

The Delta Seal is a circular emblem featuring a ship's wheel, two white horses, and a banner that reads "OURS TO PRESERVE BY HAND AND HEART". The seal is set against a green background.

DELTA'S CLIMATE CHANGE INITIATIVE



Delta's Climate Change Initiative: A Corporate Framework for Action

The United Nations' Intergovernmental Panel on Climate Change released a portion of their 4th *Assessment Report* in February 2007. The report concludes that “unequivocal warming of the climate system” has, and will continue to occur because of human activities – primarily from the burning of fossil fuels and the resulting release of harmful greenhouse gases (GHGs)¹. It is estimated that up to half of Canada's GHG emissions are under the direct or indirect control or influence of municipal governments. Consequently, municipalities have become a focal point of both the Government of Canada's and Province of British Columbia's climate change action planning.

Delta Council has long understood the important role municipal leadership plays with regard to climate change initiatives/actions and has progressively pursued various environmental stewardship initiatives that have effectively reduced the municipalities' environmental footprint. To further this environmental stewardship movement, Delta has developed a unique and progressive Climate Change Initiative aimed at reducing the municipalities' vulnerability and contribution to climate change.

To ensure the success of the Initiative, staff has formed an interdepartmental Climate Change Working Group (CCWG) that will ensure that each action plan is developed, implemented, monitored, and results reported back to Council. In addition, the CCWG will build upon this Initiative by adding new action plans if required. This process of development, implementation and feedback will ensure that action plans are regularly updated to reflect leading edge technologies and strategies currently being developed for municipalities in Canada and around the world.

The action plans contained within Delta's Climate Change Initiative focus on reducing the energy consumed and solid waste generated during the delivery of municipal services and the operation of civic facilities. Delta's Climate Change Initiative is not only comprehensive, but is also intended to reflect both corporate and community needs and values.

Tackling climate change with individual, focused action plans is unique amongst municipalities. It will allow Delta to focus efforts where they belong and bring about the best opportunities for successful GHG emission reductions

¹ There are primarily six major GHGs, targeted by the Kyoto protocol as contributing to global warming. The top contributors are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.



Delta's Climate Change Initiative: A Corporate Framework for Action

The Corporation of Delta's 2006 Greenhouse Gas Baseline Inventory

Before the Climate Change Initiative was developed, the municipality created a list or 'inventory' of all of the municipal buildings, vehicles and utilities that produced greenhouse gas emissions in 2006. Once this was complete, Delta hired a consultant to calculate the amount of CO₂e (GHG emissions) produced by each item on the inventory. The calculations considered the amount of natural gas used to heat or cool Delta's recreational facilities (arenas and pools), the amount of electricity needed to provide street and traffic lighting, heat and light for municipal buildings, parks, and other recreational/cultural facilities, the amount of electricity required to operate Delta's water, sewer and drainage utilities, and the amount of gasoline and biodiesel fuel needed to operate Delta's municipal fleet vehicles and equipment. Cumulatively, these represent the total GHG emissions produced by the Corporation of Delta in 2006. The table below outlines the GHG emission totals in ten subcategories.

Corporate Fixed Infrastructure	Tonnes of CO₂e
Aquatic and Arena Facilities	4068
Other Recreation Facilities	258
Municipal Hall	1034
Operations/Worksyard and Utilities	293
Street and Traffic Lighting	140
Police and Fire Buildings	527
Parks	89
Other	35
Corporate Vehicle Fuels	
Fleet Vehicles	1181
Corporate Solid Waste	
Solid Waste	607
Total Corporate Inventory	8232

Delta used the 2006 baseline inventory to set a GHG reduction target for the Climate Change Initiative. The goal is to reduce Delta's corporate GHG emissions by 20% of 2006 levels by 2015. In addition, Delta has committed to the BC Provincial GHG reduction target of reducing emissions by 33% of 2007 levels by 2020. In order to track the success of the Initiative, Delta will conduct a baseline inventory review each February. This inventory will allow the municipality to celebrate successes and identify areas that may need more attention.



Delta's Climate Change Initiative: A Corporate Framework for Action

DELTA'S CLIMATE CHANGE INITIATIVE ACTION PLANS:

1. Building Efficiency Plan
2. Green Fleet Management Plan
3. Infrastructure Improvement Plan
4. Education and Training Plan
5. Flood Management Plan
6. Sustainable Development Management Plan
7. Community Outreach and Education Plan
8. Urban Forest Management Plan
9. Natural Areas Management Plan



Delta's Climate Change Initiative: A Corporate Framework for Action

Building Efficiency Plan

2006 Baseline Inventory Levels:

In 2006, Delta's civic buildings emitted 71.5% of our corporate GHG emissions - 50% from recreational facilities, 13% from the municipal hall, 6% from the police and fire buildings and 3% misc. This equates to 5887 tonnes of the total 8,232 tonnes calculated in the 2006 baseline inventory.

Building Efficiency Plan Summary:

The Building Efficiency Plan is intended to improve the energy efficiency of the Corporation of Delta's civic buildings. The plan includes investigation of potential community energy systems and target energy efficient retrofits to the existing building stock (municipal hall, engineering operations works yard, recreation centres, police and fire halls, libraries and museums). The energy retrofits will be focused on a review of the recreation centre boilers and chiller systems, civic building envelopes, HVAC systems, and lighting. The plan will also consider the merits of a Buildings Accreditation program (e.g., LEEDs, BOMA Go Green, GVRD BuildSmart). The Building Efficiency Plan will build upon initiatives already being undertaken. Examples include:

- Energy efficient lighting
- Heat Exchangers
- Insulation
- HVAC control timers
- Energy Management Systems
- Low E Ceilings

Future Building Efficiency Actions:

Energy Efficiency Consultant/Coordinator:

Delta will hire an Energy Efficiency Consultant/Coordinator to conduct energy audits of the civic buildings. This will be a 50/50 cost sharing opportunity between Delta and BC Hydro. The Coordinator will have expertise in HVAC systems and energy efficiency retrofitting. Responsibilities will include: conducting energy audits, identification and implementation of potential energy efficiency upgrades/retrofit opportunities.

Retrofit Inefficient Civic Buildings:

The 2006 Baseline has identified the efficiency of all of the civic buildings in Delta. Staff will assess each building and begin retrofitting to achieve the most energy savings within available funding or as additional funds or grants become available.

Green Civic Building Accreditation:

Where it makes sense, Delta will explore and consider the implementation of Building Accreditation Programs, such as:

- LEEDs for Buildings
- BOMA Go Green Program
- GVRD BuildSmart
- Energuide for Buildings

GHG Reduction Goals:

Delta has set a goal to achieve a 20% overall reduction of GHG emissions by 2015. It is expected that the GHG emissions from civic buildings can achieve a higher percentage. Delta is aiming to reduce its buildings emissions by 30% before 2015 (from 5887 tonnes to 4121 tonnes of CO₂e before 2015).



2008 Financial Implications:

Energy Efficiency Coordinator:

- Hire a consultant/coordinator \$40,000
(50% subsidized by BC Hydro) (Delta's portion)

Allocation for Building Retrofits in 2008:

- Building retrofits To be determined

Green Civic Building Accreditation Review:

- Explore options for Accreditation Existing Budget

Total Cost for 2008: **To be determined**
(plan is subject to external funding being made available)

Potential Funding Opportunities:

- FCM's Green Municipal Fund (Community Energy System)
- Ministry of EMPR's Community Action on Energy Efficiency
- NRCAN's ecoEnergy Retrofits for Buildings
- Power Smart Partners
- Government of Canada's Ecotrust Fund
- Canada Strategic Infrastructure Fund
- BC Local Infrastructure Planning Grant Program

Department:

PR&C (Rec. Facilities), CP&D (all other buildings), Engineering (support).



Delta's Climate Change Initiative: A Corporate Framework for Action

Green Fleet Management Plan

2006 Baseline Inventory Levels:

In 2006, the corporate fleet vehicles emitted 14% of all of Delta's Corporate GHG emissions. This equates to 1,181 tonnes of the total 8,232 tonnes of CO₂e emitted through the delivery and operation of municipal services.

GHG Reduction Goals:

To reduce Delta's fleet vehicle GHG emissions levels to 20% below the levels for the 2006 year before 2015: Delta will reduce its emissions from 1181 tonnes to 944 tonnes of CO₂e before 2015.

Green Fleet Plan Summary:

The Green Fleet Management Plan is a major component of Delta's Corporate Climate Change Initiative. The plan is based on a program of actions that are aimed at reducing greenhouse gas emissions and improving the overall efficiency of the Delta's corporate fleet. The plan will include fleet accreditation through the Fraser Basin Council's E3 Fleet Accreditation Program, an Energy Efficient Vehicle and Component Purchasing Strategy, and a transportation demand management program for Delta employees. Collectively, these initiatives will reduce our corporate environmental footprint. Delta has already implemented or participated in several successful programs that have reduced fleet emissions, including:



- Purchase of Hybrid-electric vehicles
- Off-Road Pollution Prevention Program
- Diesel Oxidation Catalyst Conversions
- ECM (Electronic Control Module) Adjustments
- Pursuing Fleet Efficiency Funding
- Ensuring Fleet Manager Representation
- Use of B20 Biodiesel
- Use of 4 strokes instead of 2 strokes in small equipment (weedies, leaf blowers, etc.)

2008 Financial Implications:

E3 Green Fleet Accreditation:

- Bronze Rating by 2008 *Existing Budget*

Energy Efficient Purchasing Strategy:

- Operating Charge-out Rate Increase \$33,000
- Replacement of 4 Conventional Fleet Vehicles with 4 Hybrid Vehicles \$44,000

Transportation Demand Management:

- 25% 3-zone bus pass subsidy for 40 \$15,600
- Maintenance cost for fleet carpool vehicles *Existing Budget*

Total Annual Cost for 2008: **\$92,600**

Future Green Fleet Actions:

E3 Green Fleet Accreditation:

The E3 Fleet Rating Accreditation program recognizes fleets for achieving green performance using a credit-based system. Delta is aiming to achieve a bronze rating by earning accreditation credits in the following best management practice categories:

- training and awareness
- idling reduction
- vehicle purchasing
- fuel data management
- operations/maintenance
- trip and route planning
- utilization management
- GHG performance

Energy Efficient Purchasing Strategy:

The Energy Efficient Purchasing Strategy includes:

1. Hybrid vehicle purchasing
2. Fuel efficient conventional vehicle purchasing and right sizing
3. Fuel efficient heavy duty and off-road vehicle purchasing

Transportation Demand Management:

The TDM program includes the Go Home Green (GHG) Corporate Carpooling Program which allows municipal staff to commute to and from work in Delta's corporate vehicles. Delta is also offering a 25% bus pass subsidy for employees to encourage the use of public transit.

Potential Funding Opportunities:

- FCM's Green Municipal Fund (Sustainable Transportation)
- FCM's Municipal Relations Program
- The Government of BC's Local Grants Program
- Transport Canada's Moving On Sustainable Transportation
- Government of Canada's Ecotrust Fund

Department:

Engineering (lead), All Departments (support).



Delta's Climate Change Initiative: A Corporate Framework for Action

Infrastructure Improvement Plan

2006 Baseline Inventory Levels:

In 2006, Delta's water, sewer, drainage infrastructure and corporate solid waste collection process emitted 14% of all of Delta's Corporate GHG emissions - 7% from solid waste, 4% from utilities/operations, 2% from street lighting, 1% from field houses. This equates to approximately 1152 tonnes of the total 8,232 tonnes of CO₂e.

GHG Reduction Goals:

Delta will reduce its emissions generated from the provision of water, sewer, drainage and solid waste services to 20% below the levels for the 2006 year before 2015. This is a reduction from 1152 tonnes to 921 tonnes of CO₂e before 2015.

Infrastructure Improvement Plan Summary:

The Infrastructure Improvement Plan aims to reduce GHG emissions and consider the susceptibility of climate change related infrastructure servicing impacts. To do both, the plan has been broken into two components: the Utility Service Improvement Plan and the Transportation Improvement Plan.

1. The Utility Service Improvement Plan proposes to identify ways to improve the energy efficiency of Delta's utility services. This will include further efficiency reviews and improvements to Delta's sanitary and water pump stations, flood boxes and street lighting. The plan will continue to promote water conservation through the WaterWise team and water meter program. It will continue to promote recycling by providing additional recycling options for the community. In addition, it will implement drainage BMPs (infiltration swales, permeable surfaces, etc).
2. The Transportation Improvement Plan proposes to look at our transportation infrastructure and develop ways to enhance transportation choices while also considering best management practices. The plan will include cycling and walking improvements (corridors, facilities and bike lanes), consideration of narrower roadways and dedicated bus lanes.



2008 Financial Implications:

The Utility Service Improvement Plan:

▪ Audits of pump stations/floodboxes	<i>Existing Budget</i>
▪ Research new streetlight technologies	<i>Existing Budget</i>
▪ Implement street light pilot program	<i>Dependent on funding</i>
▪ Provision of water meters	\$200,000
▪ Recycling containers in parks	\$75,000

The Transportation Improvement Plan:

▪ Walking/cycling implementation plan	<i>To be determined</i>
▪ Walking/cycling infrastructure	<i>To be determined</i>
▪ Transit and road space infrastructure	<i>To be determined</i>

Total Cost for 2008: To be determined

Future Infrastructure Improvement Actions:

The Utility Service Improvement Plan:

- **Pump Stations/Flood boxes** - Audit sanitary/water pump stations and floodboxes, and identify potential sites for upgrades.
- **Street Lighting** - Investigate new energy efficient street lighting technologies. Consider pilot project for adaptive street lighting.
- **Water Metering Program** - continue to encourage residential water metering. Install meters on agricultural properties.
- **Parks Recycling** - Recycling bins will be installed in Delta Parks and open spaces in an effort to reduce the amount of corporate solid waste generated by Delta.

The Transportation Improvement Plan:

- **Walking/Biking** - provide bicycle lock facilities, guidance signs, maps, and a strengthened sidewalk network. Refresh and develop a cycling infrastructure implementation plan.
- **Transit and Road Space Infrastructure** - develop bus priority lanes (e.g., 72nd Avenue), bike lanes/corridors (rather than just shared vehicles/bike lanes - may require stripping of parking from certain corridors), and improved transit service.

Potential Funding Opportunities:

- FCM's Green Municipal Fund (Transportation)
- Ministry of EMPR's Community Action on Energy Efficiency
- Government of Canada's Ecotrust Fund
- Canada Strategic Infrastructure Fund
- BC Ministry of T's Cycling Infrastructure Program
- BC Ministry of CS's Local Motion Fund
- ICBC - Road Sense
- BC Local Infrastructure Planning Grant Program

Department:

Engineering (lead).



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Education and Training Plan

Education and Training Plan Goal:

The goal of the Education and Training Plan is to educate the over 1000 full time, part time, temporary, and auxiliary Corporation of Delta employees about the negative impacts of climate change and what can be done about it. In order to reduce the size of Delta's environmental footprint, staff will need to be trained as to how they can make behavioural changes that will have a positive impact on the environment, as well as to enable them to affect change in the workplace through their areas of influence on community or corporate operations.

Education and Training Plan Summary:

The Education and Training Plan is intended to train and educate Delta employees about the opportunities for and benefits of reducing GHG emissions. The Plan will include training (e.g., fuel efficient driving techniques) and education (e.g., water and energy conserving techniques). A portion of the education program will focus on educating staff about the health risks associated with GHG production. This plan will build upon existing educational and training initiatives, including:

- Staff attendance at environmental educational sessions
- Environmental training courses/ workshops for staff
- BC Hydro Turn It Off Challenge
- BEST Commuter Challenge



Future Education and Training Actions:

Climate Change initiative Launch for Staff:

The launch of the Climate Change Initiative will include opportunities for interdepartmental challenges, prizes, socials, and educational lunch and learns.

Fuel Efficient Fleet Training:

Delta will appoint a Fleet Trainer who will implement training programs such as the one promoted by NRCan. SmartDriver for the city has been designed to train staff to make the fleet more fuel-efficient, reduce idling, protect the environment and learn defensive driving techniques.

Education/Training Opportunities for Staff:

Provided that funding is available, staff will be offered the opportunity to attend environmental workshops and conferences that are related to their position.

Reporting Success to Staff:

All successes will be reported to staff.

2008 Financial Implications:

Climate Change Initiative Launch for Staff:

Existing Budget

Fuel Efficient Fleet Training:

See Fleet Management Plan

Education/Training Opportunities for Staff:

To be determined

Reporting Success to Staff:

Existing Budgets

Annual Cost for 2008: **To be determined**

Potential Funding Opportunities:

To be determined.

Department:

Human Resources, Engineering, and Environmental Services (lead), All other departments (support)..



Delta's Climate Change Initiative: A Corporate Framework for Action

Flood Management Plan

Flood Management Plan Goal:

Most of the Corporation of Delta is located on the lowlands of the Fraser River delta, and is protected by an extensive dyke system along the Fraser River, the Strait of Georgia, and Boundary Bay. While the dyke system provides a substantial degree of flood protection, it does not completely eliminate the potential for flooding in the protected areas. The goal of the Flood Management Plan is to identify ways to reduce the risks associated with climate induced flooding, whether it be from sea level rise, spring freshet events, or extreme precipitation events.

Flood Management Plan Summary:

Delta's Flood Management Plan proposes to address the necessary adaptive strategies needed to reduce the risk of inland and coastal flooding. The Plan will include a seawall/dyke improvement strategy to cope with sea level rise, a flood box and pump upgrade program to reduce the impacts of flood events, and a floodplain bylaw to shape future development. This plan will build on initiatives that Delta has already taken to reduce flood risk in the community. Some of the initiatives that have been undertaken include:

- constructing a sand berm along the Beach Grove shoreline
- seawall/dyke inspections
- retaining a consultant to study storm surges
- retaining a consultant to develop a Flood Management Plan
- developing a made-for-Delta storm surge model
- drafting a Floodplain Bylaw
- supporting national studies such as UBC's Climate Change Visualization.
- participation on the national committee on infrastructure climate change impacts



Future Flood Management Actions:

Seawall/Dyke Improvements:

Climate change is leading to sea level rise. The Intergovernmental Panel on Climate Change has estimated that sea level between 1993 and 2003 rose at a rate of 3.1mm/year. It is *likely* that the rate of observed sea level rise in year the 2100 will be higher than current levels. Delta will plan sea level/dyke improvements and seek senior government funding to address these long term projections.

Improving Flood Infrastructure:

Much of Delta is built on a floodplain that is protected by a series of 9 dykes totaling 61.5km in length. It is also protected by floodboxes, pump stations and inland drainage culverts that are normally capable of protecting the community from flooding. As sea level rises, this infrastructure may not be able to handle the load. Delta will seek new technologies and research ways to improve the system to reflect sea level rise projections and to work to continue to provide a reasonable level of protection against flooding.

Floodplain Bylaw for Delta:

Delta is developing a floodplain bylaw for the lowland areas that would assist in reducing the form of development that could occur below a particular flood level (tbd based on the results of the Flood Management Study). This will reduce Delta's risk to flooding.

2008 Financial Implications:

Seawall/Dyke Improvements:

- Increase level of protection *To be determined* of the dyke

Improve Flood Protection Infrastructure:

- Continue to develop and *To be determined* implement a long term upgrade plan

Floodplain Bylaw for Delta:

- Develop a bylaw in *Existing Budget* partnership with CP&D

Annual Cost for 2008: **To be Determined**

Potential Funding Opportunities:

- Canada Strategic Infrastructure Fund
- BC Local Infrastructure Planning Grant Program
- Reinstatement of Federal and Provincial Flood Protection Program

Department:

Engineering (lead), CP&D (support)



Delta's Climate Change Initiative: A Corporate Framework for Action

Sustainable Development Management Plan

Sustainable Development Management Plan Goal:

Although Delta is not growing rapidly at present, steady re-development of existing areas and several major external projects have contributed to a changing community. Delta's Official Community Plan includes several sustainability principles and related policies that require implementation through more focused, action-oriented plans. The Sustainable Development Management Plan will address how the municipality directs, influences and promotes climate change mitigation and adaptation in new development projects for all types of land uses.

Sustainable Development Plan Summary:

Large and small developments can have an impact on the environment and on our community's social fabric and quality of life. While Delta has been successful in working with developers of larger projects to employ high environmental standards, including those that can mitigate the effects of climate change, the intent of this plan is to better integrate these elements into all development projects. The plan will identify ways to reduce greenhouse gas emissions from new development while ensuring other objectives continue to be met such as livability and affordability in residential areas, business viability and community integration in commercial and mixed use areas, and employment and efficient movement of goods in industrial areas. Under the broader umbrella of the sustainability principles of the Official Community Plan, implementation of this aspect of the Climate Change Initiative will help Delta achieve a reduced environmental footprint while managing growth and change.



2008 Financial Implications:

Most of the actions identified in this plan are closely tied with ongoing efforts to improve development standards and procedures. In this respect, much of the costs of implementation will be funded through existing departmental budgets. New initiatives that may require funding include those that involve outside consulting services, preparation and publication of materials, coordination of events, or advertising of new requirements. Budgets for such initiatives are presently undetermined, but are expected to be in the range of \$30,000 - \$50,000 for the fiscal year.

Future Sustainable Development Actions:

Many aspects of this plan are already in use, while others are new. Future actions will build upon the tools and programs in place while at the same time developing and implementing new initiatives.

Existing or Under Development:

- Implementation of a "Sustainability Checklist"
- Updating subdivision and development standards
- Updating landscape standards
- Promoting alternative energy and green roofs
- Participation in the Tilbury Eco-Industrial Network

To be Developed:

- Updating the Building and Plumbing Bylaw
- Educational materials for developers
- Recognition programs for developments that achieve a high environmental standard

Potential Funding Opportunities:

- FCM's Green Municipal Fund
- BC Local Government Infrastructure Planning Grants
- BC Green City Awards
- BC Smart Development Partnership Program
- GVRD Sustainable Enterprise Fund
- Community Action on Energy Efficiency Program

Department:

Community Planning and Development (lead), all other Departments (support).



Delta's Climate Change Initiative: A Corporate Framework for Action

Community Outreach and Education Plan

Community Outreach and Education Plan Goal:

One of the primary goals of the Initiative is to reduce Delta's corporate ecological footprint. This effort will also be expressed in the public realm through a series of public education and outreach programs.

Community Outreach and Education Plan Summary:

To mitigate the effects of climate change, staff will work towards enabling change in the everyday behaviour of residents, business owners and children through education and outreach programs. A suite of interactive and informative education programs, media and activities will be considered to capture the public's attention and to provide realistic energy saving options. The plan will build upon the education and outreach initiatives already being undertaken in Delta. Examples of these initiatives include:

- Water Wise Education Team
- Water Saving Education and Device Distribution
- Rain Barrel Education and Distribution
- Curbside Recycling Education
- Home Composter Education and Distribution



2008 Financial Implications:

Climate Change Website:

- Website update and maintenance
Existing Budgets

Public Outreach and Branding:

- Appoint an Educational Coordinator
Existing Budgets
- Purchase Educational Material
\$50,000

Educational School Programs:

- Various educational opportunities
To be determined

Total Cost for 2008: **To be determined**

Potential Funding Opportunities:

- Green Streets Canada - Tree Canada Foundation
- Power Smart for Business Program
- EcoACTION Community Funding
- Pembina Institute for Appropriate Development

Department:

Environmental Services, Engineering and Parks, Recreation and Culture

Future Sustainable Development Actions:

Climate Change Website:

A climate change webpage will be launched in conjunction with Delta's Climate Change Initiative. The climate change webpage will describe the initiative, and educate residents about global warming and its implications for Delta, offer practical facts, figures and provide useful tips like ways residents can reduce their GHGs. Links to other sites where residents can calculate their carbon footprint or find online interactive children's educational games will also be listed.

Public Outreach and Branding:

A series of outreach programs designed to engage the public, gain insight into their perceptions of climate change and give residents the opportunities to learn new behaviours will be implemented. Branding Delta's climate change initiative by means of stickers, buttons, flyers and a logo will also be developed. Outreach programs could include:

- Media: Public service announcements (Leisure Lookout), reader-board postings, local radio and newspaper.
- Community climate change survey, public expert panel discussions, community events

Educational School Programs:

Explore the opportunities to educate elementary and high school students through interactive programs related to energy/water efficiency, drought tolerant gardening, recycling, etc.



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Urban Forest Management Plan

Urban Forest Management Plan Goals:

Our urban forests filter water, provide habitat, sequester carbon and improve local air quality. These forests include all trees growing individually, along streets, in groves, forests and woods as well as shrubs and ground cover. Understanding the composition and health of Delta's urban forest will assist in the management and succession of current and future urban tree stock.

Urban Forest Management Plan Summary:

The Urban Forest Management Plan proposes initiatives focused on the enhancement and maintenance of urban forested spaces in Delta. The Plan will take inventory of Delta's tree stocks, monitor change, and develop specific recommendations and plans that utilize existing and future urban tree stocks. The emphasis of the Plan would be on public lands while recognizing the important role private lands also play in urban forest ecology. Examples of efforts related to the Plan and already implemented include:

- The Green Gateway Program on Ladner Trunk Road
- Planting 20,100 trees by 2010 and attaining 40% urban forest canopy cover
- Bylaw No. 6336 Delta Tree Cutting Regulation Bylaw



2008 Financial Implications:

Delta Tree Inventory:

- Inventory upkeep and reporting
\$ 5,000 annually

Promoting the Urban Forestry Benefits:

- Development of an on-line brochure
\$ 5,000 annually
- Printed Material
\$10,000 annually

Tree Planting and Preservation Incentives:

- Incentives
\$50,000 annually

Total Cost for 2008: **\$70,000**

Future Urban Forest Management Actions:

Delta Tree Inventory:

Staff will annually report on the condition of the urban forest relative to:

- meeting the goals of Council
- location and age of the forest
- condition of forest including any threats to a particular species

Promoting the Urban Forestry Benefits:

Public recognition of the importance of urban tree stock is key to the success. Creating simple tools for the public to better understand why these trees reduce their personal carbon loading will be developed.

Tree Planting and Preservation Incentives:

Partnership potentials can exist in many areas including making public land available for planting initiatives by corporations and community groups. Other incentives for private land may include cost sharing of tree planting on boulevards, tree retention initiatives and a public match program where the municipality will plant a tree for every private tree planted.

Potential Funding Opportunities:

- Green Streets Canada (Tree Canada Foundation)
- FCM's Green Municipal Funds (Enabling Fund, Investment Fund & Infrastructure Fund)
- Sustainable Enterprise Fund (GVRD)
- Canada Infrastructure Program (Infrastructure Canada)

Department:

Parks, Recreation & Culture (lead),
Community Planning & Development
(support), Engineering (operational role).



Delta's Climate Change Initiative: A Corporate Framework for Action

Natural Areas Management Plan

Natural Areas Management Plan Goals:

Delta is one of the most ecologically diverse municipalities in the Lower Mainland. From Burns Bog to Cougar Creek to Boundary Bay, the Municipality of Delta is home to a wide range of birds, amphibians, fish, small mammals and plant species. It is imperative that this biodiversity is monitored and protected over time.

Natural Areas Management Plan Summary:

The Natural Areas Management Plan is intended to identify and inventory designated ecologically sensitive areas (ESA) as well as other natural areas like riparian zones found along major irrigation corridors. Climate change will exert pressure on ESAs and other natural areas that provide habitat for wildlife. The Plan will record wildlife inventories and monitor water and soil quality on a regular basis in these areas. By collecting data on a regular basis, steps can be taken to maintain the overall health of these areas. Public education will also be a component of this plan. Examples of efforts already made include:

- Establishment of the Burns Bog Ecological Conservancy Area
- Integrated Storm Water Management Plan (ISMP) for Cougar Creek is underway between the Corporation of Delta and the City of Surrey
- Cougar Creek Storm Drain Tag education program (fish symbols)



Future Natural Areas Management Actions:

Ecologically Sensitive Areas & Natural Areas Inventory:

While a number of ESAs have been identified and protected through zoning, other areas have not been labeled as an ESA or even identified. These areas should be identified as an Important Natural Area (INA) so that they may be monitored and their value considered in future (e.g., large sloughs with riparian habitat).

Cougar Creek Water Quality Monitoring Station:

An ISMP is currently being developed for this watercourse with completion anticipated by the end of 2007. Installation of a permanent water quality monitoring station would allow for regular monitoring of pH, conductivity, temperature, dissolved oxygen and turbidity in the creek. Data collected would be managed and analyzed by Delta staff and used as background information in consideration for future development proposals, storm water management and habitat restoration.

Biodiversity and Abundance Monitoring Program:

Through volunteer groups, staff efforts and consultants, specific points of interest from the inventory will be chosen for study. Studies may vary in complexity and technical efforts; volunteers may perform simple transect identification studies, staff may use in-house equipment to gather more technical data and consultants may be retained for comprehensive efforts. The goal is to obtain a greater understanding of our local biodiversity.

Watershed Management (ISMPs):

Examine other watersheds within Delta and develop ISMP much like the Cougar Creek ISMP.

2008 Financial Implications:

Ecological Sensitive Areas & Natural Areas

Inventory:

- Retain a consultant *To be determined*

Cougar Creek Water Quality Meter:

- Purchase and installation of Water Quality Meter *\$18,000*
- Ongoing maintenance, data-logging & data management *Existing Budget*

Biodiversity and Abundance Monitoring Program:

- Retain a consultant *To be determined*

Watershed Management (ISMPs):

- Retain a consultant *To be determined*

Total Annual Cost for 2008: **To be determined**

Potential Funding Opportunities:

- MOE's Public Conservation Assistance Fund
- Real Estate Foundation of BC
- BC Agricultural Environmental Partnership Initiative
- Stewardship Initiative
- Pacific Salmon Foundation

Department:

Environmental Services (lead) , Community Planning and Development (support).