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Appendix K

IRMP Stakeholder Engagement

MEETING NOTES

Subject:	Summary of Integrated Rainwater Management Plan Internal Stakeholder Kickoff Meeting
Meeting Date:	June 4, 2019
Location:	Native Sons Hall – Lodge Room, Courtenay
File:	3222.0044.03
Prepared By:	Vignesh Murugesan, Jody Rechenmacher

Attendees

Rod Armstrong	Manager of Asset Management Technical Services, City of Courtenay
Annie Berard	Manager of Financial Planning, City of Courtenay
Beth Brooks	Water Technician, City of Courtenay
Lisa Butler	Manager of Engineering Strategy, City of Courtenay
Rich Feucht	Development Engineer, City of Courtenay
Kerby Fisher	Foreman, Sewer/Drainage Department, City of Courtenay
Nancy Gothard	Policy Planner, City of Courtenay
Averlee Howie	GIS Technician, City of Courtenay
Mike Kearns	Manager of Parks Maintenance, City of Courtenay
Ryan O'Grady	Director of Engineering Services, City of Courtenay
Tatsuyuki Setta	Manager of Community and Sustainability Planning, City of Courtenay
Dave Snider	Director of Recreation and Cultural Services, City of Courtenay
Angela Spence	Engineering Technologist, City of Courtenay
Chris Thompson	Technologist, Asset Management, City of Courtenay
Jody Rechenmacher	Community Infrastructure Consultant, Urban Systems
Glen Shkurhan	Senior Engineer, Urban Systems

1. Meeting purpose and objectives

The objectives for the workshop were as follows:

- Internal stakeholders are clear on what an Integrated Rainwater Management Plan (IRMP) is and how it may connect to their work.
- Potential issues, opportunities or questions relevant to the IRMP are identified to guide data collection and analysis stages.
- Stakeholders provide input on what the end deliverable could look like to best support them in their work.
- Expectations about process timeline and extent of engagement is clear.

2. IRMP Overview

Glen Shkurhan delivered a presentation about IRMPs and the scope of the City's IRMP work in 2019 (as well as future phases). The presentation is attached in Appendix A.

3. Issues, opportunities, and questions

To understand the key issues and opportunities associated with the IRMP from the perspective of other City departments, the attendees were asked four key questions. Each attendee recorded their reponses on sticky notes and placed them on the appropriate flip chart with the corresponding question. The following is a transcription of what input was provided.

Question 1: What other work might this align with?

The attendees identified relevant work at the City (either historic, ongoing, or planned) that the IRMP could align with. Work identifed is as follows:

- Official Community Plan Update
- Water Treatment Project CVRD
- Parks and Recreation Master Plan
- Municipal Natural Assets Initiative
- Flood Control Planning
- Bylaw updates for Oil Grit Separators requirement
- Stormwater Operation and Maintenance procedures for ponds
- Dike Replacement Strategy
- SDS Bylaw Update
- Zoning Bylaw
- Local Area Plan
- Courtenay Riverway Study of 1988
- Climate Emergency Strategy
- Arden Local Area Plan
- Individual Parks Plans and Natural Area Management Plan
- Water Smart Action Plan (water conservation plan)
- Asset Management Plan/Strategy
- 5th Street Raingarden Upkeep
- Development Permit Guidelines
- Sewer Master Plan
- Financial Plan
- Capital Plan
- Urban Forest Strategy

Question 2: What issues are you aware of in the watershed or with the drainage infrastructure that should be considered in this process?

The Issues identified by attendees are as follows:

Data related concerns

- Lack of data and access to reliable data
- Concern about lack of database and monitoring

Concerns about regulations

- Current infrastructural inadequecy and inconsistency with updated IDF curves in SDS bylaw which tries to account for climate change.
- City regulatory barriers to alternative source control on public land
- Lack of water quality considerations and requirements for existing residents and new developments

Environmental concerns

- Lack of water quality monitoring at stormwater outfalls located near waterways
- Climate change as an unknown parameter
- Overuse of sand and salt on private roads and inability to police this act
- Erosion issues in estuary and other protected habitats
- Declining riparian health. Example- Millard Piercy, Brooklyn and Glen Urquhart creeks
- Fish habitat
- Unnecessary rapid conveyance of water

Concern about infrastructural constraints and other resources

- Stormwater maintenence needs
- Inadequate stormwater utility funding
- Lack of adequete staff and resources for additional monitoring and implementation of initiatives
- Growth opportunities and limitations
- Aging infrastructure (like pipelines, culverts)
- Lack of awareness of stormwater infrastructure issues

Views and interests

- Competing interests between developers and environmental groups
- Public views ranging from “Private is Private” attitude to land management to increased awareness

<u>Question 3: What opportunities does this work present?</u>

The attendees identified the following opportunities the IRMP work presents:

Relationship building

- Improved relationships with external stakeholder groups like environment stewardship groups
- Better relationships between city departments

Path to environmental sustainability

- Increase in urban canopy
- Hydrologically manage wetlands
- Increasing infiltration rates and making water quality better
- Increased awareness of the value of wetlands
- Improved environment protection. Example – improved estuary health
- Improved sustainability of planned and natural areas
- Possibility of connecting water conservation initiatives and landscape design

Inform other ongoing and future work

- Connecting with existing plans and strategies that include rain water management to help take actions
- Neighborhood planning units in OCP to roughly conrrespond to watershed boundaries
- Comprehensive data collection and monitoring of water networks city or region wide
- Inform land use and concurrent OCP process
- Stormwater utility feasibility study
- Infrastructure condition and risk documentation
- Inform 5-10 year capital plan
- Update SDS Bylaw
- Provide clear direction for development proposals

Funding opportunities

- Dedicated funding for stormwater related initiatives
- Optimization of taxation model and revenue
- Updating Storm Development Cost Charges (DCC)
- More access to funding opportunities

Public image and engagement

- Better public messaging
- Increased public awareness and empowerment by shared vision for their watershed

<u>Question 4: What questions do you have about the state of the watershed or drainage infrastructure that would be helpful to be answered through this process?</u>

Current state of watershed

- How has development impacted our watersheds?
- What are the upstream impacts Courtenay cannot control?
- What happens to watersheds if the IRMP is not developed?
- Provide clarity on the role of natural lands within the context of a watershed
- What are the ecological parameters/baseline conditions prevalent in riparian systems in terms of quality of water, benthics and biodiversity?
- What are the thresholds for landuse? (informing land use options which could lead to OCP review)

Water Quality

- What is the water quality across the watersheds?
- Will water quality considerations be implemented through bylaw/policy?

State of Infrastructure

- Is major infrastructure adequately sized/designed to meet population growth?
- What is the condition of pipe systems and what are the capacity constraints?
- What is the design and function of existing stormwater detention ponds?
- What are the rates of inflow and infiltration?

Mitigation and Adaptation Information

- How to mitigate damages already done to key watersheds?
- What is the best way to tackle this taking a regional approach?

Public Engagement and Awareness

- What is the level of public engagement within each watershed?
- What is the level of public awareness about the effects of untreated water on streams and estuary?

Funding information

- Provide better clarity on how to implement existing bylaw stormwater requirements where existing infrastructure is inadequate and when it is cost prohibitive to change DCC?
- How will we pay for all of the upgrades that we need to make in the short term?
- Need for a clear vision and a set of data showing what exists, where it exists and what needs to be done to improve the conditions

4. Envisioning the end deliverable

This section of the workshop was geared towards gathering input on the end deliverables. The questions attempted to envision how the end deliverables would be employed and what ought to be included to make it relevant and useful for the internal stakeholders.

Question 1: What do you see as conditions for success?

When it comes to the OCP revision (2020) and the Zoning Bylaw update (2022):

- Climate crisis lens should be used
- GHG emissions and water need to be the focus
- Housing needs assessment should be used to inform land use
- Neighborhood planning unit should correspond to watersheds
- Coordination between different projects should be ensured
- Watershed health from IRMP should be used to inform the process
- Public engagement should be a crucial element

When it comes to O & M Practices:

- Practices for ponds should be included as none exist presently
- IRMP should inform the practices
- Coordinating information gathering and use is crucial
- Understanding how parks impact O&M will add value
- Potential for modification of ponds can be explored
- Understanding the impact of snow and ice control on streams will help in taking appropriate measures
- Knowing cost associated with managing sand added to roads will inform the practices
- Quantify level of service for all initiatives

- Lack of resources for oil and grit separators
- Need for more co-ordinated discussions

In the case of the Sewer and Water Master Plans:

- Coordinating capital projects should be a priority
- Inflow & Infiltration should be considered
- Aligning land use use information is important
- Ensuring funding at a sustainable level is crucial

Question 2: What would make the end deliverable most useful to you?

Attendees would like to see an end deliverable to the IRMP work that includes:

- Updates on recommendations from past studies
- Potential projects for DCC bylaw update
- A clear implementation plan outlining timeline and resources required
- This project delivered within 1.5 -2 years timeline
- Recommendations for future studies
- Public/Council focused version of (or component to) the plan

5. Communication and Engagement Strategy

The objective of this discussion was to inform how City departments wanted to be engaged throughout the rest of the project, and to identify any specific concerns related to the project. It also facilitated spelling out of concerns related to this project.

Question 1: How would you like to be engaged moving forward?

- The interdepartmental session was appreciated and more one on one engagement/discussion for technical alignments was suggested
- Operations department wants opportunities to provide input on maintenance and operations impacts through out the process
- Regular status updates refering to action items for stakeholder understanding and accountability
- Email with project updates was emphasized
- Meetings need to be convened when project milestones are reached

Question 2: With regard to this project, what are the fears and concerns?

- Changing scope figured among the major concerns
- Potential for special interests guiding or disrupting the focus of the report
- Council approving the strategy without fully understanding the operational resources required
- Confidence in the direction this project is headed in was expressed

6. Close and Next Steps

Next Steps (data collection with update in the fall)

The input received in this meeting will help to inform the scope of data collection and the approach for engaging/ coordinating with other City departments throughout the remainder of the project.

The bulk of the scope for 2019 will focus on data collection, which will inform an understanding of the state of the watersheds in the City. Future work in 2020 (pending funding approval) will focus on developing strategies for maintaining and improving watershed health.

An update will be provided to workshop attendees in late Fall 2019, once the data collection has been completed. Other more targeted engagement and consultation may take place with individual departments throughout the year as necessary.

If you have any questions or comments, please contact Lisa Butler, Manager of Engineering Strategy.

The preceding is the writer's interpretation of the proceedings and any discrepancies and/or omissions should be reported to the writer.

URBAN SYSTEMS LTD.

Jody Rechenmacher, P.Eng.
/vm

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City of Courtenay

Integrated Rainwater Management Plan Stakeholder Workshop

Tuesday, June 4, 2019

What We Heard Summary

PURPOSE:

The purpose of the stakeholder session was to increase awareness and understanding of the Integrated Rainwater Management Planning process and timeline, to acknowledge and build community capacity for working together and to gather input on identified successes, challenges, and what data currently exists.

FORMAT:

The session was by invitation to those (approximately 40 groups) currently doing work within the Comox Valley around watershed stewardship and stormwater management. Courtenay has an active community of people and agencies working in this field who have local knowledge and history that can benefit the planning process.

The session was held Tuesday, June 4, 2019 from 9 a.m. – 11 a.m. at the Native Sons Hall. 30 people from a variety of Courtenay and Comox Valley organizations and companies attended. A list of workshop attendees is provided in Appendix A.

Attendees were invited to come for 9 a.m. to have coffee and socialize, with the formal agenda starting at 9:15 a.m. Staff from City of Courtenay, Urban Systems (engineering consultants), and Tavola Strategy Group (public engagement consultants) facilitated the event. A detailed presentation was provided by Glen Shkurhan of Urban Systems, supported by Katie Hamilton of Tavola Strategy Group. The presentation was followed by round-table discussions focusing on opportunities, challenges, desired outcomes, and data related to rainwater management in the area.

The format provided an opportunity to update everyone at one time with the approach that is being taken and the associated timelines, it also provided opportunity to build relationships between City staff, the Urban Systems team and stakeholder groups early in the process. The project team hopes to benefit from the community's perspective on what is working with regard to rainwater management, where more effort is needed, and in particular what data/information is available and can support understanding the state of the watersheds within the City.

Attendees were seated at round tables. Each table had a facilitator, flip chart and paper and pens available. An "Ideas Wall" was placed on the wall to encourage attendees to note what excites them about developing an Integrated Rainwater Management Plan and what questions they would like answered through the process.

WORKSHOP FORMAT

WHAT WAS SHARED:

The IRMP PowerPoint presentation given by Urban Systems is attached as Appendix B.

WHAT WE HEARD:

30 people participated in the round-table discussions and hundreds of comments were noted from the four tables of participants. The discussion notes are summarized below. A number of themes emerged from the discussions:

What's working well in the Comox Valley in terms of rainwater/stormwater management?

- There were several mentions of the positive relationships and collaboration that is occurring within the region and the potential for partnerships and education that exists amongst groups, schools and the community.

- Several participants highlighted specific projects that are working well, including specific properties such Home Depot, Walmart and the hospital and areas such as Brooklyn Creek, Arden, and Kus-kus-sum. Some mentioned demonstration projects such as the new Fifth Street Rain Gardens and there were mentions of improved regulatory tools within the valley.

What challenges do you see related to rainwater management or the IRMP process?

- Participants highlighted inconsistency amongst the various jurisdictions and amongst the many roles within development and building process, including Council and staff, developers and home owners.

- Many were keen to see progress occur and some felt that rainwater management efforts have typically been postponed to future initiatives and need to be addressed.

- Several noted there is greater education and awareness needed of the overall watershed, natural systems and the downstream impacts of individual actions. In addition, several felt that the current standards are seen as the minimum requirements that need to be met and should be strengthened.

- In terms of external factors, climate change, sea level rise and flooding were identified as top of mind challenges.

What objectives/outcomes would you like to see from the IRMP process? e.g. policies, programs, infrastructure.

- Several mentioned a desire to see greater consistency amongst all agencies within the watershed in terms of standards and policies and implementation. There were specific mentions of updating the standards in the Subdivision and Servicing Bylaw, and introducing Best Management Practices to guide development activities.

- Many felt greater education and awareness is a necessary component to both watershed education and policies and standards.

- In terms of the IRMP itself, some felt it should be bound by the watershed boundary and that it should be adaptive over time.

- There were singular mentions of the need for residential incentives, increased monitoring and enforcement to ensure private and public infrastructure is in compliance.

What excites you about the Integrated Rainwater Management Plan?

- There were multiple comments about the recognition and respect for watersheds/riparian areas, and pleased with the possibility of a watershed approach to development and water management. Some comments also related to the potential for retaining functional wetlands and collecting and maintaining baseline data.

Do you have any remaining questions or comments about the Integrated Rainwater Management Plan?

- The importance of having representation and data from the Brooklyn Creek Watershed Group was noted, as was the need for broad community awareness about the project objectives and schedule.

- The need for specific involvement from private land holders including forestry and agriculture was highlighted, and a request for ongoing meetings with stream keepers after the printed data is available.

The detailed notes from the table top discussion are included as Appendix C.

WHAT'S NEXT:

All input will now be considered in more detail and will inform further refinement of the integrated rainwater management planning process.

Throughout the summer and early fall, the project team will be pulling together information that is available and relevant to the scope of this study, and filling data gaps by conducting additional data collection. Together, this information will provide a comprehensive understanding of the current state of the watersheds within the City of Courtenay.

Another stakeholder session is planned for late Fall of 2019, to share an update based on information collected.

Further data analysis and development of strategies to maintain and improve watershed health is planned for 2020, subject to funding approval.

Information about the Integrated Rainwater Management Plan can be found at www.courtenay.ca/irmp

APPENDIX A: Workshop Participants

1. Dianne Hawkins, Comox Valley Chamber of Commerce
2. Erin Nowak, Comox Valley Conservation Partnership/Land Trust
3. Jim Boulter, Comox Valley Naturalists Society
4. Murray Little, Comox Valley Naturalists Society
5. Robyn Holme, Comox Valley Regional District
6. Darry Monteith, Comox Valley Regional District
7. Howie Siemens, Comox Valley Regional District Emergency Response
8. Rick Waldhaus, Crown Isle
9. Meaghan Cursons, Cumberland Community Forest Society
10. Dusty Silvester, Current Environmental
11. Rupert Wong, Current Environmental
12. Sandra Viney, Downtown Courtenay Business Improvement Association
13. Tanis Gower, Fernhill Consulting
14. Richard Cave, Koers + Associates
15. Monty Horton, K'ómoks First Nation
16. Carol McColl, K'ómoks First Nation
17. Chris Durupt, McElhanney
18. Bob Hudson, McElhanney
19. Steve Williams, Millard Piercy Watershed Stewards
20. Jill Hatfield, Ministry of Agriculture
21. Kathryn Clouston, Morrison Creek Streamkeepers
22. Tim Ennis, Nature Conservancy
23. Shelly Ashfield, Town of Comox
24. Marvin Kamenz, Town of Comox
25. Craig Perry, Town of Comox
26. Caroline Heim, Tsolum River Restoration Society
27. Pam Kumar, Vancouver Island Health Authority
28. Rob Crisfield, Village of Cumberland
29. Ken Roger, Village of Cumberland

Staff and consultants:

1. Lisa Butler, City of Courtenay
2. Chris Davidson, City of Courtenay
3. Ryan O'Grady, City of Courtenay
4. Angela Spence, City of Courtenay
5. Katie Hamilton, Tavola Strategy Group
6. Tim Lutic, Urban Systems
7. Jody Rechenmacher, Urban Systems
8. Glen Shkurhan, Urban Systems

APPENDIX B: PowerPoint Presentation

Integrated Rainwater Management Plan

Presentation to Stakeholder Group (June 4, 2019)

LINKAGES TO OTHER DOCUMENTS AND INITIATIVES

RELATIONSHIP BETWEEN LAND USE, INFRASTRUCTURE, AND ENVIRONMENT

Runoff
Conveyance

Holistic management of systems and processes (built and natural)

“historic-drainage solutions are insufficient and transfer problems downstream to the detriment of our environment and water resources”

1970’s	1980’s	1990’s	2000’s	2010’s
drainage	Puget Sound starts to innovate	ecological push; EPA laws	dawn of IRMPs	IRMP 2.0

why

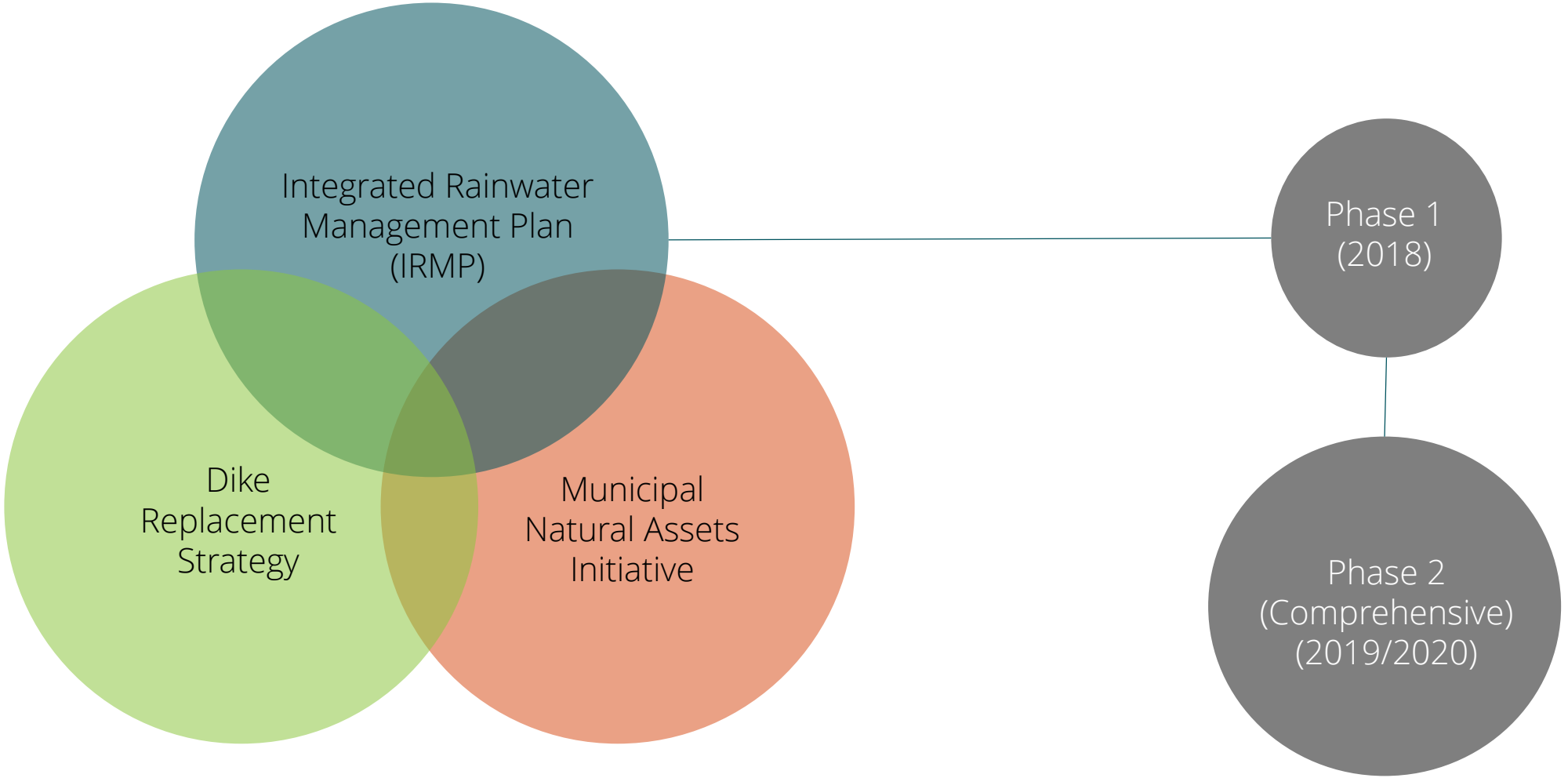
do an IRMP?

Satisfy municipal responsibility for *sustainable* service delivery

Satisfy Provincial and Federal regulations for habitat protection

A response to community *values*, *needs*, and *priorities*

LINKAGES TO OTHER DOCUMENTS AND INITIATIVES



International Council for Local Environmental Initiatives (ICLEI)
Climate Change Adaptation Strategy - Stormwater

WHY DO AN INTEGRATED RAINWATER MANAGEMENT PLAN?

"ENACT PERFORMANCE-BASED BYLAWS TO PROTECT WATERSHEDS AND RIPARIAN HABITAT AREAS, AND TO CONSIDER ALTERNATIVE STORMWATER MANAGEMENT PRACTICES."

- The City of Courtenay's OCP

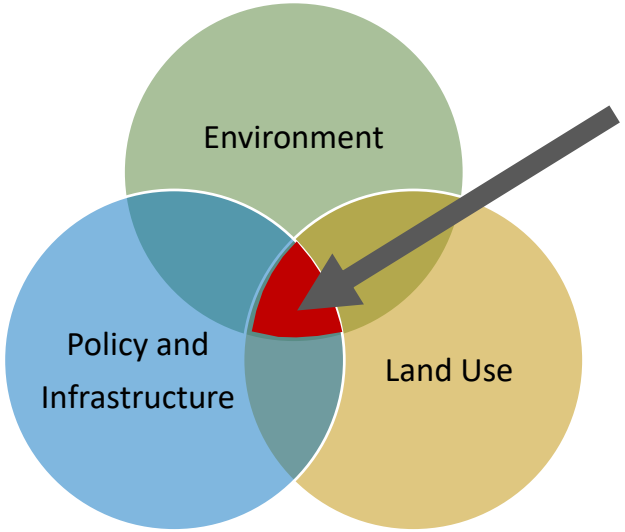
"GREEN INFRASTRUCTURE PROVISIONS SUCH AS RENEWABLE ENERGY, GREEN ROOFS AND/OR INNOVATIONS IN STORMWATER MANAGEMENT THAT COULD CONTRIBUTE TO BOTH GHG REDUCTIONS, PILOTING OF TECHNOLOGICAL INNOVATIONS AND COMMUNITY EDUCATION"

- 2010 OCP amendment

what

is an IRMP?

PURPOSE (DESIRED OUTCOME)



A comprehensive look at policy, procedures, regulations and infrastructure to guide community growth in an environmentally respectful and sustainable manner.

Must be pragmatic and achievable - grounded in realities of implementation.

Consider implementation and operations throughout IRMP process.

Need champions and stakeholder buy-in.

Education.

(people often don't support what they don't understand)

A living document.

how

to do an IRMP?

DATA AND INVENTORIES OF AN INTEGRATED RAINWATER MANAGEMENT PLAN

Hydrometric

Rainwater infrastructure

Hydrogeology / geotechnical

Land use

Water quality and benthic community sampling

Riparian corridor

Biophysical
(Aquatic / Terrestrial)

ANALYSIS AND EVALUATION OF AN INTEGRATED RAINWATER MANAGEMENT PLAN

Hydrologic and hydraulic analysis

Ecological health

Natural hazard assessment

Land use alternatives

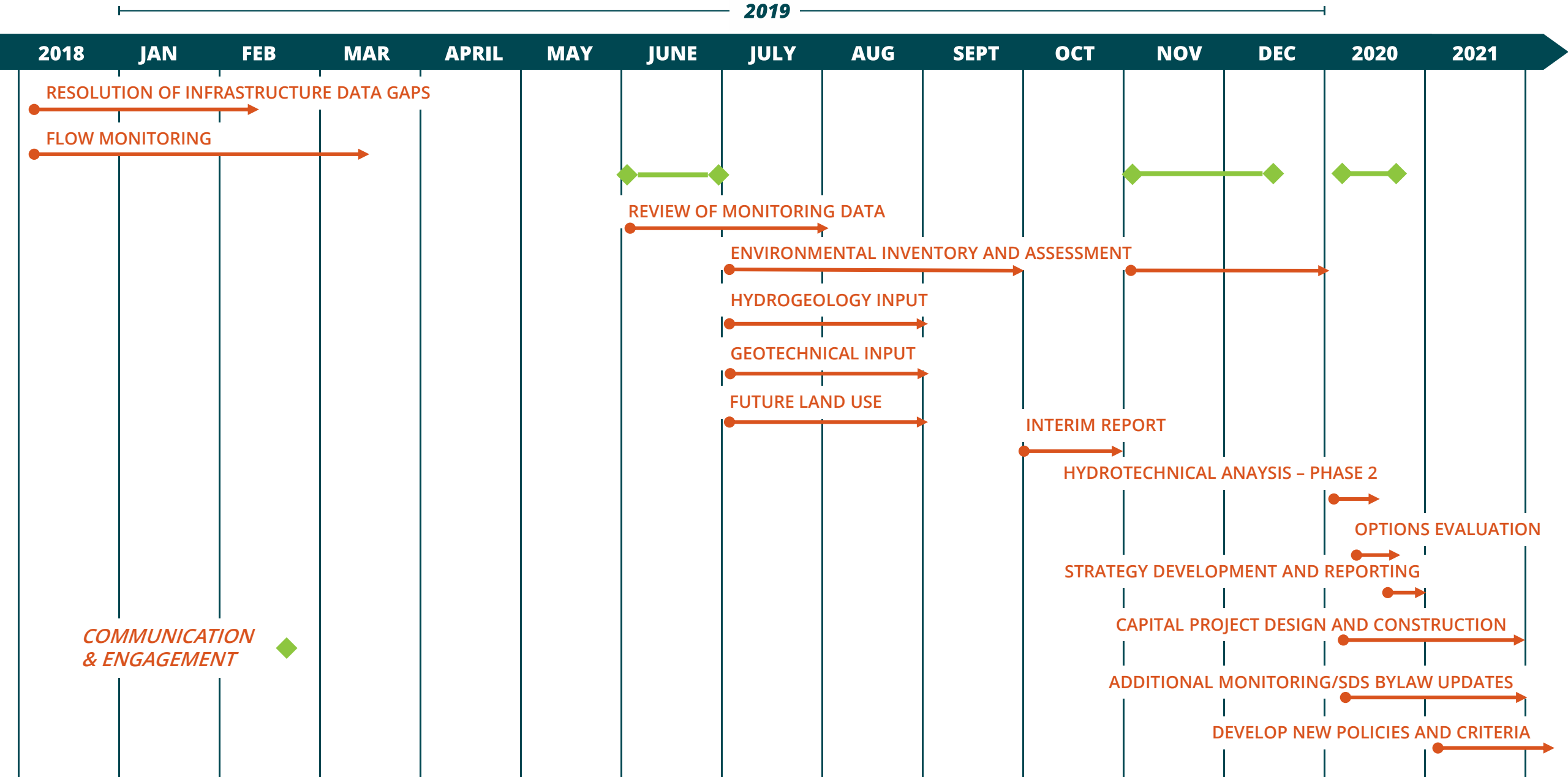
Erosion potential

Rainwater management alternatives

INTEGRATED RAINWATER MANAGEMENT PLAN PROCESS

STAGE 1	STAGE 2	STAGE 3	STAGE 4
What does Courtenay have?	What does Courtenay want?	How does Courtenay put the IRMP into action?	How does Courtenay stay on target?
Data Collection	Analysis	Strategy	Adaptive Management

SCHEDULE AND MILESTONES



Communication and Engagement

PURPOSE OF PUBLIC ENGAGEMENT

Communications and engagement plan will engage stakeholders and public to understand values, current issues and potential actions that will inform an Integrated Rainwater Management Plan for Courtenay.

Consultation is integral to ensuring that an Integrated Rainwater Management Plan meets the needs of the community.

The engagement strategy outlines how the City will engage community groups, key stakeholders, City staff, other governments, institutions, First Nations and the public in the planning process.

Early engagement of 34 stakeholder groups occurred to help inform the design of the engagement process. 18 responses were received.

1. *What are your organization's top priorities?*
2. *How do you/your organization want to be engaged?*
3. *Who else should we talk to?*

What We Heard

- Strong interest in better understanding condition and capacity of Courtenay's infrastructure
- Need for cross-connections with sewer system to be identified and addressed
- Place priority on health of watershed and aquifer, and marine health including source control methods
- Desire to see clear, simplified and transparent policy and guidelines regarding stormwater management on private land
- There is high interest in partnership and working together.
- Working groups, open houses and workshops were common suggestions for engagement, and a number of groups invited the Courtenay team to attend one of their meetings and present.

Questions?

What is working well in Comox Valley in terms of rainwater/stormwater management?

What challenges do you see?

What objectives/outcomes would you like to see?

E.g. : Policies, programs, infrastructure

What data is being collected and where?

Thank-you

APPENDIX C: Notes from facilitated table-top discussions

TABLE #1

What's working well in Comox Valley in terms of rainwater/stormwater management?

- Stronger relationships between industry/municipalities and streamkeepers/stewardship groups
- Town of Comox – good understanding of storm infrastructure
- Brooklyn diversion working well to address erosion + protect fish habitat
- Crown Isle Shopping Centre – bio swales, permeable pavers. Seems to be working well through collaboration with Crown Isle + City of Courtenay
- Home Depot + hospital
- 5th street complete St. rainwater gardens
- Anderton corridor flooding mitigation

What challenges do you see?

- Revision to engineering standards – line up to actual goals of Integrated Rainwater Management Plan (IRMP)/other water plans
- More monitoring needed
- Linkages with other plans (city-wide and within the region)
- Better understanding of natural systems
- Changing bylaws + guidelines with the understanding that things will continue to change – realistic and achievable
- Understanding of downstream impacts/ impacts of implementing new technologies
- Continual adaptation – goal post always moving
- Change + uncertainty for development community
- Tendency for these plans to be too far reaching – focus on areas that need storm water management, realities of implementation
- Division between sub divider, developer, individual home owners – rules need to apply across the board
- Sea level rise – hard time draining water/problems with outfall function

What objectives/outcomes would you like to see? e.g. policies, programs, infrastructure

- Capital projects related to storm water infrastructure
- Residential incentive programs to encourage residents – water barrels, rain gardens
- Disconnecting roof leaders (comes with challenges)
- Consistency throughout jurisdictions on managing stormwater (bylaws, incentive programs, etc) – specifically in overarching objectives
- Consistency in Intensity Duration Frequency (IDF) curves across jurisdictions?
- Consistency in assumptions used in stormwater modeling/development of stormwater plans
- City to publish pre-development flows for various watersheds
- Town of Comox – get Brooklyn creek back to predevelopment flows – requires coordination with City of Courtenay
- Recognition that historical existing issues are expensive/extensive to address – impact to developers to fix retroactivity

What data is being collected and where?

- Brooklyn Creek – Ministry of Environment is collecting data
- Ministry of Transportation and Infrastructure collecting regional data (culverts, etc)
- Airport no longer collecting hourly rain data

- City needs more rain data
- IslandWeather.ca (elementary schools collect rain data – can download 1 min rain data)
- Flow data + rain data – priority for development community
- Town of Comox – future development in North East – coordinate equipment/monitoring with other jurisdictions?
- Data accessibility – OPEN DATA – each local gov.t making data easily accessible (website?) to developers/interest groups

TABLE #2

What's working well in Comox Valley in terms of rainwater/stormwater management?

- Collective interest
- Input from active stewardship groups – full coverage coordinated, funding from Real Estate Foundation of British Columbia (REFBC)
- Hydro dam to control flows
- Future initiatives (Kus-kus-sum) – airport lagoons, Brooklyn creek
- Future development providing opportunity to deal with issues
- Detention pond at Walmart (functional)

What challenges do you see?

- Shellfish poisonous
- Ideas for stormwater management often not implemented to save costs (bare min)
- Cumulative impacts
- Historic legacy of inappropriate plan development
- Channelization of river – flooding
- Lag in implementing best management practices (BMPs) from engineering – previously restricted by bylaws (outdated) and design standards
- Use of historic IDF curves
- Challenges in requiring home owners/private property to maintain onsite systems
- Lack of public knowledge of watershed function

What objectives/outcomes would you like to see? e.g. policies, programs, infrastructure

- Edible shellfish
- Enhanced buffers on riparian areas
- Update Subdivision and Development Servicing (SDS) bylaw with BMPs – not just bare minimum
- Consistency in policy and activities between jurisdictions (sub-basin plans/coordination)
- Bylaw enforcement and ensuring proper maintenance of infrastructure (private + city)
- Adaptive IRMP that can use new info as it is improved
- Focus on infiltration rather than detention
- Land acquisition to protect key assets

What data is being collected and where?

- Morrison creek – headwaters flow data
- Upper Millard Piercy – flow data
- Comox Valley Regional District (CVRD) – Comox lake watershed
- Weather station on school in Cumberland
- Habitat assessments by stewardship groups (most watersheds)
- CVRD – grant funding to collect data on aquifers
- Eel grass mapping – protect watershed
- Water turbidity (Vancouver Island Health Authority (VIHA)) and reported illness

- Migrated salmon (in/out) – Department of Fisheries and Oceans (DFO), stewardship, K'ómoks First Nation (KFN)
- Hydro – flow, fishery

TABLE #3

What's working well in Comox Valley in terms of rainwater/stormwater management?

- Anfield Apartments
    - Underground infiltration galleries
    - Car park runoff
        - i) managed on-site
        - ii) estuary border
    - Watershed group had interaction with developer
- Hospital
- Water storage underground
- Demonstration projects
- Getting groups together (Communications + Engagement)
- Using knowledge of groups
- Riparian buffers acquired around Arden Area – positive
- Tree Bylaw – related to Urban Forestry – true that it exists – need to revisit to be effective on private land
- Revisiting strategies
- Walmart outlet to estuary – Wet land before estuary – 2 stage

What challenges do you see?

- Arden area west Courtenay new developments surrounding Piercy Creek
- Non-functional storm water/fish habitat, Piercy Creek
- Planners + developers to work beyond the site
- Front loading of engagement prior to development, no follow up
- Council not understanding on what's on ground
- Effectively communication challenges (staff, council)
- Municipality planning- big picture- before developments happen
- Municipal needs to get infrastructure in place before development occurs
- What is bare minimum – not adequate
- Lack of capacity- municipality to review/implement
- Issue keeps getting passed to next initiative- i.e. SDS- not address – will be Official Community Plan (OCP)
- Source control- list of options needed
- Ponds need to be planned out
- City needs to know where infrastructure is/maintenance
- Lack of design criteria
- Timeline- slow to implement

What objectives/outcomes would you like to see? e.g. policies, programs, infrastructure

- No backcheck/monitoring for success of development/storm water strategies- need to implement post development
- More interaction back with check designer/developer/streamkeepers/municipal – on an ongoing basis
- Water programs for steward to implement- i.e.: Nanaimo- feed into provincial database
- Plan laid out macro + micro scale – certainty

- Monitoring pre + post development
- Watershed boundary for IRMP
- Collaboration - don't duplicate process
- 30 metre riparian buffer
- All urban streams with function riparian areas
- Big picture – updated SDS with clear standards that maintain nat. hydrograph from pre development
- Discuss what pre-development means
- Impervious targets

What data is being collected and where?

- Province hydrometric station between Willemar and 1st Street
- Flow monitor request list has been sent to the City's Public Works Department - streamkeepers put problem areas on map and identified where stream health needed monitoring
- Streamkeeper data – Comox Valley Land Trust requested 10-12 monitoring locations from Public Works
- Desperate need for central data repository - follow Regional District of Nanaimo strategy for working with stewardship groups for data collection and compilation
- Morrison Creek - work in headwaters veg + aquatic species
- Invasive species person in town (prov)
- Air park invasive species - 20 years data on website – Comox Valley Nature
- Some stations through CVRD measuring water quality data
- Timeline info circulated to group, ie: no input in flow stations (2018)

TABLE #4

What's working well in Comox Valley in terms of rainwater/stormwater management?

- Awareness + education
- Importance of water sheds
- Development Permit Areas + regulatory tools – Cumberland
- Water balance model
- Shared watershed-inputs
- Puntledge park
- Watershed model – schools
- Partnership + collaboration

What challenges do you see?

- Existing buildings – grey water usage
- Multi-jurisdictional watersheds
- Private forestry
- Lack of water in streams
- Maintenance – Ministry of Transportation and Infrastructure responsibility?
- Poorly done development – retroactive
- Where water goes – why?
- Flash/drought – Climate Change
- Water quality – perspectives
- Lack of awareness
- Agricultural lands – can be part of solution
- Addresses future growth per Regional Growth Strategy

What objectives/outcomes would you like to see? e.g. policies, programs, infrastructure

- Watershed mapping as public education tool
- Implementation – multiple levels
- Beyond Courtenay
- Integrated watershed protection – Regional function
- Public engagement monitoring – informal tracking
- Greater awareness + education of public
- Water security – retention
- Story telling + place making
- Standardization of data collection – integration of knowledge holder data

What data is being collected and where?

- Tsolum temp + groundwater monitoring – flows, fish migration
- Proper functioning condition – upper watershed
- River forecast
- CVRD water demand model
- CVRD coastal hazards – SLR, flood construction, costal erosion, mapping
- Snow/rain monitoring – upper watershed. Aquifer impacts, wells, wetlands, ponds…, CVRD, HAKAI Institute, Vancouver Island University (VIU)
- LiDAR – GeoBC- August
- Wetland performance – Cumberland
- Look to other successes

What We Heard

Stakeholder Engagement Summary Report

INTEGRATED RAINWATER MANAGEMENT PLAN

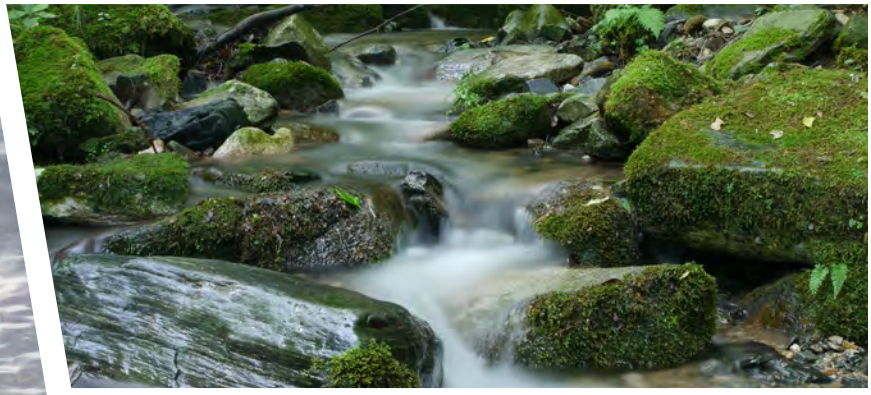
CITY OF COURTENAY
Engineering Services

July 2022

Prepared by TAVOLA STRATEGY GROUP

Project Overview

In cities and towns, rainwater that doesn't absorb into the ground flows into storm drains which empty into local waterways. How we manage rainwater directly affects the health of our rivers and oceans. An Integrated Rainwater Management Plan strives to manage rainwater in a way that protects the aquatic environment and mitigate the impact of drought and flooding. By managing rainwater effectively, communities can replenish soil moisture, and reduce the amount of runoff.



The City of Courtenay Integrated Rainwater Management Plan will be a community-wide plan that will guide how we manage rainwater now and into the future. The plan will guide how we manage our underground infrastructure such as stormwater pipes and catch basins, as well as our natural assets such as wetlands and rivers. Specifically, the plan considers the bylaws, policies, best management practices and infrastructure projects needed to provide adequate drainage and mitigate the impact of stormwater on the watershed.

Work on the Integrated Rainwater Management plan began in 2019 and will continue through 2022. The second phase of stakeholder consultation occurred during April and May 2022 and will inform a draft plan that will be presented to Council in Fall 2022.

PHASE TWO CONSULTATION: 2022

The objective of Phase 2 Consultation is to provide an update on the work done to date and gain a greater understanding of stakeholder priorities and values for rainwater management. Building off engagement efforts in 2019, targeted consultation invited input from K'ómoks First Nation, local government, the development community, local environmental and stewardship groups, and local engineering and environmental consultants.

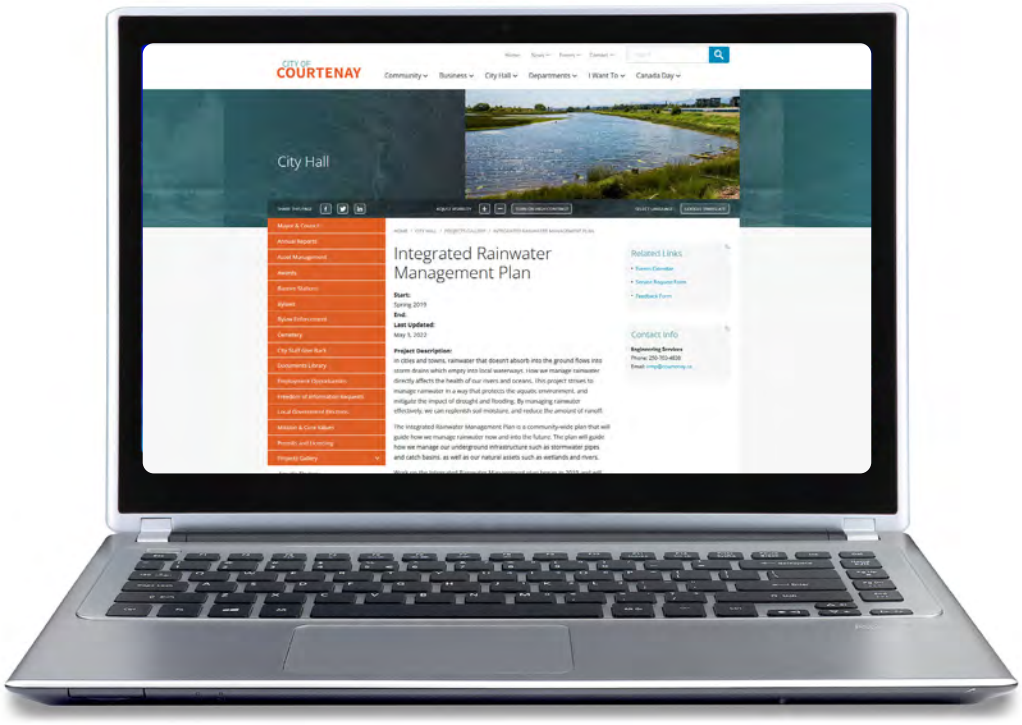
Prior to the COVID-19 pandemic, the first phase of consultation for the Integrated Rainwater Management Plan was a workshop in June 2019 which gathered representatives from K'ómoks First Nation, local government, the development community, local environmental and stewardship groups, and local engineering and environmental consultants. Discussions focused on highlighting issues and opportunities that could be addressed through the integrated rainwater management planning process, developing an understanding of what data and monitoring work related to rainwater management is already underway in the community, and identifying where more information is needed.

Phase 1 stakeholder meeting

Phase 2 Process: What We Did

We engaged stakeholders the following ways:

- A letter with a link to the online survey sent to 44 contacts, with 32 responses. It was open from Wednesday, April 20th, to Wednesday, May 25th, 2022.
- Six stakeholder meetings occurred. City of Courtenay staff met with:
  1) **Beaver Meadow Farms (2 attendees)**
  2) **Comox Valley Conservation Partnership (16 attendees)**
  3) **Millard Piercy Watershed Stewards (5 attendees)**
  4) **Russell Farms (1 attendee)**
  5) **Town of Comox staff (2 attendees)**
  6) **Wedler Engineering (2 attendees)**
- Meeting with K'ómoks First Nation. Staff prepared a briefing note that was presented at the monthly *Community 2 Community Forum*. Approximately nine people attended.



What Was Asked

Engagement questions focussed on the following:

ONLINE SURVEY QUESTIONS

1. *Which group do you represent?*
   - ☐ *City staff*
   - ☐ *City of Courtenay Council*
   - ☐ *Environmental organization*
   - ☐ *First Nations*
   - ☐ *Land developer*
   - ☐ *Other local government*
   - ☐ *Provincial or Federal government*
   - ☐ *Technical expert*
2. *Please rate your knowledge of the following:*
   - ☐ *Ecosystem impacts of stormwater*
   - ☐ *Hydrology*
   - ☐ *Stormwater system management*
3. *What considerations are most important to you in the management of rainwater? Please rank the options in order of priority. (1 being highest priority, and 8 being least)*
   - ☐ *Cost to taxpayers*
   - ☐ *Ease of development requirements and approval*
   - ☐ *Fish passage*
   - ☐ *Health of aquatic ecosystems*
   - ☐ *Prevention of property damage and erosion*
   - ☐ *Reduced risk of drought*
   - ☐ *Reduced risk of flooding*
   - ☐ *Water quality of streams*
4. *Please rank your support for each of the rainwater/stormwater management tools:*
   - ☐ *Directing roof leaders to absorbent landscaping and disconnecting them from the stormwater system*
   - ☐ *Updated bylaws and development requirements*
   - ☐ *Absorbent landscaping*
   - ☐ *Rainwater capture and re-use (e.g. rain barrels)*
   - ☐ *Green roofs on buildings*
   - ☐ *Permeable pavement*
   - ☐ *Rain gardens in public boulevards*
   - ☐ *Detailed design guidelines for land developers*

5. *Where should the City of Courtenay focus efforts to increase adoption of rainwater management practices? Check all that apply.*
   - ☐ *City property (e.g., parks, streets, sidewalks)*
   - ☐ *Existing businesses and commercial property*
   - ☐ *Existing residential homes*
   - ☐ *New development*
6. *How should the City of Courtenay support the adoption of rainwater management practices? Please rank the options in order of priority. (1 being highest, and five being least)*
   - ☐ *Consultation with landscape professionals*
   - ☐ *Developing policies or bylaws that support best management practices.*
   - ☐ *Educational resources and design guidelines*
   - ☐ *Financial incentives (e.g., rebates and discounts)*
   - ☐ *Public workshops and a demonstrations*
7. *To what extent should the. City of Courtenay require the adoption of rainwater management practices?*
   - ☐ *Mandatory*
   - ☐ *Optional*
   - ☐ *Recommended with little support*
   - ☐ *Recommended with support*
   - ☐ *Other (please specify)*
8. *What communities do you think are leading the way in their management of rainwater?*
9. *Do you have any other comments on the management of rainwater within the City of Courtenay?*

STAKEHOLDER MEETINGS

- *Introductions and background*
- *What concerns about rainwater management do you have?*
- *What recommendations do you have for improved rainwater management?*

What We Heard

ONLINE SURVEY

The following themes were the most prevalent from survey respondents. The detailed survey results are available in **Appendix 4**:

- Nearly 3/4 of respondents generally ranked their knowledge of hydrology, stormwater management and ecosystems impact of stormwater as novice to advanced. Few respondents expressed having proficient or technical expert knowledge in any of the three topic areas.
- The top three considerations that are most important in the management of rainwater are, in order, health of aquatic systems, water quality of streams, and reduced risk of flooding. The least important considerations to respondents were ease of development and cost to taxpayers.
- Respondents noted support for all eight rainwater/stormwater management tools with the highest support for (in order) absorbent landscaping, detailed design guidelines for land developers, and updated bylaws and development requirements.
- The top two ways the City of Courtenay should focus efforts to increase adoption of rainwater management practices are to focus on new development and City property (e.g., parks, streets, and sidewalks.)
- The top three priorities respondents felt the City should support are (in order): 1) Developing policies or bylaws that support best management practices, 2) educational resources and design guidelines, and 3) public workshops and demonstrations.
- Survey respondents felt that the City should make adoption of rainwater management practices mandatory for new development and on City of Courtenay property.
- Victoria, Gibsons, Nanaimo, and communities within the Pacific Northwest (Portland and Seattle, and Shoreline, Washington) were noted as the top communities leading the way in rainwater management.
- Respondents noted the need for solid baseline and modelling data, interjurisdictional coordination, and education and guidance on specific topics such as grey water, xeriscape/ rain gardens and agricultural lands.

It is important to note that 44% of respondents were from environmental organizations and 20% of respondents were local government staff, including City staff. There were respondents in each category, with exception of no respondents from land development.

STAKEHOLDER MEETINGS

Several themes emerged from the stakeholder meetings:

- Strong interest in groups and governments working together
- The need for reliable data, and monitoring to evaluate the operation of the traditional stormwater system, the natural function of the watershed, and the condition of the streams
- Objective-based regulations that allow for site specific flexibility and scalable options are desirable, instead of prescriptive regulations that don't allow for flexibility
- Climate change and planning are important considerations that must be built into the stormwater model and the stormwater system must be designed to accommodate more intense rainfall events
- There are other communities that are further ahead, that Courtenay can look to for guidance and lessons learned
- Importance of interjurisdictional consistency and coordination across the Comox Valley governments, and value of working with community groups and volunteers (e.g., Brooklyn Creek Watershed Society, Millard Piercy Watershed Stewards)
- The cumulative impacts of development on downstream watercourses and agricultural lands must be considered. (e.g., Mallard Creek)
- A review of DCC bylaw and development requirements may be beneficial, resulting in clear policy and requirements that can be well communicated.
- Traditional infrastructure requirements such as road widths, stormwater drainage in new development, etc. need to be reconsidered
- Consider incentives to increase the amount of permeable surface in new and existing developments
- Subsurface geology must be considered when designing rainwater source control systems

During some of the meetings, stakeholders provided followed up technical information, reports, and public education materials. A summary of the documents are attached in **Appendix 2: Community Resources**.

Community Resources

APPENDICES

1) **Stakeholder Letter**
2) **Community Resources**
3) **K'ómoks First Nation Briefing Note**
4) **Integrated Rainwater Management Plan Survey Results**

Next Steps:

This *What We Heard Summary* report compiles all the stakeholder input collected in Phase 2 and will inform a draft Integrated Rainwater Management Plan that will be presented to Courtenay City Council in fall 2022.

Appendix I:
Stakeholder Letter

CITY OF COURTENAY
INVITATION

RE: INTEGRATED RAINWATER MANAGEMENT – SPRING 2022 CONSULTATION

Good morning,

The City of Courtenay is seeking your input on the development of the Integrated Rainwater Management Plan. This plan will guide how we manage rainwater now and into the future.

An Integrated Rainwater Management Plan takes a comprehensive look at the bylaws, best management practices, and infrastructure needed to provide adequate drainage and address the environmental impacts of stormwater within the watershed. Work on the Integrated Rainwater Management plan began in 2019 and will continue through 2022, with stakeholder consultation this spring and a draft plan will be presented to Council in Fall 2022.

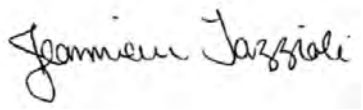
We invite you to complete an online survey by May 4th at
https://www.surveymonkey.com/r/CourtenayIRMP

We also invite you to attend a meeting to learn more about the project and share your feedback. Meetings will occur May 9 - 20, 2022. Please RSVP to let us know when you may be available to meet.

A *What We Heard Summary* report will compile all input collected and will inform a draft Integrated Rainwater Management Plan that will be presented to Council in the Fall of 2022.

For more information about the Integrated Rainwater Management plan, visit:
https://www.courtenay.ca/irmp

We look forward to hearing from you,



Jeanniene Tazzioli
Manager of Engineering, Environmental Projects

Appendix II:
Community Resources

During the public consultation meetings in Spring of 2022, resources in the form of reports, bylaws, and informative brochures were provided to the City of Courtenay by stakeholders. The City will review these documents and take them into consideration when developing the Integrated Rainwater Management Plan. The documents are summarized in the following list:

- **Town of Comox:**
  - *Comox Runoff Control Bylaw No. 1919 (Oct 2021)*
  - *Comox Drainage Infrastructure Protection Bylaw No. 1824 (Oct 2021)*
- **Comox Valley Conservation Partnership:**
  - *Municipal Natural Assets Initiative: Integrating Species at Risk Considerations Into Natural Asset Management*
- **Millard-Piercy Watershed Stewards:**
  - *General Information Brochure*
  - *Think Like A Watershed Brochure*
  - *New Story Boards on Piercy Creek Brochure*
- **Russell Farm**
  - *Minister of Agriculture's Advisory Committee: Revitalizing the Agricultural Land Reserve and the Agricultural Land Commission Discussion Paper for Stakeholder Consultation and Public Engagement*
- **Beaver Meadows Farm**
  - *Letter from C&F Land Resource Consultants Ltd. Re: City of Courtenay Draft Development Permit Areas (DPA) Guidelines (the "Draft DPA")*
  - *Area Maps:*
    - » *Beaver Meadow Farms Area and Flood Water Maps*
    - » *Aquatic ESA Areas*
    - » *Official Community Plan Terrestrial ESA Areas*
  - *City of Langford Agricultural Strategy (Page 11 only)*
  - *City of Abbotsford OCP Bylaw 2600-2016:*
    - » *Part 5: Protection of Agriculture Development Permit Guidelines*
  - *Beef in BC Magazine Article: Understanding Agricultural Water*

Appendix III:
K'ómoks First Nation Briefing Note

THE CORPORATION OF THE CITY OF COURTENAY

BRIEFING NOTE

To: K'ómoks First Nation
File No.: 5335-20
From: Chief Administrative Officer
Date: April 28, 2022
Subject: **Integrated Rainwater Management Plan**

BACKGROUND:

During a rainfall event, watersheds direct water to low lying spots on the landscape, filling streams, ponds, rivers, and lakes. Rain may soak into the surface soil, infiltrate and replenish the groundwater, evaporate into the atmosphere or flow over the ground as surface runoff. Cities are built within watersheds, and the development of impermeable surfaces such as buildings and roads, increases the amount of surface runoff created by a rainfall event. To manage this water, the City of Courtenay has built a network of drains, underground pipes and outfalls to direct water to streams and rivers.

The design and objective of municipal stormwater systems has evolved over time. A successful stormwater system was once considered to be a network of pipe and outfalls that quickly conveyed water off the landscape and into receiving waters. Today, it is understood that this approach has an impact on receiving waterbodies. How we manage rainwater directly affects the health of our rivers and oceans.

An integrated rainwater approach strives to address these environmental impacts, by reducing the volume of rainwater that gets directed to the stormwater system, and slowing the rate at which water replenishes receiving waterbodies.

DISCUSSION:

The City of Courtenay is working to develop an integrated rainwater management plan, which is a community wide plan that will guide how we manage rainwater now and into the future. How we manage rainwater directly affects the health of our rivers and oceans. This project strives to manage rainwater in a way that protects the aquatic environment, and mitigates the impact of drought and flooding. By managing rainwater effectively, we can replenish soil moisture, and reduce the amount of runoff.

The plan will guide how we manage our underground infrastructure such as stormwater pipes and catch basins, and as well our natural assets such as wetlands and rivers. This plan will take a comprehensive look at the bylaws, policies, best management practices and infrastructure projects needed to manage rainwater better.

This project was first initiated in 2019, with a consultation process which gathered representatives from K'ómoks First Nation, local government, the development community, local environmental and stewardship groups, and local engineering and environmental consultants, to start the conversation about rainwater management. The discussion focused on highlighting issues and opportunities that could be addressed through the integrated rainwater management planning process, developing an understanding of what data and monitoring work related to rainwater management is already underway in the community, and identifying where more information is needed.

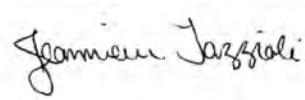
NEXT STEPS:

Building off engagement efforts in 2019, targeted consultation will occur in spring 2022 and we would like to follow up directly with representatives from K'ómoks First Nation. In addition, K'ómoks First Nation is welcome to join in with engagement with local government, the development community, local environmental and stewardship groups, and local engineering and environmental consultants.

In addition to direct engagement with K'ómoks First Nation, as part of this consultation process, we are using an initial online survey that we would invite you to consider completing. The online survey at: https://www.surveymonkey.com/r/CourtenayIRMP.

A "What We Heard" Summary Report will compile all input collected and will help to inform a draft Integrated Rainwater Management Plan. This process will include follow ups with K'ómoks First Nation so as to assist in finalizing the Plan that will be presented to Council for consideration at the end of 2022.

Prepared by:



Jeanniene Tazzioli, P.Eng.
Environmental Engineer

Reviewed by:

Chris Davidson, P.Eng., PMP
Director of Engineering Services

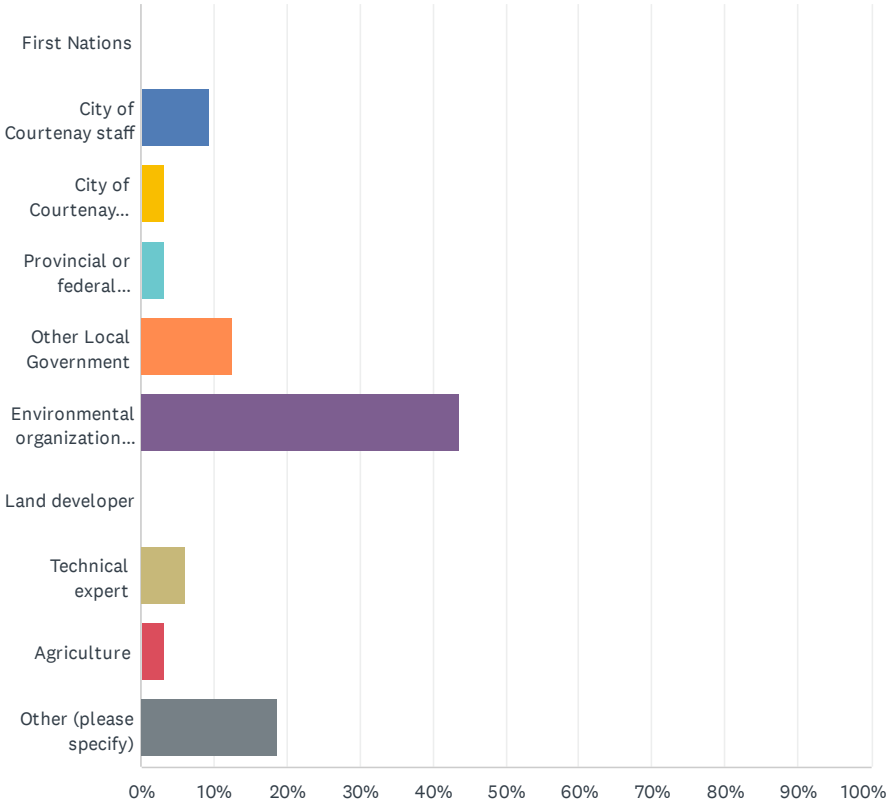
Concurrence by:

Geoff Garbutt, MCIP, RPP
Chief Administrative Officer

Appendix IV:
Integrated Rainwater Management Plan Survey Results

Q1 Which group do you represent?

Answered: 32 Skipped: 0

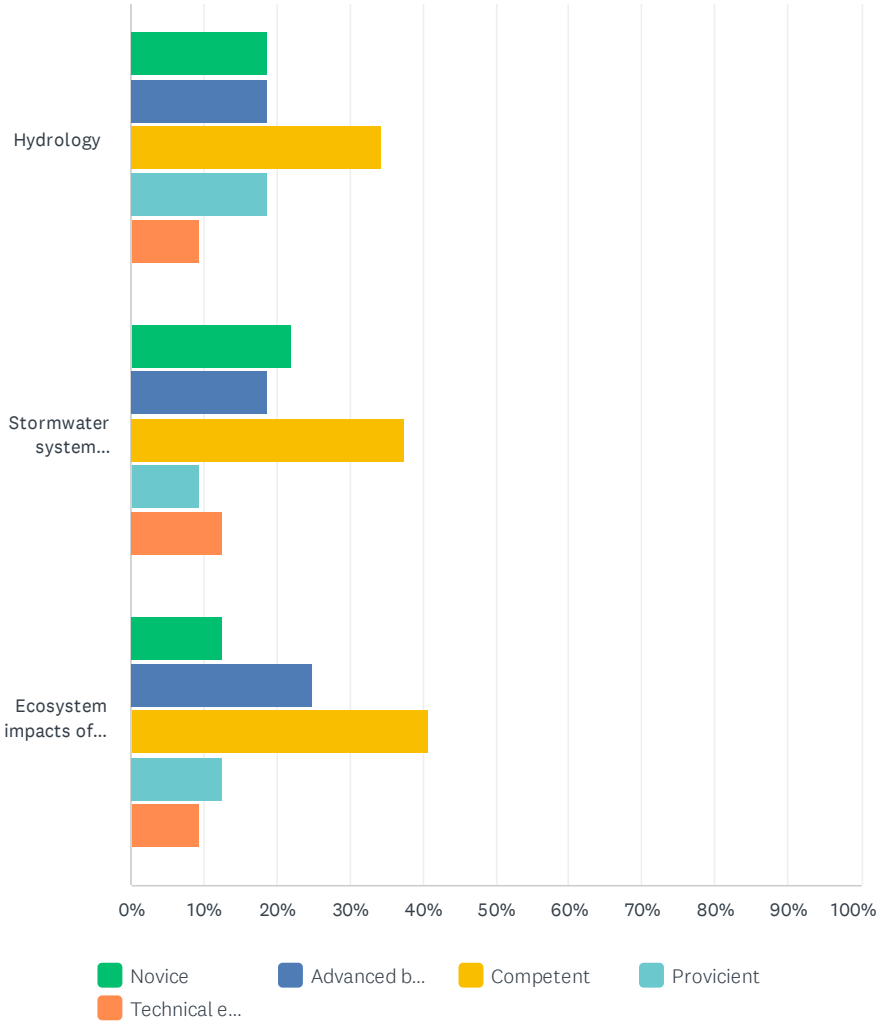


ANSWER CHOICES	RESPONSES	
First Nations	0.00%	0
City of Courtenay staff	9.38%	3
City of Courtenay Council	3.13%	1
Provincial or federal agencies	3.13%	1
Other Local Government	12.50%	4
Environmental organization/stream keeper	43.75%	14
Land developer	0.00%	0
Technical expert	6.25%	2
Agriculture	3.13%	1
Other (please specify)	18.75%	6
TOTAL		32

#	OTHER (PLEASE SPECIFY)	DATE
1	property owner, courtenay	5/5/2022 12:34 PM
2	Resident of the Comox Valley	5/4/2022 3:36 PM
3	Architect	5/4/2022 2:31 PM
4	Farmer	5/2/2022 3:55 PM
5	Consulting Civil/Municipal Engineer	4/27/2022 11:29 AM
6	Engineeering Consultant	4/20/2022 1:54 PM

Q2 Please rate your knowledge of the following:

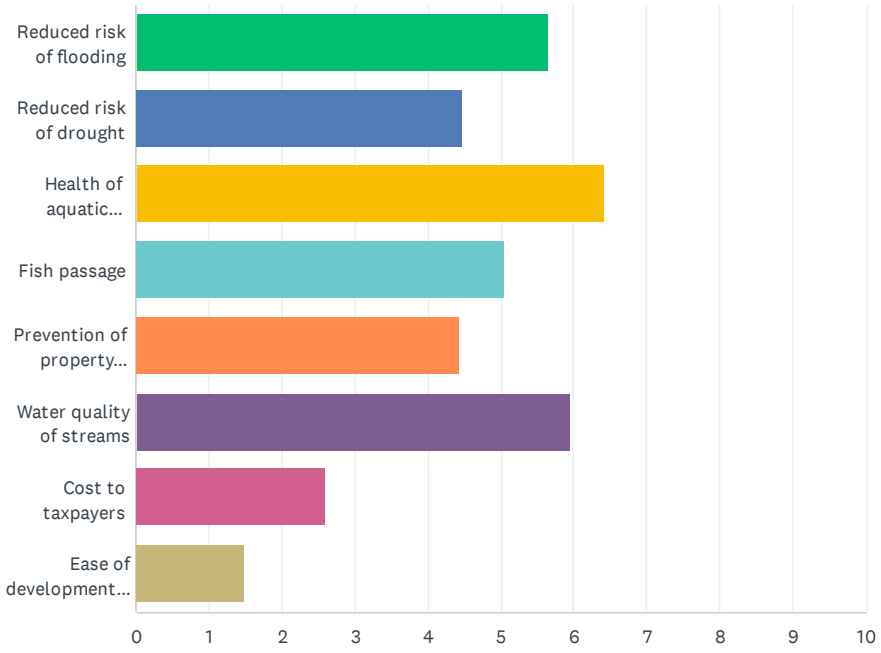
Answered: 32 Skipped: 0



	NOVICE	ADVANCED BEGINNER	COMPETENT	PROVICIENT	TECHNICAL EXPERT	TOTAL	WEIGHTED AVERAGE
Hydrology	18.75% 6	18.75% 6	34.38% 11	18.75% 6	9.38% 3	32	2.81
Stormwater system management	21.88% 7	18.75% 6	37.50% 12	9.38% 3	12.50% 4	32	2.72
Ecosystem impacts of stormwater	12.50% 4	25.00% 8	40.63% 13	12.50% 4	9.38% 3	32	2.81

Q3 What considerations are most important to you in the management of rainwater? Please rank the options in order of priority. (1 being highest priority, and 8 being least)

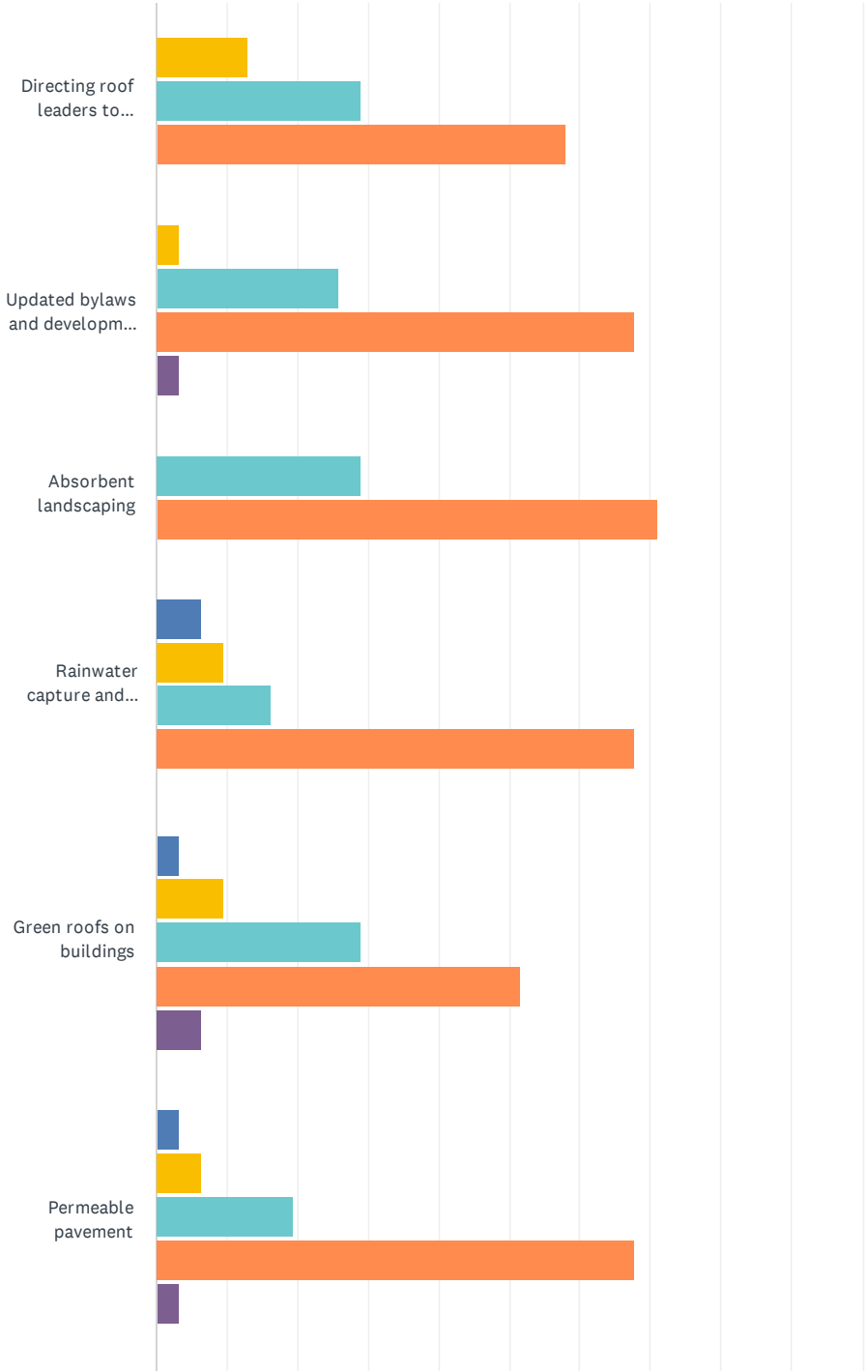
Answered: 32 Skipped: 0

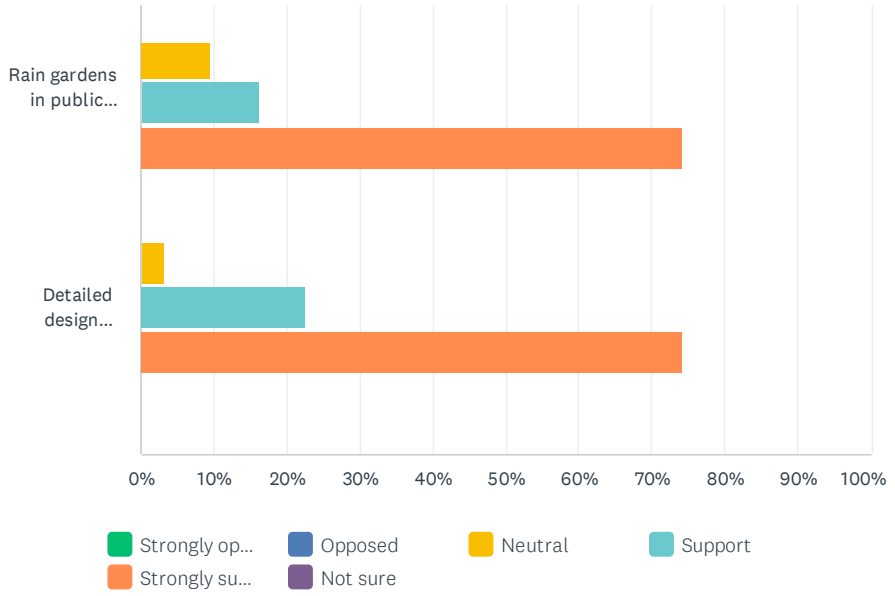


	1	2	3	4	5	6	7	8	TOTAL	SCORE
Reduced risk of flooding	21.88% 7	15.63% 5	9.38% 3	28.13% 9	18.75% 6	0.00% 0	3.13% 1	3.13% 1	32	5.66
Reduced risk of drought	3.13% 1	15.63% 5	18.75% 6	9.38% 3	21.88% 7	12.50% 4	9.38% 3	9.38% 3	32	4.47
Health of aquatic ecosystems	51.61% 16	6.45% 2	9.68% 3	12.90% 4	6.45% 2	9.68% 3	3.23% 1	0.00% 0	31	6.42
Fish passage	0.00% 0	19.35% 6	22.58% 7	25.81% 8	19.35% 6	6.45% 2	3.23% 1	3.23% 1	31	5.06
Prevention of property damage, and erosion	6.25% 2	12.50% 4	12.50% 4	12.50% 4	9.38% 3	40.63% 13	3.13% 1	3.13% 1	32	4.44
Water quality of streams	18.75% 6	28.13% 9	21.88% 7	6.25% 2	9.38% 3	15.63% 5	0.00% 0	0.00% 0	32	5.94
Cost to taxpayers	0.00% 0	3.23% 1	3.23% 1	3.23% 1	9.68% 3	12.90% 4	58.06% 18	9.68% 3	31	2.61
Ease of development requirements & approvals	0.00% 0	0.00% 0	0.00% 0	3.13% 1	6.25% 2	0.00% 0	18.75% 6	71.88% 23	32	1.50

Q4 Please rank your support for each of the rainwater/stormwater management tools.

Answered: 31 Skipped: 1

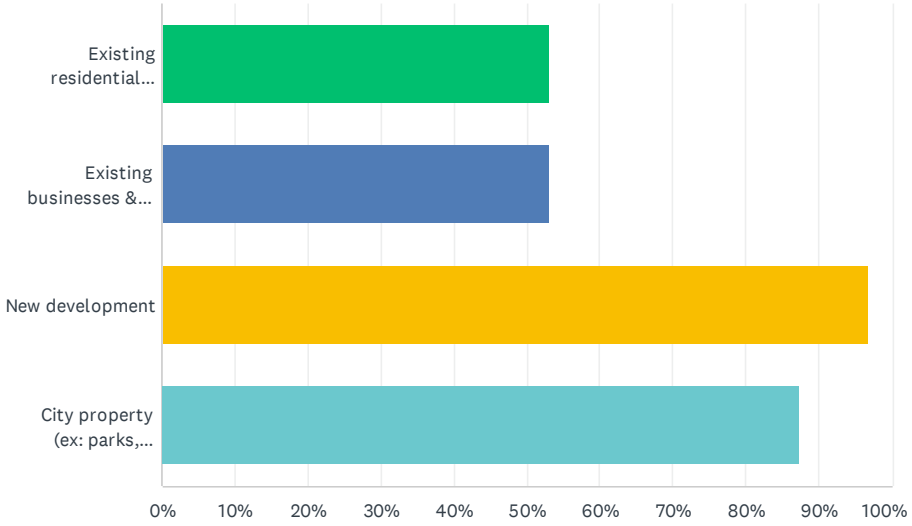




	STRONGLY OPPOSED	OPPOSED	NEUTRAL	SUPPORT	STRONGLY SUPPORT	NOT SURE	TOTAL
Directing roof leaders to absorbent landscaping, and disconnecting them from the stormwater system	0.00% 0	0.00% 0	12.90% 4	29.03% 9	58.06% 18	0.00% 0	31
Updated bylaws and development requirements	0.00% 0	0.00% 0	3.23% 1	25.81% 8	67.74% 21	3.23% 1	31
Absorbent landscaping	0.00% 0	0.00% 0	0.00% 0	29.03% 9	70.97% 22	0.00% 0	31
Rainwater capture and re-use (ex: rain barrels)	0.00% 0	6.45% 2	9.68% 3	16.13% 5	67.74% 21	0.00% 0	31
Green roofs on buildings	0.00% 0	3.23% 1	9.68% 3	29.03% 9	51.61% 16	6.45% 2	31
Permeable pavement	0.00% 0	3.23% 1	6.45% 2	19.35% 6	67.74% 21	3.23% 1	31
Rain gardens in public boulevards	0.00% 0	0.00% 0	9.68% 3	16.13% 5	74.19% 23	0.00% 0	31
Detailed design guidelines for land developers	0.00% 0	0.00% 0	3.23% 1	22.58% 7	74.19% 23	0.00% 0	31

Q5 Where should the City of Courtenay focus efforts to increase adoption of rainwater management practices? Check all that apply.

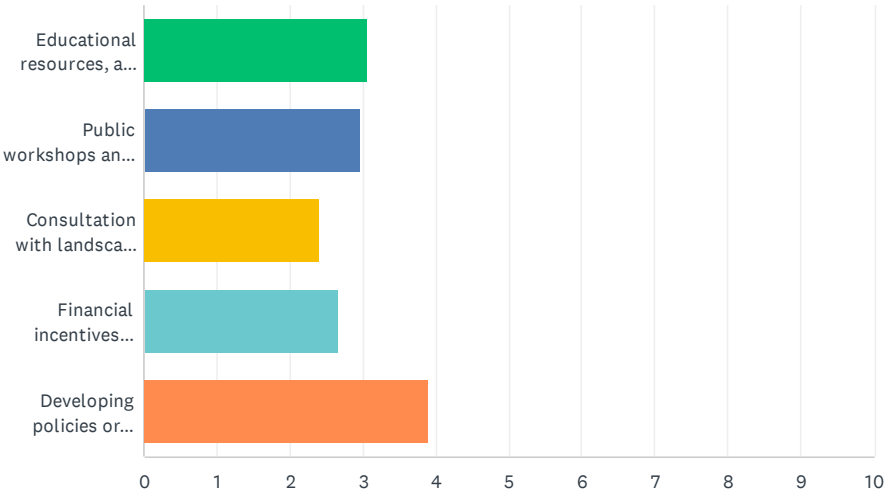
Answered: 32 Skipped: 0



ANSWER CHOICES	RESPONSES	
Existing residential homes	53.13%	17
Existing businesses & commercial property	53.13%	17
New development	96.88%	31
City property (ex: parks, streets, sidewalks)	87.50%	28
Total Respondents: 32		

Q6 How should the City of Courtenay support the adoption of rainwater management practices? Please rank the options in order priority. (1 being highest priority, and 5 being least)

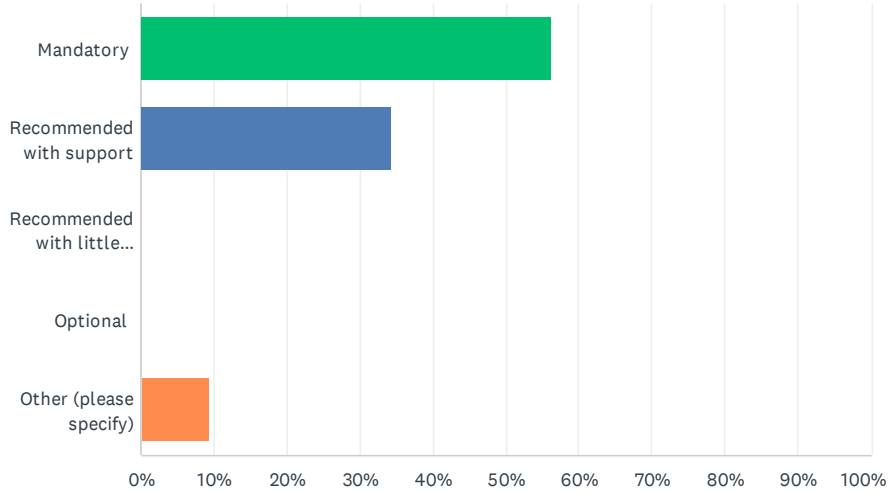
Answered: 32 Skipped: 0



	1	2	3	4	5	TOTAL	SCORE
Educational resources, and design guidelines	6.25% 2	37.50% 12	28.13% 9	12.50% 4	15.63% 5	32	3.06
Public workshops and demonstrations	18.75% 6	6.25% 2	31.25% 10	40.63% 13	3.13% 1	32	2.97
Consultation with landscape professionals	6.25% 2	18.75% 6	15.63% 5	28.13% 9	31.25% 10	32	2.41
Financial incentives (e.g.: rebates, discounts)	9.38% 3	31.25% 10	12.50% 4	9.38% 3	37.50% 12	32	2.66
Developing policies or bylaws that support best management practices	59.38% 19	6.25% 2	12.50% 4	9.38% 3	12.50% 4	32	3.91

Q7 To what extent should the City of Courtenay require the adoption of rainwater management practices?

Answered: 32 Skipped: 0



ANSWER CHOICES	RESPONSES	
Mandatory	56.25%	18
Recommended with support	34.38%	11
Recommended with little support	0.00%	0
Optional	0.00%	0
Other (please specify)	9.38%	3
TOTAL		32

#	OTHER (PLEASE SPECIFY)	DATE
1	Mandatory for new development. Incentives for existing. Must do for City owned infrastucture.	5/3/2022 5:27 PM
2	When possible, Mandantory. Some properties will not achieve rmp.	5/2/2022 9:08 AM
3	For new development it should be mandatory if required by a bylaw. For existing private development, it should be encouraged. On existing City owned land and road allowances it should be implemented where appropriate and cost effective	4/27/2022 11:29 AM

Q8 What communities do you think are leading the way in their management of rainwater?

Answered: 20 Skipped: 12

#	RESPONSES	DATE
1	Victoria	5/12/2022 11:44 AM
2	City of Victoria	5/5/2022 12:34 PM
3	I do not know any.	5/4/2022 3:36 PM
4	Islands such as Salt Spring Island.	5/4/2022 2:31 PM
5	Communities that consider natural assets (wetlands, riparian areas, forest cover etc.) as components of the rainwater management system and which protect those assets with policy as well as maintain/restore them with public works budgets commensurate with expenditures on engineered assets. Also, communities that use all relevant watershed boundaries as their IRMP planning scale not just the portions of those watersheds which happen to fall within their jurisdictional boundary (e.g., Brooklyn Creek is a good example of where this principle has clearly not been considered and significant downstream consequences have resulted). Communities that consider climate predictions and do not get by with IDF curves based on historical norms from an airport weather station that is not a terrific representative of the watersheds affected.	5/4/2022 12:06 AM
6	City of Victoria - all of western Europe (we are 2 decades behind)	5/3/2022 5:27 PM
7	City of Vancouver	5/3/2022 9:11 AM
8	Village of Cumberland OCP	5/3/2022 8:54 AM
9	Tsolum River Restoration Society and Courtenay and District Fish and Game	5/2/2022 4:19 PM
10	City of Vancouver, City of North Vancouver, Town of Gibsons, City of Shoreline - WA, Portland -OR (salmon safe city).	5/2/2022 3:24 PM
11	RDN - https://www.getinvolved.rdn.ca/rainwater-management-strategy	5/2/2022 9:08 AM
12	Nanaimo has instituted a program with their stewards to collect data and monitor their waterways and it has paid dividends in better decision-making and reduced problems in the regional district. This helps both staff and residents.	4/27/2022 11:45 AM
13	Don't know.	4/26/2022 4:25 PM
14	Gibsons	4/24/2022 9:01 PM
15	I do not live long enough in Canada to know for certain but have heard that Victoria has an incentive program that supports the installation of permeable surfaces .	4/24/2022 1:19 PM
16	Delta	4/21/2022 9:32 AM
17	Victoria, Gibsons	4/21/2022 9:27 AM
18	I think think the City needs to align with Town of Comox standards for Brooklyn Creek Watershed.	4/21/2022 9:15 AM
19	Seattle, Portland, many US Cities are further ahead with policy and action.	4/20/2022 1:54 PM
20	https://www.rdn.bc.ca/rainwater-harvesting The Regional District of Nanaimo has an ongoing subsidy program to support property owners to adopt rainwater harvesting methods, along with a team of public educators who speak to many aspects of water supply and management	4/20/2022 11:40 AM

Q9 Do you have any other comments on the management of rainwater within the City of Courtenay?

Answered: 22 Skipped: 10

#	RESPONSES	DATE
1	Install storm water drains that empty into the ocean	5/12/2022 11:44 AM
2	I understand the city is consulting on the issue, and looking forward to seeing policy updates. On an individual level I would like guidance on how to manage rainwater on my 2 acre property, which holds a spring feeding into Towhee Creek	5/5/2022 12:34 PM
3	Encourage the development of rain gardens and/or xeriscape gardens on residential properties eg. front yards.	5/4/2022 2:31 PM
4	Yes. Lots. Looking forward to a more fulsome engagement tool than an anonymous online survey to provide feedback. (:	5/4/2022 12:06 AM
5	The first question about priorties isn't a good one. If you manage rainwater to reduce erosionand property damage, you also improve water quality (becuase it is degraded by erosion) and protect the health of aquatic ecosystems and you will reduce the risk of flooding. Prioritizing one of these goals over another doesn't rule one or another of them out...	5/3/2022 5:27 PM
6	Efforts to restore water balance are especially important	5/3/2022 11:08 AM
7	Support on site water retention Support small scale rainwater harvesting for grey and potable water LEED	5/3/2022 9:40 AM
8	There should be greater consistency across the Comox Valley jurisdictions regionally - Town of Comox, City of Courtenay, Village of Cumberland, CVRD and K'omoks. Water doesn't follow jurisdictional boundaries.	5/3/2022 9:11 AM
9	Ideally rainwater should not be directed into ditches and directed from there to the ocean. Natural infrastructure should be used as much as possible, with filtration prior to being directed back to streams or wetlands. Rainwater from one watershed should not be directed into a different watershed.	5/2/2022 4:28 PM
10	Maintain natural assets of wetlands, marshes, natural drainage with improvements/treatments when required.	5/2/2022 4:19 PM
11	Water modelling was a good start	5/2/2022 3:55 PM
12	A regular water quality monitoring program needs to be adopted. Climate change and it's associated impacts need to be taken into consideration with the IRWM planning. Emerging contaminants of concern like fire retardants, 6-6 ppd Quinone (tire particulate contamination) etc. should also be looked at. Pollutant disposal in storm drains in residential and commercial areas. The Puget Sound area has done public education on where storm water goes that could be adopted by the City. The urban forestry strategy should be strengthened and the tree cutting bylaw should also be strengthened to support the IRWMP.	5/2/2022 3:24 PM
13	No.	5/2/2022 9:08 AM
14	The most important thing is to have baseline data to see where you are going right or wrong. Once you have the baseline data you need to monitor to see what direction things are going. There are several stewardship groups in the City that would be happy to harness the power of their volunteers to make this a cost effective system that would benefit all of us. They also have access to retired professionals and can make informed decisions and provide good advice based on years of knowledge working within their various watersheds.	4/27/2022 11:45 AM
15	Rainwater Management should not be burdensome to implement. It should be practical and take a common sense approach and provide opportunities for individualized techniques to be applied to a site driven by the end goal/objective for that site.	4/27/2022 11:29 AM

	drought.	
17	1.) Review the functionality of rainwater retention ponds. 2.) Consider the installation of an official rain gauge in Courtenay as the current gauge at the Comox Airport is not representing the actual rainfall west of the Courtenay River. Thus leading to wrong data for rainwater management decisions.	4/24/2022 1:19 PM
18	Concerned about road pollutants and run off from industrial uses entering watercourses untreated.	4/21/2022 9:32 AM
19	new developments need to use updated best practices and this needs to happen as soon as possible	4/21/2022 9:27 AM
20	Rainwater management has changed over the years and hence the water balance methodology that has been developed. This approach manages both the downstream flooding and stream degradation by controlling the discharge duration and volumes of stormwater.	4/21/2022 9:15 AM
21	All BMPs need maintenance. Maintenance for the City requires a budget for either Public Works or Parks. There is no point discussing incorporating BMPs into design if the City will not maintain them.	4/20/2022 1:54 PM
22	Great to see this work being done!	4/20/2022 11:40 AM