



2001

DROUGHT MANAGEMENT ACTION PLAN

Capital Regional District Water Department
479 Island Highway
VICTORIA BC V9B 1H7

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EXECUTIVE SUMMARY

This report details the Drought Management Action Plan undertaken during the drought of 2001. A 25-30% reduction over the ten-year water consumption average was required to avoid significant capital expenditures and to avoid water quality deterioration resulting from low reservoir water levels. The goal of the Communications Plan and Stage 3 watering restrictions was to ensure residents and businesses achieved the set water-consumption limits established for each month from April to September.

The combination of a comprehensive and aggressive communications plan, along with the implementation of Stage 3 watering restrictions, were highly effective in meeting the water-reduction limit of 20-30%, established under the Drought Management Action Plan during 2001.

Water demand was reduced by 27.8% between the months of April and September.

Recommendations

The following recommendations are based upon an experience with Stage 3 restrictions and feedback from the public:

1. Car washing should be restricted under Stage 3.
2. The Bylaw Enforcement Officers need to be able to use their discretion in circumstances of blatant violation of the bylaw and have the authority to issue a ticket on the first offence.
3. Allow power washing prior to the application of a finishing material where the structural integrity of a building/surface would be jeopardized.
4. Allow the filling of hot tubs during Stage 3 water restrictions.
5. Amend the bylaw to clarify the definition of micro or drip irrigation
6. Train bylaw Enforcement Officers on landscape irrigation.
7. Train all staff who respond to public inquiries on the bylaw, water efficiency technologies and practices, communication, and CRD policies. This should include the CRD Recycling Hotline staff.
8. Extend the hot line hours from the current hours of 8:00 a.m. to 4:30 p.m. Monday to Friday, to 7:00 a.m. to 7:00 p.m. Monday to Saturday.
9. Compile a list of the All Weather Playing (sand based) fields within the CRD, including the street address and name of the field, etc. and place on the Website for public information.
10. Place the violation form on the Website for public access.
11. Hire two full time students to assist with the telephone inquiries, to process violation reports and staff public events.

1.0 BACKGROUND

1.1 CRD Water Department

The Capital Regional District Water Department (CRD Water) supplies drinking water to the second largest municipal system in British Columbia, serving a population of approximately 325,649. The Department is responsible for the supply, treatment and delivery of drinking water to its municipal (wholesale) customers and for the operation of the retail water distribution system in the Western Communities and Sooke.

The municipal wholesale customers are the City of Victoria including Esquimalt, District of Saanich, District of Oak Bay, the Juan de Fuca Water Distribution Commission and the Saanich Peninsula Water Commission which in turn supplies water to Sidney, Central Saanich and North Saanich. The Juan de Fuca Distribution Commission retails water to the Town of View Royal, City of Colwood, District of Langford, District of Metchosin, District of Sooke and parts of the Juan de Fuca Electoral Area. With the exception of the Juan de Fuca Distribution Commission area, each of the municipalities operates their own water distribution systems.

The Regional Water Supply Commission oversees the regional water supply and comprises 19 commissioners appointed by member municipalities and the Juan de Fuca Electoral Area. Representation and weighted voting on the Commission are based on population. Weighted voting is applicable to all decisions.

The CRD Water draws all of its water supply from above ground reservoirs, primarily the Sooke Reservoir. The Sooke Reservoir is 181 meters (594 feet) above sea level, has a firm capacity of 52.3 million cubic meters (11.5 billion gallons) and a delivery capacity of approximately 454 million litres (100 million gallons) per day. The catchment area is 87 square kilometers (34 square miles) and is 97% owned by the CRD. The first dam was built in 1914 and the present Sooke Dam was built in 1970. There are some years when the reservoir does not fill, while in other years substantial volumes of water are lost over the spillway.

The Goldstream Reservoir system, consisting of Butchart, Lubbe and Goldstream Reservoirs is the backup water source and can be used in times of drought and during annual routine maintenance and emergencies when water cannot be supplied from Sooke Reservoir. The storage capacity of this reservoir system is approximately 10 million cubic meters (2.2 billion gallons) and the catchment area is 11.5 square kilometers (4.5 square miles). The Goldstream Dams were built between 1892 and 1914 and were upgraded in 1995 to meet current seismic standards. CRD Water also maintains minimum flows in the Goldstream River for salmon fishery enhancement purposes within the Goldstream Provincial Park, which uses about 4 million cubic meters (900 million gallons) annually.

The Charters River system consists of a small dam on the Charters River normally used as an emergency backup in Sooke.

Watersheds owned by the CRD (Sooke and Goldstream) are protected and closed to the public.

CRD Water's Technical Services Division is responsible for collection and analysis of hydrologic data, including precipitation and stream flow data. This data is used to predict water

availability depending on water levels, precipitation and demand. Approximately one hundred years of data is available for analysis. The analysis of this data to provide probabilities of the reservoir falling to critically low level was key in the decision making process of the Regional Water Supply Commission. The probability report was updated on a weekly basis.

1.2 2001 Drought

The Victoria area depends on winter rainfall to fill its reservoirs. The climate of the Greater Victoria area is mild and moist, with annual precipitation of approximately 1600 mm (63.47") at the Sooke Reservoir. While in the winter months normal rainfall is about 1210 mm (48"), rainfall in the winter of 2000/01 was the lowest since records began in 1916, at about half of what the area normally receives. The dry winter of 2000/01 significantly reduced the volumes in the Sooke Reservoir leaving it at 38.2 million cubic meters (8.5 billion gallons) or less than 70% full. The Goldstream Reservoir system was at 9 million cubic meters (2 billion gallons) or 94% of capacity. The combined total for all the reservoirs was 47.2 million cubic meters (10.5 billion gallons), or 73% of capacity, well below the normal prior to the outdoor water use season. This shortfall placed the CRD in a serious water shortage situation.

1.3 Drought Management Action Plan

Faced with this precipitation shortfall, the Capital Regional District Water Department (CRD Water) implemented a Drought Management Action Plan aimed at reducing water use by 25% to 30% during the key seasonal high water use months. The Drought Management Action Plan was presented to the Regional Water Supply Commission at the March monthly meeting and was approved for implementation April 2, 2001.

The Drought Management Action Plan (DMAP) consisted of the following elements:

- Staffing
- Implementing Stage 3 watering restrictions (Bylaw 2867-Stage 3)
- Switching to Goldstream Reservoirs
- Reactivating the Charters Reservoir System
- Reducing water releases to the Goldstream fishery
- Developing a contingency plan for pumping from the north basin of the Sooke Reservoir
- Reducing public sector water use
- Developing and implementing a comprehensive communications plan:
 - Media Advertising
 - Media Releases
 - Presentations
 - Meetings with stakeholders
 - Telephone Hotline
 - Water Watch
 - Facts sheets
 - Brochures
 - Workshops
 - Promotional items (bumper stickers and tattoos)

- Monthly reports to the Regional Water Supply Commission (RWSC)
- Allocating additional funding for the Drought Management Action Plan
- Workshops
- Water Watch
- Probability forecasts

Staffing

Seven students were hired to educate the residents of the Greater Victoria area on Stage 3 restrictions, providing water-efficiency tips aimed at reducing water usage during the drought, and to identify residents who were violating the bylaw (Appendix 1). The students patrolled the community on bicycles during the daylight shifts and in CRD Water vehicles at night. The patrols operated 24 hours per day, seven days per week. The media referred to the students as “water cops”, despite a news release (See Appendix 2) produced to inform the public of their duties to serve as educational support to the community. The random coverage by the students instilled a sense of caution in the public, as they did not know when and where the patrols were scheduled on a given day.

In addition to the students, an auxiliary clerk was hired to respond to the overwhelming number of calls into the Drought Hotline. The clerk was required to staff the Hotline, answer general water-restriction and by-law queries, and produce letters, cheque requisitions for the Toilet Rebate Program rebates and assemble education kits for school presentations. This clerk also maintained the violation database, and produced “Notices of Complaint”. A binder was created with documents specific to the bylaw as a resource tool. An additional part-time clerk was hired for two weeks during peak Hotline use.

2.0 WATER RESTRICTIONS - BYLAW 2867 – A bylaw to Prescribe Outdoor Water Use Restrictions

2.1 Bylaw Description

Stage 1 outdoor water use restrictions come into effect each year from June 1st to September 30th unless the CRD Water General Manager determines otherwise. Bylaw 2867 (Appendix 3) was approved March 21, 2001 by the Regional Water Supply Commission and Stage 3 restrictions were implemented on April 2, 2001 (Appendix 4) when the reservoir was at 69.7% of capacity. This was the first time Stage 3 had been implemented since the current bylaw to prescribe outdoor water use was enacted in 1992. To determine whether Stage 2 or Stage 3 restrictions should be in effect, the Water Supply Commission considers whether or not a greater than 80% probability exists during the year, that volume of water in the Sooke Lake Reservoir and the Goldstream Reservoirs will be at least 22.73 billion litres (5 billion gallons) or 35% of total storage. It was recognized that these restrictions would create hardship for some businesses and residents, but that if Stage 3 were not implemented there would be hardship for everyone in the community. It was estimated that there was only 229 days supply of water if summer consumption remained at the 10-year average, so significant reductions in water usage were necessary.

Stage 3 highlights are as follows:

- ❑ Lawn watering is not permitted at any time.
- ❑ Trees, shrubs and vegetable and flower gardens may be watered only when using a hand-held hose with a shutoff valve or with a hand-held container, OR using a micro-irrigation or drip-irrigation system within set hours.
- ❑ Washing of cars or boats is permitted only when using a hand-held hose with a shutoff valve or with a hand-held container.
- ❑ Residential swimming and wading pools or hot tubs, garden ponds or decorative fountains may not be filled.
- ❑ Decorative fountains may not be operated unless they use recirculated water.
- ❑ Exterior windows, building surfaces, parking lots, driveways or sidewalks may not be washed with a hose.

2.2 Stage 2 Water Restrictions

The Water Supply Commission directed CRD Water to move from Stage 3 to Stage 2 water restrictions on December 18, 2001 (Appendix 5). The decision was made upon the reservoir reaching the 10 year average. The RWSC was unwilling to relax restrictions until there was a high level of comfort that the reservoir would fill.

Restrictions were lifted in January (Appendix 6) when the Sooke Reservoir started spilling.

2.3 Revisions to Bylaw

At the March 21, 2001 Commission meeting, staff were asked to prepare a draft of Stage 4 water restrictions in the event that Stage 3 restrictions did not prove adequate in meeting the water-use limits. The draft Stage 4 (Appendix 7) proposed at the April 18, 2001 Commission meeting banned all outdoor watering. The Water Supply Commission rejected the Draft Stage 4, stating that the public's response to Stage 3 was positive and at that time it would only serve to alarm the community to have a Stage 4 in the bylaw. The media reported this discussion as if Stage 4 was to be implemented June 1st, which caused residents to become very anxious. The number of calls to the Drought Hotline increased significantly. Nurseries noted an immediate drop in sales when talk of a Stage 4 became public. The Commission decided that if the water-supply situation deteriorated, then a meeting would be called to revisit more strict watering restrictions.

At the request of the Water Supply Commission, CRD Water staff submitted a report in June proposing a number of options that included:

- banning car washing;
- only permitting when recycled water is used;
- banning car washing except to remove deleterious substances;
- and leaving the bylaw as is, but appealing to the public to volunteer not to wash their cars.

The Commission decided not to change the bylaw provisions on car washing. Instead staff were instructed to launch a car-washing campaign to encourage residents and businesses to wash cars only when necessary. The ‘Don’t wash me, I’m saving water’ campaign was subsequently developed. In December, the Water Supply Commission reviewed this issue and recommended that Stage 3 prohibit car washing.

In July the following changes were made to the bylaw (Appendix 8) in light of experience with its provisions and to address some health and safety concerns.

- ❑ A clause was added to prohibit water waste.
- ❑ Power washing of sidewalks for safety reasons was permitted
- ❑ Power washing of dumpsters for health reasons was permitted.
- ❑ Power washing necessary prior to the application of a product or preparation of a surface for finishing was permitted.
- ❑ Use of micro/drip-irrigation systems was limited to specific hours.

With the exception of sand-based playing fields, public gardens and playing fields were no longer exempt from lawn watering restrictions. Boulevards and medians could no longer be watered. The watering of fairways and roughs on golf courses was prohibited.

These changes were deemed necessary to ensure an equitable and consistent bylaw. There was significant opposition to the lack of car-washing restrictions and staff presented a report to the Water Supply Commission (Appendix 9) proposing options for their consideration. Staff were directed not to change the bylaw with regard to car washing and to pursue a car washing media campaign that would encourage residents and businesses to wash cars only when absolutely necessary.

There were times when individuals blatantly violated the bylaw knowing that the first infraction would only result in a notice so they filled their pools or washed building surfaces. The enforcement policy was changed on February 13, 2002 so that a Bylaw Enforcement Officer could issue a ticket on the first offence if a hot tub, swimming pool or wading pool were filled depending on a number of factors including culpability of violator, seriousness of the violation and the likelihood that the violator will re-offend.

2.4 Bylaw Enforcement

CRD Bylaw Officers enforced the bylaw in all communities except Langford and Sidney. Most violations were called into the Drought Hotline, and the remaining were reported by the summer students (See “Staffing” Section). The first time offenders were issued a “Notice of Complaint”. On the second offence, a Bylaw Enforcement Officer visited the property to investigate the alleged watering infraction and, if warranted, issued a warning. On the third offence, the Officer issued a ticket. The third and subsequent violation resulted in a minimum fine of \$100.00 plus costs, and a maximum fine of \$2,000 through the courts.

The Bylaw office faxed CRD Water the details of each violation and this information was added to the violation database. There were 806 Notices of Complaints issued, 48 warnings and 7

tickets issued. These figures represent less than 1% of the households in the Capital Regional District.

A database was maintained at the CRD Water office outlining the details of each violation. The entire history and comments for each offence was recorded. Violation letters were slow in reaching the water offenders. Many times, second violation complaints were received before the initial letter had been issued. This was due to the high volume of complaints and the shortage of staff to prepare and document the violations.

Some members of the public insisted that staff immediately visit residents who were breaking the bylaw. A number of persons became angry or were perplexed because staff required the complainant's name, address, and telephone number in order to process a water use violation report. As with a police report, this data is required if action is taken under the bylaw. Copy of water use violation report (Appendix 10).

There were instances of blatant abuse of water or certain first-time violations (such as power washing or the filling of pools). However, under the bylaw enforcement policy, a ticket could not be issued. This was subsequently changed in the February 2002 amendment.

2.5 Water Restrictions Lifted

On January 8, 2002 the reservoir filled and spilled.

3.0 SWITCHING TO GOLDSTREAM RESERVOIRS

Goldstream reservoirs were held in reserve in case the temporary pumping facility was required, necessitating shutting down the Sooke Reservoir supply. The Goldstream Reservoirs were not utilized, as pumping was not required.

4.0 REACTIVATING CHARTERS RESERVOIR SYSTEM

Sooke is supplied with water from Sooke Reservoir via a 30-km (19 miles) pipeline (the flowline). The back-up supply for Sooke is the Charters River system consisting of a dam on the Charters River. By switching to the Charters system for as long as there was sufficient flow of acceptable quality, approximately 9.09 million litres (2 million gallons) per day was saved from the Sooke Reservoir. CRD Water reactivated Charters Reservoir earlier in March and was able to use this water until the end of May.

5.0 REDUCING WATER RELEASES TO FISHERIES

CRD Water releases water into the Goldstream River for fisheries enhancement purposes. Because of the drought it was agreed to reduce water to fisheries. Typically between 13.64 and 15.91 million litres (3.0 and 3.5 million gallons) per day is released in the spring and summer with a further 1363.8 million litres (300 million gallons) released in the fall for spawning.

Discussions with Fisheries were undertaken to reduce these quantities to 12.27 million litres (2.7 million gallons). In mid-summer the releases were reduced to 10.91 million litres (2.4 million gallons) per day.

6.0 PUMPING FROM THE SOOKE RESERVOIR

A contingency plan to pump from the north basin of the Sooke Reservoir was developed. The Sooke Reservoir is shaped like a spoon. The intake tower is on the shallow end (handle) of the reservoir. CRD Water draws water from the top 7 meters (23 feet) of the reservoir. The contingency plan called for CRD Water to place a temporary pumping station on a floating barge in the deep end (bowl) and pump water to the intake via a 4 km temporary pipeline. Pumping from the North end was designed to provide 136.38 million litres (30 million gallons) per day, or enough for typical winter daily water use. The estimated costs for the contingency plan were:

1. Capital costs of \$2.5 million dollars for pipe to divert water from the deep (north) end to the south end;
2. \$1 million to install the pipe;
3. Operating costs of \$8,200 per day to operate (electric pumps in the reservoir, diesel generators on shore)

As the four kilometres of steel pipe required had the longest delivery time, it was ordered and taken into inventory. The pipe material and diameter was chosen so that it could be used in future contracts for the replacement of the No.1 Transmission water main. Since the temporary pumping facilities would take 6 weeks for preparation and mobilization and installation tenders were called and a contract awarded, the contract was structured so that it could be cancelled without penalty at specific stages, specifically, after preparation of the equipment, after mobilization, and after installation but before operation. CRD Water was liable only for the costs to date as specified in the contract. The contract for installation of the pipe was tendered but not awarded.

7.0 REDUCING PUBLIC SECTOR WATER USE

CRD Water developed a Best Management Practices Guide to water efficiency for the public sector, which was provided free to public sector organizations. In addition, meetings were held with various public sector agencies to solicit their cooperation in reducing water use.

Public sector organizations undertook the following actions in response to requests from CRD Water.

FEDERAL GOVERNMENT

Department of National Defence

Federal Government properties are not subject to CRD Water's regulations. The Department of National Defense notified CRD Water that all of its military bases would be abiding by Stage 3 water restrictions and would do whatever was possible to assist in elevating the water shortage. Vehicle washing was reduced significantly and CRD was invited to staff an information booth (Appendix 11) during their employee environment day on one of the bases.

Albert Head Penitentiary

CRD Water staff was notified that this penitentiary would be abiding by the Stage 3 water restrictions to set an example for the community and inmates and to do its part to help the community.

PROVINCIAL GOVERNMENT AGENCIES

BC Buildings Corporation (BCBC)

BCBC set up a committee and established a "Best Practices" policy (Appendix 12) for reducing water use in their buildings and landscaping practices. They encouraged their staff to conserve water through their "GoodLife" rewards program (Appendix 13).

BC Ferries

BC Ferries posted signs at their Swartz Bay and Tsawwassen terminals (Appendix 14) to advise travelers of the water shortage in Victoria, and the need for conservation. CRD Water placed an advertisement through Light Vision Media that was shown on the large outdoor screen in the vehicle holding area, as well as the TV screens inside the waiting areas for walk-on passengers. This ran from July through September.

Ministry of Transportation and Highways

The Ministry of Transportation and Highways (MOTH) ceased all watering of medians in the Greater Victoria Area.

LOCAL GOVERNMENT AGENCIES

School Boards

CRD Water staff met with the three school boards in the Victoria area to communicate to them the severity of the water shortage and to advise them of the water restrictions. School Boards 61 and 62 submitted a water conservation proposal for CRD's benefit (Appendix 15). School District 63 also informed us that they intended to eliminate watering of grounds, decrease fertilizer schedule to keep fields longer, delay field renovations and install flushometers in all bathrooms (Appendix 16). Initially, playing fields were exempt under the bylaw. With the

amendments made to the bylaw effective July 11, 2001, however, watering of playing fields (except sand-based) became prohibited.

MUNICIPALITIES

The following outlines the water saving efforts initiated by each municipality:

Langford

The District Langford developed wells to irrigate planting beds and, trees on boulevards (Appendix 17).

City of Colwood

The City of Colwood issued a “Water Restrictions Proclamation” announcing its intention to respect Stage 3 water restrictions and endeavor to seek out innovative ways to reduce water consumption (Appendix 18).

The Corporation of the District of Saanich

The District of Saanich (Appendix 19) undertook the following measures:

1. No planting of flowers in parks, boulevards and recreation centres.
2. Sprinkler systems shut off in all municipal properties including parks.
3. Sprinklers only used for perennial borders (hand watering), golf course tees and greens, shrubs and bushes in danger of being lost if no hand watering, and sand based soccer fields.
4. Annual water main flushing cancelled except for water quality standards being maintained.
5. Flushing of the distribution system only was done to maintain water quality.
6. Water system leaks other than broken mains will be repaired in 12 hours instead of 4 days.
7. Swimming pools were not to be drained for routine maintenance other than required for health standards.
8. Washing of municipal vehicles was sharply curtailed.

Town of Sidney

The Town of Sidney (Appendix 20) adopted their own watering restrictions (virtually the same as CRD’s Stage 3 with the exception of a user fee applied to residents’ water bill for a violation of Stage 3) and Town staff worked additional hours around the clock to patrol for watering infractions. Sidney placed an advertisement to advise the public of the restrictions and encouraged the use of rain barrels. Signs were placed on Public Works Trucks “Water Patrols” to notify the public that staff were patrolling.

The District of Central Saanich

In order to support CRD Water's efforts to conserve water as a result of the low water levels in the reservoir the District of Central Saanich (Appendix 21) undertook the following actions above the Stage 3 restrictions:

- Reduce the frequency or eliminate the washing of Parks and Public Works maintenance vehicles.
- Continue to plant drought-tolerant plants, including native species.
- Power wash only the shelter tables, floors etc. required to comply with health and safety standards.
- No annual flower plantings in 2001.
- Adjust irrigation systems for minimum amount of water for new plantings.
- Reduce watermain flushing.
- Eliminate sewer and storm main flushing and road flushing.
- Eliminate daily hydrant rentals for non-potable water uses.

City of Victoria

The City of Victoria (Appendix 22) took the following measures:

- Fewer flowerbeds were planted and the ones planted were hand watered.
- Water for hanging baskets was drawn from Smith's Hill Reservoir (non-potable).
- Some of the irrigation systems were converted to micro/drip systems.
- Water Parks and wading pools were not filled.

Esquimalt

Installed a glycol-closed loop cooling system at the local sports centre.

Oak Bay

Oak Bay Parks staff responded creatively to the water shortage by designing desert scenes in areas usually planted with flowers (Appendix 23). Boulevard watering was suspended in 2001.

Municipalities - Comparison

A comparison of each municipalities' water use for the summer of 2001 and previous summers is attached as Appendix 24. This chart illustrates the water reductions by municipality, with Oak Bay showing the most significant reduction.

8.0 COMMUNICATIONS PLAN

8.1 Purpose

Demand Management's "Communications Plan for Stage 3/Severe Water Shortage" (Appendix 25) was implemented to ensure that the public was aware of the seriousness of the water

shortage, to educate the public on how to reduce water use and communicate the requirements of Bylaw Number 2867.

8.2 Key Messages

Six key messages were developed to convey to individual consumers the need for their full participation and compliance with the water restriction Bylaw:

1. The severe water shortage problem is real, and each person needs to conserve water immediately and comply with the watering restrictions.
2. Every individual's actions will make a difference.
3. The water restriction bylaw is equitable, and everyone is asked to conserve water: residents, businesses, and public bodies.
4. By conserving, each person will have helped the community get through the water shortage.
5. Water efficiency is easy. Information was provided on water-efficient actions.
6. "If we each save a little we all save a lot."

The communications plan to get the key messages out consisted of the following elements:

- Media advertising
- Media Releases
- Presentations
- Meetings with stakeholders
- Telephone Hotline
- Water Watch
- Facts sheets
- Brochures (Toilet Replacement Program, Leak Detection cards, Indoor/Outdoor Guides)
- Workshops
- Promotional items (bumper stickers, stickers, tattoos, tea towels, water bottles)
- Monthly reports to the RWSC

8.2.1 Fact Sheets

CRD Water developed a number of Fact Sheets for each of the three water-restrictive stages. These informative papers offered water-saving tips for the home and garden.

- "Waterfacts 2: Straight Talk About...Residential Water-use Restrictions Stage 2 Bylaw" (Appendix 26) summarized the water use restrictions and Bylaw enforcement.
- "Waterfacts 3: Straight Talk About...Residential Water-use Restrictions Stage 3 Bylaw" (Appendix 27) summarized the water shortage, restrictions and Bylaw enforcement. This fact sheet disseminated information on Stage 3, and was referenced in response to telephone queries on water restrictions. Public demand was such that it was reprinted after July 11th 2001, when the Regional Water Supply Commission amended the bylaw.

- “Waterfacts 5: Straight Talk About...Landscape Care During Water-use Restrictions” (Appendix 28) provided information to residents about landscape maintenance during the drought.
- “Waterfacts 6: Straight Talk About...Water Saving Actions for Homeowners” (Appendix 29) gave indoors and out door water-saving tips for the home and community.
- “Waterfacts 7: Straight Talk About...Water Saving Actions for Business” (Appendix 30) targeted the Industrial-Commercial-Institutional (ICI) sector and outlined conservation ideas in two high-volume and frequent-use areas, food services and washrooms.
- The “*Drought Plan Backgrounder*” (Appendix 31) fact sheet was produced and distributed for the media conference on March 21st. This provided background information on the operations of the Capital Regional District Water supply, the precipitation shortfalls that resulted in drought for the Greater Victoria Region and what initiatives were planned (as part of the Drought Management Action Plan) to mitigate this water shortage.
- Another informative facts sheet was the “*Comparison of Available Water Supply*” (Appendix 32). This sheet was a replica of the poster produced for the media conference and showed water levels and consumption in an average year, in 1998 when water levels were low, and the projections for 2001. This visual representation of water levels in the reservoir highlighted the seriousness of the water shortage very effectively.

All Waterfacts sheets were provided to: municipal offices, libraries and CRD offices, nurseries and garden centres, and were available at all community events CRD Water staff attended. The sheets were also mailed to residents who called in requesting the information on the drought hotline.

8.2.2 Brochures

In addition to the Water Facts articles, CRD Water produced several other water-saving brochures:

- The Canadian Mortgage and Housing Corporation (CMHC), in conjunction with CRD Water, produced the publication “*Household Guide to Water Efficiency*” (Appendix 33). This booklet dealt with water-consumption habits within Canada and methods for greater water conservation.
- While offering water-saving tips for indoor and outdoors usage, it complemented CRD’s “*A Homeowner’s Guide to Outdoor Water Use*” (Appendix 34).

8.2.3 Water Watch

- The “Water Watch” (Appendix 35) report is produced weekly by CRD Water. It provides a weekly water supply system summary and includes data such as the daily demand for the current month, average month to date, the 10 year average demand year

to date, precipitation for the current month, average 10 year average precipitation rainfall, and the average daily flow into the reservoir. Water Watch is produced weekly and distributed to commissioners, the media, the municipalities and other interested parties. It includes such information as storage summary (current, last year on this date, and 10 year average), rainfall summary, inflow into the reservoir, and consumption summary. It also details Water Conservation action required.

8.2.4 Print Media Advertising

The following advertisements were placed in the local print media, Times Colonist, News Group and Monday Magazine.

- ❑ Water Shortage Advisory (Appendix 36)
- ❑ Under Stage 3 Restrictions (Appendix 37)
- ❑ Toilet Replacement VS Rain barrels (Appendix 38)
- ❑ Be a water saver-don't wash me! (Appendix 39)
- ❑ Is your lawn ready for the summer? (Appendix 40)
- ❑ A watering can is your plant's best friend (Appendix 41).
- ❑ For tree and shrub health-just dig it! (Appendix 42)

8.2.5 Radio and Television Advertising

Radio and television advertising was an efficient tool to inform the public several times a day on the most recent water updates. Each radio and television representative was given a media kit at the onset of the water restrictions. The kits comprised Fact Sheets, News Releases, copy of Bylaw 2867, water-projection data; a sheet containing commonly asked questions and answers, the Drought Hot Line telephone number and ads on Water Shortage and Stage 3 Restrictions.

Both CFAX 1070 and The Ocean/Hot 103 ran 30-second spots daily on the morning and evening weather broadcasts outlining:

- ❑ Water usage/water consumption limits,
- ❑ Stage 3 and water reduction tips.
- ❑ CRD Water faxed daily water-consumption limits, actual water use and reservoir levels to the radio stations.

In addition to TV advertising matching newspaper advertising, CHEK TV:

- ❑ Produced 10 ads to appear in rotation, featuring 5 indoor and 5 outdoor water saving tips.
- ❑ Designed and displayed a chart (Appendix 43) showing consumption figures compared with the daily limits during the 5:00 p.m. news hour
- ❑ To augment the December indoor water consumption campaign, a new series of TV ads were produced and run.

An advertisement on Shaw Cable TV that rotated the Stage 3 regulations proved not to be very successful. Few inquiries were generated as a result of this advertising media.

8.2.6 Media Coverage

The Regional Water Commission held a media conference on March 21st to initiate public awareness regarding the water restrictions for 2001. It was important to convince the media of the seriousness of the situation and ask for their support in making the issue clear to residents. All media representatives were given media information kits, including a copy of Bylaw 2867. A copy of the Agenda (Appendix 44) and the Regional Chair's statement is attached (Appendix 45). All local radio and television stations attended as did the CBC-Vancouver and the Weather Channel. Additional media conferences were to be held when required. Media kits included the following:

- "Water Shortage Advisory" ad
- "Under Stage 3 restrictions" ad
- "Drought Plan Background" fact sheet
- "Comparison of Available Water Supply"
- "Waterfacts" copies of the Fact sheets for distribution to the public
- "Stage 3 Watering Restrictions Begin April 2" initial news release

The local print media also supported the Drought Management Action Plan as a community service in the following ways.

Times-Colonist:

- Published a column featuring letters from residents who wrote in with their water saving hints.
- News articles and special extended reports with interviews of key CRD Water personnel. Reporters also interviewed various industry representatives (hospitality, irrigation, power washing) and residents of the Victoria area to highlight different perspectives on the drought and how Stage 3 restrictions impacted their lives. (Appendix 46).
- An illustration (Appendix 47) of a water glass with the actual water consumption versus the monthly target in the Capital Region section initially on a daily basis and then every three days.
- In the fall, the Times-Colonist also began to publish the current reservoir levels on a weekly basis (Appendix 48).

In addition, local newspapers published the following articles and correspondence:

Title	Source	Date
Capital tapped out	Times-Colonist	March 2, 2001
Ahhh, what a day	Times-Colonist	March 7, 2001
Preventable crisis	Times-Colonist	March 11, 2001
It's official: We're in a drought	Times-Colonist	March 14, 2001
Reduce your water use	Times-Colonist	March 14, 2001
Municipalities urged to enforce restrictions	Times-Colonist	March 16, 2001
Drought threatens to dry up jobs	Times-Colonist	March 21, 2001

Conservation must start now	Times-Colonist	March 21, 2001
Region turns off taps	Times-Colonist	March 22, 2001
The Dry Season	Goldstream News	March 23, 2001
CRD turns off the water tap	Goldstream News	March 23, 2001
Butchart planned for water shortage	Times-Colonist	March 23, 2001
CRD's restrictions the Island's harshest	Times-Colonist	March 23, 2001
Councils decide to lead by example	Times-Colonist	March 23, 2001
Dying on the vine	Times-Colonist	March 23, 2001
CRD warns of strategy for 24-hour patrols	Times-Colonist	March 23, 2001
Lincoln's Liberty	Times-Colonist	March 24, 2001
Wet ideas sought	Goldstream News	March 28, 2001
Water rationing, the next stage	Monday Magazine	March 29, 2001
Water usage drops as restrictions near	Times-Colonist	March 30, 2001
Gardening without water, you say	Goldstream News	March 30, 2001
Planning key to water problems	Times-Colonist	April 1, 2001
It's hip not to drip as water curbs start	Times-Colonist	April 2, 2001
Toughest restrictions yet	Times-Colonist	April 3, 2001
CRD seeks ways to mitigate water shortage	Times-Colonist	April 4, 2001
Micro-system exempt from restrictions	Times-Colonist	April 5, 2001
Waterwise: A dry period good for lawn	Times-Colonist	April 5, 2001
Water restrictions put local gardener over A (rain) barrel	Times-Colonist	April 5, 2001
Municipalities anticipate loss of jobs due To water shortage	Times-Colonist	April 5, 2001
Salmon fishing hinges on water levels	Times-Colonist	April 5, 2001
How to be a Waterwise Gardener	Times-Colonist	April 5, 2001
Garden Hints	Times-Colonist	April 5, 2001
Saving for a rainy day	Times-Colonist	April 5, 2001
Over the Fence-She Belongs to Horticulture	Coastal Living	April 6, 2001
Water-needy flower baskets hang in the Balance	Times-Colonist	April 6, 2001
Bracing for a dry summer	Goldstream News	April 6, 2001
Some sage advise for surviving in these Water-saving times	Times-Colonist	April 7, 2001
Restrict water in baskets, too	Times-Colonist	April 7, 2001
Water conservation sends rain barrel sales Soaring	Times-Colonist	April 9, 2001
Strange things stir in the shallows	Times-Colonist	April 8, 2001
Where our water comes from	Times-Colonist	April 8, 2001
Residents adjust to restrictions	Times-Colonist	April 10, 2001
Wells approved for Langford park, Fire Hall	Goldstream News	April 11, 2001
It's green to go brown	The Ring-UVIC	April 6, 2001
Every drop counts	The Ring-UVIC	April 6, 2001
Go Natural and save water	The Ring-UVIC	April 6, 2001
Pools and spas just a drop in the bucket	Times-Colonist	April 12, 2001
Lawns with water...or without it	Goldstream News	April 13, 2001
We're still looking for water-saving tips	Goldstream News	April 18, 2001
Some advise on water conservation	Goldstream News	April 18, 2001

Schools crimp water usage	Goldstream News	April 18, 2001
Tighter water restrictions drawn up	Times-Colonist	April 19, 2001
Drought surcharge on tap	Times-Colonist	April 21, 2001
Water restrictions spur innovative responses		
From business community	Business Examiner	April 16, 2001
Owners want tubs exempted from ban	Goldstream News	April 27, 2001
Population boom at root of water shortage	Times-Colonist	May 2, 2001
Drought hasn't hit home yet	Times-Colonist	May 4, 2001
Dirty Water: Could our water make us sick?	Goldstream News	May 11, 2001
Cloudy water	Goldstream News	May 11, 2001
Water Board rejects surcharge	Times-Colonist	May 17, 2001
Water worries increase	Monday Magazine	May 17, 2001
Whither The Weather?	Monday Magazine	May 17, 2001
Down to the Last Drop	Monday Magazine	May 17, 2001
From Uplands to Deep Cove, gardeners		
Drill for water	Times-Colonist	May 18, 2001
Healthy water a top priority	Times-Colonist	May 23, 2001
Huge Tank Saves Water at Fire Hall	Goldstream News	May 23, 2001
Hot weather brings true test	Times-Colonist	May 24, 2001
Message in a bottle	Times-Colonist	May 24, 2001
Capital's water chief keeps sunny outlook	Times-Colonist	May 27, 2001
Water restraint proves effective so far	Times-Colonist	May 29, 2001
Cartoon	Sooke News	May 30, 2001
All's well for hotel greenery	Times-Colonist	May 30, 2001
Good water news	Goldstream News	June 1, 2001
Debate needed on water sales	Times-Colonist	June 3, 2001
CRD's E-Team set to embark on patrols	Times-Colonist	June 2, 2001
Water restrictions not likely to become		
Any more onerous	Goldstream News	June 6, 2001
Seeds not bugged in this dry planting season	Times-Colonist	June 7, 2001
Herons face greater threat from eagles	Times-Colonist	June 8, 2001
Dam expansion questioned at forum	Goldstream News	June 8, 2001
Chamber wades into water shortage	Goldstream News	June 8, 2001
Still worry for water	Times-Colonist	June 12, 2001
Asko Electronic wash and dryer	Times-Colonist	June 14, 2001
Desert scene blooms in "dry" Oak Bay	Times-Colonist	June 19, 2001
CRD to regard low-flush toilets	Times-Colonist	June 20, 2001
Save water, and money	Times-Colonist	June 21, 2001
Too late to ban car washing, Water		
Board decides	Times-Colonist	June 21, 2001
Schools turn off the taps	Goldstream News	June 22, 2001
Water demand challenge met	Victoria News Group	June 22, 2001
Watering: It's not how much, it's where	Times-Colonist	June 23, 2001
Bathwater in the garden is easy with hose	Times-Colonist	June 23, 2001
Right plant, right place	Times-Colonist	June 28, 2001
Reservoir ahead of schedule	Times-Colonist	June 29, 2001
Oak Bay tops in cutting water usage	Times-Colonist	July 6, 2001
Dry spell fosters excessive water use	Times-Colonist	July 11, 2001
High noon is when to sprinkler	Times-Colonist	July 12, 2001

Water use has nerves on edge	Times-Colonist	July 13, 2001
Go slow approach to enforcement	Goldstream News	July 13, 2001
The summer blues, a fight to survive	Victoria News Group	July 13, 2001
Water planning effort continues as city Dries out	Victoria News Group	July 13, 2001
Hand-waterers needn't rise with lark	Times-Colonist	July 14, 2001
UN report paints grim climate picture	Times-Colonist	July 16, 2001
Water use being squeezed again	Goldstream News	July 20, 2001
Water-wise gardening addressed in CRD	Times-Colonist	July 21, 2001
Water on the brain	Times-Colonist	July 22, 2001
Fire hazard on the rise	Goldstream News	July 25, 2001
Parks dry but grass will survive drought	Goldstream News	July 25, 2001
Metchosin residents forced to truck in water	Goldstream News	July 25, 2001
Business adjust to dry conditions	Times-Colonist	July 26, 2001
CRD serious about watering tickets	Times-Colonist	July 26, 2001
It's a matter of perspective	Times-Colonist	July 27, 2001
Tint puts green back in Island's dry lawns	Times-Colonist	July 27, 2001
Saving water a global effort	Goldstream News	July 27, 2001
CRD promotes conservation	Goldstream News	July 27, 2001
Water for People, Water for the River	Goldstream News	July 27, 2001
Some grass more equal than others	Goldstream News	July 27, 2001
Stop flushing away problems	Times-Colonist	Aug 3, 2001
Residents practice conservation	Victoria News Group	Aug 3, 2001
A water-wise future	Victoria News Group	Aug 4, 2001
Conservative Victorians keep us within Limits	Times-Colonist	Aug 4, 2001
Sooke reservoir at lowest level yet	Times-Colonist	Aug 5, 2001
More than goodwill	Times-Colonist	Aug 5, 2001
Natural is beautiful, too	Times-Colonist	Aug 5, 2001
Saanich is having no trouble with its trees	Saanich News	Aug 8, 2001
Water-saving efforts praised	Goldstream News	Aug 8, 2001
A clean car wets the lawn	Times-Colonist	Aug 9, 2001
Simple measures help the cause	Times-Colonist	Aug 7, 2001
Matelots' method saves in shower	Times-Colonist	Aug 12, 2001
Heat has water quality in doubt	Times-Colonist	Aug 12, 2001
World water crisis looms as Canada Debates sales	Times-Colonist	Aug 13, 2001
Downspouts can water gardens	Times-Colonist	Aug 14, 2001
There's been a lot of hot air	Times-Colonist	Aug 16, 2001
Pump likely not needed	Times-Colonist	Aug 16, 2001
Shower device helps save water	Times-Colonist	Aug 13, 2001
Saving water a way of life	Times-Colonist	Aug 15, 2001
Region embraces water rules	Times-Colonist	Aug 23, 2001
Only a full load gets washed	Times-Colonist	Aug 23, 2001
Swan Lake shows water at work	Times-Colonist	Aug 23, 2001
No time to turn on the taps	Goldstream News	Aug 24, 2001
More rain is needed	Goldstream News	Aug 24, 2001
Save tap water while it heats up	Times-Colonist	Aug 25, 2001
Golf courses have cut back	Times-Colonist	Aug 25, 2001

Put downspouts to good use	Times-Colonist	Aug 26, 2001
Royal Roads pump paying for itself	Times-Colonist	Aug 27, 2001
Clean up with care	Times-Colonist	Aug 29, 2001
Plants get water from veggies	Times-Colonist	Aug 30, 2001
Assess trees for drought damage	Times-Colonist	Aug 30, 2001
CRD sets water target at 34 million gallons	Times-Colonist	Sept 1, 2001
The green, green grass of rugby	Times-Colonist	Sept 1, 2001
The Graffiti Busters	Times-Colonist	Sept 7, 2001
Water woe	Goldstream News	Sept 7, 2001
School Field Closures	Times-Colonist	Sept 11, 2001
CRD water restrictions stay	Goldstream News	Sept 12, 2001
Langford is looking good	Goldstream News	Sept 12, 2001
Water curbs to stay in force	Times-Colonist	Sept 20, 2001
No time to pull back	Times-Colonist	Sept 21, 2001
Parched fields to see some soccer use	Times-Colonist	Sept 26, 2001
You've got a drought story, no doubt?	Times-Colonist	Sept 27, 2001
No-fly zone pondered at reservoir	Times-Colonist	Sept 29, 2001
Fungi prey on drought-ravaged plants	Times-Colonist	Oct 2, 2001
Water rate jump imminent	Times-Colonist	Oct 7, 2001
Leaves dropping	Times-Colonist	Oct 18, 2001
Businesses hit hard by water restrictions	Times-Colonist	Oct 18, 2001
Raeside's Island	Times-Colonist	Oct 21, 2001
Water board faces \$1 million gamble	Times-Colonist	Oct 22, 2001
Water remains a scarce resource	Goldstream News	Oct 26, 2001
Water restrictions remain despite soggy Oct	Times-Colonist	Nov 2, 2001
Water hike recommended	Goldstream News	Nov 7, 2001
No time to waste water	Times-Colonist	Nov 21, 2001
Rain hasn't filled reservoir yet	Times-Colonist	Nov 22, 2001
Keep on conserving that precious water	Goldstream News	Nov 30, 2001
Area water OK despite disinfection interrupt	Times-Colonist	Dec 1, 2001
Reservoir remains at low level	Times-Colonist	Dec 8, 2001
Reservoir hits 76 per cent full	Times-Colonist	Dec 18, 2001
It's official, we're allowed to water lawns	Times-Colonist	Dec 19, 2001
Water commission eases restrictions	Goldstream News	Dec 21, 2001
Rains fill up reservoir reducing restrictions	Goldstream News	Dec 24, 2001
Drought leaves lasting impact	Times-Colonist	Dec 24, 2001
Jensen sets priorities	EnviroNews	Dec 24, 2001
Reservoir so full it overflows	Times-Colonist	Jan 8, 2002
The Pineapple Express leaves havoc	Times-Colonist	Jan 9, 2002
Conservation, rain boost Sooke reservoir	Goldstream News	Jan 11, 2002
Raeside's Island	Times-Colonist	Jan 12, 2002

8.2.7 News Releases

In order to highlight specific issues, the Water Department issued News Releases throughout the drought (Appendix 49). A comprehensive list is as follows:

Residents Urged to Reduce Water Use
Regional Water Commission to Discuss Watering Restrictions
Stage 3 Watering Restrictions Impact on Local Businesses
Stage 3-Watering Restrictions Begin April 2
CRD Water Department Awards Contract for the Sooke Reservoir Expansion
Water Conservation Goals Met for April
Stage 3 Watering Restrictions Impact on Car Dealers
Stage 4 Unlikely as Water Conservation Proves Effective June Water Consumption Limit Set
Student Teams to Help Residents with Water Concerns
Water Conservation Goals Met for June, Target Set for July
Water Restriction Times Implemented for Irrigating Gardens
CRD Hopes to Avoid Tougher Watering Restrictions and Temporary Pumping
Water Department Guide Shows CRD Residents How to Reduce Outdoor Water Use
Don't Wash Me Campaign
CRD Sets August Water Use Limits
First Construction Contract Awarded for Sooke Reservoir Expansion
September Water Limit Set at 34 Million Gallons
Work Starts on Sooke Reservoir Expansion
Vote for More Effective Water Planning
Recent Rains Lead to Dramatic Increase in Reservoir Levels
CRD Residents Asked to Keep Conserving Water
CRD Sets November Water Consumption Limit
Water Commission Cuts Back on Water Restrictions
Commission Lifts Water Restrictions

8.3 Presentations and Meetings

Following its launch, many other presentations were given, targeting those groups and businesses that consumed or were perceived to consume greater volumes of water. CRD Water staff met with and discussed the water shortage and its implications with the following groups:

- ❑ Fire Chiefs
- ❑ Presidents of all Chambers of Commerce as well as the Sooke Chamber of Commerce and the Victoria Chamber of Commerce
- ❑ Tourism Victoria
- ❑ Peninsula First Nations
- ❑ Auto Dealers
- ❑ Langford Area and Lake Protection Agency
- ❑ Auto Rentals
- ❑ Marina owners and operators
- ❑ Golf Course operators
- ❑ BCBC
- ❑ School Boards
- ❑ BC Landscape Association
- ❑ Various municipal parks and recreation departments
- ❑ Department of National Defense
- ❑ Irrigation Industry Association

8.4 Monthly Reports to Regional Water Supply Commission

At each meeting of the RWSC during the drought staff provided a series of reports addressing various aspects of the Drought Management Action Plan. (Appendix 50).

One of the key reports for decision making focussed on the probability of falling below the minimum storage and hence the need to proceed with pumping.

8.5 Telephone Hotline

A Drought Management Hotline was established to respond to residents' concerns. The Hotline number was publicized in all ads and press releases and offered live and pre-recorded information about Stage 3 water restrictions. An auxiliary clerk was hired from March 30 to September 30, 2001 to staff the Hotline, respond to questions regarding Stage 3 water restrictions, and record violations to the bylaw. Because of demand, a second auxiliary clerk was hired for a two-week period. Callers to the Drought Hotline in the first few months of Stage 3 restrictions asked for clarification of the bylaw. By June, the calls had shifted emphasis and many residents called in to report violations, to obtain information on ways to conserve water, or to find out how they could apply for the Toilet Replacement Program.

CRD Water staff kept a record of each call, and the subject of that call, in logbooks. All calls were tallied at the end of each day and any literature provided to the caller was also logged. The CRD Recycling Hotline was also provided with literature.

The Hotline number was posted on the CRD Website, the CRD Recycling Hotline, in newspaper ads and on all CRD Water publications.

Approximately 10,498 telephone calls (Appendix 51) were received by demand management staff and over 300 e-mails. These numbers do not factor in the calls/e-mails responded to by the General Manager of the Water Department and CRD Water billing staff. Overall the public was supportive of CRD Water's efforts to maintain adequate supplies of potable water but there were factions that were dissatisfied with the stringent measures imposed.

While the Hotline proved helpful, some residents expressed difficulty in notifying CRD Water of violations after hours, when the prerecorded messages would play. Extending the hours would help alleviate the frustration for the public trying to report violations and having to leave the information on an answering machine.

8.6 Website

All the demand management educational brochures and information were placed on the CRD Water Website www.crd.bc.ca/water. A detailed copy of Bylaw 2867 was also on the Website. A number of residents suggested the violation form be posted to this site. The Website was updated regularly on the water-reduction consumption limits versus actual consumption, bylaw information, and all related information. The advantage of posting this information on the Website was to provide immediate access for CRD Water employees, media and the public.

The Website also included a “*Question and Answers*” page, news releases and other literature such as the *Waterfacts* series and “*A Homeowner’s Guide to Water Use*”. Schools would have benefited from a list of exempted sand-based playing fields on this Website, and the hours of operation for the Drought Hotline could have been posted as well.

8.7 CRD Water Outreach Events and Workshops

CRD Water actively coordinated and participated in many events during the Stage 3 watering restrictions. An outdoor water efficiency display booth (Appendix 52) was produced and completed in time for the Victoria Flower and Garden Show held at Royal Roads on July 6th to 8th. CRD Water staff participated in the following events:

Event	Date
Spring Home Show	March 30-April 1, 2001
Swan Lake	April 15, 21-22, 2001
Watershed Tours	May 7-12, 2001
Happy Valley Fair	May 10, 2001
City of Victoria – Scrub Up Days	May 11, 2001
Sidney Town Hall	May 28, 2001
Department of National Defense	June 5, 2001
Sidney Days	July 1, 2001
Victoria Flower & Garden Show	July 6-8, 2001
Saanich Strawberry Festival	July 8, 2001
Oak Bay Garden Party	July 16, 2001
All Sooke Days	July 21, 2001
RootsFest	July 27-29, 2001
Fern Fest Community Celebration	August 18, 2001
Swan Lake Water Festival	August 23, 2001
Public Works Info Day	August 25, 2001
West Shore Summer Festival	August 26, 2001
Saanich Fall Fair	September 1-3, 2001
Earth Festival	September 5, 2001
Metchosin Days	September 9, 2001
Victoria Home Show	October 19-21, 2001

Watershed tours (Appendix 53), which are held annually, provide the public with an opportunity to tour the reservoir. At a display tent located near the intake tower CRD Water provided information on Demand Management, Watershed Management and Water Quality. Technical Services produced diagrams outlining the Sooke Reservoir expansion project.

Irrigation Workshops

In partnership with the BC Irrigation Industry Association, CRD sponsored 5 micro/drip-irrigation workshops (Appendix 54). The irrigation workshops were changed in focus to specifically target micro and drip irrigation systems. As these systems were the only irrigation systems compliant with the watering restrictions, public interest was keen. Although only four workshops were originally scheduled, a fifth was added to meet the demand. 242 residents attended the five micro/drip-irrigation workshops.

CRD Water co-sponsored with the Irrigation Association of BC and South Vancouver Island Parks and Ground Keepers, a Landscape Irrigation Auditor workshop targeted at irrigation specialists to obtain certification for Landscape Irrigation Auditor (Appendix 55).

Native Plant Workshops – 45 people attended three Native Plant workshops (Appendix 56) held at the Swan Lake Nature Sanctuary during October and November. The response was overwhelming; only two workshops were scheduled, but enough participants responded to fill six workshops. Three others are planned for the spring of 2002.

Drinking Water Stewardship Awards

CRD established the Drinking Water Stewardship Awards (Appendix 57) to recognize individuals, business and non-profit agencies that made outstanding contributions to the stewardship of water, including supply, quality and efficient use of water. This award was to be offered in conjunction with the already established Environmental Awards for which a ceremony is held every year. The call for nominations was advertised in the Times-Colonist and weekend editions of the News Group. This year the award to be presented by CRD Water is tailored to water conservation in keeping with the spirit of the drought and seeks to acknowledge significant contributions made by organizations, businesses and individuals within the community.

9.0 BUSINESS PARTICIPATION

It was important to inform large water users of the seriousness of the water shortage and to solicit water saving practices and if possible encourage the installation of water saving technologies. CRD Water staff met a number of organizations and the response to these efforts was for the most part very successful.

9.1 Irrigation Companies

The Irrigation Association of British Columbia worked closely with staff to provide a definition of micro/drip-irrigation systems (Appendix 58) that would be permitted under Stage 3 watering restrictions. Many of the companies in the Victoria area specialized in these types of systems so were able to market effectively their services during the drought. Additionally, some companies expanded their business by retrofitting existing irrigation systems making them compliant with Stage 3. For example, Wes-Tech Ltd. advertised “save your summer with Aqua’s Micro Irrigation Retrofit of your sprinkler system”, adding “CRD Stage 3 Water Restriction

Compliant”. Wes-Tec Ltd. clients were provided with signs they posted on their properties to avoid passersby reporting violations to bylaw or the drought hotline.

The definition of micro drip irrigation caused some confusion with some irrigation companies and hardware outlets claiming that soaker hoses met the definition. This type of irrigation equipment contains micro pores throughout the entire hose. The uniformity of application is very poor and water slowly oozes out and these systems plug easily so that water distribution becomes unpredictable. A clearer definition is needed.

Interview BC Irrigation Industry Association

In January of 2002, CRD Water staff interviewed Karen M. Hounsome the 2001 President of the BC Irrigation Industry Association. Initially, there was a lot of anger with CRD Water’s decision to impose Stage 3 restrictions. The BC Irrigation Industry worked with CRD Water to inform the industry of the bylaw and the equipment that was permitted. Industry members were quick to change the focus of their marketing and adapted to providing micro/drip installations and conversion services. Ms. Hounsome estimates that this sector conducts five million dollars of business each year in the Victoria area and overall managed a small profit in 2001.

9.2 Power Washing

At the March 21st media conference, a concerned independent businessman addressed the Regional Water Supply Commission regarding Stage 3 and how it would negatively affect his power-washing business. Addressing his concerns, the Commission permitted businesses using water as part of their process or production an exemption from the bylaw. As the March 30th news release, “Stage 3 Watering Restrictions Impact on Local Businesses” states: “Power washing prior to painting a building, surface preparation for resurfacing a driveway or stucco and washing where health and safety is a concern are examples of unrestricted uses. Washing for beautification or cleaning is not permitted during Stage 3 restrictions.”

9.3 Vessels at Ogden Point Docks

Westcan Terminal Ltd. undertook an active approach to the drought and notified all vessels berthing at Ogden Point Docks in Victoria of the water shortage. As the Westcan Head Office is in Miami (where water restrictions are implemented every year) this company had a greater appreciation and awareness of the impact of water shortages on the community and acted accordingly. Vessels were advised to:

- limit their fresh water intake from the dock
- fill up before docking in Victoria, and
- clean decks, safety boats and windows at other Ports of Call

Westcan aimed at reducing consumption from 180-225 tonnes (200–250 tons) of water per year to 50-136 tonnes (100–150 tons). Westcan produced a poster notifying visitors of the drought and asked for their support by reducing unnecessary water use (Appendix 59).

9.4 Golf Courses and Bowling Green Operators

Under the water-restriction bylaw, golf courses and bowling-green operators had to reduce consumption by 50 percent from their regular consumption during Stage 3. A letter was sent to all golf courses informing them of the requirements under Stage 3 and asking for information regarding the efforts to reduce consumption (Appendix 60). The July 11th amended bylaw stipulated that fairways and roughs could not be watered during Stage 3. The drought hotline received many calls from concerned residents about golf courses over-watering and watering in the middle of the day. Many questioned how CRD Water would be able to monitor and enforce the restrictions given that CRD wholesales water to the municipalities and the municipalities only read meters in the spring, fall and winter, after summer had passed. CRD studied the statistical water consumption information for each golf course and they discovered that of the 13 golf courses using the Municipal water supply only 4 successfully reduced their water consumption by 50% or more in 2001 compared to 2000. One golf course does not have a separate water meter and therefore we were unable to determine if they managed to reduce their water consumption. The CRD found that only one bowling-green operator successfully reduced their water consumption in 2001 by 50% or more. Two bowling-green operators do not have separate water meters and therefore we were unable to determine if they managed to reduce their water consumption. Currently, CRD Bylaw Enforcement Officers are investigating the Golf Courses and Bowling Green operators who did not reduce their water consumption by 50%. Prosecution will begin once the investigations are completed.

9.5 Car Dealerships

May 11 News Release “Stage 3 Watering Restrictions Impact on Car Dealers” announced that Regional Water Supply Chair Nils Jensen had met with the Car Dealers’ Association on May 10, 2001. President and owner of Victoria *Infiniti* Nissan stated his dealership would not wash customers’ cars after servicing, estimating a water savings of 25-30%. The dealership instead cleaned and vacuumed the interior of the cars they serviced. He was quoted as saying; “customers are already requesting this.” Dealerships such as Victoria *Infiniti* Nissan, Wille Dodge and Metro Toyota posted signs in their service departments advising their clients of this water-conservation measure. The CRD produced notices for all dealers to display in their service centres. As part of this campaign, bumper stickers and posters (Appendix 61) were distributed to all car dealerships. A random sample of larger car dealerships in Victoria indicated that they were complying with the campaign.

9.6 Marinas

Marinas posted CRD Water-produced signs (Appendix 62) at their docks, advising their patrons of the water shortage and that under Stage 3 restrictions, all vehicles (including boats and seaplanes) could only be washed with a hose equipped with a shut-off device. The sign urged patrons to limit water consumption to essential uses only.

9.7 Restaurants

As in previous years, CRD Water produced “*Just Ask*” tent cards (Appendix 63) geared towards restaurant patrons. The tent cards were designed to notify customers of the water restrictions and that servers would only serve water if the patron asked. A request form and sample was mailed to 488 restaurants.

9.8 Hotels

A hotel tent card (Appendix 64) was produced advising hotel patrons of the water shortage in the Victoria area. The Hotel Association assisted CRD Water with the text, and offered to fax the request form and sample to each of its members. The exceptional support and assistance the Hotel Association provided led to an overwhelming response from the hotels requesting the cards. Twenty hotels requested 6,805 cards, resulting in CRD Water reordering more cards to meet the demand.

9.9 Bulk-Water Carriers and Well-Drilling Companies

Bulk water carriers supplying non-municipal water to those wishing to use water for non-compliant uses during the restrictions reported similar or small increases in their hot tub and swimming pool water filling business; however, they also indicated substantial increases of up to 8500% for their watering service business (shrubs, trees and landscape watering). Local well drilling companies all reported an increase in business, ranging from 10%-25% during the drought.

9.10 Lawn Care Companies and Landscaping Businesses

Under Stage 3 restrictions, lawn watering was not permitted. Clearly this had a negative impact on lawn-care companies and landscaping businesses offering lawn maintenance. At a meeting with CRD Water staff and the BC Landscape Association, the Association criticized the bylaw and showed little willingness to work cooperatively with CRD Water. Some of the landscape companies did make the CRD Fact Sheets and A homeowner’s Guide to Outdoor Water Use available for their patrons at their garden centres. As well, a few did advertise native or drought-tolerant plantings, or water-saving devices such as rain barrels, for sale.

10.0 BUDGET

The annual operating budget for the Demand Management Program for the 2000/2001 fiscal year was \$540,140. Programs scheduled for delivery in 2001 were re-examined given the water supply crisis. Staff shifted the marketing campaign from a moderate outreach program encouraging compliance with Stage 1 restrictions and uptake of water efficiency technologies and behaviors to an aggressive campaign educating the community on a first time enacted Stage 3 restrictions and the current water supply situation. Radio and TV campaigns that were not planned now needed to be launched. The role of the students was also altered to include patrols of neighborhoods to educate residents and report on violations. This meant that additional shifts were required. Auxiliary staff were required to staff the numerous telephone inquiries adding to the expenses. Regular full time staff worked overtime to accommodate the many requests for

public speaking engagements. Printing costs and graphic arts specialists fees were much higher due to the volume of new ads and educational materials required. Additional irrigation workshops were scheduled and the native plant workshops delayed. When the native plant workshops were scheduled in the fall the response was overwhelming and additional ones were scheduled. New Home Show events were scheduled to ensure the public had access to CRD Water information and advice. Staff expedited the production of the Best Management Plan manual (Appendix 65) for the public sector. Bylaw intervention costs increased dramatically. The display booth and Outdoor Guide booklet were fast tracked to be ready for the Victoria Flower and Garden Show. The 2001 Demand Management budget of \$540,000 was redirected to the Drought Management Action Plan and increased as follows:

The Drought Management Communications Plan Budget Breakdown is as follows:

Newspaper Ads	\$ 65,300.
Radio Ads	75,125.
TV Ads	37,300.
Auxiliary Phone Staff	6,300.
Restaurant 'Table Tents'	<u>2,100.</u>
Total Additional Budget	\$186,125.

Due to the public's heightened awareness of water-conservation issues brought on by the drought, as well as additional media coverage, the Toilet Replacement Program (TRP) (Appendix 66) received more applications than initially anticipated. The TRP budget was increased to \$132,000, (1,300 rebates) from \$72,500, (500 rebates). Prior to 2001, fewer than 1000 rebates had been processed since the program was initiated in 1994.

11.0 PUBLIC FEEDBACK

Given the severity of the restrictions, the feedback from the public was extensive. Letters to the Editor in the Times-Colonist and the News Group publications (See Appendix 67) highlighted the main concerns residents had regarding the water restrictions. Many blamed development and increased population for the water shortage, while others vented their anger on perceived inequalities in the bylaw, such as playing fields or golf courses being able to water. Many wrote in offering their own water-saving tips.

The majority of residents who visited the CRD Water booth at community events, supported CRD Water's water-efficiency efforts and understood the need for the Stage 3 restrictions. Many residents incorrectly perceived Victoria as being on the "Wet West Coast" rainforest. They therefore could not understand that the area was experiencing a drought. Southern Vancouver Island is classified as a northern Mediterranean climate and is in a rain shadow, receiving 50 percent less rain than the City of Vancouver. Once people understood this, there was a greater appreciation of the necessity of water restrictions and not as much blame was directed at the CRD Water Department.

One issue that was not understood clearly by many residents was the Sooke Reservoir Expansion Project. The public was not aware of the history of the project and many believed that the CRD Water Department had not planned ahead. When informed of the history of the project and how the work had been expedited, residents were more positive in their outlook towards the CRD

Water Department. A copy of the History of the Sooke Reservoir (Appendix 68) was made available to the public. A Sooke Reservoir Storage Summary (Appendix 69) was also posted on the CRD Water Website.

Initially, there was a great deal of objection to Stage 3 and the ban on filling hot tubs from the retailers of this product. As the summer progressed, the retailers began to provide new hot-tub purchasers with a free fill-up. The hot tub retail stores were buying water from commercial bulk-water suppliers who in turn were getting their supply from well owners or going to other communities. Hot tubs are generally only filled once during the summer season and the total amount of water consumed would be insignificant.

Many residents expressed an interest in rain barrels and called the Drought Hotline requesting information on where to get them. They also suggested the CRD Water Department offer a rain-barrel rebate. As a service to the public the CRD posted on their Website, a list of all local retailers that carried rain barrels, including specifications and the costs (Appendix 70).

In response to the restrictions, some residents reactivated wells on their properties, while some affluent residents had new wells drilled on their properties. Residents utilizing well water were encouraged, by CRD Water staff, to post signs advising neighbours of this. This was done in an attempt to reduce the occurrence of telephone calls reporting bylaw violations in unwarranted situations.

On the lighter side, a satirical song “Dried Brown Lawn” (Appendix 71) was written, produced and performed by Al Ferraby of CFX 1070 and played on the local radio station throughout the duration that Stage 3 restrictions were in force. Also, the Dog’s Ear T-shirt & Embroidery Co., a local T-shirt print shop, printed and sold T-Shirts that had “I Survived the Drought of 2001” printed across the front of the shirt (Appendix 72).

Some local businesses, such as the Ocean Point Resort, found it necessary to have their lawns painted in order to simulate the luscious green grass effect.

12.0 DISCUSSION

This was the first time that Stage 3 of the bylaw had been put in place. Not surprisingly there were issues raised by the public that need to be addressed and some fine-tuning of the bylaw.

- **Staffing**

Due to the significant costs associated with the Outdoor Water Wise program, CRD Water would have been better served by hiring two-full time students to augment the additional clerical staff that responded to the Drought Hotline and attend community events when needed.

Month	Number of Calls
March 21-31	1,184
April	2,058
May	2,102
June	1,098
July	1,610
August	943
September	567
October	349
November	292
December	295
TOTAL	10,498

The above table shows the numbers of telephone calls taken on a monthly basis. These numbers do not reflect the inquiries taken by the CRD Water Wise office or Billing Department. Another suggestion was to create a procedure manual for this position. This would delineate procedures for each aspect of the job and maintain consistency with regard to information released to the public.

Staff was inundated with calls from the public wanting to know why CRD Water did not offer rebates for rain barrels. Prompted by the number of calls, another advertisement (Appendix 73) was placed in the Times-Colonist and the weekend edition of the News Group providing the estimated water savings of rain barrels versus 6-litre toilets.

The turnaround time for the violation letters was not fast enough and many times second-violation complaints were received while the initial letter had not yet been issued. The addition of a second full time clerk would have rectified this problem.

Even with the additional staffing, staff was required to work extended hours to accommodate the public demand for community events and presentations.

- **Car Washing**

Car washing, permitted under stage 3 was a very controversial issue. The commission decided to allow car washing to continue but directed staff to conduct an awareness campaign to reduce car washing voluntarily. Car washing contributes a small portion to outdoor water consumption. While the public perceives that water is being wasted washing cars, only .03% is used by commercial car washes and service stations use only .33% of total regional water use. Some service stations do not have car washing facilities on the premises, and some offer other services such as Laundromats and Mini-Marts or convenience stores.

- **Business Impacts**

No evaluation of the impact of the drought on the business community has been undertaken, although the Economics Department at the University of Victoria is evaluating the feasibility of

conducting such a study. However, the following anecdotal information provides some insight as to the impact on local businesses.

In January of 2002, CRD staff interviewed John Derrick, the Island Representative for the British Columbia Landscape Association (BCLA) to obtain information on the impact of the drought of 2001 and the Stage 3 watering restrictions as reported to him by members of the local chapter of BCLA.

BCLA members were divided into the following categories and the information gathered regarding the effects of the drought are:

- **Maintenance companies-gardeners** that provide lawn care services such as clean up, weeding, lawn trimming and fertilizing. These businesses reported a 20-50% loss in revenues. The all-round maintenance gardeners were not affected as badly. There was no effect to a 20% reduction in business during the drought.
- **Landscaping companies** were divided into 3 categories:
 - Commercial sector service providers. There was no difference in the amount of work requested from the previous years and revenues remained the same.
 - Residential sector service providers that planted and watered plants and prepared lawns but did not seed until the fall stated that work was steady and there was no revenue shortfall. There was a lot more hardscaping such as rock walls and pools, while any that relied upon plants sales were down 10% - 20%.
 - Renovation companies that redesigned landscapes mostly for an upscale clientele found that business was up slightly. Some of their clients had drilled their own wells or put in micro/drip irrigation systems.

Landscapers in general reportedly installed more micro/drip irrigation systems this year compared to previous years and there was a heightened awareness of this technology.

Local growers, nurseries or bedding plant sales companies in the Victoria area realized sales down by as much as 60% and as low as 40%. Mainland growers shipped less plant product to the Victoria area.

Retailers expected business to be down slightly. Fertilizer sales were down 50% - 60%. Plant sales were down 7% - 20%.

Mr. Derrick felt that the drought presented a good opportunity to educate people on the importance of proper soil preparation such as mulching and composting.

13.0 RESULTS

The combination of a comprehensive and aggressive communications plan, along with the implementation of Stage 3 watering restrictions, were highly effective in meeting the water reduction limit of 20 to 30%, established under the Drought Management Action Plan during 2001. From April to September inclusive, a 27.8% water reduction was accomplished. The

table below provides a comparison of the water consumption limits set, the actual water use and ten-year consumption data.

MONTH	LIMIT	ACTUAL	% BELOW LIMIT	NORMAL AVERAGE	% BELOW AVERAGE
April	30	27.38	8.7	30.97	11.6
May	34	29.76	12.5	40.21	26.0
June	37	32.01	13.5	47.24	32.2
July	40	37.73	05.7	54.90	31.3
August	40	33.25	16.9	52.25	36.4
September	34	32.50	04.4	40.81	20.4
October	30	27.20	09.3	31.76	14.4
November	28	25.47	09.0	28.78	11.5
December	27	24.87	07.9	27.85	10.7

The Sooke Reservoir fell to 17.96 billion litres (3.95 billion gallons) in early October and there was a turbidity event caused by high wind and wave action on exposed benthic sediments (almost 1 metre or 3.3 feet above the 1998 low level). Other than this one event, water quality was good. A Sooke Reservoir Storage Summary chart (Appendix 74) provides a volume summary from September through November. The water levels in the reservoir continued to drop until October 26 and the Water Supply Commission decided to maintain Stage 3 watering restrictions until there was significant recharge in the reservoir. The temporary pumping station was not required.

14.0 FINANCIAL IMPACT

From CRD Water's perspective, revenue losses totaled \$2.5 million. On the positive side, community awareness of where water comes from and adoption of water-conserving practices and technologies was expedited. Staff anticipates a 10% reduction in water consumption in the year 2002 as a direct result of public awareness and participation.

15.0 RECOMMENDATIONS

The following recommendations are based upon an experience with Stage 3 restrictions and feedback from the public.

1. Car washing should be restricted under Stage 3.
2. The Bylaw Enforcement Officers need to be able to use their discretion in circumstances of blatant violation of the bylaw and have the authority to issue a ticket on the first offence.
3. Allow power washing prior to the application of a finishing material where the structural integrity of a building/surface would be jeopardized.
4. Allow the filling of hot tubs during Stage 3 water restrictions.
5. Amend the bylaw to clarify the definition of micro or drip irrigation.

6. Train Bylaw Enforcement Officers on landscape irrigation.
7. Train all staff who respond to public inquiries on the bylaw, water efficiency technologies and practices, communication, and CRD policies. This should include the CRD Recycling Hotline staff.
8. Extend the hot line hours from the current hours of 8:00 a.m. to 4:30 p.m. Monday to Friday, to 7:00 a.m. to 7:00 p.m. Monday to Saturday.
9. Compile a list of the All Weather Playing (sand based) fields within the CRD, including the street address and name of the field, etc., and place on the Website for public information.
10. Place the violation form on the Website for the public's access.
11. Hire two full time students to assist with the telephone inquiries, to process violation reports and staff public events.