004, the municipality constructed independent irrigation (non-potable) wells at Rainbow Park, Spruce Grove Park and Myrtle Phillip Community School.

3.6 Water Leakage Reduction

Since 2009 the municipality has had an ongoing program to detect and fix water leaks.

4 CURRENT WATER SUPPLY AND CONSUMPTION CONDITIONS

4.1 Water Supply Infrastructure

Whistler's water supply system is relatively complicated due to the nature of how Whistler developed in isolated neighborhoods and our geography. The RMOW draws drinking water from 14 water wells and one surface water source to supply water our water distribution systems. On an annual basis, around half of the RMOW's water is supplied from the surface water source, Twenty-One Mile Creek, but during the months of March through June and October to November this water supply is periodically unavailable due to high turbidity or low UV transmittance. Turbidity usually occurs when sediment enters the creek from localized slope erosion or other activity in the watershed. Low UV transmittance usually occurs due to either turbidity or colour staining in the water resulting from organic matter. Even during hot July and August weather, when the maximum daily water demands normally occur, the turbidity occasionally exceeds the drinking water guidelines, thereby making the Twenty-One Mile Creek source temporarily unusable. This is usually caused by an intense, short duration summer rainfall event. This problem can be currently be temporarily managed for a few hours by our water storage reservoirs, with some fire storage risks. With the initiatives in this Plan, if we lose 21 Mile Creek Supply, sufficient water will be available even during peak season by using the groundwater supplies (Refer to S. 1.2 Water Supply Principals, Principal No. 4).

The 2015 Alpine Reservoir Level Control Project (E108) will increase the interconnectedness of Whistler's water system by automating the movement of water between the Village zone and the Alpine-Rainbow zones. This project will further improve Alpine-Rainbow water quality, reduce ongoing power costs and reduce demand on the Alpine water wells, thus preserving their peak capacity for times of greater need. The project will also facilitate automation of movement of water from Alpine to the Village Zone in the future, as may be required in an emergency.

4.2 Sufficiency of Supply

Figure 3-1 showed that although the demand for more water has leveled off significantly due to Whistler conservation efforts, overall demand continues to grow in alignment with our community growth. Total demand for water will likely continue to grow into the future as we reach build-out. Our continued success as a resort is reliant on reliable supply to meet this increased demand.

Whistler has established and continues to adhere to specific water supply system principals and water quality criteria, as follows:

- 1) Provide safe drinking water in accordance with the Canadian Drinking Water Standards and in compliance with Provincial Regulation. Our operating Permit also specifically requires the following:
 - a. Do not use 21 Mile Creek when Turbidity NTU > 1
 - b. Do not use 21 Mile Creek when UV Transmittance (UVT) insufficient to remove pathogens
- 2) Provide sufficient water to meet all domestic and fire flow demands at all times
- 3) Use 21 Mile Creek as much as possible to minimize costs and provide highest available drinking water aesthetic quality
- 4) Accommodate periods when 21 Mile Creek supply is off-line, using groundwater to satisfy all demands
- 5) Work towards integrating isolated sub-systems in the Core sub-system to increase system resilience and minimize long-term costs
- 6) Minimize costs by implementing conservation programs and supply projects in order of most to least cost-effective

Currently, the maximum available supply flow from all sources is 30 cubic-meters per minute (m³/min) including the new W219 well in Rainbow Park. If Twenty-One Mile Creek were unavailable for an extended period, the maximum available supply would be 21 m³/min (a reduction of 9 m³/min or 30%). 21 m³/min is substantially lower than Whistler core area's recent 2015 peak

observed demand⁴ of 28 m³/min. It is therefore clear that a supply gap currently exists during our busiest summer period if 21 Mile Creek were to go off line.

A supply gap currently exists during our busiest summer period when 21 Mile Creek is off line. At build-out, Whistler is forecast to face a 5 m³/min shortfall during maximum day demand.

As can be seen from Table 1, Whistler's is forecast to face a shortfall of 5 m³/min at build-out peak day demand with 21 Mile Creek off-line.

Where?	Current Max Day Demand (m ³ /min)	Build-Out Demand ⁵ (m ³ /min)	Current Supply (m ³ /min)	Supply Gap at Build-Out (m ³ /min)
Alpine	2.0	2.9	4.6	1.7
Cheakamus	0.47	1.3	4.5	3.2
Core Area	14	18	12	(5.4)
Emerald	0.63	0.76	1.5	0.72
All Whistler Sub-Total	18	23	23	0.17

Table 1 Summer Supply Shortfall

4.3 Other Factors

An initiative is underway to establish a climate change adaptation strategies for the RMOW. A subsequent update to this report will take the outcomes of that initiative into account.

Staff and Council may also subsequently consider changes to planting and irrigation policies as they apply to the RMOW itself.

4.4 Water Consumption Design Conditions

The design criteria used to design our waterworks infrastructure is based on bed units. While most municipalities use population as the unit for water use estimations, using bed units in Whistler makes sense as there is a significant water use associated with a developed bed unit. For example, once a hotel is built, water is consumed for irrigation, ice makers, and the swimming pool whether the hotel is occupied or not. In addition, the number of developed bed units can be relatively easily measured, while determining an accurate daily average population in Whistler is difficult, is only an annualized estimate, and is still not an exact comparison for water consumption purposes as the large visitor population does not use water in the same way as our resident population. Using bed units as the unit for water design criteria is common for resort communities.

The maximum demand design value is the measure of the maximum foreseeable demands that the water system will need to accommodate during the most challenging weather and demand conditions that will likely occur. In most of the world, including in Whistler, that situation will invariably arise during the hottest days of summer: in the discussion following only summer maximum demand will be considered.

Design for this relatively conservative criterion is the accepted standard, and a reasonable standard in light of the consequences of water supply system failure which can include pressure decreases, depletion of available firefighting supplies, or water supply interruptions. Whistler's previously established maximum demand design criterion of 700 litres per bed unit per day (L/BU/day) in the summer anticipated maximum foreseeable residential usage, maximum hotel occupancy, full irrigation demands and a margin of safety.

⁴ Peak day demand for Whistler plus Whistler South excluding Cheakamus occurred July 3, 2015

⁵ Assumes 90% occupancy on Maximum Day Demand day

Under current build-out conditions, summer maximum demand of 700 L/BU/day would translate to 26 m³/min, which is significantly higher than Whistler's currently available supply: this difference had raised the question of whether the design standard is too high, or whether maximum demand conditions simply haven't occurred. In order to answer this question staff commissioned a technical review of the 700 L/BU/day design standard.

A resulting recent (June 2015) update to the RMOW long-term water supply plan⁶ and subsequent staff work have provided new insight into the observed maximum annual demands for the years 2013-2015. It has been found the actual amounts recently consumed to be different (significantly less than) the aforementioned design criteria. Additionally, Whistler is much closer to build-out than it has been historically, so there are fewer unknowns adding uncertainty to supply planning. Engineering practice under such conditions is to revise the design criteria downward to reflect current (as opposed to historical) usage patterns, but to retain a safety margin reflective of remaining unknown factors, for example, the actual number of bed units available in the current maximum demand period, and the likelihood of further tourism growth beyond 2014 and 2015's record levels.

A staff review of maximum day supply volumes established that the historical maximum demand of occurred for the Core Area⁷ on July 3, 2015. Based on this finding, staff have accepted the consultant's recommendation the RMOW's maximum demand standard be reduced from 700 to 530 L/BU/day.

In 2015, the RMOW's design maximum demand standard was reduced from 700 L/BU/day to 530 L/BU/day

In 2014, approximately 5.4 million cubic meters were supplied to Whistler's potable water system from the surface and groundwater sources. The following two charts show historical water use in Whistler. Figure 4-1 shows peak daily water consumption per bed unit in Whistler's core area. Figure 4-2 shows average daily water consumption per bed unit. Comparing these two figures reveals that while 2014 had an annual average demand of 271 L/BU/day, peak day demand rate was 468 L/BU, significantly larger than the annual average. Understanding the peak demand is critical for designing infrastructure components to deal with these annual peak events.

The trend in Figure 4-1 reflects Whistler's transition from a mostly winter resort to a year-round destination resulting in a significantly increased maximum water demand in the 1990's. The decrease in maximum demand starting in 2000 shows the effectiveness of the water conservation measures that were implemented at that time. 2010 was an exceptional year, and has been removed for clarity. 2013 and 2014 show only a slight increase in average water use, possibly indicating the record-level

⁶ (Draft) Potable Water Supply Plan 2014 Update D-17984.00, Opus Daytonknight, June 2015

⁷ Whistler Village, White Gold, and South Whistler, excluding Cheakamus Crossing

tourism in those years was counter-balanced by effective conservation measures.

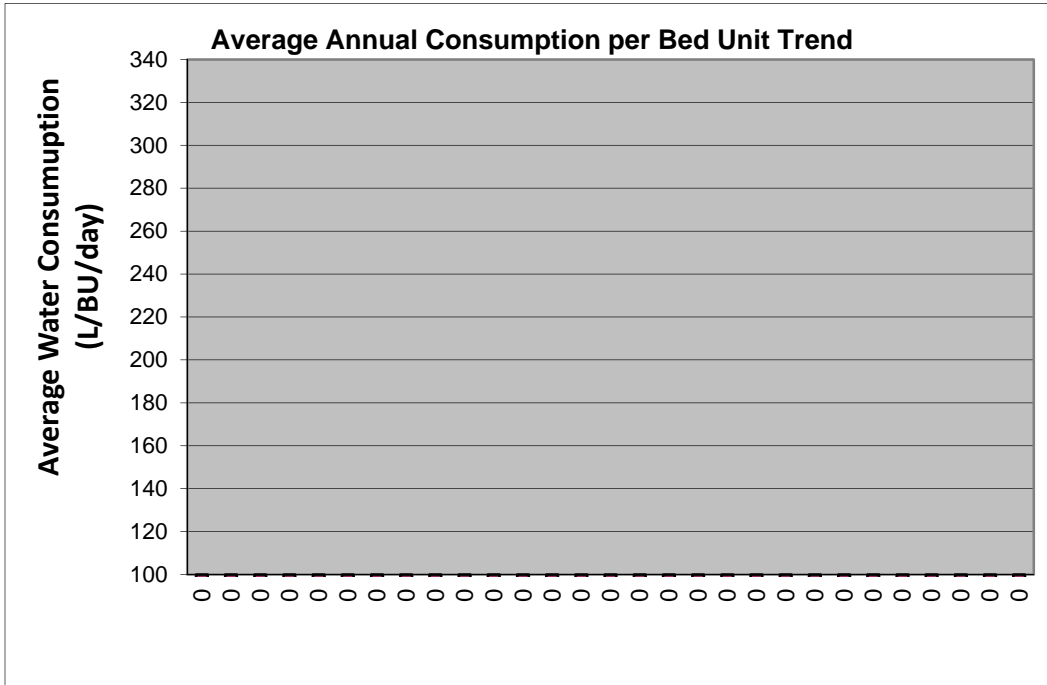


Figure 4-1 Average Consumption per Bed Unit Trend

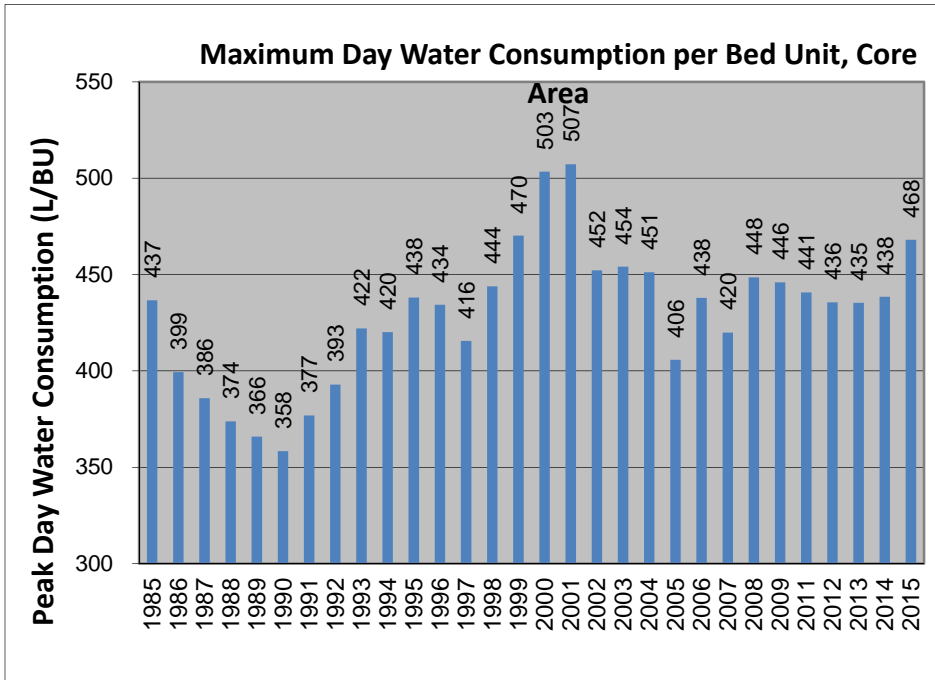


Figure 4-2 Water Consumption per Bed Unit Trend, Core Area

2015's peak day as seen in Figure 4-2 was significantly counter-trend, and 2015 has had higher consumption overall. 29 of the

38 weeks to-date in 2015 had higher consumption than 2014. As a result, 2015 is currently forecast to have 10% higher overall consumption than 2014: 2015's conditions show that per Bed Unit maximum demand trends and annual maximum consumption are subject to significant change: seemingly steady patterns may not hold true in the future without significant additional focus on conservation efforts, particularly in summer.

Figure 4-3 shows weekly consumption in the summer of 2015 compared with the 2011-2014 period. 2015 brought a combination of drought, high temperatures, and record tourism. In this example, until water use restrictions began to be enforced in 2015, consumption had exceeded 2014 consumption by 11%, with consumption in the non-irrigation period still up significantly due to increased 2015 tourism. With summer water use outreach and communication, consumption dropped significantly beginning the week of July 28th, and total 2015 consumption had trended back down to 8% higher than 2014 by the week of August 11th. By September, with cooler and wetter weather, and irrigation restrictions still in place, consumption was about equal to prior years'.

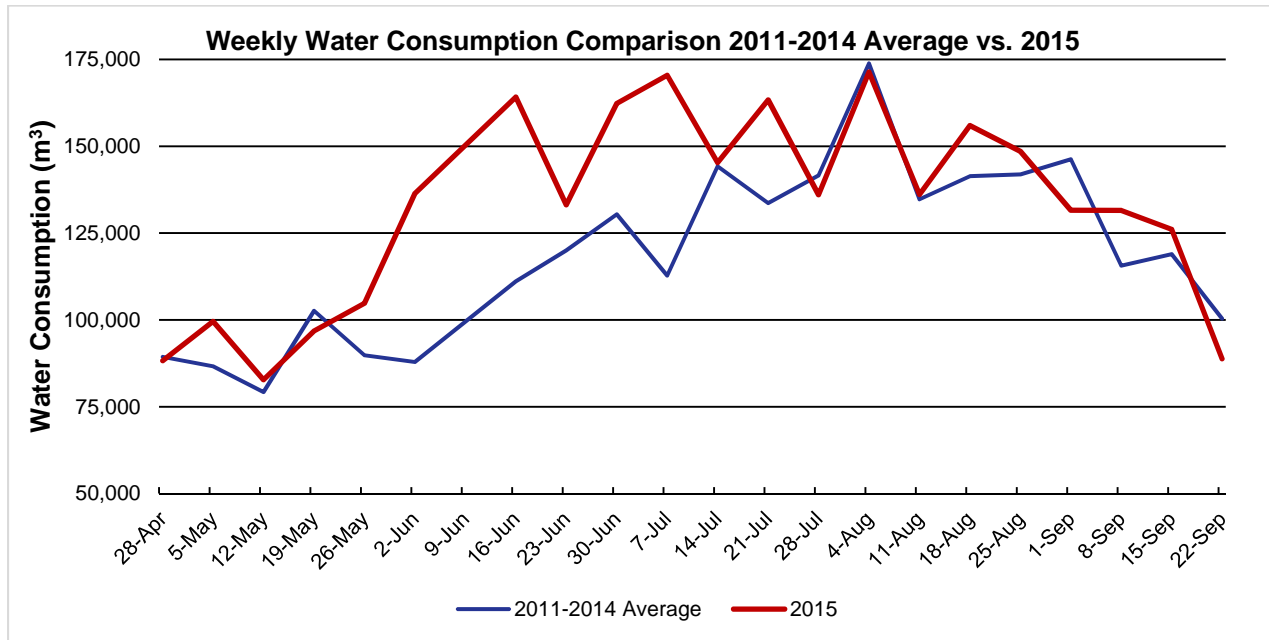


Figure 4-3 Weekly Summer Water Consumption 2015 vs. Recent Years

4.5 Residential vs. Other Consumption

There are significant differences in Whistler between residential and other uses. In general residential consumption per bed unit is much lower than for Whistler as whole. For example, in the week of August 31, 2015, Cheakamus Crossing consumption was 111 L/BU/day, *much* lower than the Whistler 2020 objective. Permanent resident areas are known to consume much less water per capita than the community as a whole, due to the effect of resort usage patterns.

4.6 Whistler Core Water Zone

Despite the RMOW water system as a whole having surplus supply in some zones, the locations of the supplies do not always match the areas of demand. For example, both Emerald Estates and Cheakamus Crossing have water supplies that exceed the local demand, but currently there are no connections that allow water from these areas to be pumped to the Village area – the area of highest demand.

The Whistler Core water zone (generally the area from Creekside through to Nesters), has sufficient water supply when Twenty-One Mile Creek water is available, but has a deficiency at maximum day demand if Twenty-One Mile Creek cannot be used. Since it is foreseeable that Twenty-One Mile Creek may not be available during maximum day demand periods, further water conservation programs or infrastructure development will be required to close the gap between available supply and maximum day demand when Twenty-One Mile Creek is offline.

4.7 Supply and Demand Summary

Normally water supply improvements are triggered when maximum day demand approaches the supply capacity. When that level is reached, the municipality has the choice to build additional water supply sources or to implement additional conservation programs if such programs can be relied upon to close the supply gap.

As explained above, the Village water zone does have supply deficiencies during maximum demand if Twenty-One Mile creek water is unavailable. The difference between supply and demand at build-out is approximately 5.4 m³/min⁸, and the lowest cost method (either water conservation programs or infrastructure improvements, or a combination of both) must be pursued to correct this shortcoming otherwise there is a risk of water supply interruptions or firefighting storage shortfalls.

5 BUSINESS AS USUAL SCENARIO – NO FURTHER WATER CONSERVATION MEASURES

A *minimum* of 15% (\$1.1 million⁹) of the total annual expenditures in the RMOW water and sewer utilities vary with the amount of water used in Whistler. These are costs such as electricity, chemicals, testing, equipment maintenance, and staff overtime for both water supply and wastewater treatment. As electricity makes up a significant portion of these costs, these costs have increased, and are expected to continue increasing, faster than overall inflation. The average annual variable cost of water supply based on the above value is approximately \$402 per m³/min. A 16% reduction in water consumption from 2014 to Whistler 2020 target levels would result in operating savings of more than \$182,000 per year.

The probability of the maximum demand event occurring concurrently with sustained high turbidity events at Twenty-One Mile Creek is not high but it is a prudent design approach. The potential of Twenty-One Mile Creek being off-line at maximum demand due to drought conditions alone, or due to drought combined with a sudden powerful rainstorm is somewhat higher. Responsible management of Whistler's water system require implementation of the measures described in this report to ensure that the catastrophic outcomes of water supply failure such as that experienced by Tofino in 2006¹⁰ never happen in Whistler..

6 POTENTIAL WATER CONSERVATION PROGRAMS AND SUPPLY PROJECTS

Staff developed a prioritized list of possible water conservation measures in 2004, and updated that list in a report to Council in 2013 in Administrative Report 13-011¹¹, which included both water conservation and supply measures ranked by cost effectiveness. This list included estimated capital costs and peak flow reduction for each conservation and supply measure, and presented them in prioritized order. Many of these programs and projects have now been implemented or are in progress, and this report re-evaluates the remaining initiatives alongside a select few new/refined ideas for consideration.

The updated 2014 Whistler Potable Water Supply Plan identifies several possible infrastructure projects to increase Whistler's water supply and/or pump existing supplies from the area of the supply wells to the Whistler Village water zone, the area of highest demand. The higher benefit-cost ratio items in the Plan have already been included in past and present five year plans.

6.1 Potential Water Conservation Program Benefit Analysis

Based upon the Water Conservation Cost-Benefit Updates Technical Memorandum¹² both maximum and average water consumption reductions have been estimated for each of the possible conservation programs listed.

Table 2 below indicates conservation measures listed in order of greatest benefit to least benefit, as determined by comparing the cost of the measure with the reduction in flow that would likely result.

An explanation of each table column is:

“Priority”:

Priority identifier. Programs starting with “C” are conservation programs. The Programs have been ranked from C1 to C13, with C1 being the highest priority.

“Program Name”:

Descriptive name of the program. These names may not precisely match program names included in the 2015-2019

⁸ Opus Dayton & Knight, Whistler Potable Water Supply Plan 2014 Update (draft)

⁹ Unless otherwise noted, all valuations in this report are stated in 2014 Canadian dollars

¹⁰ “Visitors scramble as water shortage shuts Tofino businesses”, CBC News, August 30, 2006

¹¹ Comprehensive Water Conservation and Supply Plan, presented to Council February 5, 2013

¹² October 31, 2012, Kerr Wood Liedel

five year plan.

“Capital Cost Estimate”:

An estimate of the total capital costs associated with a program over the program life.

“Annual Conservation Savings”:

An estimate of the gross reduction in operating costs the program would provide, based on the *average* annual flow reduction it would provide.

“Total Annual Cost/Savings Estimate”:

Average annual cost minus annual conservation savings for the first ten years of the program. The annual costs include first-year one-time costs, ongoing annual O&M costs, and amortized capital depreciation.

“Estimated Max Flow Benefit (m3/min)”:

An estimate of the *peak day* flow reduction provided by the program. Peak day flow reductions result in reduced future infrastructure expenses, and are therefore important in determining which programs to implement.

“Max Flow Weighed Benefit (\$/m3/min)”:

The Total Annual Cost/Savings Estimate divided by Estimated Max Flow Benefit. This provides a measure of cost or saving per unit of flow, and helps with comparing the cost-effectiveness of the various programs.

Table 2 Potential Water Conservation Program Cost-Benefit Analysis

#	Program Name	Capital Cost Estimate	Annual Conservation Savings	Total Annual Cost/Savings Estimate	Estimated Max Flow Benefit (m3/min)	Max Flow-Weighted Benefit (\$/m3/min)
C1	Once through water use by-law	\$0	(\$28,000)	(\$27,000)	0.28	(\$6,000)
C2	Update Comprehensive Water Usage bylaw	\$0	(\$6,000)	(\$5,000)	0.06	(\$6,000)
C3	Water Use bylaw - Outreach	\$0	(\$5,000)	\$17,000	2.5	\$1,000
C4	Water Leakage reduction program	\$380,000	(\$140,000)	\$12,000	1.4	\$1,000
C5	Public education	\$0	(\$9,000)	\$11,000	0.09	\$8,000
C6	Irrigation source program	\$320,000	(\$8,000)	\$9,000	0.23	\$3,000
C7	Home water audits and retrofits	\$0	(\$21,000)	\$10,000	0.20	\$3,000
C8	Universal Metering & Volume-Based Pricing	\$10,710,000	(\$100,000)	\$407,000	2.1	\$12,000
C9	Non-residential audits	\$0	(\$41,000)	(\$16,000)	0.61	(\$2,000)
C10	Low-volume toilet and waterless urinal rebate	\$0	(\$4,000)	\$14,000	0.04	\$21,000
C11	Clothes washer rebate	\$0	(\$5,000)	\$33,000	0.05	\$41,000
C12	Efficient landscaping program					TBD
C12	Rainwater Capture (Cistern) Rebate	\$0	\$0	\$10,000	-	Low
C13	Efficient irrigation rebates	\$0	\$0	\$12,000	-	Low

6.2 Detailed Description of Potential Water Conservation Programs

6.2.1 Once-Through Water Use By-Law

A bylaw was presented to Council in 2009 for the regulation of once-through cooling equipment, in which drinking water passes

through cooling equipment, absorbs heat, and is discharged to the sewer system.

Once-through cooling equipment uses the low temperature of Whistler's drinking water in combination with a heat pump to cool walk-in refrigerators and freezers at a reduced cost versus other systems. Once-through cooling is also used for air conditioning, water coolers and ice makers without the need for a heat pump.

Such practices are banned or restricted to non-potable sources in many other jurisdictions for two reasons: once-through cooling creates higher greenhouse gas levels than alternative systems, and once-through cooling drives up both average and maximum day demand. Moreover, it wastes large amounts of water.

This bylaw received First Reading, but was never adopted mostly due to resistance from the Restaurant Association of Whistler (RAW) resulting from its members cost concerns. The thrust of the bylaw will be to permit ongoing use of these systems until they wear out.

Staff will bring a *Once-Through Water Use By-Law* to Council for consideration in 2015

6.2.2 Updated Water Use (Sprinkling) Bylaw

A number of potential changes to the Water Use (Sprinkling) Bylaw were identified in the 2002 Water Supply Master Plan which could have a positive effect on both annual and Maximum Day Demand summer water use if implemented, while simplifying the messaging to the community.

Staff will bring an updated *Water Use Bylaw* to Council for consideration in 2016, after significant dialogue with stakeholders in the community.

6.2.3 Completion of Water Leakage Reduction Program

The 2010 Water Leakage Management Strategy and its associated Implementation Plan identified a multi-phase approach to ongoing leak detection in Whistler.

After reviewing the high costs relative to savings anticipated from the proposed Implementation Plan, staff significantly revised the plan. The resulting approach is:

1. Where cost-effective staff have permanently installed water zone meters at various locations.
2. Staff monitor flows into all major water zones between the hours of 2 AM and 4 AM, using a combination of the permanently installed meters, reservoir level measurements, and temporary metered bypasses.
3. Once a major water zone is found to have high leakage, staff isolate individual streets, shut off water to buildings, and measure the water leakage directly. Once streets with major leaks are identified municipal crews do further work to locate, excavate and fix the leaks. This approach has been quite effective, for example, in early 2015 three major leaks were found in Emerald and fixed, resulting in a saving of more than 30 litres per second.

It is estimated that \$30,000-\$50,000 will typically be spent annually on an on-going basis to detect, locate, excavate and repair leaks. The 2015 leakage detection program budget was raised in order to effect detection in the Village zone, which is substantially more complex than the other zones.

6.2.4 Water Use Bylaw Outreach

It was previously reported to Council that adding two term bylaw officers dedicated to education and enforcement of Whistler's current water use bylaw would result in peak water use reductions. These term positions would be during the summer irrigation season.

As a result of the extraordinary situation in 2015, Utilities staff were reassigned from Unidirectional Flushing Program (UDF) to daily irrigation monitoring and outreach duties. Properties which are contravening Water Use Restrictions are being informed, then subsequently warned. The very small number of those failing to correct their irrigation practices have been referred to By-Law for enforcement.

The UDF program is essential to maintain water quality, so using technical Utilities staff to perform outreach is not a supportable long-term approach. There is however a lowest cost approach to enhanced outreach, specifically:

Employing one summer student each year to monitor irrigation, perform outreach, document and refer repeated infractions to By-Law would provide the same benefit as the 2015 outreach program, at a low cost and without impacting the UDF program. The staff would also be able to perform other related work, such as monitoring general water use by reading Whistler's installed base of water meters, and patrolling the Rainbow Lake access trail to identify and mitigate water quality hazards posed by trail users and provide information outreach and assistance to those users. This is a substantially lower cost approach (approximately \$25,000 per year for this suite of activities) due to the low hourly rate and flexible hours associated with summer

students, and can be supported by funds already included in the 2015-2019 five-year financial plan.

Funding for on-going *Water Use By-Law Outreach* is already included in the 2015-2019 financial plan.

6.2.5 Irrigation Source Program

In 2014 the Myrtle Philip School irrigation well collapsed, and the school's irrigation system was therefore reconnected to the municipal water system. This reversal was a significant step backward in for our demand reduction program, resulting in a likely increase in annual demand for drinking water in excess of 12,000 m³ of water in the summer of 2015.

A project to install a dedicated irrigation well for the Meadow Park sports fields would result in reduced demands on the potable water system. Capital and ongoing maintenance costs have been estimated by staff for potential inclusion in the capital plan. Meadow Park currently consumes about 15,000 m³ water for irrigation each year.

Construction of an irrigation well at Meadow Park has a low benefit relative to cost, and is not budgeted in the 2015-2019 financial plan.

6.2.6 Home Water Audits and Retrofits

It was estimated that indoor water use savings of up to 45 litres per person per day (L/person/day) could be achieved by conducting water audits, replacing showerheads and faucet aerators, and repairing leaking toilets. The program cost estimate of \$300,000 would be expended over a ten-year program lifespan.

Home Water Audits and Retrofits has a low benefit relative to cost, and is not budgeted in the 2015-2019 financial plan.

6.2.7 Metering and Volume Based Pricing

The implementation of metered water billing is often high on the priority list of conservation advocates. According to Steven Renzetti, an economics professor specializing in water at Brock University, "Divide up Canadian cities from those that are metered and those that are not: the ones that are metered use about ... 40 to 45 per cent less water per person", as quoted in the *Globe and Mail*¹³. The District of Squamish (Squamish) recently reported¹⁴ that Squamish Council has decided to implement metered billing for all non-residential home uses in 2016-2017 in an effort to avoid the major infrastructure improvements that would otherwise be needed to address forecasted community growth and the associated water supply and storage infrastructure needed for that growth. The non-residential home uses identified include commercial, industrial, bulk, multi-family residential, and District-owned facilities. Squamish Council decided to take this particular partial-measure approach due to the much higher benefit-cost ratio compared to also metering its many single-family homes.

Various approaches to volumetric metered billing which have been pursued by other municipalities or could be pursued in Whistler include:

- Metering every water system connection in all building types ("Universal" metering)
- Industrial-Commercial-Institutional only ("ICI" metering)
- High volume user-only metering
- metered billing only for new connections and existing connections that already have a meter ("Opportunistic" metering)
- irrigation system-only metering
- whole-strata metering, rather than per-strata-unit metering ("Property" metering)

Examples of such billing approaches from the same *Globe and Mail* article include:

- Vancouver, with all multi-family and commercial properties metered since the 1970's, and single-family homes and duplexes built after 2012 billed based on meters has implemented a form of Opportunistic metering
- North Vancouver, which bills all commercial, industrial and municipal properties based on meters has ICI metering. 39% of its single family and duplex homes are 'meter ready' in case of future Universal metering, but have flat rate billing today.

¹³ "Experts call for increased use of residential meters in B. C."; *Globe and Mail*; August 2, 2015

¹⁴ "Master Planning, Reinvestment Planning and Financial Planning: The combination that worked for the District of Squamish"; BCWWA Watermark Summer 2015 Vol. 24 No. 2; David Roulston, P. Eng.

Large decreases in peak water use have been achieved in other communities as a result of metering programs, but the question remains whether such reductions could be achieved in Whistler and whether the cost savings from the reductions would outweigh the large capital costs of metering. Business factors that could result in an outcome different from other communities include: the high proportion of commercial BU's, the desire of resort businesses to present a lush environment to visitors, and the large number of well-financed absentee property owners using third parties to maintain their grounds. Social factors likely to arise include publicly expressed concerns over potential of transfer of costs from absentee owners to resident owners.

Communities typically move forward with water metering programs when it makes financial sense in order to avoid major capital improvements or water supply failure. The plan provided in this report will not require any major supply improvement projects to meet Whistler's forecast demand. Without a large looming capital water supply improvement in our future forecast that could be avoided, it becomes more difficult to justify the large expense associated with water metering.

A small number of RMOW properties are currently billed for water use on a volume basis, including Whistler's largest commercial water user, the Chateau Fairmont. It is significant to note, in this context, that the Chateau Fairmont has been very successful in reducing its annual water consumption over the last decade, even though the volume rate it pays results in significantly lower costs than what it would pay under the RMOW flat-rate pricing structure to which other hotels are subject.

It had previously been estimated that implementing "Universal Metering" (metering all residential, industrial, commercial and institutional (ICI) customer connections and establishing usage-based billing) would result in a water-use reduction of 10-45%. It is assumed that universal metering and implementation of progressive block water rates for all customers will reduce overall demand by 15%. It has been measured in other jurisdictions that peak demand savings will be 1.5 times the annual average savings, in other words, summer sprinkling drops much more than other uses. This is very important as peak summer use drives Maximum Day Demand and system capacity capital infrastructure requirements.

The cost of universal metering was updated in the prior report. Using the same underlying values and assumptions, the capital cost of metering all unmetered connections, and inspecting and upgrading existing connections for proper function, is estimated at about \$11,000,000 assuming a 35 year average system life, with an annual \$100,000 cost for reading and maintaining the meters and equipment and processing water bills.

Significant changes have occurred since the previous cost estimates were made, however:

- Staff found in 2015 that historic commercial building plans indicate the presence of water meters not present in RMOW tracking systems such as Tempest and GIS. Fewer new installs of large ICI meters would therefore likely be required than had been previously estimated
- Meter inspection and replacement labour costs were found in a 2014 pilot study to be substantially lower than previously estimated: the average labour cost was less than \$50 per meter
- Current generation radio-readable meters permit extremely fast and efficient reading using "drive-by" technology (or permanent network-connected gateway devices) without needing external building antennas as had been previously assumed
- A software interface now exists that will permit the RMOW's Tempest billing system to automatically receive water meter data. Funds are already included in the 2016 financial plan to implement this Tempest-meter interface.
- Current generation meters provide 'real time' metering, and long-term data logging. These capabilities facilitate more effective system leak detection, and enable the meters to perform automated leakage detection on the private side of the meter. While these features don't affect metering costs, they would have an impact of the amount of leakage found and fixed.

Given these changes since the prior valuations were made, and Whistler's specific social and behavioral factors, staff recommend a comprehensive water metering options and cost analysis be undertaken in 2016, including inventorying the RMOW's stock of existing ICI meters with a goal to refine the cost-benefit information

6.2.8 Non-Residential (Industrial-Commercial-Institutional) Water Use Audits

Industrial-Commercial-Institutional ("ICI") water audits can be very effective when aimed at sectors known to have opportunities for large water savings and individual customers with above-average consumption, but these audits are only effective once volume based pricing has been implemented. Hotels and restaurants, which likely represent a large proportion of Whistler's overall water usage, are typically excellent candidates for water savings. The Capital Regional District (Greater Victoria) has conducted several ICI audits annually since 2004, with typical water savings of 35% for hotels and 30-80% for restaurants. These savings are achieved largely through the replacement of once-through cooling systems often used in commercial

refrigeration. These once-through devices are covered under a separate conservation program, and these water savings have been removed from the estimate for ICI audits.

It was assumed that 20 facilities would be audited annually at a cost of \$2,500 per audit. It is assumed that the program would run for ten years at \$50,000 annually, and it is estimated that 25% water savings would be achieved on average for 200 connections. This would include 75% of the hotels and restaurants in Whistler. Assuming these 200 customers represent 25% of Whistler's annual average water use, total water savings of 6% of 2011 demand, or 870 m³/day, is estimated to be achieved by the program.

ICI Water Use Audits has as a prerequisite ICI metering, and is not now budgeted in the 2015-2019 financial plan, but that may change given the outcome of the study recommended in the section above.

6.2.9 Public Education

There is no well-defined convention for estimating water savings from public education or social marketing initiatives in general terms. Typical estimates range from 0-2% of average demand. A public education program with an annual budget of \$75,000 has been previously estimated to achieve maximum day water demand savings of 0.10 m³/min (0.5% of maximum day demand) over a 10-year program implementation cycle.

Although public education is typically ineffective in isolation, it is a necessary component of a comprehensive water demand management program, supporting all other program measures.

As a result, an on-going public education program was started in 2013.

Public Education is budgeted as an on-going program in the 2015-2019 financial plan. These funds have a supported a substantially increased communication effort in 2015, including outreach, advertising, social media presence, and other measures.

6.2.10 Low - Volume Toilet Rebate

Toilet replacement will be a primary factor in reducing future water demand as old toilets are replaced, and a well-designed rebate program might significantly accelerate the replacement of old, inefficient fixtures. However, the cost-effectiveness of a rebate program must consider the proportion of program participants who would make the same decision without the benefit of a rebate, and the fact that many old toilets are in Whistler's second homes which are only partially occupied. Standards have also changed and toilets that use more than 6 lpf are no longer available in BC. Many water utilities have recently examined the cost-effectiveness of toilet rebate programs and decided to discontinue the rebates based on market research that shows the incentives are not necessary to motivate most customers to replace toilets.

A total budget of \$190,000 over four years would be sufficient to issue approximately 1,000 toilet rebates at \$150 each, allowing for modest program administration costs. Assuming a toilet is flushed five times daily and the flush volume is decreased by 10 litres per flush, the total program water savings is estimated at an annual average of 0.7 litres per second.

A Low Volume Toilet Rebate program has very low benefit relative to cost, and is not budgeted in the 2015-2019 financial plan.

6.2.11 Efficient Clothes Washer Rebate

As with toilets, the pace of technology change in the mass market for washing machines has radically changed in the past decade. A washing machine program analysis must consider the proportion of program participants who would make the same decision without the benefit of a rebate. As horizontal-axis machines have gained market share and decreased in price, the need for a financial incentive to motivate the purchase of an efficient machine has decreased. When these factors are considered, single-family residential washing machine rebate programs are typically not found to be cost-effective, and several programs have been discontinued in recent years (e.g. Toronto and Greater Victoria).

A typical vertical-axis machine used by a family of four is estimated to use 45 m³/year of water, while high-efficiency washers typically use less than half as much water for the same quantity of laundry. It is assumed that replacing an old vertical axis residential washing machine with new horizontal axis machine will reduce water use by 20 m³/year on average, and that half of the machines for which a \$250 rebate is claimed would not otherwise have been replaced within the program lifespan. Assuming 250 rebates per year over a ten-year program lifespan, the total water savings achieved would be $0.5 \times 2,500 \times 20 / 365 = 68$ m³/day, and annual average of 0.04 m³/min

An Efficient Clothes Water Rebate program has very low benefit relative to cost, and is not budgeted in the 2015-2019 financial plan.

6.2.12 Efficient Irrigation or Landscaping Program

Our recent outreach to landscaping and irrigation companies in Whistler indicates that efficient irrigation or landscaping policies or incentives may have merit, particularly if combined with revised municipal development and sprinkling standards.

An investigation as to the costs and benefits of an *Efficient Irrigation / Landscaping Program* should be considered for inclusion in the 2016-2020 five year plan.

6.2.13 Rainwater Capture Rebate

Although the idea of using rain barrels to reduce water consumption has remained popular, harvesting rainwater for irrigation using small storage systems has been shown to be ineffective due to both the relative lack of rainfall to refill storage when the plants require irrigation, and due to neglect or disuse of such systems in the years after initial installation. For irrigation uses, rain barrels and similar-sized cisterns will, at best, only offset municipal water usage equivalent to a few times their volume annually, and will have no impact on peak demand as they will generally be empty when demand peaks in mid-summer.

A rainwater capture rebate program is no longer under consideration.

6.2.14 Efficient Irrigation Rebate

Past experience in the southern USA indicates that incentives for replacing or upgrading irrigation system components does not lead to durable water savings, as water efficiency is highly dependent on proper operation and ongoing maintenance. No water savings are expected from such a program.

In irrigation rebate program is no longer under consideration.

6.2.15 Data Quality Improvements

Understanding of water consumption and supply outcomes hinges on accuracy of water consumption and supply data. Benefit-cost analysis is highly dependent on water data, asset inventories and valuation, and accurate program plan and financial information. A number of the water quantity related-values used in developing this report can be substantially improved through various measures including expanded or improved instrumentation, improved SCADA reporting, inventorying installed meters, improved or increased field data gathering, and emphasis on converting paper forms to electronic data.

Many of these data quality improvements will flow directly out of projects and programs identified in this report, or other programs and projects in process or identified in the current five year plan, such as the Utilities SCADA upgrade project planned for completion December 1, 2015.

6.3 Potential Water Supply Projects Benefit Analysis

The costs and water produced by the identified potential projects have been estimated and shown in order of least costly to more costly on a per unit of water supplied basis in Table 2, the same units as used for the potential water conservation programs.

Table 3 below indicates supply projects listed in order of greatest benefit to least benefit, as determined by comparing the cost of the measure with the increase flow that would likely result.

An explanation of each table column is:

“Priority”:

Priority identifier. Programs starting with “S” are supply projects. The Projects have been ranked from S1 to S6, with S1 being the highest priority.

“Project Name”:

Descriptive name of the program. These names may not precisely match program names included in the 2015-2019 five year plan.

“Capital Cost Estimate”:

An estimate of the total capital costs associated with a program over the program life.

“Total Annual Cost/Savings Estimate”:

Average annual cost during the first ten years of the project. The annual costs include first-year one-time costs, ongoing annual O&M costs, and amortized capital depreciation.

“Estimated Max Flow Benefit (m3/min)”:

An estimate of the *peak day* flow reduction provided by the project.

“Max Flow Weighed Benefit (\$/m3/min)”:

The Total Annual Cost/Savings Estimate divided by Estimated Max Flow Benefit. This provides a measure of cost or saving per unit of flow, and helps with comparing the cost-effectiveness of the various projects.

Table 3 Potential Water Supply Project Cost-Benefit Analysis

<i>Priority</i>	<i>Program Name</i>	<i>Capital Cost Estimate</i>	<i>Total Annual Cost/Savings Estimate</i>	<i>Estimated Max Flow Benefit (m3/min)</i>	<i>Max Flow-Weighted Benefit (\$/m3/min)</i>
S1	<i>Spring Creek Booster Station</i>	<i>\$480,000</i>	<i>\$35,000</i>	<i>2.6</i>	<i>\$1,000</i>
S2	<i>New Function Well</i>	<i>\$320,000</i>	<i>\$11,000</i>	<i>2.7</i>	<i>\$1,000</i>
S3	<i>Third 21-Mile Aquifer Well (Rainbow Park)</i>	<i>\$560,000</i>	<i>\$14,000</i>	<i>1.2</i>	<i>\$1,000</i>
S4	<i>Aquifer Storage and Retrieval (ASR) Pilot System</i>	<i>\$700,000</i>	<i>\$70,000</i>	<i>0.8</i>	<i>\$5,000</i>
S5	<i>Whistler Cay Aquifer Well w/ Treatment</i>	<i>\$10M - \$20M</i>		<i>5.1 – 6.0+</i>	<i>Poor</i>
S6	<i>Surface Water Treatment</i>	<i>\$15M - \$30M</i>		<i>4.5 - 12</i>	<i>Poor</i>

6.4 Detailed Description of Potential Water Supply Projects

Where the potential supply projects have been previously determined to have highest flow-weighted benefit they have been included in the current or prior Water Utility five year plans. Descriptions of all potential future projects follow.

6.4.1 Spring Creek Booster Station

Installing a booster pump station at the location of the Spring Creek PRV station would allow excess water that can be supplied by the Athletes Village Well W217 to be pumped to the Baxter reservoir and supply water to the Village water zone. The well pump at Well 212-1 would also be replaced with a lower pressure pump as that pump would only need to supply water to the Spring Creek and Function Junction pressure zones.

The Spring Creek Booster Station project is included in the 2015-2019 Financial Plan.

6.4.2 New Function Junction Well

A second well near Well 217 would increase the amount of water that could be pumped from the Function Junction aquifer. This water is not required for Cheakamus Crossing, or Function Junction, but would be beneficial when pumped to the Village water zone via the Spring Creek Booster Station.

Constructing a New Function Junction Well is not currently required to close the supply gap, and is not currently under consideration.

6.4.3 Third Twenty-One Mile Creek Aquifer Well

The potential for a third well in the Twenty-One Mile Creek Aquifer has been identified, but this well would be lower in capacity and further from existing infrastructure than the other wells in this area, and would be subject to significant regulatory and project risks.

Constructing a Third Twenty-One Mile Creek Well is not currently required to close the supply gap, and is not currently under consideration.

6.4.4 Aquifer Storage and Retrieval System

The aquifer which supplies the Community Wells in Whistler Village has a very low recharge rate. As a result, the Community Wells can't sustain prolonged high rates of withdrawal. It is feasible to pump water into the community aquifer during times of excess supply, which can occur even in dry, high demand periods. This would substantially enhance maximum day flow capacity.

An Aquifer Storage and Retrieval System has a relatively high cost for the flow benefit, and is currently not under consideration.

6.4.5 Whistler Cay Aquifer Well with Treatment

There is the potential for a well in Whistler Cay, which would require treatment (filtration) due to high iron and manganese in this aquifer. If the well were unable to provide a minimum sustainable flow of 5.1 m³/min it is likely surface water treatment would be a better option

Whistler Cay Aquifer Well with Treatment has significant project risk and high cost: it is not currently under consideration.

6.4.6 Surface Water Intake with Treatment

There is the potential of treating (chemical dosing and filtering) water from Green Lake, the Cheakamus River, or 21 Mile Creek to provide additional supply. Such measures are of significant cost and would only be considered if other conservation and supply programs proved insufficient.

Surface Water Treatment has a very high cost and is not currently under consideration.

6.4.7 Upgrade Community Wells

Historically, the Community Well aquifer had been estimated as supporting a maximum supply of 103 litres per second, while the current four wells in this aquifer are only configured to produce a maximum of 4.2 m³/min. The conclusion reached was that upgrades to the wells would provide additional supply at a low cost. Testing and hydrogeological review in 2014 demonstrated the aquifer can supply 4.2 m³/min for short periods, but can ordinarily provide no more than 3.0 m³/min.

Upgrading the Community Wells is no longer considered a viable option.

6.5 Combined Benefit Analysis

Staff recommend that an integrated approach of both water conservation and infrastructure improvements be undertaken to reduce the risk of having a water supply interruption in the Whistler Village water supply zone.

Tables 2 and 3 have been combined into Table 4 (below), to allow the most cost-effective approaches to reducing the water supply risk to be easily identified.

An explanation of each table column is:

"Priority":

Priority identifier. Programs starting with "C" are conservation programs, those starting with "S" are supply projects. The Programs have been listed in priority order from 1 to 18.

"Program Name":

Descriptive name of the program or project. These names may not precisely match project and program names included in the 2015-2019 five year plan.

"Capital Cost Estimate":

An estimate of the total capital costs associated with a program over the program life.

"Total Annual Cost/Savings Estimate":

Average annual cost minus annual conservation savings (if any) for the first ten years of the program. The annual costs include first-year one-time costs, ongoing annual O&M costs, and amortized capital depreciation.

"Estimated Max Flow Benefit (m³/min)":

An estimate of the *peak day* flow reduction provided by the program. Peak day flow reductions result in reduced future infrastructure expences, and are therefore important in determining which programs to implement.

"Max Flow Weighed Benefit (\$/m³/min)":

The Total Annual Cost/Savings Estimate divided by Estimated Max Flow Benefit. This provides a measure of cost or saving per unit of flow, and helps with comparing the cost-effectiveness of the various programs.

Table 4 Integrated Table of Conservation and Infrastructure Improvements

Priority	Program Name	Capital Cost Estimate	Total Annual Cost/Savings Estimate	Estimated Max Flow Benefit (m ³ /min)	Max Flow-Weighted Benefit (\$/m ³ /min)
C1	Once-Through Water Use By-law		(\$27,000)	0.28	(\$6,000)
C2	Update Comprehensive Water Usage bylaw		(\$5,000)	0.06	(\$6,000)
C3	Water Use bylaw - Outreach		\$17,000	2.5	\$1,000
C4	Water Leakage Reduction Program	\$380,000	\$12,000	1.4	\$1,000
C5	Public Education		\$11,000	0.09	\$8,000
S6	Spring Creek Booster Station	\$480,000	\$35,000	2.6	\$1,000
S7	New Function Well	\$320,000	\$11,000	2.7	\$1,000
S8	Third 21-Mile Aquifer Well (Rainbow Park)	\$560,000	\$14,000	1.2	\$1,000
C9	Irrigation source program	\$320,000	\$9,000	0.23	\$3,000
C10	Home water audits and retrofits		\$10,000	0.20	\$3,000
S11	Aquifer Storage and Retrieval (ASR) Pilot System	\$700,000	\$70,000	0.84	\$5,000
C12	Universal Metering & Volume-Based Pricing	\$10,710,000	\$407,000	2.1	\$12,000
C13	ICI audits		(\$16,000)	0.61	(\$2,000)
C14	Low-volume Toilet Rebate		\$14,000	0.04	\$21,000
C15	Clothes washer rebate		\$33,000	0.05	\$41,000
C16	Efficient Landscaping Program				TBD
S17	Whistler Cay Aquifer Well w/ Treatment	\$10M - \$20M		85 - 100+	Poor
S18	Surface Water Treatment	\$15M - \$30M		75 - 2200	Poor

Table 4 has been organized highest to lowest priority. For full descriptions of the Projects and Programs in Table 4 see Sections 5 and 6.

A review of Table 4 indicates that almost all projects and programs have a net cost, and supply projects' *Max Flow-Weighted Benefits* are generally competitive with conservation programs'.

C5 ("Public Education") has been prioritized higher than its *Max Flow-Weighted Benefit* would suggest, for two reasons: The absolute cost of this program is very low, and all Conservation programs require a public education component in order to be accepted by the community.

C13 ("ICI Audits") has been prioritized lower than its *Max Flow-Weighted Benefit* would suggest because this program is dependent on ICI metering being implemented first.

RECOMMENDATIONS

Delivering 5.4 m³/min equivalent of supply and conservation is the long term goal, as noted previously. Recommended timing and prioritization will be presented to Council for consideration in the next five year plan.

The identified long-term supply gap to be addressed by the supply and conservation programs is 5.4 m³/min. In order to address this gap, programs totaling 5.4 m³/min minimum must be implemented. Table 5 below shows the programs which will be required to fulfill this requirement. These programs comprise the programs recommended by staff to Council for ongoing inclusion in the RMOW's five-year financial plan.

Table 5 Recommended Supply and Conservation Programs

Priority	Program Name	Capital Cost Estimate	Total Annual Cost/Savings Estimate	Estimated Max Flow Benefit (m ³ /min)	Max Flow-Weighted Benefit (\$/m ³ /min)
C1	Once-Through Water Use By-law		(\$27,000)	0.28	(\$6,000)
C2	Update Comprehensive Water Usage bylaw		(\$5,000)	0.06	(\$6,000)
C3	Water Use bylaw - Outreach		\$17,000	2.5	\$1,000
C4	Water Leakage Reduction Program	\$380,000	\$12,000	1.4	\$1,000
C5	Public Education		\$11,000	0.09	\$8,000
S1	Spring Creek Booster Station	\$480,000	\$35,000	2.6	\$1,000
RECOMMENDED PROGRAM TOTAL		\$860,000	\$43,000	6.9	\$374

The recommended programs are each already identified in the 2015-2019 financial plan, with only minor adjustments required for the 2016-2020 plan.

The first five programs shown in Table 5 provide significant, economical supply reduction through conservation. Over the *long term* C1 – C5 are expected to reduce average water consumption by approximately 4.3 m³/min. These programs will make a significant contribution towards Whistler's goal of reducing water consumption to 425 litres per person per day.

In order to provide the necessary 5.4 m³/min required to meet maximum future demand, however, more than these conservation programs will be required. The next best choice is a booster station at Spring Creek, to bring surplus Cheakamus Crossing water north. This project is straightforward, has a flow-weighted cost equivalent to conservation programs, and provides many other operational benefits.

Staff recommend continuing with the six programs and projects identified in Table 5, which will close supply gap with a small margin of safety, by providing an overall flow benefit of 6.9 m³/min.

Staff recommend a Comprehensive Volumetric Metering Options Review be commissioned and presented to Council in 2016.

Staff recommend including in the 2016-2020 five year plan an investigation as to the costs and benefits of an *Efficient Irrigation / Landscaping Program*.





REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: February 5, 2013

REPORT: 13-011

FROM: Infrastructure Services

FILE: 220

SUBJECT: COMPREHENSIVE WATER CONSERVATION AND SUPPLY PLAN

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Infrastructure Services be endorsed.

RECOMMENDATION

That Council endorse the ongoing water conservation and supply plan outlined in Administrative Report No. 13-011.

REFERENCES

Appendix A - Water Conservation data sheet

Other:

- Draft Whistler Official Community Plan, at 3rd reading – Chapter 9
- Water Conservation Cost-Benefit Updates – KWL Consultants October 2012
- Draft Water Supply Plan Update – Opus DaytonKnight Consultants December 2012
- WATER CONSERVATION REGULATION BYLAW NO 1806, 2008 – presented to Council March 17, 2008
- LONG TERM WATER SUPPLY PLAN – presented to Council June 7, 2004
- Whistler2020 Water Strategy, adopted by Council January 8, 2007
- WATER CONSERVATION PROGRAM – presented to Council February 2, 2004
- Village of Pemberton Cost-Benefit Analysis for Water Metering – Earth Tech 2007
- District of Lillooet Water Conservation Plan – TRUE Consulting 2009
- http://www.cscd.gov.bc.ca/lqd/infra/infrastructure_grants/ - Provincial infrastructure grant website.
- Water Conservation Programs – A Planning Manual – American Water Works Association

PURPOSE OF REPORT

This report is to update Council on water conservation initiatives that have been pursued for the past several years, and get Council endorsement of the prioritized list of further possible water conservation programs and infrastructure improvements that will assure Whistler of a long-term reliable water supply.

DISCUSSION

1) Need for Water Conservation

Whistler is surrounded by rivers, lakes, and glaciers so sometimes it is difficult to explain why water conservation and supply issues are important. The natural hydrologic cycle evaporates water from oceans, lakes, and rivers, and deposits the water in our local mountains in the form

of both rain and snow. The water that runs off the mountains fills our rivers and creeks, and over time replenishes the below-ground aquifers. The RMOW's water supply and distribution system temporarily interrupts this cycle, but most of the water we "use", is treated and returns to the natural environment.

Water conservation is still important as there are significant costs associated with operating our water and wastewater systems. Reducing the average amount of water used in Whistler is important as that will result in reduced maintenance and operating costs for our water and wastewater systems. Reducing the peak (maximum day) amount of water use can be even more financially significant as lowering this peak water usage can delay or eliminate the need to construct more water supply and wastewater treatment infrastructure.

To-date, the RMOW has kept water rates low by avoiding the installation of an expensive water filtration system. If water consumption increased again like it did in the 1990s, a filtration system would be required to meet incremental demand, and water rates would need to be significantly increased to pay for this additional infrastructure.

British Columbia's Water Plan "Living Water Smart" was rolled out by the provincial government in 2009 and includes 2 goals which stand out as very relevant to water conservation in Whistler:

1. Fifty percent of new municipal water needs will be acquired through conservation by 2020.
2. By 2020, water use in British Columbia will be 33 percent more efficient.

The Provincial government is continually updating the criteria for provincial infrastructure grants. The provincial infrastructure grant website indicates that a "water demand management plan" is required before local governments can apply for water related infrastructure funding, and the ongoing water conservation and supply plan described in this report is intended to be a major step towards fulfilling this requirement.

Through the Whistler 2020 process, a community goal was set to reduce water consumption to 425 litres per capita per day. In 2011 the consumption was measured at 536 litres per capita per day (based on the calculated population equivalent for Whistler). In order to meet this sustainability goal, significant water conservation programs will be required to reduce consumption by 21%.

2) Background – Previous water conservation work in Whistler

Since the late 1990's, municipal staff have been implementing various water conservation projects and programs throughout the municipality. Initially, these projects and programs were the obvious first steps (the low-hanging-fruit) and provided high returns in regards to cost savings. The results of these conservation programs can be seen in Chart 1 (note the significant leveling of the demand in the late 1990s and early 2000s).

In 2004 municipal staff completed a report that included a prioritized list of water conservation measures. This list included estimated capital costs and peak flow reduction for each conservation measure, and presented them in prioritized order. Many of these programs and projects have now been implemented and this report re-evaluates the remaining initiatives alongside a select few new/refined ideas for consideration.

The significant water conservation programs which have been implemented by the RMOW are as follows:

1. Whistler Golf Course Irrigation Systems

In the late 1990's, the municipality partnered with the Whistler Golf Course on the development of an independent irrigation (non-potable) well. This resulted in a significant decrease in municipal water use for the operation of the golf course. All three golf courses in Whistler now use untreated water for irrigation.

2. Hydrant Use Permitting Process

In 1999, the Public Works (now Infrastructure Services) Department launched a program that regulated the use of fire hydrants by the private sector. A hydrant use permit and backflow preventer must be obtained from RMOW Utilities before a contractor can use a fire hydrant. This change significantly reduced the inappropriate use of fire hydrants for non-emergency services.

3. Irrigation/Sprinkling Bylaw

In 2001, municipal council approved a bylaw to regulate and restrict lawn irrigation and other miscellaneous uses of water (e.g. washing driveways?). These regulations are similar to those in the lower mainland and allow residents to water their lawns every other day during early morning and evening hours. Further restrictions on irrigation can be implemented under this bylaw if the municipality declares a "water emergency".

4. Low Flow Plumbing Fixture Bylaw

In 2003, municipal council approved a bylaw that requires low flow toilets, showerheads and other fixtures for all new construction that involves a plumbing permit. Recent changes to the BC Building Code have both a) incorporated fixture efficiency requirements within the BCBC (similar to, and in place of our local bylaw) and b) incorporated incremental efficiency requirements for low flow fixtures (esp. toilets).

5. Independent Municipal Parks Irrigation

In 2003 and 2004, the municipality constructed independent irrigation (non-potable) wells at Rainbow Park, Spruce Grove Park and Myrtle Phillip Community School. These new water sources provide a significant amount of irrigation, which helps reduce summer water demand on the municipal potable system.

6. Water Leakage Reduction

Since 2009 the municipality has had an ongoing program to install flow meters capable of measuring low volume flows in many of the municipal pressure reducing valve stations. These flow meters will allow our Infrastructure Services staff to identify neighbourhoods that have unusually high leakage (greater than 10%) by tracking minimum nighttime flows. Once leaks are located, municipal crews excavate and fix the leaks.

7. One-Through Cooling Equipment

A bylaw was presented to Council in 2009 for the regulation of once-through cooling equipment. This is equipment that uses the low temperature of Whistler's drinking water as a method to cool air conditioning equipment, water coolers and ice makers. Drinking water passes through this equipment, absorbs heat, and is discharged to the sewer system. This bylaw received First Reading, but was never adopted mostly due to resistance from the Restaurant Association of Whistler (RAW) because of cost concerns.

3) Current Water Supply and Consumption Conditions

Water Supply

Whistler's water supply system is relatively complicated due to the nature of how Whistler developed in isolated neighbourhoods. The RMOW draws water from 18 wells and 2 surface water sources to supply water into a water distribution system, but not all our water sources can supply water to all parts of Whistler. On an annual basis, almost half of the RMOW's water is supplied from 21 Mile Creek, but during the months of March, April, May and June this water supply is frequently unavailable due to high turbidity. Turbidity usually occurs when sediment enters the creek from localized slope erosion or other activity in the watershed. Even during July and August, when the maximum daily water demands normally occur, the turbidity occasionally exceeds the drinking water guidelines, thereby making the 21 Mile Creek source temporarily unusable. This problem can be temporarily mitigated by our water storage reservoirs, and our experienced water operations crew who can adjust the system to best meet the demands using other supply sources and our storage reservoirs.

The available supply from all sources is 484 litres per second (l/s) and if 21 Mile Creek cannot be used, the available supply is 334 l/s (a reduction of 150 l/s or 31%).

Water Consumption Design Conditions

The design criteria used to design our waterworks infrastructure is based on bed units. While most municipalities use population as the unit for water use estimations, using bed units in Whistler makes sense as there is a significant water use associated with a developed bed unit. For example, once a hotel is built, water is consumed for irrigation, ice makers, and the swimming pool whether the hotel is occupied or not. In addition, the number of developed bed units can be relatively easily measured, while determining an accurate daily average population in Whistler is difficult, is only an annualized estimate, and is still not an exact comparison for water consumption purposes as the large visitor population does not use water in the same way as our resident population. Using bed units as the unit for water design criteria is common for resort communities. For the purposes of this report, the per bed unit water consumption amounts have been converted to litres per second (l/s) of total system need, to allow a direct comparison to the estimated water saving of various conservation programs.

The Maximum Day Demand (MDD) design value is the measure of the maximum foreseeable demands that the water system will need to accommodate during the most challenging climactic and user-demand conditions that will likely occur, usually during the hottest days of summer. Design for this relatively conservative criterion is the accepted standard, and a reasonable standard in light of the consequences of water supply system failure. Whistler's MDD design criterion of 700 litres per bed unit per day (l/bu/d) in the summer anticipates maximum foreseeable residential usage, maximum hotel occupancy, full irrigation demands and a margin of safety that can be used for emergency or line-breaks, etc. This is the equivalent to a total system demand of 430 l/s. Our MDD for the winter is 500 l/bu/d (equivalent to 308 l/s) due to the fact that irrigation is not a significant wintertime use. The pump systems, pipe sizes, and storage reservoirs are all sized to ensure sufficient water flow during these seasonal MDD conditions.

Measured Water Consumption

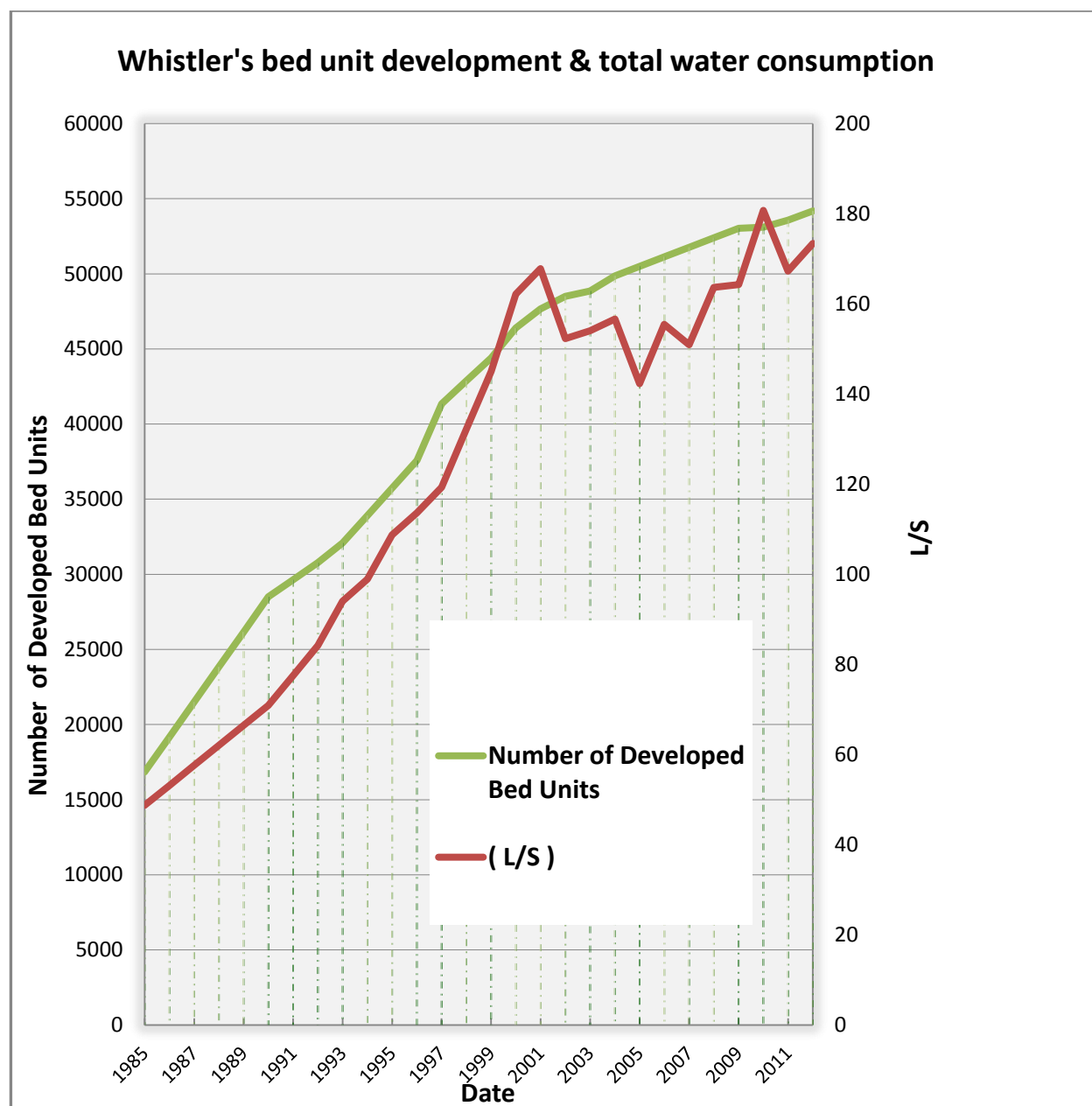
A recent update to our Water Supply Plan (still in draft form) has re-examined the observed MDD's for both summer and winter in recent years and found the actual amounts consumed to be somewhat less than the aforementioned design criteria.

In 2010, the summer maximum day demand of 277 l/s was measured during Crankworx mountain bike festival in August 2010, and a winter MDD of 234 l/s was measured in February 2010, during the Olympic Games.

In 2012, approximately 5.3 million cubic metres were supplied to Whistler's potable water system from the surface and groundwater sources. This is an annual average of 167 l/s. This shows how the peak water use is significantly larger than the average rate of consumption, and understanding the peak usage amount is critical for designing infrastructure components to deal with these infrequent peak events.

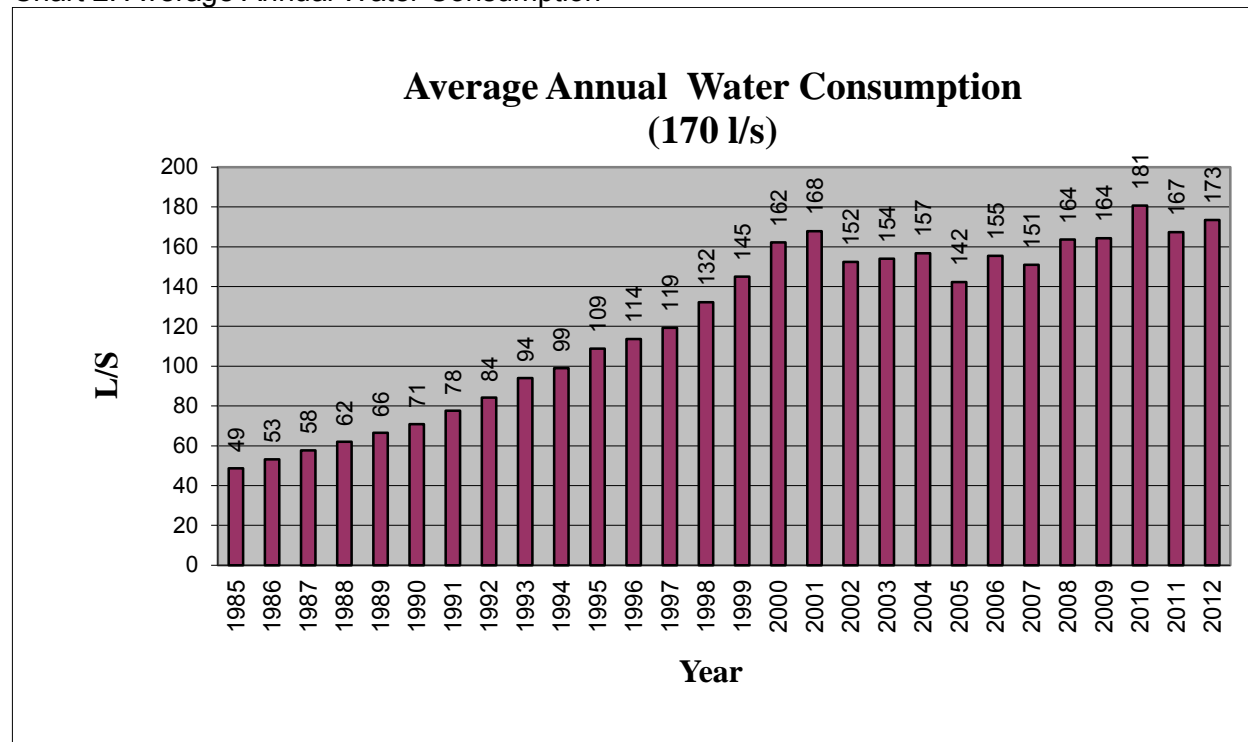
The following two charts show historical water use in Whistler.

Chart 1. Past Development and Water Consumption



This graph of total water demand per year shows Whistler's transition from a mostly winter resort to a year-round destination with a significantly increased water demand in the 1990's. The decrease in water use starting in 2000 shows the effectiveness of the water conservation measures that were implemented at that time. 2010 was the year of highest water demand, with 2011 and 2012 dropping back to levels similar to the pre-Olympic years.

Chart 2. Average Annual Water Consumption



This graph of average annual water demand is useful for determining water supply costs per unit and shows that average water use in Whistler has been relatively constant for a few years (with the exception of 2010), and can be expected to remain at approximately 170 l/s if water use patterns remain the same.

Whistler Village water zone

Despite the RMOW water system as a whole having significantly more supply than the current measured maximum day demand, the locations of the supplies do not always match the areas of demand. Both Emerald Estates and Cheakamus Crossing have water supplies that exceed the local demand, but currently there is no connection that allows water from these areas to be pumped to the Village area – the area of highest demand.

The Whistler Village water zone, generally the area from Creekside to Nesters, has sufficient water supply when 21 Mile Creek water is available, but has a deficiency at maximum day demand if 21 Mile Creek cannot be used. There is a small chance of 21 Mile Creek not being available during maximum day demand, and there is approximately 5 hours of storage in the Village water zone reservoirs, but further water conservation programs or infrastructure development will be required to close the gap between available supply and maximum day demand when 21 Mile Creek is offline.

Supply and Demand Summary

Normally water supply improvements are triggered when maximum day demand approaches the supply capacity. When that level is reached, the municipality has the choice to build additional water supply sources or to implement additional conservation programs.

As explained above, the Village water zone does have supply deficiencies during the measured MDD if 21 Mile creek water is unavailable. The difference between supply and demand is approximately 70 l/s, and the lowest cost method (either water conservation programs or infrastructure improvements, or a combination of both) must be pursued to correct this shortcoming otherwise there is a risk of water supply interruptions.

4) Business as Usual Scenario – no further water conservation measures

Approximately 18% (\$1.057 million) of the total annual expenditures in the RMOW water and sewer utilities vary with the amount of water used in Whistler. These are costs such as electricity, chemicals, testing and equipment maintenance for both water supply and wastewater treatment. As electricity makes up a significant portion of these costs, these costs are expected to increase faster than regular inflation. The average annual variable cost of water supply is approximately \$6,300 per litre per second. If average water consumption increases or decreases by 10% (equal to 17 l/s), the annual costs will vary by approximately \$106,000 per year (plus inflation).

The probability of the MDD event occurring concurrently with sustained high turbidity events at 21 Mile Creek is not ranked to be high. Nonetheless, even with that reduced probability, the implementation of conservation measures or development of new supply sources is warranted given the catastrophic outcomes of water supply failure during MDD periods.

Potential Water Conservation Programs

Staff developed a prioritized list of possible water conservation measures in 2004, and updated that list in October 2012.

Based on the Water Conservation Cost-Benefit Updates technical memorandum both maximum and average water consumption reductions have been estimated for each of the possible conservation programs listed.

Table 1. Potential Water Conservation Programs

Item	Water Conservation Program	Capital Cost Estimate	Total Annual Cost/Savings Estimate	Estimated Program Cost over 10 years	Estimated Max Flow Reduction Or Supply (L/s)	Estimated Unit Cost (\$/L/s Max)
1	Once through water use bylaw	\$0	(\$27,800)	(\$278,000)	4.6	(\$61,099)
2	Completion of Water Leakage Reductions Program	\$100,000	(\$110,827)	(\$1,108,267)	23.2	(\$47,770)
3	Better Enforcement of Comprehensive Water Use Bylaw – sprinklers	\$0	\$19,680	\$196,800	19.3	\$10,197

4	Irrigation Source at Meadow Park Fields	\$300,000	\$9,810	\$98,100	3.8	\$25,816
5	Home water audits and retrofits	\$0	\$10,305	\$103,050	3.4	\$30,309
6	Metering & volume based pricing	\$9,644,000	\$517,327	\$5,173,267	20	\$258,663
7	ICI water use audits ²	\$0	(\$16,630)	(\$166,300)	10.1	(\$16,465) ²
8	Public Education	\$0	\$81,825	\$818,250	1.5	\$545,500
9	Low-volume toilet rebate	\$0	\$39,590	\$395,900	0.7	\$565,571
10	Efficient clothes washer rebate	\$0	\$65,460	\$654,600	0.8	\$818,250
11	Rainwater capture rebate	\$0	\$42,590	\$425,900	-	n/a
12	Efficient landscaping and irrigation rebates	\$0	n/a	n/a	-	n/a

Notes:

1. Total Annual cost/savings estimate includes an annual program cost estimate, an annual operating cost/saving estimate, an annual investment rate cost, and an annual depreciation cost over the 30 year estimated life of the infrastructure
2. ICI water audits must be done after volume based pricing is implemented in order to realize water savings

Description of Potential Water Conservation Programs

1. Once through water use bylaw

A bylaw was presented to Council in 2009 for the regulation of once-through cooling equipment. This is equipment that uses the low temperature of Whistler's drinking water as a method to cool air conditioning equipment, water coolers and ice makers. Drinking water passes through this equipment, absorbs heat, and is discharged to the sewer system. This bylaw received First Reading, but was never adopted largely due to resistance from the Restaurant Association of Whistler (RAW). Staff remain of the opinion that this use of our water resources is inappropriate. The full conservation benefits of this program will take several years to realize as the requirements will be phased in to allow businesses to properly plan for these changes to their infrastructure. Research has shown that the capital costs for air cooled equipment are very similar to the water cooled equipment, so no additional capital costs to local businesses are anticipated. Additional education, inspection and enforcement costs are anticipated to make this bylaw successful.

2. Completion of Water Leakage Reduction Program

A project to install low flow meters that would detect leakage in Whistler's neighbourhoods has been partially completed, but further work is required to install meters in all the necessary locations and equip these meters with monitoring equipment. Once the installations are completed, a regular program of reviewing the information and comparing against baseline data will be required to determine if leakage is happening. Further steps will need to be taken to precisely locate and fix leaks as they are detected. It is estimated that \$30,000 will be spent annually to excavate and repair leaks.

3. Better Enforcement of Water Use Bylaw – sprinklers

It was estimated that adding two term bylaw officers that would be dedicated to education and enforcement of Whistler's current water use bylaw would result in peak water use reductions. These term positions would be during the summer irrigation season.

4. Irrigation Source at Meadow Park Fields

A project to install a dedicated irrigation well for the Meadow Park sports fields would result in reduced demands on the potable water system. Capital and ongoing maintenance costs have been estimated by staff.

5. Home Water Audits and Retrofits

It was estimated that indoor water use savings of up to 45 litres per capita per day (l/c/d) could be achieved by conducting water audits, replacing showerheads and faucet aerators, and repairing leaking toilets. The program cost estimate of \$317,000 would be expended over a ten-year program lifespan.

6. Metering and Volume Based Pricing

It was estimated that fully metering residential, industrial, commercial and institutional (ICI) customer connections and establishing usage-based billing would result in a reduction of 10-45%, with 15% savings reported to be typical in recent years. It is assumed that metering and implementation of inclining-block water rates for all customers will reduce overall demand by 15%. It has been measured in other jurisdictions that peak demand savings will be 1.5 times the annual average savings.

The capital cost of metering all unmetered connections, and inspecting and upgrading existing connections for proper function, is estimated to be \$9.7 million.

To calculate the cost of water savings by this measure, it is assumed that the capital cost will be depreciated on a straight line at 2% annually, and that the annual cost of reading and maintaining the meters and equipment and processing water billing will be \$100,000.

7. ICI water use Audits

ICI water audits can be very effective when aimed at sectors known to have opportunities for large water savings and individual customers with above-average consumption, but these audits are only effect once volume based pricing has been implemented. Hotels and restaurants, which likely represent a large proportion of Whistler's overall water usage, are typically excellent candidates for water savings. The Capital Regional District (Greater Victoria) has conducted several ICI audits annually since 2004, with typical water savings of 35% for hotels and 30-80% for restaurants. These savings are achieved largely through the replacement of once-through cooling systems often used in commercial refrigeration. These once through devices are covered under a separate conservation program, and these water savings have been removed from the estimate for ICI audits.

It was assumed that 20 facilities would be audited annually at a cost of \$2,350 per audit. It is assumed that the program would run for ten years at \$47,000 annually, and it is estimated that 25% water savings would be achieved on average for 200 connections. This would include 75% of the hotels and restaurants in Whistler. Assuming these 200 customers represent 25% of Whistler's annual average water use, total water savings of 6% of 2011 demand, or 870 m³/day, is estimated to be achieved by the program.

8. Public Education

There is no well-defined convention for estimating water savings from public education or social marketing initiatives in general terms. Typical estimates range from 0-2% of average demand. A public education program with an annual budget of \$75,000 is estimated to

achieve maximum day water demand savings of 1.67 l/s (0.5% of maximum day demand) over a 10-year program implementation cycle.

Although public education is typically ineffective in isolation, it is a necessary component of a comprehensive water demand management program, supporting all other program measures.

9. Low - Volume Toilet Rebate

Toilet replacement will be a primary factor in reducing residential water demand in the next decade, and a well-designed rebate program may significantly accelerate the replacement of old, inefficient fixtures. However, the cost-effectiveness of a rebate program must consider the proportion of program participants who would make the same decision without the benefit of a rebate. Standards have also changed and toilets that use more than 6 lpf are no longer available in BC. Many water utilities have recently examined the cost-effectiveness of toilet rebate programs and decided to discontinue the rebates based on market research that shows the incentives are not necessary to motivate most customers to replace toilets.

The budget of \$440,000 would be sufficient to issue approximately 2,500 toilet rebates at \$160 each, allowing for modest program administration costs. Assuming a toilet is flushed five times daily and the flush volume is decreased by 10 litres per flush, the total program water savings is estimated at 63 m³/day.

10. Efficient Clothes Washer Rebate

As with toilets, the pace of technology change in the mass market for washing machines has radically changed in the past decade. A washing machine program analysis must consider the proportion of program participants who would make the same decision without the benefit of a rebate. As horizontal-axis machines have gained market share and decreased in price, the need for a financial incentive to motivate the purchase of an efficient machine has decreased. When these factors are considered, single-family residential washing machine rebate programs are typically not found to be cost-effective, and several programs have been discontinued in recent years (e.g. Toronto and Greater Victoria).

A typical vertical-axis machine used by a family of four is estimated to use 45 m³/year of water, while high-efficiency washers typically use less than half as much water for the same quantity of laundry. It is assumed that replacing an old vertical axis residential washing machine with new horizontal axis machine will reduce water use by 20 m³/year on average, and that half of the machines for which a \$250 rebate is claimed would not otherwise have been replaced within the program lifespan. Assuming 250 rebates per year over a ten-year program lifespan, the total water savings achieved would be $0.5 \times 2,500 \times 20 / 365 = 68$ m³/day.

11. Rainwater Capture Rebate

Although rain barrels have remained popular, harvesting rainwater for irrigation uses is generally ineffective in the Pacific Northwest due to the relative lack of rainfall to refill storage when the plants require irrigation. For irrigation uses, rain barrels and cisterns will only offset municipal water usage equivalent to a few times their volume annually, and will have no impact on peak demand as they will generally be empty when demand peaks in mid-summer.

It is assumed that 70 rebates at \$500 each can be issued annually over a ten-year program lifespan, with an annual budget of \$47,000, achieving water savings of 0.09 m³/day per rebate, or 63 m³/day overall. Savings potential may be significantly greater for new non-

residential construction and Provincial plumbing code changes planned for late 2012 include new provisions that may encourage more non-potable water systems.

12. Efficient Landscaping and Irrigation Rebates

Recent experience has shown that incentives for replacing or upgrading irrigation system components does not lead to durable water savings, as water efficiency is highly dependent on proper operation and ongoing maintenance. No water savings are expected from such a program. Programs for replacing turf (the most water-intensive landscaping) have proven not to be cost-effective in hotter climates such as Arizona and Texas, typically appealing to customers who are already low water users.

Potential Water Supply Infrastructure

The recently updated Whistler Water Supply Plan identifies several possible infrastructure projects to increase Whistler's water supply and/or pump existing supplies from the area of the supply wells to the Whistler Village water zone, the area of highest demand. The costs and water produced by these potential projects have been estimated and shown in order of least costly to more costly on a per unit of water supplied basis in Table 2, the same units as used for the potential water conservation programs.

Table 2. Potential Water Supply Infrastructure Projects

Item	Water Conservation Program	Capital Cost Estimate	Total Annual Cost/Savings Estimate ¹	Estimated Program Cost over 10 years	Estimated Max Flow Reduction Or Supply (L/s)	Estimated Unit Cost (\$/L/s Max)
1	Upgrade Community Wells	\$250,000	\$33,333	\$333,333	33	\$10,101
2	Second 21 Mile Creek Aquifer Well	\$296,000	\$45,787	\$457,867	45	\$10,175
3	Spring Creek Booster Station and New W212-1 Well Pump	\$972,000	\$81,840	\$818,400	43	\$19,033
4	New Function Junction Well ²	\$317,000	\$46,907	\$469,067	45	\$10,424 ²
5	Third 21 Mile Creek Aquifer Well	\$560,000	\$44,867	\$448,667	20	\$22,433

Notes:

1. Total Annual cost/savings estimate includes an annual program cost estimate, an annual operating cost/saving estimate, an annual investment rate cost, and an annual depreciation cost over the 30 year estimated life of the infrastructure
2. The new Function Junction Well can only supply water to the Whistler Village zone (where it is needed) after the Spring Creek Booster Station project is completed.

Description of Potential Water Supply Projects:

1. Upgrade Community Wells

The Community Well aquifer has been estimated at supporting a maximum supply of 103 litres per second, while the current four wells in this aquifer can only produce a maximum of 70 l/s. The costs for this project have been based on re-developing three of the existing wells, and installing one new well.

2. Second 21 Mile Creek Aquifer Well

Geotechnical investigations have indicated that a second well in the 21 Mile Creek Aquifer could be located along the valley trail between the existing well and Rainbow Park. This second well was anticipated when the initial 21 Mile Creek well and booster station infrastructure were constructed, so only minor modifications to existing infrastructure would be required if this new well was built (these costs are included in the assessment above).

3. Spring Creek Booster Station and New W212-1 Well Pump

Installing a booster pump station at the location of the Spring Creek PRV station would allow excess water that can be supplied by the Athletes Village Well W217 to be pumped to the Baxter reservoir and supply water to the Village water zone. The well pump at Well 212-1 would also be replaced with a lower pressure pump as that pump would only need to supply water to the Spring Creek and Function Junction pressure zones.

4. New Function Junction Well

A second well near Well 217 would increase the amount of water that could be pumped from the Function Junction aquifer. This water is not required for Cheakamus Crossing, or Function Junction, but would be beneficial when pumped to the Village water zone via the Spring Creek Booster Station.

5. Third 21 Mile Creek Aquifer Well

The potential for a third well in the 21 Mile Creek Aquifer has been identified, but this well will be lower in capacity and further from existing infrastructure than the other wells in this area.

5) Recommendations

Staff recommend that an integrated approach of both water conservation and infrastructure improvements be undertaken to reduce the risk of having a water supply interruption in the Whistler Village water supply zone.

Tables 1 and 2 have been integrated to allow the most cost-effective method for reducing the water supply risk to be easily determined. The list of potential conservation programs and water supply projects has been organized from least costly (or highest savings) to most costly on a per unit of water supplied basis.

Table 3. Integrated Table of Conservation and Infrastructure Improvements

Item	Water Conservation Program	Capital Cost Estimate	Total Annual Cost/Savings Estimate ¹	Estimated Program Cost over 10 years	Estimated Max Flow Reduction or Supply (L/s)	Estimated Unit Cost (\$/L/s Max)
1	Once through water use bylaw	\$0	(\$27,800)	(\$278,000)	4.6	(\$61,099)
2	Completion of Water Leakage Reductions Program	\$100,000	(\$110,827)	(\$1,108,267)	23.2	(\$47,770)
3	Upgrade Community Wells	\$250,000	\$33,333	\$333,333	33	\$10,101
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5	Better Enforcement of Comprehensive Water Use Bylaw – sprinklers	\$0	\$19,680	\$196,800	19.3	\$10,197
6	Spring Creek Booster Station and New W212-1 Well Pump	\$972,000	\$81,840	\$818,400	43	\$19,033
7	New Function Junction Well ²	\$317,000	\$46,907	\$469,067	45	\$10,424 ²
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9	Irrigation Source at Meadow Park Fields	\$300,000	\$9,810	\$98,100	3.8	\$25,816
9	Home water audits and retrofits	\$0	\$10,305	\$103,050	3.4	\$30,309
10	Metering & volume based pricing	\$9,644,000	\$517,327	\$5,173,267	20	\$258,663
11	ICI water use audits ³	\$0	(\$16,630)	(\$166,300)	10.1	(\$16,465) ³
12	Public Education	\$0	\$81,825	\$818,250	1.5	\$545,500
13	Low-volume toilet rebate	\$0	\$39,590	\$395,900	0.7	\$565,571
14	Efficient clothes washer rebate	\$0	\$65,460	\$654,600	0.8	\$818,250
15	Rainwater capture rebate	\$0	\$42,590	\$425,900	-	n/a
16	Efficient landscaping and irrigation rebates	\$0	n/a	n/a	-	n/a

Notes:

1. Total Annual cost/savings estimate includes an annual program cost estimate, an annual operating cost/saving estimate, an annual investment rate cost, and an annual depreciation cost over the 30 year estimated life of the infrastructure
2. A new Function Junction well must be completed after the Spring Creek booster station is built in order for the well to supply water to the Whistler Village water zone where it is needed
3. ICI Water Audits must be completed after the implementation of metering and volume based pricing to be effective

While the first two items shown in Table 3 have a net cost benefit and will be pursued, more than just these two programs will be required to close the gap of 70 l/s that exists between the continuously available supply and the measured maximum day demand. Items 3, 4 and 5 have very similar cost/benefit estimates, and a detailed review of these items will be undertaken before it is determine which is the preferred option. Each of these programs and projects will be brought to Council as part of the annual budget process.

The recommended conservation programs (Items 1 and 2) are expected to reduce average water consumption by approximately 28 l/s or 17%. These programs will make a significant contribution towards Whistler's goal of reducing water consumption by 21% (from 2012 levels) to 425 litres per person per day.

WHISTLER 2020 ANALYSIS

W2020 Strategy	TOWARD Descriptions of success that resolution moves us toward	Comments
Water	All potable water is used sparingly and only used to meet appropriate needs.	Implementation of water conservation programs will ensure that Whistler moves towards this description of success.
Water	With respect to water resources, capital and long-term costs are managed in a financially prudent and fiscally responsible manner.	Only developing further water supplies or implementing conservation programs in a prioritized order and as required will ensure that long-term costs are managed.
Water	Water supply is distributed reliably, equitably and affordably – and is managed proactively within the context of effective and efficient emergency preparedness.	Pursuing conservation programs or additional water sources in advance of when they will be required will ensure that Whistler's water supply remains reliable.

W2020 Strategy	AWAY FROM Descriptions of success that resolution moves away from	Mitigation Strategies and Comments
Water	None.	

BUDGET CONSIDERATIONS

A total capital expenditure of between \$350,000 and \$400,000 will be required over ten years to proceed with Items 1, 2 and either Item 3 or 4. These programs and projects are expected to result in a total savings of between \$595,000 and \$856,000 over the ten year period due to reduce costs to supply water.

Community Engagement

Individual programs within this plan will involve public consultation as required when those programs are implemented.

SUMMARY

With the current water sources, and current measured maximum day demand, there is a low but distinct probability for the Whistler Village water zone to experience water supply interruptions. All other areas in Whistler have supplies in excess of the measured demands.

In order to reduce the risk of water supply interruptions, staff recommend a combination of conservation programs and water supply improvement projects to eliminate the risk of water supply interruptions in the Whistler Village water zone. The conservation programs and water supply projects have been evaluated on the basis of cost effectiveness, and a combined list illustrates the lowest cost method to reduce this risk.

The recommended conservation programs will make a significant contribution to Whistler's goal of reducing per capita water consumption to 425 litres per day.

Going forward, the maximum day and average water consumption in Whistler will be monitored annually, and additional items from the prioritized list of conservation programs and infrastructure projects will proceed if required to ensure a reliable water supply for Whistler.

Respectfully submitted,

James Hallisey
MANAGER OF ENVIRONMENTAL PROJECTS
for
Joe Paul
GENERAL MANAGER OF INFRASTRUCTURE SERVICES

APPENDIX A

Water Conservation data sheet

Whistler Development

2012 developed bed units	53,098
Developed bed units at buildout	61,274

2012 Conversion of flow per bed unit to l/s 1.625 l/bu/day = 1 l/s

Water Conservation Goals

2011 Per capita use	536 l/person/day
Whistler 2020 Goal	425 l/person/day

Water Supply

With 21 Mile Creek source	787 l/bu/day 484 l/s
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Without 21 Mile Creek	543 l/bu/day 334 l/s
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Water Consumption

2012 total water consumption	5,280,000 cubic metres Average of 272 l/bu/day Average of 167 l/s
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Measured maximum day demand	450 l/bu/day 277 l/s
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2012 total variable cost of water supplied	\$1,057,000
Includes - electricity	
- chemicals	
- equipment maintenance	

Variable cost of water supplied	\$10,284 per l/bu/day \$6,329 per l/s
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RESORT MUNICIPALITY OF WHISTLER

CONSOLIDATED WATER USE REGULATION BYLAW NO.1538, 2001

A BYLAW TO REGULATE THE USE OF WATER WITHIN THE RESORT MUNICIPALITY OF WHISTLER

WHEREAS the Council of the Resort Municipality of Whistler has authority pursuant to Section 518.1 of the *Local Government Act* to regulate in relation to municipal services;

AND WHEREAS Council has established a community water distribution service and wishes to regulate the use of that service for water sprinkling;

NOW THEREFORE the Council of the Resort Municipality of Whistler, in open meeting assembled, ENACTS AS FOLLOWS:

TITLE

1. This bylaw may be cited for all purposes as “Water Use Regulation Bylaw No.1538, 2001”.

DEFINITIONS

2. In this bylaw:
 - (a) “Garden Hose” means a flexible hose with an outside diameter of no more than 1 inch.
 - (b) “General Manager” means the Resort Municipality’s General Manager of Engineering and Public Works.
 - (c) “Sprinkle” or “sprinkling” means the application or distribution of water to lawns, fairways, fields or any other area consisting primarily of sod or turf, by scattering or spraying but excludes “drip irrigation” and the application of water to flower beds and vegetable gardens.
 - (d) “Water” means water supplied by the Resort Municipality of Whistler.
 - (e) “Newspaper” means a publication that contains news and advertising and is distributed at least weekly in the Resort Municipality of Whistler.

PROHIBITION

3. No person shall, between June 1st and September 30th inclusive in every year, sprinkle or allow sprinkling except in compliance with this bylaw.

SPRINKLING RESTRICTIONS

4. No person shall sprinkle or allow sprinkling except at premises:

Bylaw 1943

- (a) with even numbered civic addresses, on Thursdays and Sundays between the hours of 4:00 a.m. and 9:00 a.m. and between the hours of 7:00 p.m. and 10:00 p.m.; and

Bylaw 1943

- (b) with odd numbered civic addresses, or with no civic address, on Wednesdays and Saturdays between the hours of 4:00 a.m. and 9:00 a.m. and between the hours of 7:00 p.m. and 10:00 p.m.

- 5. The water use restrictions in Section 4 are referred to in this bylaw as "Level 1" restrictions.
- 6. If the General Manager determines that a further reduction in water use is required beyond the Level 1 restrictions for water conservation reasons, the General Manager may authorize the implementation of further water use reduction measures by written order, and after the notification prescribed by Section 11, no person shall:

- (a) sprinkle or allow sprinkling except at premises

Bylaw 1943

- (i) with even numbered civic addresses, on Thursdays between the hours of 4:00 a.m. and 9:00 a.m. and between the hours of 7:00 p.m. and 10:00 p.m.; and

Bylaw 1943

- (ii) with odd numbered civic addresses, or with no civic address, on Wednesdays between the hours of 4:00 a.m. and 9:00 a.m. and between the hours of 7:00 p.m. and 10:00 p.m.

- (b) use a garden hose to wash sidewalks, driveways, roofs or other outdoor surfaces; or
- (c) use a garden hose to wash motor vehicles unless the hose is equipped with a shut off device that is spring loaded and operated by hand pressure.

- 7. The water use restrictions outlined in Section 6 are referred to in this bylaw as "Level 2" restrictions.
- 8. If the General Manager determines that a further reduction in water use is required beyond the Level 2 restrictions for water conservation reasons, the General Manager may authorize the implementation of further water use reduction measures by written order, and after the notification prescribed by Section 11, no person shall:

- (a) sprinkle or allow sprinkling at any time;
- (b) use a garden hose to wash sidewalks, driveways, roofs or other outdoor surfaces; or
- (c) use a garden hose to wash motor vehicles unless the hose is equipped with a shut off device that is spring loaded and operated by hand pressure.

- 9. The water use restrictions in Section 8 are referred to in this bylaw as "Level 3" restrictions.
- 10. The General Manager shall advise Council of the issuance of any orders establishing Level 2 or Level 3 restrictions.

NOTICES

- 11. Notice of orders under Sections 6 and 8 of this bylaw shall be given by an announcement made on behalf of the Resort Municipality through a radio station broadcasting in the municipality or by one publication in a newspaper, not less than 48 hours prior to the commencement or revocation of restrictions under the order.

PERMITS

12. A person who has installed a new lawn, either by replacing sod or by seeding, or who has installed new landscaping on a substantial part of the outdoor portion of a premises, may apply to the General Manager for a permit entitling that person to sprinkle at any time at the premises described in the permit and during the term of the permit.
13. The General Manager, upon being satisfied that an applicant qualifies under Section 12, shall issue a permit to the applicant upon payment of a fee in the amount of \$30.00.
14. A permit issued under Section 13 shall be valid for 90 days after the date of issuance and shall be conspicuously displayed at the premises for which it was issued.
15. Before the expiration of a permit issued under Section 13, a person may apply for and obtain one extension only of the permit, on the same terms and conditions.

EXEMPTIONS

16. Sections 6(b) and 8(b) do not apply to outdoor areas which are required to be cleaned or watered so as to comply with health, fire or safety requirements.
17. The provisions of Sections 4 to 10 inclusive do not apply to the following classes of persons and places:
 - (a) a person who holds a permit issued under Section 13;
 - (b) municipal parks, municipal village; school board fields and
 - (c) landscaping, turf and sod within public road rights-of-way.
18. Golf course and pitch-and-putt operators are exempt from Sections 4 to 10 if they have provided the General Manager with a water use reduction program for that calendar year.

OFFENCE AND PENALTY

19. A person who contravenes any provision of this bylaw commits an offence and is liable upon conviction to a fine not exceeding \$2,000.00.

This copy of "Water Use Regulation Bylaw No.1538, 2001" has been consolidated and printed by the authority of the Corporate Officer of the Resort Municipality of Whistler pursuant to Section 139 of the *Community Charter* and Bylaw Consolidation and Revision Bylaw No. 1957, 2010.

Dated this 13th day of April, 2011.

Shannon Story
Corporate Office



WHISTLER

REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: June 7, 2004
FROM: Engineering and Public Works
SUBJECT: LONG TERM WATER SUPPLY PLAN

REPORT: 04 - 78
FILE: 216

DEPUTY'S ADMINISTRATOR'S COMMENT/RECOMMENDATION

That the recommendation of the General Manager of Engineering and Public Works be endorsed.

RECOMMENDATION

That Council adopts the Long Term Water Supply Plan dated March 2004.

PURPOSE

The 2004 Long Term Water Supply Plan updates the 1994 water study and provides a comprehensive plan that will meet the municipality's anticipated long-term water supply needs. The Long Term Water Plan will provide guidance to staff and Council in developing policies and planning of capital expenditures.

DISCUSSION

The municipality completed a comprehensive study of long-term water supply options in 1994. This study recommends a number of improvements to the municipal water system to ensure that the water supply continued to meet water quality standards and provided sufficient firefighting flows. Many of the report recommendations have been implemented or are in progress. In addition, the provincial government has recently passed the Drinking Water Protection Act and Drinking Water Protection Regulations, which discuss new best practices and standards. In response to this situation, staff retained a consulting engineering firm to update the long-term water study and provide an implementation program for upgrading the supply and distribution systems to meet the long term needs of the resort community.

The updated Long-Term Water Supply Plan provides a basis for policy and capital planning decisions relative to developing the municipal water system to meet existing and anticipated long-term needs. The plan is designed to enable the following:

1. Provision of a cost-effective water demand management strategy through extension of existing water conservation programs including water use bylaws, alternate irrigation water sources, unaccounted for water reduction programs, and metering of the commercial areas. The proposed water conservation measures have been selected on the basis of cost effectiveness relative to managing the peak and overall water demands in the municipality.

2. Provision of a water supply that meets current and foreseeable water quality standards through completion of the groundwater chlorination program as well as monitoring and protection of groundwater source aquifers. Filtration of groundwater sources will be required if surface water influence is demonstrated. Surface water sources require filtration to meet current standards and this is a significant factor in the source development strategy (see below).
3. Development of reliable, economic, and high-quality water sources to meet existing and long-term water demands given that the existing surface water sources will not meet long-term quality and reliability requirements in their present form. A source development strategy has been established for finalizing the long-term water supply sources, which includes assessment of a number of options, demonstration of feasibility, and selection based on detailed testing and capital and operating cost estimates. Preliminary recommendations for source investigation and development have been presented with development of the 21 Mile Creek aquifer recommended as the first priority.
4. Upgrading of the water distribution system to ensure reliable delivery of long-term fire and peak domestic water demands. Fire protection and water ageing (as related to water quality) analyses have been completed which have identified a limited number of deficiencies relative to the long-term water system requirements. Specific water system upgrading programs have been recommended to improve feeder main capacity, water storage and water quality. A long-term program to rationalize and connect pressure zones and decommission redundant facilities has also been recommended. Several operating, maintenance, and security upgrades have also been included in the recommended program.

In developing the Long-Term Water Supply Plan the following approach was taken:

- Describe the existing water system and its components;
- Estimate existing bed unit design criteria and project design flows for the ultimate population;
- Review existing and potential water conservation measures, confirm a long-term water conservation program, and estimate the impact of these water conservation measures on the projected design flows;
- Evaluate existing and potential groundwater and surface water sources, and integrate the assessments into a source development strategy; and
- Review the existing water distribution system (mains, pump stations, storage reservoirs and control facilities) and make recommendations for upgrades to meet long-term needs.

Assessment of Existing Water System

The existing water supply consists of both surface and groundwater sources, which provides a robust system with redundancy that will ensure water supply remains available even in the event that one source is unavailable. The surface sources are 21 Mile Creek, Blackcomb Creek and Agnew Creek. Water treatment is presently limited to coarse screening, settling and chlorination of surface sources. These sources do not use filtration for treatment and, therefore, should be upgraded in order to meet new provincial requirements for removal of *Giardia* and *Cryptosporidium*. Alternatively, the surface sources could be shut down and replaced with groundwater supply. As described below, the Long Term

Water Supply Plan recommends that the surface supply be shut down and replaced with a groundwater source.

Existing groundwater wells are located throughout the municipality. All groundwater sources consistently meet the Canadian Drinking Water Guidelines. Some groundwater sources are chlorinated and plans are in place to provide chlorination for the remainder to ensure that minimum residual chlorine is available in the distribution system.

The water distribution system consists of 100 mm to 400 mm diameter pipes with the oldest dating back to the 1960s. Due to the rapid growth of the municipality over the past 25 years, most of the water mains are relatively new and in good condition.

As with most water systems in North America, the majority of Whistler's water comes from one source. Given this, the pipeline between the principal source, 21 Mile Creek, and the principal areas of consumption (the Village) is recognized as an important element of the distribution system. A shut down on this main will result in the loss of the 21-Mile Creek water supply. The Long Term Water Supply Plan recognizes that the municipality has procedures in place to effectively reduce water demand, which will help ensure water reservoirs in the Village area continue to provide fire storage requirements.

Water Demands and Extension of Water Conservation Program

The long-term water demands are based on the following three items:

- A development limit of approximately 55,100 bed units (including employee housing).
- A detailed analysis of existing water use.
- The estimated impact of water conservation measures that have been implemented since 1998 and further water conservation measures that are part of the long-term plan.

It should be noted that the municipality has implemented a number of effective water conservation measures over the past few years (as described below) that has directly resulted in lower demand for water. The decreased demand translates to savings to Whistler taxpayers due to the reduction in supply, distribution and treatment costs.

The estimated long-term demands are summarized in Table 1.

Table 1: Summary of Estimated Long-Term Water Demands

Item	Average Day Demand	Maximum Day Demand	Peak Hour Demand
Unit Demand (L/bu/d)	300	700	1270
Total Long-Term Demand (L/s) ⁽¹⁾	191	447	809
Total Long-Term Demand (ML/day) ⁽¹⁾	16.5	38.6	70.0
⁽¹⁾ Based on development to 55,100 bed units.			

As noted above, the municipality has a comprehensive water conservation program. Some of the conservation measures that are described in the Long-Term Water Supply Plan are:

- A low volume toilet and fixture bylaw;
- A comprehensive water use bylaw;
- Investigation and development of alternate water sources for significant irrigation demands;
- An unaccounted for water reduction program through identification of areas with high leakage and leakage repair programs;
- Efficient landscaping and irrigation requirements through existing bylaws; and
- Water metering and volume-based pricing in the core commercial areas.

For planning purposes the estimated long-term demands in the above table are based on a reduction of approximately 12%, relative to the 1998 demands and based on implementation of the above measures. These results from the conservation program are significant in terms of cost savings.

Requirements for Water Quality Compliance

As noted above, the municipality has been and is currently in compliance with the Canadian Drinking Water Guidelines and the Provincial Drinking Water Protection Act. However, it is anticipated that future water quality regulations will extend their focus to more stringent microbiological parameters as well as chemical and aesthetic parameters. In order to continue to meet best practices, it is recommended that existing drinking water treatment facilities be upgraded as follows:

- Treatment of all groundwater sources with chlorine and complete testing to determine if any of the source aquifers are influenced by surface water;
- Treatment all long-term surface sources by chlorination and filtration to ensure 99.9% reduction of Giardia and greater than 99.9% reduction of viruses. It is recommended that Cryptosporidium control should be implemented as adopted by USEPA; and
- Treatment of groundwater sources that are discovered to be under the direct influence of surface water should meet the same treatment objectives as surface sources.
- It is also recommended that an aquifer protection and well head protection program be implemented for existing and new wells using the guidelines of the B.C. Environment Well Protection Took Kit and standard well construction techniques.

Assessment of Source Options

Additional water sources will be required for the central service area (i.e. not including Emerald Estates or the Function Junction) to meet the demands of increasing development and to replace existing surface water sources which do not meet long-term quality and reliability requirements in their present form.

Implementing new water supply sources is to be based on a long-term, five-phase source development strategy as follows:

1. Complete a preliminary assessment of several surface and groundwater sources.
2. Confirm the feasibility to develop the sources identified as preferable in the preliminary assessment.
3. Prioritize the sources confirmed to be feasible for development.
4. Test sources to confirm water quality and capacity requirements.
5. Implement the new source.

Based on available information, it is anticipated that the following sources will comprise the Long-Term Water Supply Plan, and these have been used for capital budgeting purposes:

- Existing groundwater supplies are to be kept in place and existing developed wells (Spring Creek) are to be put into production.
- A groundwater development program is to be implemented for the 21 Mile aquifer.

Failing development of sufficient capacity from the above sources, one of the following options will be selected to provide the balance of the water supply:

1. A treated surface water supply from 21 Mile Creek (requiring pilot testing of a membrane filtration plant);
2. A treated groundwater supply (requiring pilot testing for manganese and iron removal), which may be cost-effective for limited quantities of water; or
3. A treated surface water supply from the Cheakamus River or Green Lake (requiring pilot treatment plants, environmental approvals, a significant public education program and adjustments to the feedermain implementation plan).

The capacity of the various sources considered for the central service area are summarized in Table 2. The total capacity required to meet the maximum day demand of the central service area is 429 L/s.

Table 2: Summary of Water Requirements and Sources

Source	Existing Capacity (L/s)	Planned Long Term Capacity (L/s)
21 Mile Creek Surface Water	73 – 190 L/s	0 L/s
Agnew Creek	Seasonal	0
Blackcomb Creek	Seasonal	0
Crekside Well (W206)	15.8	0
Community Wells	103.4	103.4
Spring Creek Wells	38	74.0
Meadow Park Well	18.9	18.9
Alpine Meadows Wells (W202 & W210)	56.8	56.8
Additional Sources	0	175.9
Total Capacity	305.9 – 422.9	429.0

As demonstrated in the above table, a significant proportion of the required new capacity must come from sources other than existing surface sources, including 21 Mile Creek. This is because they have seasonal or limited capacity during dry years and because relatively expensive treatment plants would have to be constructed to maintain them as long-term sources. The surface sources use chlorination; however, the sources are not equipped for filtration, which will be a requirement that results from the new *Drinking Water Protection Act*.

The following potential additional water sources have been identified and prioritized on the basis that they will provide the most economical sources of acceptable quality water:

- The Spring Creek wells currently under development at Function Junction (total of 74 L/s);
- The 21 Mile Creek fan currently undeveloped has a potential to yield about 150 L/s; and
- Other groundwater sources, which will require treatment to remove iron and manganese. These sources include aquifers that have been drilled and tested in the Function Junction and Whistler Cay area.

Subject to ongoing monitoring for surface water influence, the existing Emerald Estates groundwater supply will continue to serve the Emerald Estates community thus removing Emerald Estates' needs from the contiguous municipal water system.

Several potential surface water sources have also been investigated as part of this study. Of these, only 21 Mile Creek and the Cheakamus River have the potential to significantly contribute to the long-term needs of the municipality. The remainder has significant issues relating to quality, quantity, or accessibility.

The 21 Mile Creek source has limited capacity (winter one-day twenty-year average low flow of 88L/s). However, this source does have public acceptance, an existing identified watershed and water license, and the water distribution infrastructure is in place. Consideration may ultimately be given to providing a treated water supply from this source if the groundwater options all prove infeasible or uneconomic.

Water Distribution and Storage Upgrading Program

The entire municipal water system has been constructed since the 1960s with currently approved materials that remain well within their design life. The exceptions are the water mains in Alta Vista and White Gold, which are predominately asbestos cement pipes and have relatively high leakage. (As a side note, asbestos cement pipes do not present health concerns). Additionally, the existing ductile iron piping in Alpine Meadows may also have significant leakage.

Assessment of the existing water distribution and storage systems has identified a number of issues, which are described below. It should be noted that the municipality is moving forward on addressing several of these issues and several tasks were completed in 2003. The 2004 budget includes provision to complete the majority of the outstanding tasks noted in the Long Term Water Supply Plan.

The Long Term Water Supply Plan notes the following with respect to distribution and storage:

Water Distribution System

- The existing feeder mains are able to convey peak flows from the existing (and many of the proposed) sources to the principle areas of demand while maintaining zone pressures, however, they should be upgraded to meet future demand.
- The existing water distribution grid in the Village should be upgraded to convey future flows to restore reservoir levels during off-peak periods.
- In order to minimize risks of water supply interruptions, the municipality should consider further redundancy in the feeder main grid.
- Fire protection in many older areas may need to be upgraded for new development and construction due to existing small diameter local water mains.
- Common pressure zones are linked but they are opportunities to improve the connections to benefit water circulation and supply reliability.

Water Storage

- The fire storage capacity in the Upper Blackcomb Reservoir should be reconfirmed in a separate study that considers the impact of new development.

Water Quality

- In order to minimize water ageing in dead-end mains, a number of blow-down assemblies should be installed. It should be noted that the municipality has made a number of improvements in 2003 and 2004.
- Circulation in the Upper Taluswood reservoir should be improved.

Operation, Maintenance and Security

- Numerous facilities require minor modifications to meet current municipal, operating, and security standards

A program of upgrading tasks has been developed to address the items identified in the water system assessment. As noted above, a large number of the recommendations are already underway. The upgrades are divided into five sub-programs, summarized as follows:

1. Upgrade the overall water supply to the municipality by upgrading feeder mains and completed associated works. The program includes new feeder mains to convey water from 21 Mile Creek and the proposed groundwater sources, and works to convey peak flows through the Village to an upgraded Community Booster Pump Station. This will ensure refilling of the main reservoirs during off-peak periods. Other mains and control valve upgrades are also included.
2. Provide additional water storage for the central service area. This requirement is linked to an investigation of the fire and balancing storage requirements for the Blackcomb Benchlands.

3. Implement a water quality enhancement program relative to the distribution system including installation of additional blow down assemblies, provision of additional water sampling stations and chlorine monitoring stations, and water circulation upgrades at various reservoirs. As noted above, the bulk of this initiative was completed in 2003 and the remainder is scheduled for 2004.
4. Complete a pressure zone rationalization and decommissioning program to improve water circulation, redundancy of supply, and operating efficiency. This sub-program includes various water main links, decommissioning of several existing PRV stations, and zone pressure adjustments.
5. Complete various recommended operation, maintenance and security upgrades.

Long-Term Water Supply Plan

The Long-Term Water Supply Plan integrates various source development options and the water system upgrade plan into a six-phase program, which is summarized in Table 3:

Table 3: Summary of Costs (by Report Section)

Section	Name of Program	Total Est. Cost \$1,000
4	Water Conservation & Metering	\$900,000
5	Water Quality Enhancement	\$555,000
6	Groundwater Source Development	\$5,701,000
7	Surface Water Supply	\$716,000
8	Source Development Strategy	0
9	Water Distribution and Storage	\$13,314,000
Total Estimated Cost		\$21,286,000

In addition to the costs identified in the Long Term Water Supply Plan, there are operating and maintenance costs, as described in the budget section of this report.

POLICY CONSIDERATIONS

One of the primary functions of a local government is to provide safe drinking water to the public and to provide firefighting water. Chapter 8 of the Whistler Environmental Strategy describes Whistler's goal of achieving excellence in water supply and wastewater management. The Environmental Strategy identifies a number of strategic goals, such as sustainable water consumption levels, dependable quantity of water supply and excellent raw water quality. The updated Long Term Water Supply Plan is designed to help the municipality achieve the goals and objectives described in the Environmental Strategy.

In addition to municipal policies, the provincial government has a number of policies related to drinking water protection. The provincial government recently passed a new Drinking Water Protection Act and

Regulations. Further, the Ministry of Health is responsible for issuing water license and places conditions on permits to ensure public health is protected. The intent of the provincial government is to implement new water quality standards over a reasonable time period. Municipal and provincial staff are currently discussing potential changes and an implementation schedule.

The Long Term Water Supply Plan will help ensure the municipality meets all of the Canadian and provincial requirements to ensure safe water is provided to the public.

BUDGET CONSIDERATIONS

All costs associated with the municipal water system are funded through a water utility, as opposed to general tax revenue. The costs associated with the Long Term Water Supply Plan, as well as other costs associated with operating and maintenance of the water utility, have been included in the 2004 municipal budget, which has been adopted by Council. In summary, \$23.4 million has been allocated over the next twenty years for the water utility.

There are no extraordinary tax increases associated with the Long Term Water Supply Plan.

It should be noted that the source development program is currently underway and, therefore, staff are unable to confirm the final costs to develop alternative a new water supply. As the source development program provides further data, costs will become more accurate and Council will be advised of any changes through the annual budget process.

SUMMARY

Staff have prepared a Long Term Water Supply Plan that provides a comprehensive policy and decision-making document to ensure that Whistler's water supply continues to meet the resort community's needs with respect to quality and quantity. The Water Supply Plan includes water conservation measures and a source development program to meet the demands of increasing development and to replace existing surface water sources which do not meet long-term quality and reliability requirements in their present form.

Costs associated with the programs and projects described in the Long Term Water Supply Plan have been included in the 2004 municipal budget, which has been adopted by Council. It should be noted, however, that the source development program is not yet complete and, therefore, staff are unable to confirm the final costs to develop alternative a new water supply. As the source development program provides further data, costs will become more accurate and Council will be advised of any changes through the annual budget process.

Respectfully submitted,



Brian G. Barnett, P. Eng.
GENERAL MANAGER ENGINEERING AND PUBLIC WORKS

- The resort community's authentic sense of place and engaging, innovative and renewed offerings attract visitors time and time again
- The resort is comfortable, functional, safe, clean and well-maintained
- A comfortable carrying capacity of the resort, its amenities, and the surrounding natural environment is respected
- The visitor experience is based on practices and systems that efficiently use sustainable materials and energy

1.17.

WATER

In 2020, Whistler's water resources provide a dependable supply of healthy water to meet the long-term needs of people, other species, and nature. In the future:

- Whistler's potable water supply system delivers water of excellent quality, which meets or exceeds all relevant health standards, and meets benchmark aesthetic standards whenever possible
- Water supply is distributed reliably, equitably and affordably – and is managed proactively within the context of effective and efficient emergency preparedness
- Residents and visitors are educated about, and encouraged to protect and conserve natural water resources
- All potable water is used sparingly and only used to meet appropriate needs
- Wastewater and bio-solids are readily assimilated in nature
- Water supply, wastewater management and flood control infrastructure minimize energy requirements, and favour sustainably managed materials and resources
- Watershed-based management approaches and policies guide and integrate overlapping land and resource values including (but not limited to) development, infrastructure, forests, habitat, recreation, fisheries and aquifers
- Effective stormwater management and flood control measures are in place, and replicate natural hydrological systems and functions as much as possible
- Flood control systems are maintained at a high level of emergency preparedness, where risks are managed proactively, effectively, and efficiently
- With respect to water resources, capital and long-term costs are managed in a financially prudent and fiscally responsible manner
- Potable water supply source protection is optimized within a multi-barrier approach
- Healthy streams, rivers, lakes and wetlands support thriving populations of fish, wildlife and aquatic invertebrate



WHISTLER

REPORT | INFORMATION REPORT TO COUNCIL

PRESENTED: February 2, 2004
FROM: Engineering and Public Works
SUBJECT: WATER CONSERVATION PROGRAM

REPORT: 04-16
FILE: 220

ADMINISTRATOR'S COMMENT/RECOMMENDATION

That the recommendation of the General Manager of Engineering and Public Works be endorsed.

RECOMMENDATION

That Council receive the report on the municipal Water Conservation Program.

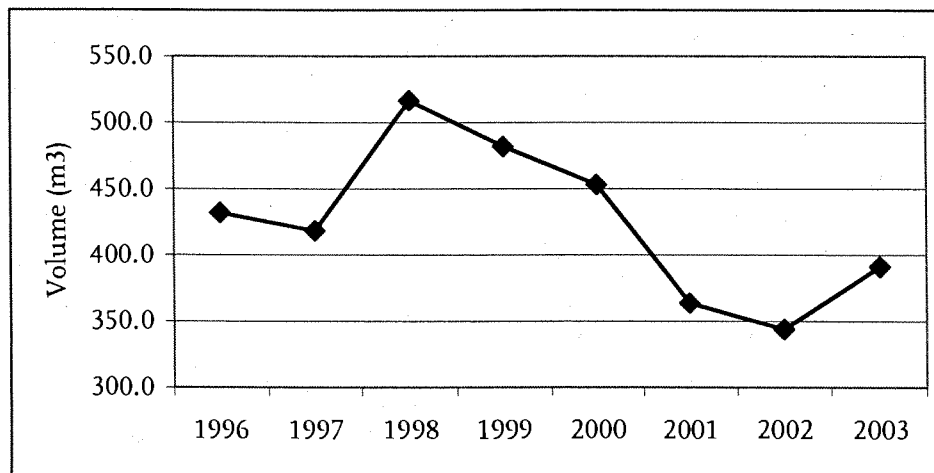
PURPOSE

The report provides Council with a status report on the municipal Water Conservation Program.

DISCUSSION

Since the late 1990's, staff have been implementing various initiatives aimed at reducing water consumption throughout the municipality. The initial programs were rather obvious first steps that provided reasonably high returns – in other words, low hanging fruit.

The figure below shows the per capita water consumption recorded since 1996. In particular, 1998 and 2003 were both long, dry summers with very low rainfall. In 1998, peak water consumption was 517 m³ per person per day. In 2003, it was 390 m³ per person per day – a 25% decrease.



Per-Capita Average Daily Water Consumption

As noted above, peak water consumption has decreased by 25% over the past five years. Peak water consumption is an important consideration because this reflects the municipality's infrastructure requirements. If peak demand can be decreased, then infrastructure expansion plans can be reduced and the taxpayers can realize cost savings.

Some of the key elements of Whistler's water conservation program include:

Whistler Golf Course Irrigation Systems

In the late 1990's, the municipality partnered with the Whistler Golf Course on the development of an independent irrigation well. This resulted in significant decrease in municipal water for the operation of the golf course.

Hydrant Use Permitting Process

In 1999, the Public Works Department launched a program that regulated the use of fire hydrants by the private sector.

Irrigation/Sprinkling Bylaw

In 2001, the municipality authorized a bylaw to regulate and restrict lawn irrigation and other miscellaneous uses of water. The regulations are similar to those in the lower mainland.

Low Flow Plumbing Fixture Bylaw

In 2003, the municipality authorized a bylaw that requires low flow toilets, showerheads and other fixtures for all new construction that involves a plumbing permit.

Independent Municipal Parks Irrigation

In 2003, the municipality constructed independent irrigation wells at Rainbow Park, Spruce Grove Park and the lower fields at Myrtle Phillip Community School. These new water sources provide a significant amount of irrigation, which helps reduce peak summer water demand.

Some of the future water conservation initiatives include:

Leak Detection Program

The Public Works Department is planning to launch a comprehensive leak detection program to identify areas of significant underground leakage in the water distribution system. Specific repair and/or replacement programs will be developed, based on the results of the leak detection program.

Water Use Bylaw

Depending on water consumption patterns over the next few years, the current irrigation bylaw may have to be strengthened to reduce average flows.

Efficient Landscaping and Irrigation Bylaw

The municipality may wish to include additional water efficiency requirements in the existing approval process for irrigation systems and landscaping. Additionally, irrigation system rebates and water efficient landscaping rebates could be offered to those that make improvements to expedite the transition to new standards.

In addition to the above, the Engineering Department is preparing a separate report to Council on water metering, which may provide a further opportunity with respect to water conservation.

POLICY CONSIDERATIONS

The *Whistler Environmental Strategy* discusses the importance of water conservation in the resort municipality. In particular, the report identifies a target for water conservation of 425 litres per person per day. The data collected over the past five years suggests that the municipality has achieved this goal.

SUMMARY

Since the late 1990's, the municipality has initiated several water conservation projects. The results to date have been very encouraging. In 1998, peak water consumption was 517 m³ per person per day. In 2003, it was 390 m³ per person per day – a 25% decrease.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "B. Barnett", with a stylized flourish at the end.

Brian G. Barnett, P.Eng.

GENERAL MANAGER ENGINEERING AND PUBLIC WORKS



REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: October 6, 2015

REPORT: 15-119

FROM: Corporate & Community Services

FILE: Bylaw 2094

SUBJECT: PERMISSIVE EXEMPTION

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Corporate & Community Services be endorsed.

RECOMMENDATION

That Council consider giving first three readings to Taxation Exemption for Not-For-Profit Organizations Amendment Bylaw No. 2094, 2015.

REFERENCES

None

PURPOSE OF REPORT

The purpose of Taxation Exemption for Not-For-Profit Organizations Amendment Bylaw No. 2094, 2015 is to request Council's consideration of the exemption of property taxes under section 224 of the *Community Charter*. Permissive exemptions apply to property taxes based on assessed property value only; they do not exempt the properties from parcel taxes, local area improvement or frontage taxes or any user fees.

DISCUSSION

Section 224(2)(a) of the *Community Charter* permits Council to grant an exemption from property taxation for land and improvements owned or held by a charitable, philanthropic, or other not for profit corporation and which council considers are used for a purpose that is directly related to the purposes of the corporation. Section 224(4) allows the term of the exemption to be up to 10 years.

The Squamish Lil'wat Cultural Centre is in the Upper Village area and provides a First Nations cultural experience and information to Whistler residents and visitors alike. Council has granted a permissive exemption each year since 2005. The Bylaw No. 2094 extends the exemption for this property to include the ten years from 2016 to 2025.

POLICY CONSIDERATIONS

A tax exemption must be adopted by Bylaw on or before October 31st in order for the exemption to be in effect in the following year. The exemption applies only to the next calendar year and any subsequent years up to a total of ten years that are provided for in the bylaw.

The proposed permissive exemption is in accordance with the Resort Municipality of Whistler's policy statement as included in the Five Year Financial Plan Bylaw which includes the statement;

“As permitted by the *Community Charter*, council has granted exemptions from municipal property taxes for the following general purposes:

- Properties owned or held by a not-for-profit organization whose purpose is to contribute to the well-being of the community with the provision of cultural, social, educational or recreational services.”

BUDGET CONSIDERATIONS

This property has been exempt from property taxes since its construction. Therefore, this exemption does not reduce existing municipal tax revenue.

COMMUNITY ENGAGEMENT AND CONSULTATION

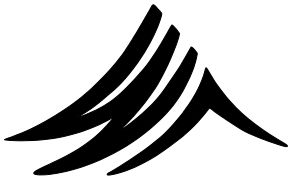
As required in the Community charter section 227, notice of this bylaw has been published in a local weekly newspaper for 2 consecutive weeks and posted in the public notice posting places

SUMMARY

That proposed Taxation Exemption for Not-For-Profit Organizations Amendment Bylaw No 2094, 2015 that provides municipal tax exemptions for the land and improvements of the Squamish Lil'wat Cultural Centre receive first, second, and third readings.

Respectfully submitted,

Anna Lamb
MANGER OF FINANCIAL SERVICES
for
Norm McPhail
GENERAL MANAGER OF CORPORATE AND COMMUNITY SERVICES



WHISTLER

MINUTES

REGULAR MEETING OF THE MAY LONG WEEKEND COMMITTEE

WEDNESDAY, AUGUST 12, 2015, STARTING AT 1:43 P.M.

In the Piccolo Room

4325 Blackcomb Way, Whistler, BC V0N 1B4

PRESENT:

Chair, RMOW General Manager, Corporate and Community Services, N.
McPhail

Councillor J. Grills

Director of Bars and Pubs, Gibbons Hospitality, Terry Clark

Member at Large, Nicole Shannon

RCMP Staff Sergeant, Steve LeClair

RMOW Manager, Village Animation and Events, B. Andrea

Whistler Health Care Centre Emergency Physician, Dr. Clark Lewis

Recording Secretary, Rose Lawrence

REGRETS:

General Manager, Four Seasons Whistler, Peter Humig

ADOPTION OF AGENDA

Moved by Councillor J. Grills

Seconded by N. Shannon

That the May Long Weekend Committee adopt the Regular May Long
Weekend Committee agenda of August 12, 2015.

CARRIED

ADOPTION OF MINUTES

Moved by B. Andrea

Seconded by Councillor J. Grills

That the May Long Weekend Committee adopt the Regular May Long
Weekend Committee minutes of May 27, 2014.

CARRIED

Moved by Councillor J. Grills

Seconded by N. Shannon

That the May Long Weekend Committee adopt the Regular May Long
Weekend Committee minutes of July 2, 2015.

CARRIED

PRESENTATIONS/REPORTS

- Outstanding Action Items N. McPhail: asked for feedback regarding how to engage groups of youth, in order to brainstorm ideas of how to improve on the weekend. T. Clark: stated that issues could still occur if youth are let out of a 2 a.m. event, vs. not holding a youth event. N. Shannon suggested that youth like to hang around the Village, and that people aren't as anonymous in a small town; hopefully the fact that there were charges laid will deter others. N. McPhail commented that anyone who was involved in those incidents has had their lives turned upside down. J. Grills indicated that the large police presence helped.
- N. McPhail stated that there are areas to improve e.g. community watch. B. N. Shannon responded that businesses could be given tools to manage the weekend. N. McPhail asked how to help businesses and added that the accommodation sector could be given tools too. He further stated that community policing might be able to broadly address over-occupied accommodation on this weekend.
- Action item: N. McPhail to compile recommendations from previous meetings.*
- Action item: N. McPhail to compile current recommendations from the Committee and also determine if there is anyone else the Committee should hear from.*
- Action item: N. McPhail to create a business survey.*
- B. Andrea remarked re: GO Fest: "are we driving incremental business" is the question asked after each event. If no, then do we drive it differently or at all.
- Round Table T. Clark asked clubs regarding the feasibility of a youth event at an all-ages venue and will report back to the Committee.

OTHER BUSINESS

There were no items of Other Business.

ADJOURNMENT

Moved by Councillor J. Grills

That the Closed May Long Weekend Committee of 12 August, 2015 be adjourned at 2:10 p.m.

CARRIED

Signed Original on File

CHAIR: N. McPhail

**RESORT MUNICIPALITY OF WHISTLER
ZONING AMENDMENT BYLAW (SHIPPING CONTAINERS) NO.
2093, 2015**

A BYLAW TO AMEND ZONING AND PARKING BYLAW NO. 303, 1983

WHEREAS Council may in a zoning bylaw pursuant to the Local Government Act, divide all or part of the area of the Municipality into zones, name each zone and establish the boundaries of the zone, regulate the use of land, buildings and structures within the zones, and prohibit any use in any zone;

NOW THEREFORE the Municipal Council of the Resort Municipality of Whistler, in open meeting assembled, **ENACTS AS FOLLOWS:**

1. This Bylaw may be cited for all purposes as "Zoning Amendment Bylaw (Shipping Containers) No. 2093, 2015".

2. Zoning and Parking Bylaw No. 303, 1983 is amended as follows:

(a) In Section 2, Definitions by deleting from the definition of "shipping container" the sentence:

"No services, including plumbing or electrical utilities, are to be provided to a shipping container."

(b) By adding the following text, to Section 5, General Regulations, as subsection 28:

28. "Shipping Containers

28.1. Shipping containers are prohibited in all of the following zones:

28.1.1. Residential zones under Section 11

28.1.2. Multiple residential zones under Section 12

28.1.3. Tourist accommodation zones under Section 14

28.1.4. Tourist pension zones under Section 15

28.1.5. Lands north zones under Section 16

28.2. The storage of shipping containers is a permitted use in the IA1 Zone (Industrial Auxiliary One)

28.3. Notwithstanding Section 28.1, shipping containers are permitted in all zones under the following circumstances:

28.3.1. Containers may be temporarily placed on construction sites, for storage incidental to an active construction project on the site, provided that:

28.3.1.1. a building permit has been issued for construction on the site and the permit has not expired, and

28.3.1.2. the shipping container is removed once construction is completed or stopped or the building permit expires.

- 28.3.2. A single container may be placed on a parcel zoned for residential or commercial uses, for a period totalling no more than 14 days, for the purpose of loading or unloading goods to permanently relocate the residential or commercial use, provided that the name of the moving enterprise is displayed on the container and the enterprise holds a current municipal business license and a current provincial commercial transport license.
- 28.3.3. Containers may be temporarily placed on any parcel or on a highway for use in conjunction with the construction or repair of public infrastructure.
- 28.3.4. Containers may be temporarily placed on any parcel or on a highway for use associated with a municipally-approved special event.
- 28.4. The following restrictions apply to all shipping containers in the municipality:
- 28.4.1. No services, including plumbing, heating or electrical service, may be provided to or installed in a shipping container.
- 28.4.2. A container shall be vented to the satisfaction of the Whistler Fire Department.
- 28.4.3. Except for containers permitted under section 28.2, containers must be placed in accordance with the applicable siting requirements for auxiliary buildings.
- 28.4.4. Except for containers permitted in the IA1 Zone (Industrial Auxiliary One), containers may not be stacked.
- 28.4.5. Except for containers in the IA1 Zone (Industrial Auxiliary One) and containers authorized under Sections 28.3.1, 28.3.3 and 28.4.4 , a container may not be located on a parcel unless a building, for which an occupancy permit has been granted, is also located on the parcel.”

Given first and second readings this __ day of _____, ____.

Pursuant to Section 890 of the *Local Government Act*, a Public Hearing was held this __ day of _____, ____.

Given third reading this this __ day of _____, ____.

Approved by the Minister of Transportation this this __ day of _____, ____.

Adopted by the Council this this __ day of _____, ____.

N. Wilhelm-Morden,
Mayor

L. Schimek,
Acting Corporate Officer

I HEREBY CERTIFY that this is a
true copy of Zoning Amendment
Bylaw (Shipping Containers) No.
2093, 2015.

L. Schimek,
Acting Corporate Officer

RESORT MUNICIPALITY OF WHISTLER

TAXATION EXEMPTION FOR NOT-FOR-PROFIT ORGANIZATIONS

AMENDMENT BYLAW NO. 2094, 2015

**A BYLAW TO AMEND TAXATION EXEMPTION FOR NOT-FOR-PROFIT ORGANIZATIONS BYLAW
NO. 2011, 2012**

WHEREAS under Section 224(2)(a) of the *Community Charter*, Council may grant a tax exemption for land or improvements owned or held by a charitable, philanthropic, or other not for profit corporation which Council considers are directly related to the purposes of that corporation;

NOW THEREFORE the Council of the Resort Municipality of Whistler ENACTS AS FOLLOWS:

1. This Bylaw may be cited for all purposes as the "Taxation Exemption for Not-for-Profit Organizations Amendment Bylaw No. 2094, 2015".
2. Taxation Exemption for Not-for-Profit Organizations Bylaw No. 2011, 2012 is amended by:
 - a) In Section 3, replacing the words "for one year." with "for a period of ten years commencing in 2016".

GIVEN FIRST, SECOND and THIRD READINGS this __ day of _____, _____.

ADOPTED by Council this __ day of _____, _____.

N. Wilhelm-Morden
Mayor

L. Schimek
Acting Corporate Officer

I HEREBY CERTIFY that this is a true copy of
"Taxation Exemption for Not-for-Profit
Organizations Amendment Bylaw No. 2094
2015".

L. Schimek
Acting Corporate Officer

**RESORT MUNICIPALITY OF WHISTLER
PARKING AND TRAFFIC AMENDMENT (SPEED LIMIT) BYLAW NO. 2095, 2015**

A Bylaw to amend Parking and Traffic Bylaw No. 1512, 2001

WHEREAS pursuant to section 146(7) of the *Motor Vehicle Act* (British Columbia) a municipality may by bylaw direct the rate of speed at which a person may drive or operate a motor vehicle on a highway in the municipality; and

WHEREAS the Council of the Resort Municipality of Whistler deems it necessary and expedient to amend Parking and Traffic Bylaw No. 1512, 2001 in order to direct the rate of speed at which a person may drive or operate a motor vehicle on certain highways within the Resort Municipality of Whistler;

NOW THEREFORE, the Council of the Resort Municipality of Whistler, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited as "Parking and Traffic Amendment (Speed Limit) Bylaw No. 2095, 2015".
2. Parking and Traffic Bylaw No. 1512, 2001 is amended by:
 - (a) inserting the following new section 4.1:

"LOWER SPEED LIMIT ON DESIGNATED HIGHWAYS

- 4.1 A person shall not drive or operate a motor vehicle on any of those highways or portions of highways designated on Schedule "B" at a greater rate of speed than 30 km/h. For clarity and in accordance with section 146(9) of the *Motor Vehicle Act*, and notwithstanding anything to the contrary under this bylaw, a person who contravenes this Section does not commit an offence against this bylaw, but may contravene section 146(7) of the *Motor Vehicle Act*."

and,

- (b) inserting the schedule attached to this Amendment Bylaw as Schedule "B" to Parking and Traffic Bylaw No. 1512, 2001.

GIVEN FIRST, SECOND AND THIRD READINGS this 15th day of September, 2015.

ADOPTED this __ day of _____, ____.

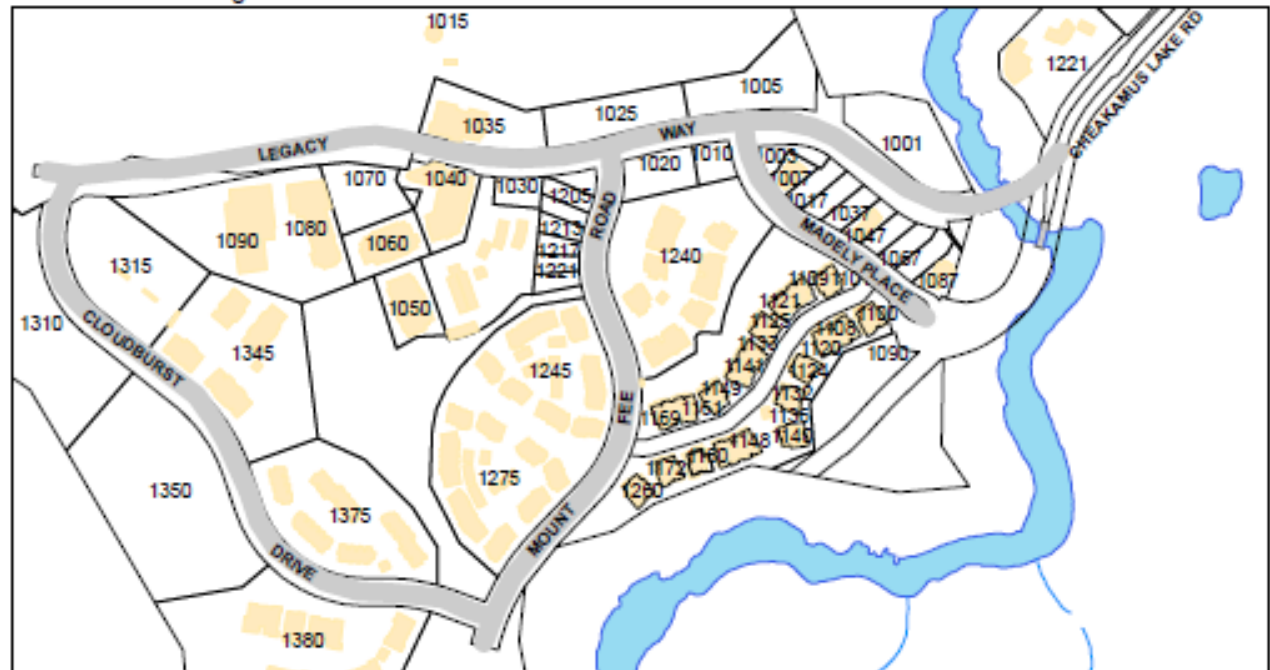
N. Wilhelm-Morden,
Mayor

L. Schimek,
Acting Corporate Officer

I HEREBY CERTIFY that this is a true
copy of "Parking and Traffic Amendment
Bylaw No. 2095, 2015"

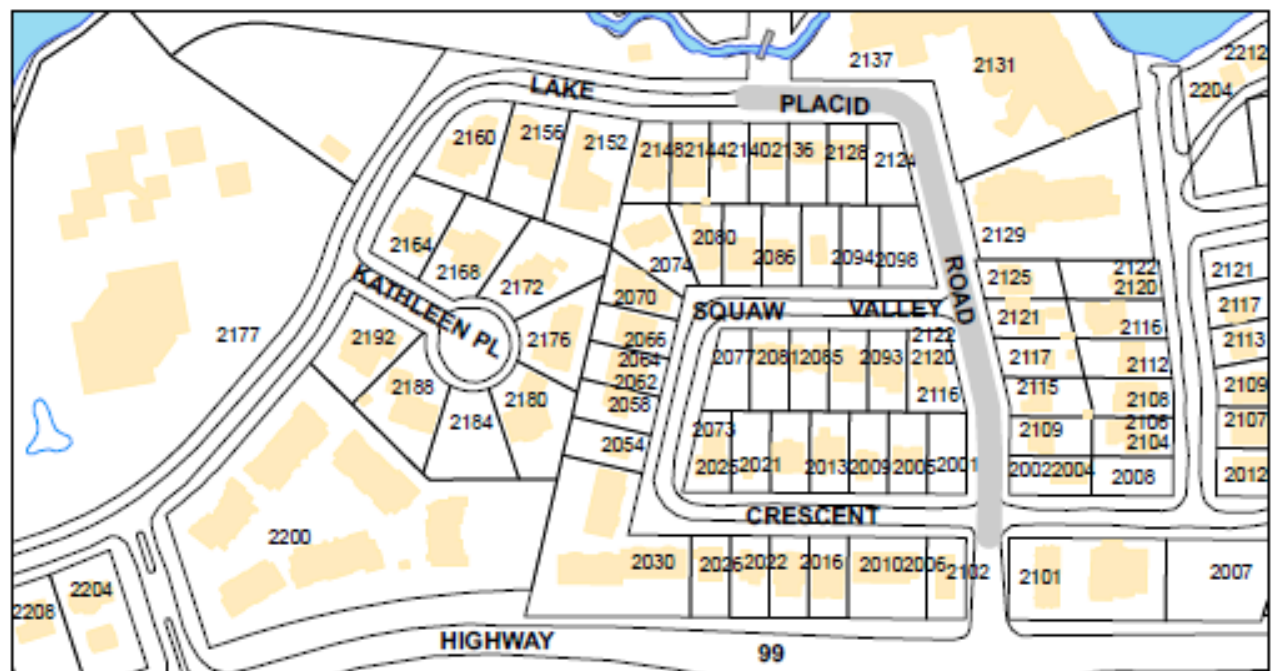
Shannon Story,
Corporate Officer

Cheakamus Crossing



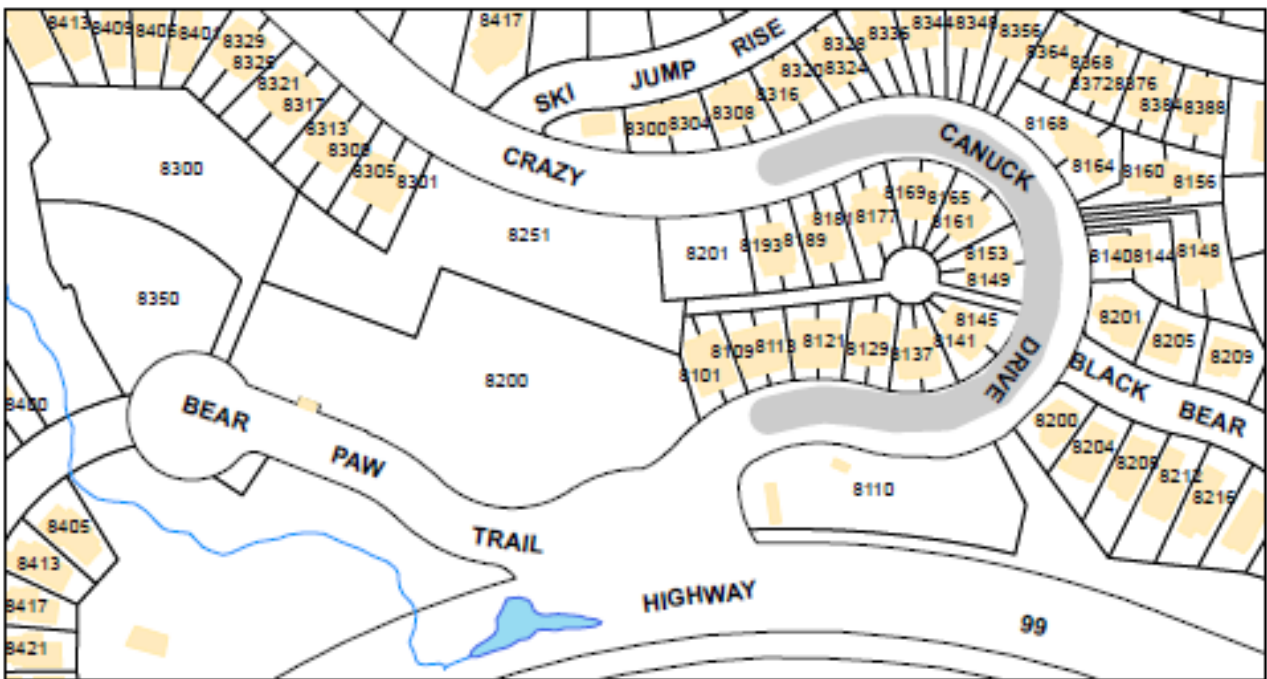
30 KM/H Speed Limit Designated Highway

Creekside



30 KM/H Speed Limit Designated Highway

Rainbow



30 KM/H Speed Limit Designated Highway

Submitted on Sunday, September 20, 2015 - 21:52

Full Name: Greg McDonnell

Mailing Address: 6-7327 Spruce Grove Lane Whistler BC

Civic address if different from mailing address:

Email Address: gregmcdonnell@hotmail.com Phone Number: 604.935.0968 Your Message:

Dear Mayor and Council,

I am writing to you to discuss the Municipal noise bylaw and Good Neighbour Agreement as it pertains to the Whistler Baseball League and their usage of your park facilities in Spruce Grove. Having served on the Liquor Licensing Advisory Committee myself, I am aware of the Good Neighbour Agreement and the noise bylaw (Bylaw 1660, 2004) which states that the RMOW believes noise past 10pm is objectionable yet the league is allowed to operate in your park to 11pm.

This contradiction to your bylaw on your own property is mystifying.

As a happy resident of Spruce Grove, my family has the privilege of living in the WHA housing units in close proximity to the park. Over the years, the baseball league itself has worked very hard to control its members but with oftentimes excessive alcohol use and the contradiction of the bylaw for 6 nights a week, there is little the league can do monitor this. Further to the alcohol issue, the RMOW is a signed partner of the Communities that Care group and this level of alcohol use in our public parks only enhances Whistler's culture of acceptance of Drug and Alcohol use. League Members leaving the park by the dozens are very loud as they exit Kirkpatrick Way and oftentimes congregate at the park entrance while waiting for cabs or deciding (quite boisterously) what bar to go to. This is unacceptable at 11pm or later on a Sunday night. Many of you know know me as an athlete...I have no problem with the cheers or the crack of the bat. It is the late night departure of loud people well after the noise bylaw, in your own park that disturbs my family. Furthermore, the light pollution and beer cans often strewn on our lawn is most unpleasant.

I would welcome the opportunity to present to you further about this and I would like a response as to why the RMOW allows the league to break its own bylaw?

With Respect, Greg McDonnell



September 21, 2015

Mayor and Council.

“Three years ago I asked all of you to stay engaged. We did that and you kept up your side of the bargain too. So I repeat what I said three years ago: In my life I have never been indifferent.” Whistler Mayor Nancy Wilhelm-Morden Tuesday, December 2, 2014.

Madam Mayor, I accept your invitation to stay engaged and to hear my thoughts.

The purpose of this letter is to ask the Council to close or at least post USE AT YOUR OWN RISK signs around the future Bayly Park for the public to see until the questions of the unresolved health and environmental pollution issues associated with the quarry, asphalt plant and the former municipal garbage dump are answered and resolved. Anything less than that would trivialize the serious nature of public and environmental health issues. The reason for this request is outlined in the following letter.

The environmental pollutions and public health hazards regarding the former Olympic Village and the future Bayly Park area were brought to the Council's attention three years ago. The issues and concerns were outlined in a letter to the Mayor and Council dated August 31, 2012. The Mayor referred the letter to the CAO for a response.

After two months of waiting and without a response from the Resort Municipality Of Whistler (RMOW) a second letter was sent to the Mayor and Council asking for explanation. Following a meeting with CAO Mr. Mike Furey and General Manager of Infrastructure Services Mr. Joe Paul where the issues outlined in the first letter was discussed, the Mayor instructed the CAO, for the second times, for a response. There is still no response from the RMOW, as of today, despite the two promises and assurances made by the Mayor to expect a response. Furthermore, please note the fact that there was not any kind of response from the Council either until I received a letter of denial dated October 10, 2014.

In that time frame inquiries were made to the following government ministries, ministry branches and agencies with limited success:

- Ministry of Environment, Vancouver
- Canadian Environmental Assessment Agency, CEAA, Vancouver
- Fisheries and Oceans Canada, Ottawa
- Access to Information and Privacy Secretariat, ATIP, Ottawa
- Fisheries and Oceans Canada Communication Branch, Ottawa
- Fisheries and Oceans Canada Freshwater Institute, Winnipeg
- Fisheries and Oceans Canada Pacific Region Fisheries Protection Program, Vancouver/Prince George
- Ministry of Forest, Lands and Natural Resources Operations, Squamish Branch

- RMOW, Legislative Services for FOI
- Information and Privacy Commissioner, Victoria
- John Weston, M.P. West Vancouver – Sunshine Coast – Sea to Sky Country
- RMOW, Legislative Services

What are the issues with the former Olympic Village site and the future Bayly Park location that no government agency is willing to part or share records and information with?

What is known can be described in the following short and partial summary.

- All parcels of land mentioned in this letter are located within the RMOW boundaries.
- All three levels of, Federal, Provincial and Municipal governments were involved with the financing, planning and developing of the Olympic and Paralympics Village including the training and accommodation facilities for the 2010 Winter Games.
- The operator of the quarry has a replacement (renewable) lease agreement with the Ministry of Energy, Mines and Petroleum Resources.
- The asphalt plant, located in the active quarry, was operating in the vicinity of Cheakamus Crossing, with full knowledge of the RMOW, for over twenty years, before the area was identified and selected as the site for the future Olympic Village.
- The RMOW opened the area for the new municipal garbage dump in 1977. Based on available records it is believed that there was no precaution of any kind taken protecting the environment, human and wildlife health. There was no clay or synthetic liners constructed or installed. There was no leachate or landfill gas collection systems constructed or installed. There was no restriction of what could or what couldn't be dumped in the landfill. It accepted municipal, household, commercial and mixed industrial and construction waste of all kinds.
- The RMOW had the opportunity to interfere on behalf of the community to stop the lease/license renewal process and request the termination of the Licence of Occupation for the quarry in 2007. It failed to do so instead the Council of the day, including the present Mayor, failed to acknowledge and ignored the polluting heavy industry next to the future Olympic Village already in the first stage of construction.
- The Licence Renewal for the quarry is 2017. The Mayor and Council have a second chance to lobby and request the appropriate authority to deny the extension of the Licence of Occupation.
- The prevailing pattern of surface winds blow predominantly from the south-south west in the summer months in this valley. The summer winds carry particulate matter, smog and other carcinogen contaminants from the quarry and asphalt plant and toxic landfill gases indiscriminately northward into every neighbourhood in Whistler and across the valley.

- There has been a lack of public consultation regarding the negative impact of the quarry, asphalt plant and garbage dump on public and environmental health while cancer seems to be taking over the first place among longtime permanent residents as the leading cause of health issues and death in Whistler.
- In 2007 the RMOW commissioned CH2M HILL, Environmental Business Group to oversee the proposed Whistler Landfill Gas Pipeline Installation and Cheakamus River Diversion Plan. The RMOW Legislative Services Department has denied the existence of these files.
- Based on the available records released by the Legislative Services Department the RMOW has never tested for the ten most common toxins released into the air by the landfill. In addition, there is no record available on the volume of hydrogen sulfide (by-product of drywall/gypsum plaster board dumped unchecked in the landfill during the construction boom of the 80s) a large component of landfill gas released into the air.
- In the Disclosure Statement the Whistler Development Corporation (WDC) and RMOW failed to inform purchasers of homes and businesses that include a daycare center, sport complex and Hostel among others of the health hazards associated with living next to an active quarry, asphalt plant, decommissioned municipal garbage dump, sewage treatment plant and BC Hydro Power Lines.
- Budget allocated for developing Bayly Park was set at \$8,000,000 in 2007. That amount was gradually reduced to \$1,400,000 in 2013/14.
- As of today, five years after the 2010 Winter Olympics and Paralympics, the future Bayly Park has been just that, a future park as it hasn't been completed or opened yet.
- The RMOW announced in March 2012 the negotiations between Eric Martin Chair of WDC and Mr. Silveri, owner of Alpine Paving and Whistler Aggregate, to move the quarry and relocate the asphalt plant. The Legislative Services Department has denied the existence of records of these negotiations.
- A 911 emergency call was made late in the evening on Friday, August 19, 2011 reporting smell of burning rubbish and smoke drifting from the quarry. There was no emergency or fire truck dispatched to the site. This emergency call has been deleted from the records of the Whistler Fire Department.
- The RMOW has been using the future Bayly Park as storage/dumping ground for mounds of unsold or unused gravel and biosolids next to the playground, soccer and playing fields months at a time.
- The RMOW and various private operators have been using the future Bayly Park as a dumping ground for unclean gravel of uncertain origin with unknown contents.

What is not known and are the major concerns of the health, wellbeing and safety of the residents and visitors of Whistler alike:

- The volume of methane gas produced/generated by the landfill.
- The volume of methane gas captured/collected.

- The volume of methane gas burnt.
- The volume of methane gas escaping into the air.
- The volume of leachate produced/generated by the landfill.
- The volume of leachate captured/collected.
- The volume of leachate diverted to the sewage treatment plant.
- The volume of leachate flowing uncontrolled from the garbage dump directly into the Cheakamus River downstream from the sewage treatment plant (downstream from where the water is, supposedly and regularly being tested).
- The effects of the open and uncontrolled quarry operation (there is no mechanism to minimize the particulate matters escaping the quarry), the asphalt plant, the constant traffic of heavy duty trucks belching out clouds of diesel fume halfway around the future park and the unceasing backup beepers of quarry machinery on public and environmental health.
- The close proximity of BC Hydro Power Lines to the soccer fields, playgrounds, playing fields and community gardens on public health.
- The effects of the unrestrained and open outflows of the toxic garbage dump leachate on public and environmental health.
- The volume of the various known airborne municipal landfill toxic gases carcinogenic to humans escaping into the air such as; vinyl chloride, benzene, ethylene dibromide, ethylene dichloride, methylene chloride, perchloroethylene, carbon tetrachloride, methyl chloroform, trichloroethylene and chloroform.
- Furthermore, it is not known whether the RMOW has received legal advice against opening the future Bayly Park before the issues, the subject of this letter, are resolved. Please note, that the park hasn't been completed or opened yet.

It is unfortunate that the RMOW seems to be doing more to make the health and environmental issues of the former Olympic Village and the future Bayly Park disappear rather than to rectify them. Approximately 95% of the RMOW FOI requests for municipal records produced no documents. Please note that the established and required protocol was followed obtaining FOI documents while indicating that the request was in the public interest as it concerns public health and health of the environment and the public has the right to know as it pays for this service in the form of property tax. A Fee Waiver Form was also filled out and handed in giving reasons for this request. It was promptly denied. Please further note that a denial of a Fee Waiver request may be tantamount to a denial of access to the information/documents themselves. Salt in the wound, the denial of Fee Waiver was followed by a letter from Legislative Services Department, before any information was provided, informing that, and "All accounts more than 60 days past due date are forwarded to collection". Is the information so forbidden that to keep it out of public knowledge/view the RMOW Legislative Services Department needs to resort to bullying even threatening? It is very disturbing to know that the RMOW feels it is appropriate to raise threat and bullying in this context.

Please note the following: To the best of my knowledge the American Environment Protection Agency, (EPA) has been monitoring municipal garbage dumpsites, disposal methods and their affects on human and environment health for over five decades. Based on the compiled scientific data the average municipal dumpsite begins producing and disgorging its toxic and carcinogenic byproducts eight years after closing and covering the garbage dumpsite. The future Bayly Park has arrived at that critical junction this year, just as the RMOW announced that everything was fine. According to the scientific data even the best methane capture system allows over twenty percent of landfill gases to escape into the air. Furthermore, offsite migration of landfill gases, methane being one, was detected at 83% municipal garbage dumpsites. As all level of governments were involved with this project wouldn't be prudent from the Mayor and Council to request an independent investigation into this site under the B.C Public Inquiry Act? Whistler cannot afford not to clean up this mess.

I challenge the Mayor and every member of the Council to read and study the documents relevant to the health and environmental issues of the former Olympic Village and future Bayly Park site and consequently this town.

Finally, please note that my wife and I made Whistler our permanent residency for several reasons. First and foremost, our children and grandchildren live here; we loved Whistler from day one when we skied here for the first time in 1978; with my wife we hoped to live the rest of our lives here in peace and yes, love. We still love Whistler with all its wonders, but this place, this factory of cancer causing agents, the blight on this community needs to be dealt with and not as a zoning issue, but as a serious health and environmental issue. It is more urgent now that more and more businesses and permanent residents move to Cheakamus Crossings. In light of the known facts and information not released or made available to the public, in my opinion, it is imperative that a prompt, thorough, effective, independent and impartial investigation be conducted into the former Olympic Village and future Bayly Park site.

In closing I share, "We... want to refocus on environmental performance outcomes," said the mayor (Pique, January 8, 2015). Madame Mayor here is your chance.

Respectfully



Joseph Farsang

13 – 1380 Cloudburst Dr.

Whistler BC. V0N 1B1

Ph: 604 932 6111



Submitted on Tuesday, September 22, 2015 - 11:32

Full Name: Keenan Moses

Mailing Address: PO Box 1498

Civic address if different from mailing address: Delta Whistler Village Suite
4308 Main St.

Email Address: moses@telus.net

Phone Number: 604-698-8494

Your Message:

Dear Mayor and Council

I would like to know if Council has address the illegally zoned short term rental accommodations. There are many listed and it is quite easy to find on websites like airbnb.ca and vrbo.com. These illegal nightly rentals are having a major affect on the housing shortage for long term rental accommodations in Whistler which is part of the reason for the worker shortage.

From: TJ Parhar [<mailto:tjparhar@cement.ca>]

Sent: Wednesday, September 30, 2015 11:15 AM

To: Mayor's Office

Subject: On behalf of Michael McSweeney CEO, Cement Association of Canada-Request for Meeting

Mayor and Council,

I am writing today on behalf of the cement and concrete industry – an industry that is present in every community across Canada and is committed to partnering with municipalities on solutions to their infrastructure challenges.

The material we produce, concrete, is an essential element of thriving, resilient and sustainable communities. It is indispensable to sustainable infrastructure assets large and small, from public buildings, roundabouts, roads and bridges to transit systems, utilities, stormwater management and water and sewage treatment plants.

Representatives from the cement and concrete industry will be meeting municipal leaders across the country over the next few months to discuss our innovative solutions and how we can best partner with you to help you:

- Reduce infrastructure construction and maintenance costs
- Increase the quality and lifespan of infrastructure assets
- Reduce complaints, improve safety and increase citizen satisfaction with public works

We would welcome the opportunity to sit down and talk with you and your colleagues in Whistler. During this meeting, we will be able to share with you strategies for saving municipal tax dollars, improving the quality of your infrastructure projects and addressing emerging challenges such as reducing GHGs and enhancing resilience to extreme weather.

I hope that through this conversation we can all come away with a better understanding of how concrete can better serve your community.

Tejindar (TJ) Parhar, Senior Director, Government and Public Affairs, Western Region for the Cement Association of Canada will be in touch with you to arrange a meeting at a mutually convenient time. He can be reached at tjparhar@cement.ca or at (250) 818-0629.

I look forward to your response.

Sincerely,

Michael McSweeney
President and CEO
Cement Association of Canada
mmcsweeney@cement.ca
(613) 236-9471 ext. 206

1188 West Georgia, Suite 900
Vancouver, BC V6E 4A2



Waste Reduction Week in Canada October 19-25, 2015



**Semaine canadienne de
réduction des déchets
19 au 25 octobre, 2015**

September 14th, 2015

Re Proclamation Request

Canada will celebrate its annual National Waste Reduction Week from October 19th through October 25th, 2015.

Each year the Recycling Council of British Columbia (RCBC) organizes BC's involvement in observing this important week. We would like to ask all municipal councils in BC and all Regional Districts to officially declare October 19th through 24th, 2015 as Waste Reduction Week in their respective communities.

Waste Reduction Week is intended to raise awareness about waste and its environmental and social impacts. The theme of Waste Reduction Week, "Too Good to Waste", is meant to draw attention to the richness and diversity of the natural world and the importance of working towards ecological sustainability through waste avoidance and resource conservation.

Please join RCBC in proclaiming October 19th-25th, 2015 as National Waste Reduction Week!

I have attached a sample proclamation for reference. For more information please contact me directly.

Thank you for your continued support!

Jessie Christophersen
Information Services Assistant
Recycling Council of British Columbia
#10 – 119 West Pender Street
Vancouver, BC V6B 1S5
jessie@rcbc.ca
604.683.6009 (ext. 317)

www.wrrcanada.com

Champion Sponsor



Please send this declaration to the Recycling Council of BC
By fax at 604-683-7255 or by email at wrw@rcbc.ca.
We thank you again for your commitment to waste reduction.

(Name of Municipality)

hereby recognizes

Waste Reduction Week in Canada

October 19-25, 2015

As a municipality, we are committed to conserving resources,
protecting the environment and educating the community.

We recognize the generation of solid waste and the needless waste of
water and energy resources as global environmental problems and
endeavour to take the
lead in our community toward environmental sustainability.

We have declared October 19-25, 2015, Waste Reduction Week in

Municipality

Signed

Date

Name and Position