

City of Winnipeg
CSO MASTER PLAN PHASE 1
Stakeholder Advisory Committee:
What was heard

Prepared by:



FIRST PERSON
STRATEGIES

November 2015

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1.0 Introduction

As part of the requirements for the Environment Act Licence No. 3042 issued by the Province of Manitoba, the City of Winnipeg is developing a Combined Sewer Overflows (CSO) Master Plan to manage the effects of combined sewer overflows in an environmentally sound, sustainable and cost-effective manner. Under the terms of the Licence the City of Winnipeg will submit:

- a preliminary proposal evaluating CSO control limits by December 31, 2015 (“Phase 1”), and
- a final CSO Master Plan by December 17, 2017, for controlling CSOs to the defined limits (“Phase 2”).

In September 2014, the City of Winnipeg established a CSO Master Plan Stakeholder Advisory Committee (SAC). As an important component of a broader public engagement process, the SAC was asked to provide input on stakeholder needs and concerns to help ensure a plan to limit CSOs and protect river quality reflects the values of Winnipeg families, business and river users, and is sustainable.

CSOs and CSO management involve a broad spectrum of stakeholders. An important goal for the SAC was to bring together a variety of perspectives early in the planning process to ensure that input from diverse interests would be incorporated into decision making on CSO management to the maximum extent possible. In Phase 1 of the Master Plan, the work of the SAC involved:

- Learning about CSO management and regulation, including the current situation in Winnipeg and control limits under consideration.
- Identifying important questions, issues and concerns.
- Contributing to the development of criteria to evaluate control options.
- Providing feedback on the relative importance of each criterion.
- Providing feedback on the specific control limit options under consideration.

The SAC will reconvene for Phase 2 of the Master Plan, once Phase 1 results have been reviewed and the Province of Manitoba sets control limits.

Level of Impact

“The City will look to the SAC for ideas, suggestions, trade-offs and to help formulate solutions, and will incorporate SAC advice and recommendations into CSO Master Plan decisions to the maximum extent possible.”
– CSO SAC Terms of Reference

The City of Winnipeg is working with the SAC at the “collaborate” level on the International Association of Public Participation (IAP2) Spectrum for Participation.

2.0 Stakeholder Advisory Committee members

The committee includes up to 15 members of the community, bringing diverse perspectives to the table including citizen, environmental, river users, business and industry representatives with an interest or stake in CSO impacts and control strategies. Current SAC representatives include:

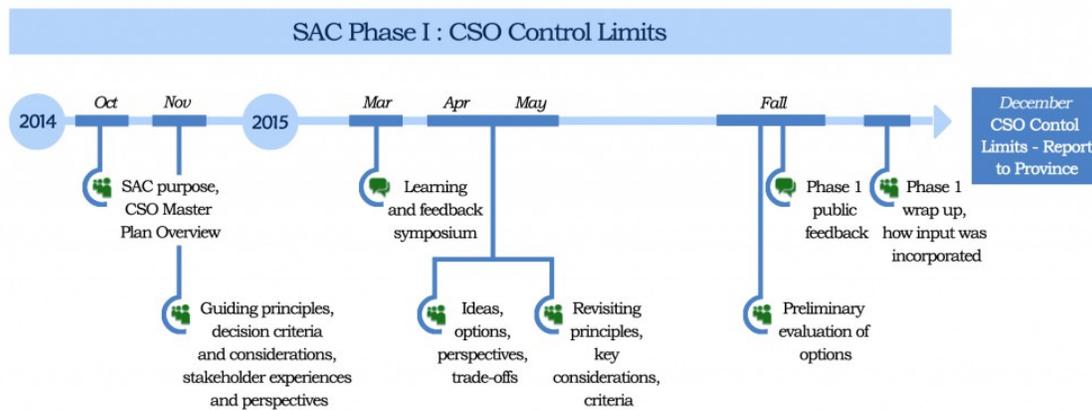
Organization	Representative
Chalmers Neighbourhood Renewal Corporation; Coalition of Manitoba Neighbourhood Renewal Corporations (Winnipeg)	Dale Karasiuk
International Institute of Sustainable Development	Henry David Venema
Lake Friendly; Partnership of the Manitoba Capital Region	Colleen Sklar
Manitoba Eco-Network	Megan Krohn
Manitoba Heavy Construction Association	Chris Lorenc
Old St. Vital BIZ	Colleen Mayer
Rivers West	Julie Turenne-Maynard
Winnipeg Chamber of Commerce	Carmine Militano

Over the course of Phase 1, the Consumer Association of Canada (Manitoba) and the Winnipeg Rowing Club also contributed to SAC deliberations. Additional efforts were made as the SAC got underway to reach out to river users and the rowing club to engage them more formally in the SAC and to document their input and concerns via phone and email.

The Province of Manitoba is represented on the Committee. Representatives from the following provincial departments and branches participate on the SAC:

Provincial Department & Branch	Representative
Manitoba Conservation and Water Stewardship (Environmental Compliance and Enforcement)	Yvonne Hawryliuk
Manitoba Conservation and Water Stewardship (Environmental Approvals)	Siobhan Burland Ross
Manitoba Conservation and Water Stewardship (Water Quality)	Joy Kennedy

3.0 Process



Phase 1 of the Stakeholder Advisory Committee process took place between October 2014 and September 2015. The following table details the various ways the SAC provided input:

1. In-person meetings

Four facilitated meetings were attended by SAC members, provincial representatives and City project team members.

- **Meeting 1:** Overview of CSO Master Plan process and current situation in Winnipeg.
- **Meeting 2:** Committee perspectives on CSO planning, overview of decision process for control limits.
- **Meeting 3:** Licence overview, input on CSO animation video and public symposium.
- **Meeting 4:** Public symposium debrief, defining community values for Master Plan, and input on evaluation criteria.

2. Conference call

- A conference call was held in October 2014 for committee members unable to attend the October meeting.

3. CSO symposium

- Three SAC members participated in a panel discussion as part of a public symposium on CSOs in March 2015.
- Several other SAC members attended and participated in small group breakout discussions.

4. Submissions and emailed references (Appendix A)

- A formal submission was received by SAC member Chris Lorenc (Manitoba Heavy Construction Association).
- Emailed reference materials were received by SAC member Colleen Sklar (Lake Friendly, Partnership of the Manitoba Capital Region).

5. Online survey

- One survey was conducted to collect input on evaluation criteria and control limit options.
- One survey was conducted to collect feedback on meetings and SAC process.

In addition, SAC members were invited to participate in two public meetings held in September 2015.

Information about the SAC's purpose, terms of reference, a list of members, meeting notes, presentations and key links were posted on the project website at <http://wwdengage.winnipeg.ca/cso-mp/sac/>.

4.0 What was heard

The following is a summary of the key themes and outcomes resulting from the SAC input received during Phase 1 of the Master Plan. Feedback received has been grouped into three areas: input on public engagement process; issues, opportunities and concerns; and input on criteria and control limit options.

No votes will be held to determine the SAC's position on issues or recommendations to the City of Winnipeg. Where consensus exists, it will be noted. Where it does not exist, minority opinions will be considered to have merit and will be noted. In the context of the SAC, consensus will be defined as "I will support the decision of the group." The opinions of all committee members will be valued and taken into consideration.

– CSO SAC Terms of Reference

4.1 Input on public engagement process

The SAC provided input on presenting information on CSOs and the Winnipeg context to the public, and on promoting the public engagement process:

- **CSO video, content for symposium:** The SAC was clear that providing context for the CSO Master Plan and defining the problem it is trying to solve would be an essential to increasing public understanding. SAC members suggested a video or graphics, available online and that could be easily shared, would be helpful in this regard. Several SAC members suggested it would be helpful to provide context specific to where CSOs fit into the broader picture of what is being discharged into the rivers by the City, industry, and others – and what else is being done, by who, to address river water quality.
- **Promoting opportunities for input:** Members of the SAC suggested that the spring 2015 CSO symposium event be promoted via social media and email. It was suggested a save the date be circulated, followed by a brief and easy to distribute overview of the event – including links to the video animation and webpage.
- **Stakeholder outreach:** Committee members also provided suggestions for additional stakeholder groups and individuals to contact about public meetings, and were in turn provided with information about public meetings and opportunities for participation to share back to their networks and contacts. SAC members suggested the symposium be promoted to students and that sustainability offices of post-secondary institutions be targeted for attendance, as they are often aware of relevant research and initiatives occurring on campus.
- **SAC participation at public events:** Three SAC members contributed water stewardship, business, and community perspectives as speakers in a moderated discussion at the spring 2015 symposium event. Several other SAC members also attended the symposium, and helped capture participant input as table facilitators in small group breakout sessions. A couple of SAC members attend the fall 2015 public meetings as well.

4.2 Key themes: Issues, opportunities and concerns

4.2.1 *Licence and Master Plan intent – improving water quality, or addressing aesthetics and perception?*

Members of the SAC felt greater clarity was necessary concerning the purpose of the Master Plan as mandated by the licence. Was it to protect Lake Winnipeg from nutrient loading to protect rivers ecosystems, or to ensure that rivers are aesthetically pleasing? Meet a public policy objective? Some felt that this was not a two-way dialogue – that the terms of the licence were mandated by the Province with minimal consultation, and without consideration of the potential financial impacts on the City. The broader view of where CSO fits in environmental management needs to be understood.

4.2.2 *Discernible impact on Lake Winnipeg?*

There was some discussion amongst the SAC as to whether CSOs have any discernible impact on Lake Winnipeg. It was noted by some SAC members that given the nutrient load from all City of Winnipeg discharges (wastewater plants and CSOs) versus loading from the watershed as a whole was in the range of approximately 7% of total Manitoba based sources or 3% of total watershed sources. It is agricultural run-off from fertilizer (potassium and nitrogen) that is having a major impact on the lake. It was noted that this is exacerbated by the fact that drainage works have sped up the flow to rivers, while wetlands, which naturally retain and filter water have continued to be filled. Some asked whether this is being taken into account in the licence discussion and options under consideration.

4.2.3 *Competing priorities for investment*

Some SAC members noted that this is not the only licence being issued to the City by the Province, and questioned whether they are all of equal importance and whether anyone is looking at how licence requirements will be prioritized. Other SAC members suggested that with limited public funds available and competing priorities for investment, the costs of mitigating CSOs outweigh its benefits (incremental benefits, diminishing returns) – balance is needed. It was noted that trade-offs would have to be considered, and that a discussion regarding the potential tax burden would have to take place

with the larger community. Some SAC members indicated CSO mitigation simply shouldn't be a priority for investment if the cost-benefit "isn't there" – if water protection is a priority for the City and Province, investments that offer the best long-term cost-benefit should be pursued.

4.2.4 Demonstrate leadership with innovative solutions

Several SAC members felt strongly that the City should demonstrate leadership and seek innovative solutions to mitigating CSOs. Some innovations discussed included:

- **Increased focus on “front of pipe, not end of pipe” solutions:** Discussion included piloting and applying green infrastructure, temporary storm water retention options, clear and enforced land use policies, incentives to industry, business, individuals for better storm water management as essential parts of a plan to mitigate CSOs.
- **Maximize City investment with watershed approaches:** Discussion included City funding upstream improvements (e.g. paying farmers to reduce their agricultural runoff) for a better return on investment in water quality than CSO mitigation – equivalent or greater amount of nutrient reduction makes this “trade” more cost effective.
- **CSOs are a complex problem that requires a “three-headed” solution:** Discussion included bringing government, business, and non-government organizations (NGOs) together to explore innovative, more complete and effective solutions.

4.2.5 Models and solutions must take climate change into account

Many SAC members noted it was imperative to integrate climate change considerations into any plans for CSO management, as severe weather will be more extreme – wet and dry. The SAC was clear - proposed infrastructure and CSO controls must take this into account.

4.3 Input on values, criteria and options for Master Plan

4.3.1 Values, criteria identified

SAC members were asked to provide input on community values for the CSO Master Plan and criteria that should be used to evaluate control options in Phase 1. The SAC raised the following points in terms of community values and criteria in response:

- **Lake Winnipeg** – impact on nutrients, lake health and use
- **Value for money** – maximize benefits and include basement flooding in assessment; focus on low-hanging fruit and best value for money
- **CSOs in broader context** – recognize other contributors and factors related to water quality; coordinate with related initiatives
- **Vision** – keep future generations in mind, social acceptability
- **Innovation & transformation** – consider the cost of doing business in Winnipeg, retaining good talent, innovation; consider how incentives and disincentives fit in; coordinate with other projects, initiatives
- **Economic benefit** – develop a program management approach which maximizes the opportunities for capacity building and economic benefits
- **Livability** – factor in potential for construction fatigue, i.e. residents getting fed up with the extent and duration of construction related disruption
- **River use** – coordinate with existing plans and projects, address misperceptions of what can actually be achieved in terms of river quality with enhanced control of CSOs
- **Social acceptability** – consider need for citizens to see the City “doing its’ part”; role of education, creating awareness

The feedback received was used to help define community values in order to help finalize the evaluation criteria used for Phase 1, which was shared at September 2015 public meetings.

4.3.2 Relative importance of criteria and feedback on control options

In fall 2015 the project team finalized the criteria to evaluate the CSO control limit options, and SAC members were asked to respond to an online survey, which paralleled a survey provided to the public. The survey included a question about the relative importance of each criterion, as well as a question where they could review information

about the five options under consideration and rate each one.

Question: Which 3 criteria do you feel are the most important in evaluating the CSO control limit options? (n=6)

Criterion	SAC Votes
Value for Cost & Affordability	4
Lake Winnipeg	4
River Usability	3
Visionary & Broader Context	3
Innovation & Transformation	2
Economic Sustainability & Construction Capacity	1
Livability	1

Of the six responses received from SAC members, “Value for Cost & Affordability” and “Lake Winnipeg” were considered the most important criteria when evaluating CSO control limit options (four votes each), followed by “River Usability” and “Visionary & Broader Context” (three votes each).

Question: Please review all five options and rate each using the scroll bar provided. (n=6)

Respondents were provided five options that were being considered for CSO control limits. By assigning a value to the responses a mean could be calculated, where a higher mean correlates to a greater support for the option.

- 5 = Strongly support
- 4 = Somewhat support
- 3 = Neutral
- 2 = Somewhat oppose
- 1 = Strongly oppose

Option	Mean
Four overflows in an average rainfall year	3.7
Zero overflows in an average rainfall year	3.5
No more than four overflows per year	3.2
85% capture in an average rainfall year	2.8
Complete sewer separation	2.8

The most supported option is “four overflows in an average rainfall year”, while the least supported options are “85% capture in an average rainfall year” and “complete sewer separation”.

Appendix A: Submissions

From: **Colleen Sklar** <csklar@shaw.ca>
Date: Wed, Sep 23, 2015 at 7:53 AM
Subject: Water square Rotterdam

CSO management from urban infrastructure - 2600 cubic meters of water held by urban storm water infrastructure. Three office buildings and public space disconnected from CSOs.



Appendix B: Terms of Reference

**City of Winnipeg Combined Sewer Overflows Master Plan
Stakeholder Advisory Committee (SAC)
Terms of Reference**

1. Introduction

The terms of reference are intended to provide pragmatic guidelines for the Stake Advisory Committee (SAC). These terms of reference are not exhaustive; the SAC may encounter circumstances not covered in this document. In these instances, the SAC members are encouraged to consult with the City of Winnipeg project team and the facilitator as to how best to address such circumstances.

2. Background

The City of Winnipeg is developing a Combined Sewer Overflows (CSO) Master Plan. During dry weather, all flow in the combined sewers is carried to the sewage treatment plants but during heavy rainfall or snowmelt, these sewer are designed to overflow when the additional volume exceeds the capacity of the system. As part of the requirements for the *Environment Act* Licence No. 3042 issued by the Province, the City of Winnipeg will submit:

- a preliminary proposal evaluating CSO control limits by December 31, 2015, and
- a final CSO Master Plan by December 17, 2017, for controlling CSOs to the defined limits.

3. Committee Purpose

The purpose of the SAC is to help the City of Winnipeg (project team) develop a plan to manage the effects of combined sewer overflows (CSOs) on our rivers in an environmentally sound, sustainable and cost-effective manner. Stakeholder input is essential to ensure that this important initiative to protect the health of our water ways moves forward in a way that reflects the values of Winnipeg families, business and river users and is sustainable. An important component of a broader public engagement process, the SAC will help ensure the resulting CSO Master Plan is reflective of stakeholder needs and input.

4. Level of Impact

The International Association of Public Participation (IAP2) provides a Spectrum for Participation that provides a reference to help establish a common understanding of the level of impact the SAC has in decision making related to the CSO Master Plan. The project team has made a commitment to work with the committee at the “collaborate” level on the spectrum.

Stakeholder engagement goal: To partner with the SAC in the development of the Master Plan, including the development of performance targets and the development of control specifics and implementation plans.

Promise to Stakeholders: The City will look to you for ideas, suggestions and trade-offs and to help formulate solutions and will incorporate your advice and recommendations into CSO Master Plan decisions to the maximum extent possible.

5. Composition and Structure of the Committee

The SAC will include up to 15 members of the community, bringing a variety of perspectives to the table, including ecological, industry, and citizen representatives with an interest or stake in CSO impacts and control strategies. The committee will also include members from the City of Winnipeg project team and an independent consultant as chair/facilitator.

SAC membership is fixed. Committee members will be directly involved in committee meeting discussions. Organizations will designate a primary representative. Although an alternate may attend meetings in instances where a primary committee member cannot attend, it is desirable that the most consistent involvement possible is maintained.

Primary and alternate committee members will receive meeting notes, materials and agendas. Presentation materials shared at SAC meetings may also be posted for public review on the City's project web page.

6. Committee Meetings and Term

The following approaches will be used to support an effective and meaningful engagement process with the SAC:

- Agenda – Circulate to SAC members one week in advance.
- Meetings – Use a workshop format to create a meaningful problem-solving environment and maintain consistency with agenda to the extent possible.
- Materials – Support participant learning by identifying ways to make it easy for the SAC members to track and access reference materials.
- Feedback – Seek participant feedback using a variety of approaches including verbal session evaluation, feedback forms at session, or online survey.
- Notes – Circulate to the SAC for feedback prior to sharing with public.

The SAC will be engaged during two phases of the CSO Master Plan process:

- Phase 1: Regulatory Performance Targets (Wrap-up October 2015)
- Phase 2: CSO Master Plan (Wrap-up October 2016)

7. Decision Making Input

No votes will be held to determine the SAC's position on issues or recommendations to the City of Winnipeg. Where consensus exists, it will be noted. Where it does not exist, minority opinions will be considered to have merit and will be noted. In the context of the SAC, consensus will be defined as "I will support the decision of the group." The opinions of all committee members will be valued and taken into consideration.

More specifically, SAC members' decision making involves:

- Contributing input for consideration by the project team in their decision making.
- No decisions will be made by the SAC unless asked by the project team. Where a decision is requested, it will be made by consensus.
- If requested, only SAC members will be involved in consensus decisions, and alternates only when primary member is not present.
- Decisions may be requested and made on SAC meeting and logistical requirements.

SAC activities and input will be summarized and included in a public participation report.

8. Roles and Responsibilities

Committee members

The role of SAC members is to invest time and energy in learning about the CSO management practices and regulation, review and provide input on potential CSO control limits and control methods, and provide input on and engage in the public participation process. Members are encouraged to represent the views of their organization/constituents/networks and facilitate a two-way flow of information in support of broader public education and engagement. This is a voluntary position.

Responsibilities of committee members are:

- Prepare for, attend, and participate in scheduled meetings between October 2014 and November 2016, normally scheduled from 4:00 pm to 6:00 pm, depending on need
- Participate in various public event(s) scheduled throughout the process
- Learn about CSOs and work constructively and collaboratively with committee members
- Identify an alternate representative in the event of a conflict with a scheduled meeting
- Allow name and organization to be posted on project website

Project team members

Project team members will work with the SAC in order to contribute background, context and subject matter expertise and explain the CSO Master Plan process, considerations and decision making criteria, and arrange for supports in order to help members achieve the SAC purpose.

Responsibilities of project team members are:

- Prepare and provide materials for review and discussion
- Arrange for meeting scheduling and logistics
- Be responsive to concerns raised by the committee, but not ask the committee to formally approve or disapprove any actions, or vote on issues or recommendations
- Incorporate the committee's advice and recommendations into decision-making to the maximum extent possible

Facilitator

The facilitator will support the work of the SAC through a focused process design and meeting facilitation.

Responsibilities of the facilitator are:

- Confirm SAC member participation, and act as a resource to SAC on process and expectations
- Facilitate (chair) committee meetings
- Enforce norms, ground rules developed by the SAC and project team and facilitate respectful and productive meetings and group dialogue
- Arrange preparation of meeting notes

Provisions for guests, observers

From time to time, the project team may request the participation of additional guest specialists, experts or consultants to contribute additional knowledge or technical insight to the committee's deliberation and discussion.

9. Committee Spokesperson

SAC members are encouraged to provide comments to the project team. In the event that a media enquiry is made, committee members are strongly encouraged to refer the media to the project team/manager.

10. Conflict of Interest

All SAC members, primary and alternates are required to disclose any conflict of interest in writing to the project team.

Appendix C: Meeting 1 Notes & Presentation (October 2, 2014)

City of Winnipeg's Combined Sewer Overflow Master Plan

Outline

- Winnipeg's Sewer History
- All about Combined Sewers
- Progress on Addressing Combined Sewer Overflows
- Combined Sewer Overflow Licensing
- The Combined Sewer Overflow Master Plan
- Next Steps

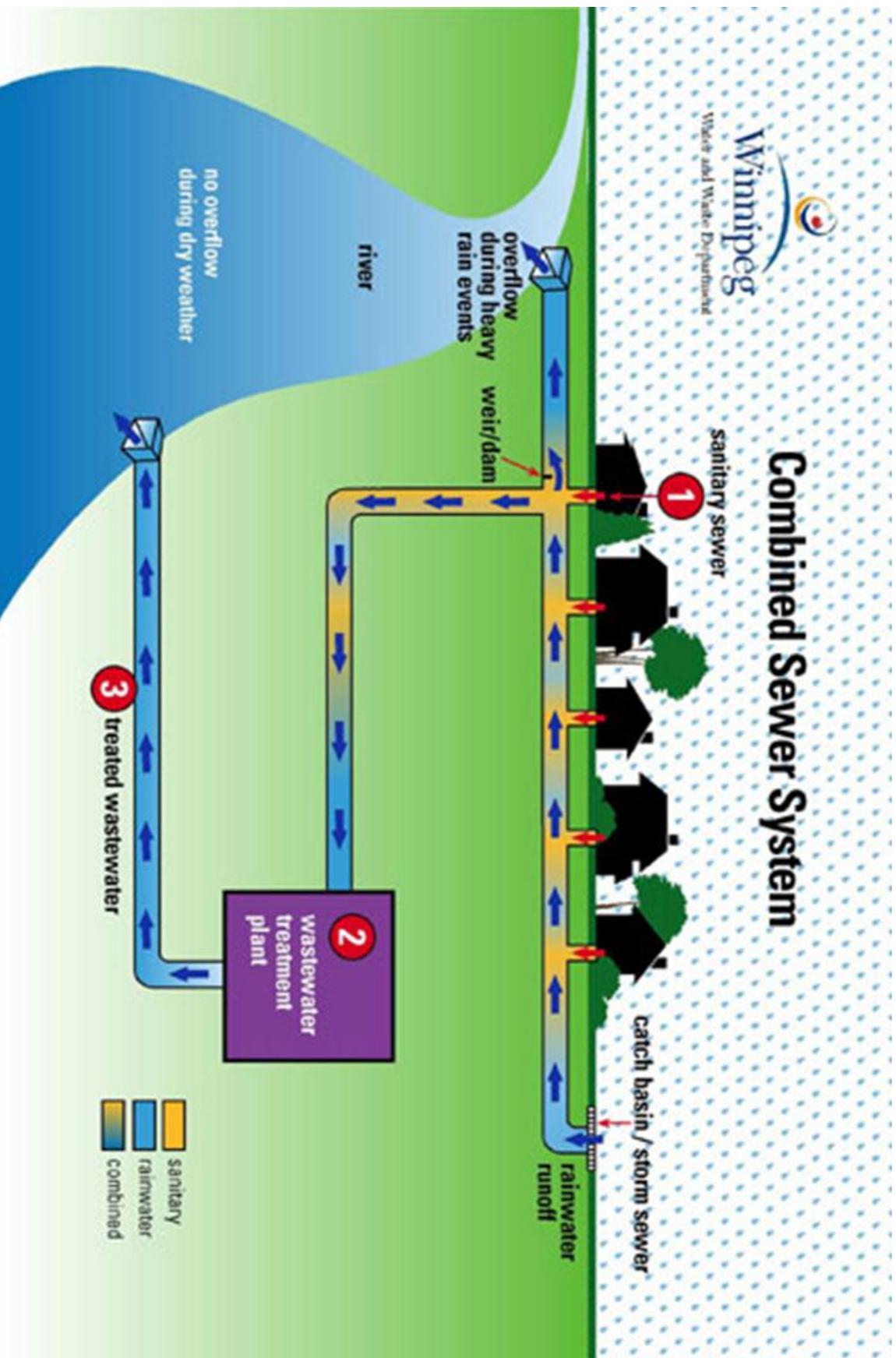
Winnipeg's Sewer History

- 1880's-1930's
 - sewers were constructed and flowed to the rivers
- 1930's-1960's
 - construction of sewage treatment plants
 - construction of interceptor sewers (divert dry weather flows to treatment plants)
 - most new sewers were combined sewers
- 1960's - today
 - installing separate sewers only

What are combined sewers?

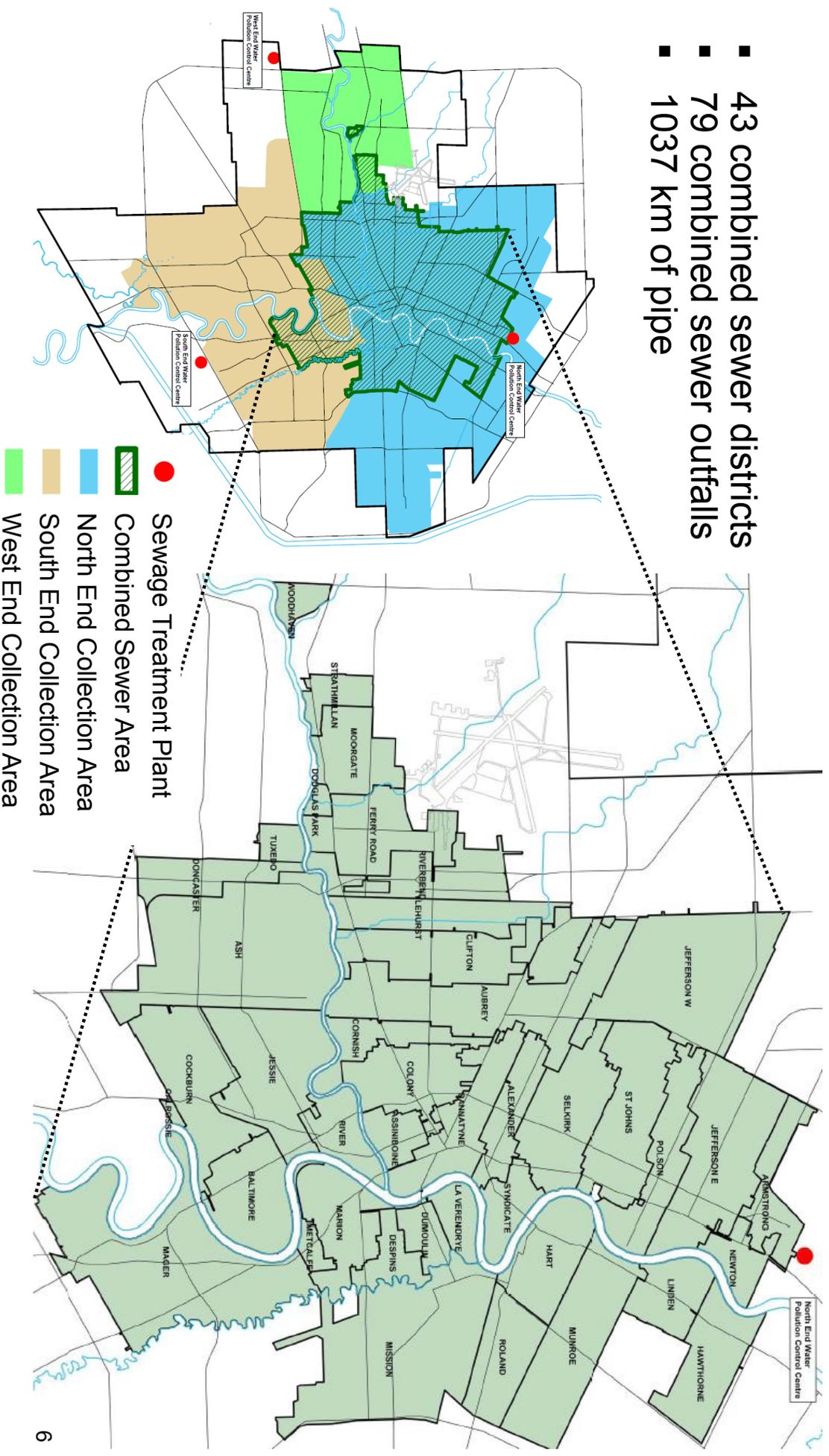
- A single pipe system, built between 1880's and 1960's, that collects both:
 - wastewater from homes and businesses, and
 - rainfall runoff and snow melt

Combined Sewer System



Combined Sewer System area

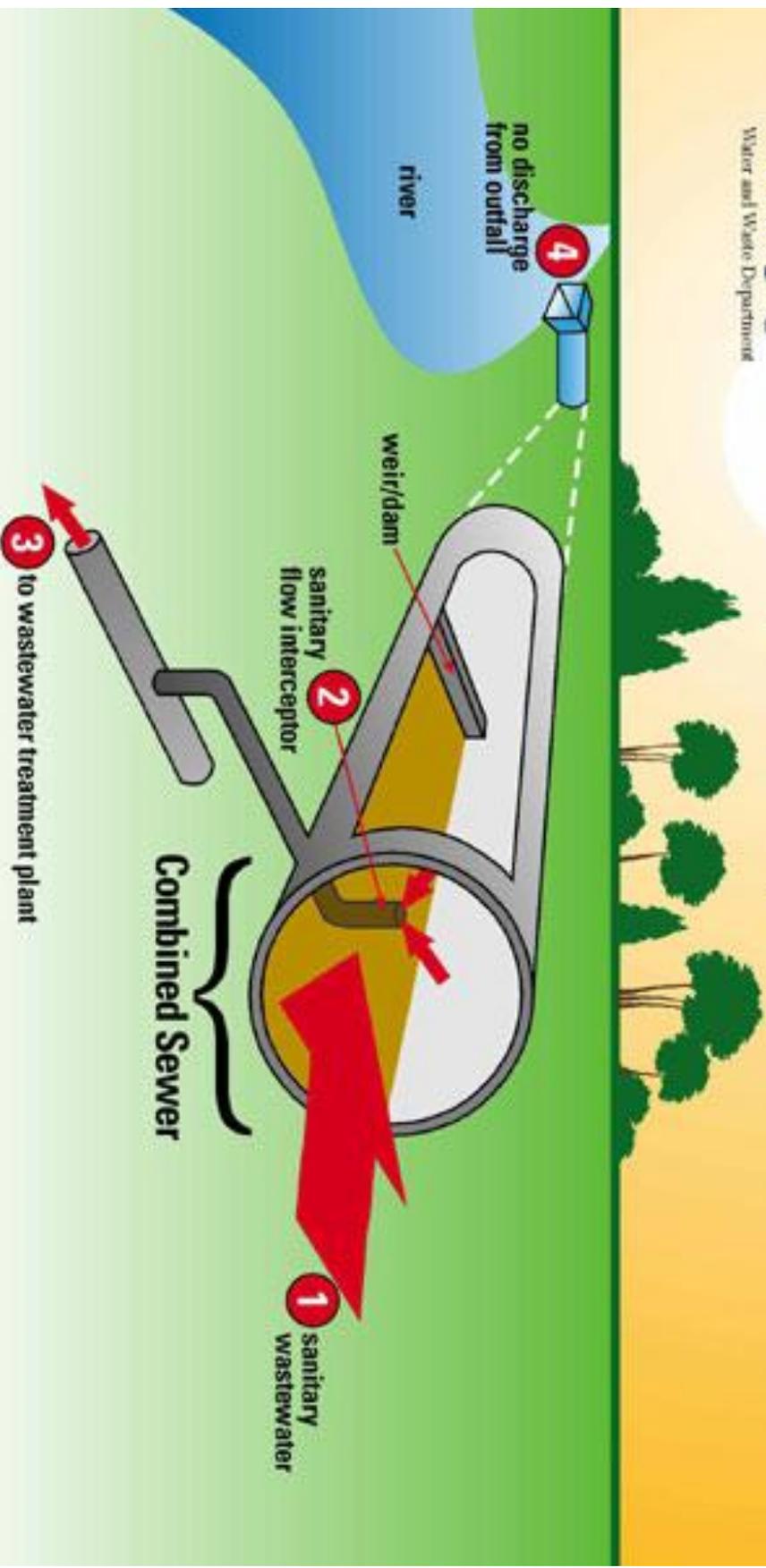
- 43 combined sewer districts
- 79 combined sewer outfalls
- 1037 km of pipe



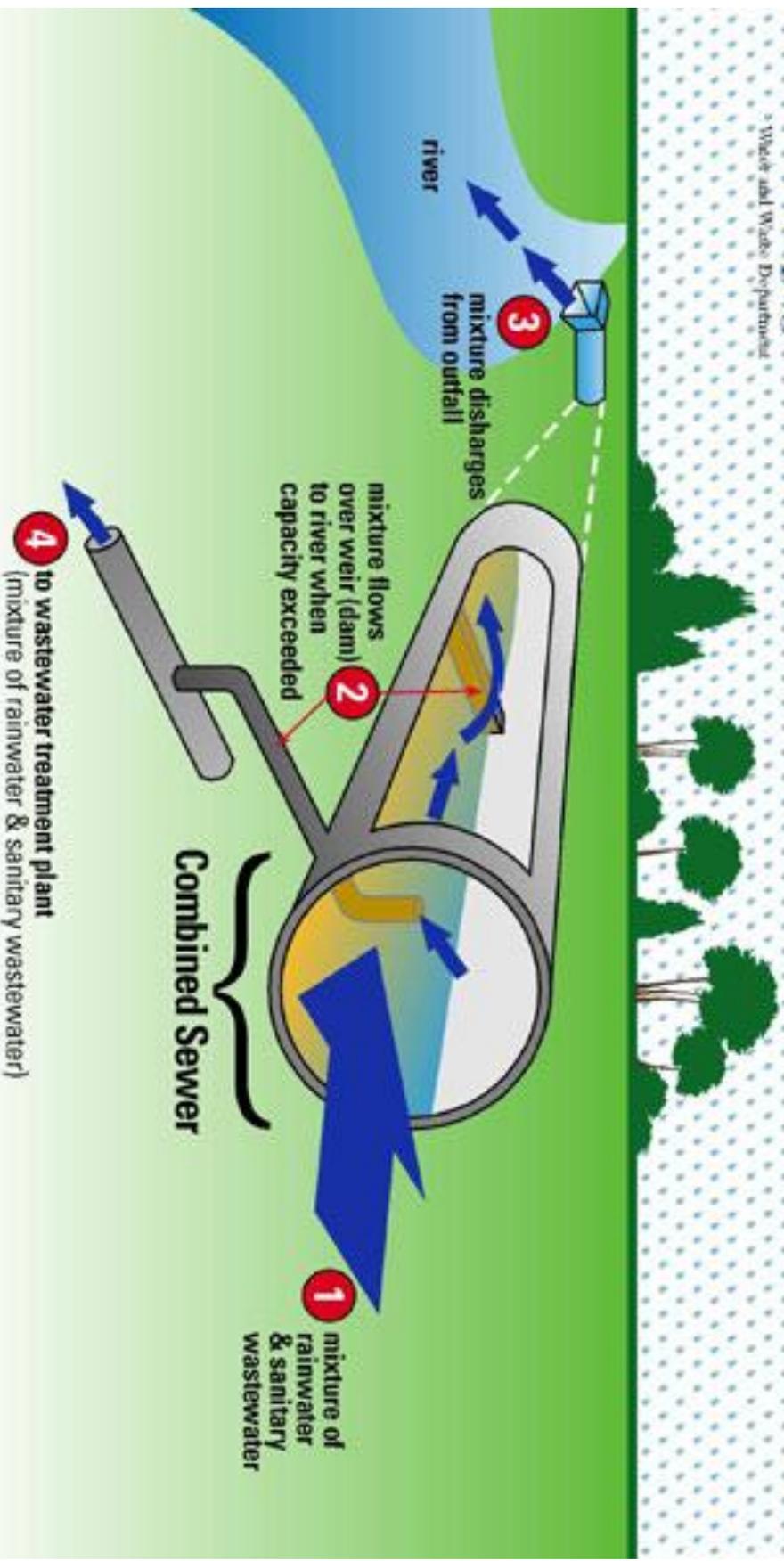
What is a combined sewer overflow?

- During dry weather, all flow in the combined sewers is carried to the sewage treatment plants
- During heavy rainfall or snowmelt, designed to overflow when the additional volume exceeds the capacity of the combined sewer system
 - the excess drains directly to the river without reaching the sewage treatment plant
 - called combined sewer overflows (CSOs)
- On average, occur about 22 times/year
- Typically 1% of the total annual sewage collected is lost through CSOs

Combined Sewer System Dry Weather Operation



Combined Sewer System Heavy Rain Operation

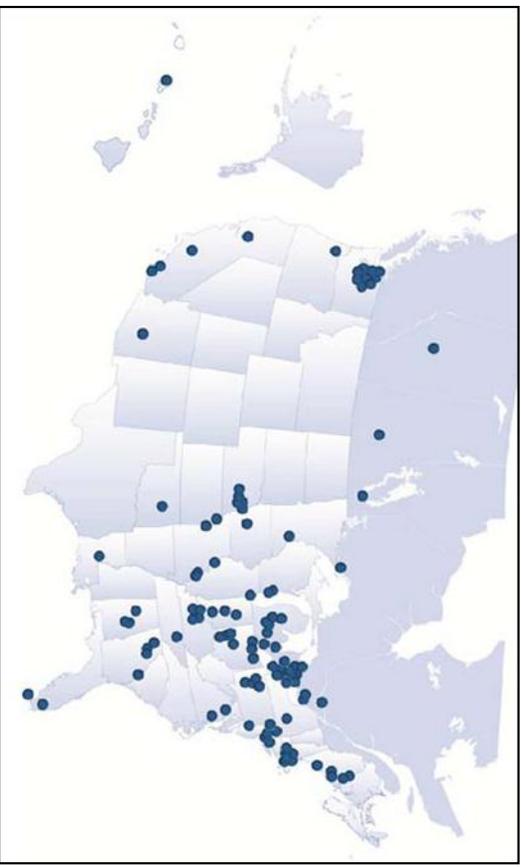


Why do combined sewer overflows occur?

- Help protect against basement flooding
- Help protect sewage treatment plant and collection system

Are CSOs unique to Winnipeg?

- Many older cities had combined sewer systems
- Most still have CSOs when it rains
- Most are working to reduce CSO impacts



Why should we reduce CSOs?

- Every time there is an overflow, there is a temporary discharge to the river of:
 - bacteria
 - floating debris
 - organic material
 - common urban pollutants from land drainage (e.g., oils, lawn/garden fertilizers)

What have we accomplished to date?

- Identified and reduced dry weather overflows through system upgrades
 - upgrading pumps, raising weirs, replacing pipes
- Identified and removed large inflows into the sewer system (e.g., ditches connecting to the sewer system)
- Developed and installed a computer monitoring system to provide early detection of high sewer levels and allow crews to respond and mitigate

What CSO projects are complete?

- Invested over \$75 million on investigating and reducing CSOs:
 - CSO outfall monitoring program
 - pilot stormwater retention tank
 - revised low-impact development standards to limit runoff
 - interceptor and collection system sewer flow monitoring
 - sewage pumping station improvements and capacity upgrades

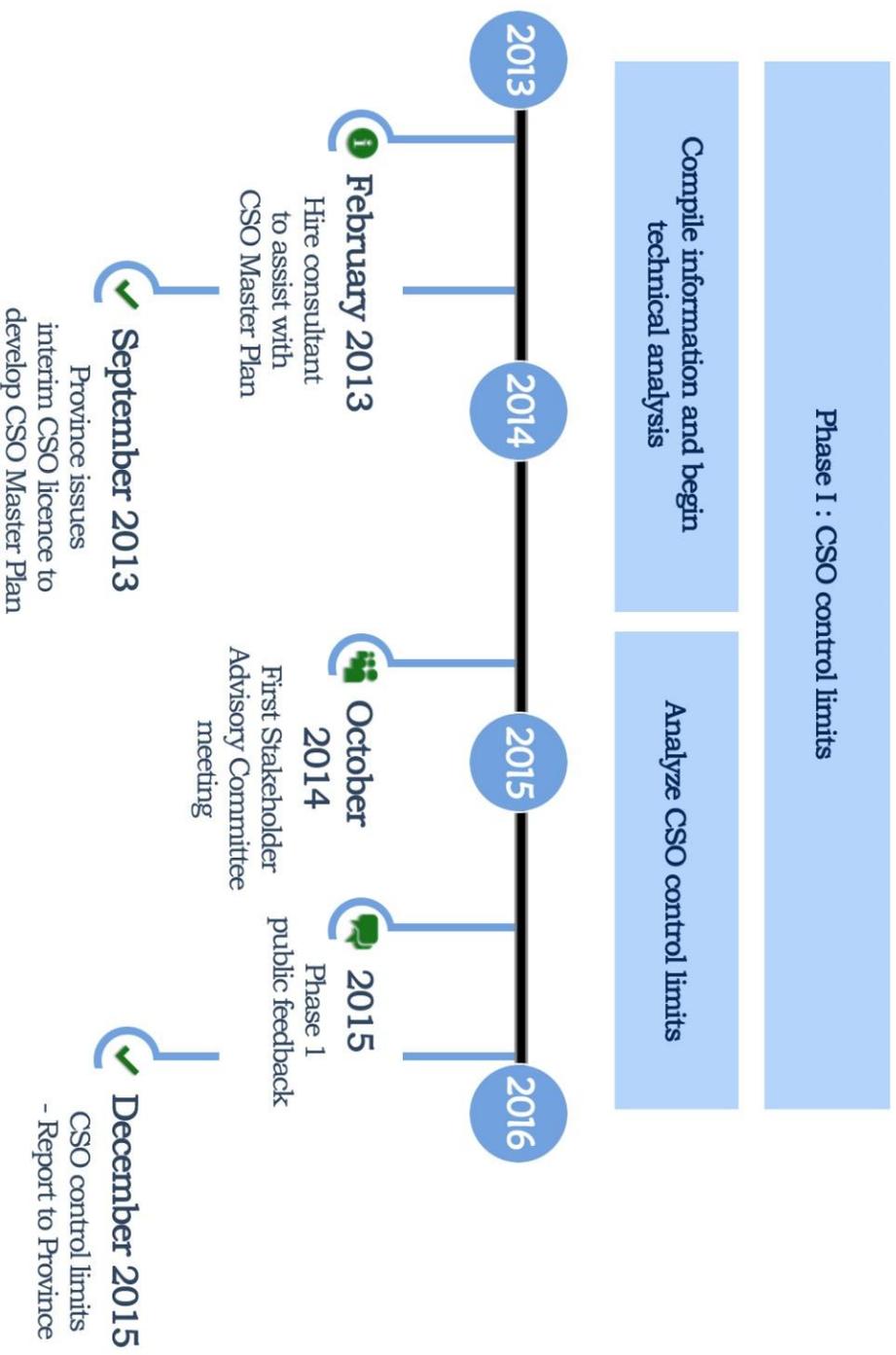


What CSO projects are complete? (cont'd)

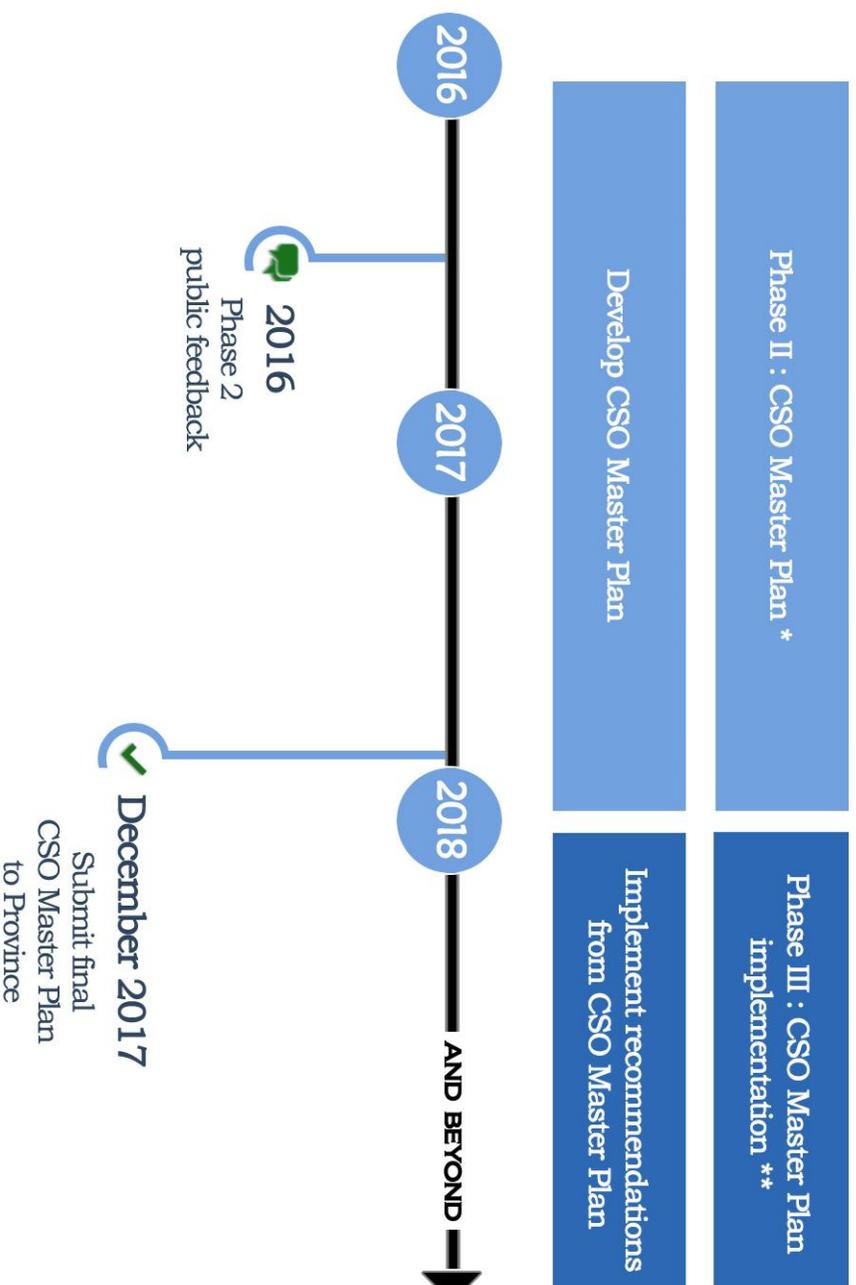
- Combined sewer renewals and replacements
- Combined sewer and basement flood relief studies
- Combined sewer separation projects
 - 1389 hectares separated out of 9705 hectares of combined sewer district



CSO Master Plan Timeline



CSO Master Plan Timeline



* Timeline is dependent upon provincial response to the CSO control limits report

** Subject to provincial approval of the Master Plan

What are the CSO regulatory requirements?

- The Province:
 - has regulatory responsibility since enactment of the Environment Act in 1988
 - Manitoba Conservation and Water Stewardship issued Environment Act Licence No. 3042 (EA No. 3042)
- Federal Requirements (2012)
 - policy for CSOs requires identification of discharge points and annual reporting of overflows

What are we required to do under Environment Act Licence No. 3042?

- Issued by the Province of Manitoba on September 4, 2013
- City will undertake work to:
 - develop a better understanding of CSO impacts and evaluate options
 - develop a long-term implementation program
- City will report back to the Province with a:
 - Preliminary Proposal by December 31, 2015
 - Final Master Plan by December 31, 2017

What are we required to do under Environment Act Licence No. 3042? (cont'd)

- Public education plan
 - submitted December 31, 2013
- CSO event reporting procedure
 - submitted December 31, 2013
- Water quality monitoring plan
 - submitted January 31, 2014
- Public notification system of CSO events
 - to be submitted by December 31, 2015

What needs to be included in the preliminary proposal?

- CSO limits to be evaluated:
 - EA No. 3042 requires:
 - maximum of 4 overflows events per year
 - zero combined sewer overflows
 - at least 85% capture and a maximum of 4 overflow events/year
 - explore other relevant control limits

What CSO control limits are used elsewhere?

- Maximum use of existing infrastructure
- Nine minimum controls (US CSO Policy)
- Environmental equivalent of separation (Edmonton)
- No more than 4 to 6 overflows/year (US CSO Policy)
- Capture and treat 85% of wet weather flows (US CSO Policy)
- River water quality standards:
 - not established for CSOs impacts

How will we evaluate CSO control limits?

- Criteria to evaluate CSO Control Limits:
 - feedback from the SAC
 - feedback from the public engagement process
 - affordability
 - constructability
 - maintainability
- environmental stewardship

What are CSO control options?

Control Option	Concerns
Sewer separation	Disruption, residual untreated stormwater
System flow balancing and real time controls	Modest control improvement, risk of increased basement flooding
Increase wet weather treatment at plants	Would threaten existing sewage plant licence compliance
Conveyance-storage tunnels	Constructability and maintenance
Green infrastructure	Modest control improvement, drainage retrofit takes decades,

What are the next steps?

- Work on CSO Master Plan is in progress
- Technical evaluations are underway
- Additional Stakeholder Advisory Committee meetings
- Regular liaison meetings with Provincial staff

**Combined Sewer Overflow Master Plan
Stakeholder Advisory Committee
Meeting #1 Notes**

Thursday, October 2, 2014, 4-6pm
Fort Rouge Recreation Centre, 625 Osborne Street

In Attendance:

Ani Terton	Manitoba Eco-Network
Jim Robinson	Lake Friendly / PMCR
Carmine Militano	Winnipeg Chamber of Commerce
Chris Lorenc	Manitoba Heavy Construction Association
Joy Kennedy	Manitoba Conservation and Water Stewardship (Water Quality)
Dale Karasiuk	Chalmers Neighbourhood Renewal
Colleen Mayer	Old St. Vital BIZ
Dorothea Blandford	Winnipeg Rowing Club
Tiffany Skomro	City of Winnipeg
Patrick Coote	City of Winnipeg
Andrew McMillan	City of Winnipeg
Ho Lau	City of Winnipeg
David Marsh	Dillon Consulting (guest)
Dennis Heinrichs	Dillon Consulting (guest)
Michelle Kuly Holland	First Person Strategies (facilitator)
Krista Stobart	First Person Strategies (recorder)

Regrets:

Colleen Sklar	Lake Friendly / PMCR
Megan Krohn	Manitoba Eco-Network
Julie Turenne-Maynard	Rivers West
Henry Borger	Manitoba Heavy Construction Association
Hank Venema	IISD
Gloria Desorcy	Consumers Association of Canada (Manitoba)
Tracey Braun	Manitoba Conservation and Water Stewardship (Licensing)
Christine Hutlet	Rivers West / Red River Basin Commission

Agenda:

1. Session opening, welcome & introductions
2. Committee purpose & overview
3. City project team presentation on CSOs and CSO Master Plan
4. Q & A
5. Session wrap up

1. Session opening, welcome & introductions

Committee members thanked for participating and introductions made.

Meeting #1 Purpose:

To ensure participants understand why they are here, what the committee is being asked to do, and to share information about the City of Winnipeg's sewer system, combined sewer overflows (CSOs), and the CSO Licence and master plan process underway.

Deliverables / Outcomes:

1. Understanding, clarity on terms of reference.
2. Greater understanding of the City's sewer system, combined sewer overflows (CSOs).
3. Identification of questions, items for clarification.

Meeting Guidelines:

- Strive to meet the stated purpose and expected outcomes of meeting
- Respect the agenda
- Listen actively to others
- No one-on-one side conversations while other are speaking, no interrupting
- Manage your own input – focused responses, comments and questions, not long speeches
- Where consensus exists, or has been reached, support group decisions
- Phones on silent, urgent calls responded to outside meeting room

Committee adopted meeting guidelines.

Committee members asked to identify their expectations:

- Be able to ask questions throughout process

2. Committee purpose & overview

Terms of Reference reviewed and adopted.

Discussion / Questions:

- Why is this a 2-year project?
 - o There are 2 phases – 1) control limits and control options and 2) developing a Master Plan.
- Will the proposed CSO Master Plan go to Council?
 - o The Proposed CSO Master Plan will be reviewed by the City to an appropriate level at different stages which may include Committee signoff.
- How does this process relate to the previous study (2002)?
 - o This is a continuation of that work and is a more formalized process to develop a plan.

Committee members asked for feedback on methods of sharing materials:

- A collaborative site
- Meeting minutes should also be shared with alternates
- Hard copies also useful

Meeting notes and materials will also be shared publicly on City of Winnipeg project website.

Phase 1 - CSO Control Limits SAC Timeline:



3. City project team presentation on CSOs and CSO Master Plan

Reference: PowerPoint presentation – will be circulated and posted on project website.

4. Q & A

Discussion / Questions:

- Can you define “clean” in terms of the water leaving the treatment plants? How do the pollution levels of discharge from a CSO compare to the discharge leaving a treatment plant?
 - o The Province has licensed discharge levels from treatment plants. Results are posted on City of Winnipeg website.
- Is there science that supports elimination of all combined sewers? Are outflows of CSOs monitored?
 - o The science is typically a risk based approach assessing environmental quality by identifying, evaluating, and managing existing and potential future risks to the environment and human health. Yes, 39 of the City’s combined outflows are monitored for occurrence of overflows; currently 2 are being monitored temporarily for water quality. There’s also an overflow risk from separate systems but this risk is much lower.
- How have you historically determined where to do infrastructure upgrades?
 - o Control centre continually monitors and flags problem areas; we also undertake condition assessments of pipes and use basement flooding statistics.
- What are other cities doing with their combined sewer systems? Are any jurisdictions going to zero combined sewers?
 - o There is an Experience Elsewhere Report available and the project team will put together a presentation to provide information on what other cities are doing.
- Can you provide examples of low impact development standards/practices?
- Presentation has talked about cost effectiveness, but nothing in presentation states that the main driver is (or should be) environmental improvement of waterways, and not just about meeting the CSO Licence. The presentation

- should clarify outcomes... e.g. what are the benefits, what environmental standards will improvements be designed to? When talking to stakeholders the context of cost/benefit should be shared.
- Is the objective to reduce the number of overflow events?
 - Will the Province handle some of the public consultation? Would like more details on what the public consultation process will involve.
 - o We're working with the Province. The City is planning to go to public in June.
 - The SAC needs to understand the social licence and the sustainability/environmental merits of this project. At the end of the day the public needs to be persuaded. This Committee should speak that language because we will be the ambassadors of the social benefit/rationale that underpins the project investments.
 - o A key role of the SAC is to help the project team frame the context for the public.
 - For a potential multimillion dollar project, consider dynamic modeling to ensure the right solutions/conclusions.
 - How was it determined that there needs to be a maximum of four overflows events per year? If 85% capture is desired, why does it matter how many overflows/year?
 - o Four tends to be the number that the EPA regulates to in the United States and was adopted here. Not sure exactly how EPA came up with four. Four overflows, 85% capture and the elimination or removal of no less than the mass of the CSO pollutants identified as causing water quality impairment are outlined in the US EPA CSO Control Policy as adequate levels of control to meet water quality based requirements. It's in the licence requirements that the Province has set and was also examined as part of the 2002 study.
 - o The City is looking beyond the CSO limits set in the licence and examining other control limits.
 - Is there a definition of the environmental standard objective to which we're developing the CSO Master Plan? What are the desired measurable outcomes? What exactly are we trying to do and how do we get there? Need information on how we define that standard.
 - o The input from this group will help define the objectives and standards. The desired outcome will be an improvement in water quality. We are assessing the impact CSO are having on water quality and potentially proposing upgrades to our sewer infrastructure to address them.
 - The context of the project should link to "Our Winnipeg".

5. Session wrap up

Next meeting – how do we talk about these concepts with stakeholders and the public

Meeting Logistics – please provide feedback on meeting time/location/day of week. Also looking for input on planning the larger symposium (Jan/Feb 2015)

Next meeting: Wednesday, November 19
Anhang Room, 2nd Floor, Millennium Library; 251 Donald St.

6. Follow-up Conference Call

A conference call was held for the committee members not in attendance at the October 2 meeting.

Call Attendees:

Colleen Sklar	Lake Friendly / PMCR
Megan Krohn	Manitoba Eco-Network
Julie Turenne-Maynard	Rivers West
Gloria Desorcy	Consumers Association of Canada (Manitoba)
Tracey Braun	Manitoba Conservation (Licensing)
Siobhan Burland Ross	Manitoba Conservation (Licensing)
Patrick Coote	City of Winnipeg
Andrew McMillan	City of Winnipeg
Tiffany Skomro	City of Winnipeg

Agenda:

- Welcome
- Recap committee roles and responsibilities
- Recap City presentation from Oct. 2 meeting with Q & A

Welcome, technical check and introductions

Recap committee roles and responsibilities:

- Reviewed committee purpose
- 2 year commitment, 2 phases of input
 - o Short term (Phase 1) focus: 2014 & Spring 2015 - control limits
 - o Longer term (Phase 2) focus: Master Plan for implementation of changes to achieve targets
- Influence: Collaborate level on International Association of Public Participation (IAP2) Spectrum
- Communication:
 - o Primarily via facilitator by email
 - o Shared resources via shared site and hard copy materials
 - o Meeting notes and materials will be posted online
 - o Primary and alternates will receive meeting materials

Recap City presentation from Oct. 2 meeting with Q & A:

Presentation given via webinar (pdf version provided to those who called in)

Discussion / Questions:

- Has the province and the city been setting aside funding to construct improvements to CSOs, or are they waiting for the Master Plan to be finished before funding?
 - o (Province) Don't know the answer from the Province's point of view.
 - o (City) There have been yearly allocations in the budget, but much depends on outcome of the Master Plan.

- It was noted the SAC group will be involved in setting targets, but targets are set in the licence. Can you clarify?
 - o SAC will have a role in evaluating targets.
- As part of the options considered with the Master Plan will there be an opportunity to use infrastructure design to hold back storm water (e.g. pilot project at UofW)?
 - o Green infrastructure is being considered.

7. Summary of Action Items and Administrative Follow-ups

As of November 10, 2014

Complete:

- COMMITTEE MEMBERS: Provide feedback on meeting time/location/day of week and input on planning the larger symposium (Jan/Feb 2015)
 - o *November meeting date set for:*
 - *Wednesday, November 19, 3:45 – 6:00p.m., Anhang Room, 2nd Floor, Millenium Library, 251 Donald St.*
- FACILITATOR: Circulate meeting notes to Committee members and alternates for feedback and comment prior to Meeting #2.
- FACILITATOR: Post meeting notes, PowerPoint presentation and reference materials on shared site for Committee members.
- Where possible, CITY PROJECT TEAM: Provide additional information in response to questions and comments raised at the meeting.
 - *Responses and additional information provided below:*
 - Can you provide examples of low impact development standards/practices?
 - o Low Impact Development (LID) is a storm water management strategy that seeks to mitigate the impacts of increased runoff and storm water pollution. Management practices promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. Green roofs, swales, retention basins are some examples of sustainable storm water management solutions to control runoff from new developments ensuring they have low impact with regards to runoff.
 - Presentation has talked about cost effectiveness, but nothing in presentation states that the main driver is (or should be) environmental improvement of waterways, and not just about meeting the CSO Licence. The presentation should clarify outcomes... e.g. what are the benefits, what environmental standards will improvements be designed to? When talking to stakeholders the context of cost/benefit should be shared.
 - o We are going to assess and report on the potential improvement in water quality for a range of control limits.
 - Is the objective to reduce the number of overflow events?
 - o Other City's CSO programs typically involve reducing the number of overflows and it's likely we will need to do the same. Once a need to address water quality is confirmed the main considerations are

typically what to limit them too, how to do it, sustainability, cost and time needed to achieve it.

- For a potential multi-million dollar project, consider dynamic modeling to ensure the right solutions/conclusions.
 - o Hydraulic models of the sewer system and a water quality river model are being developed as part of the project.
- The context of the project in public communications should link to “OurWinnipeg”
 - o This project aligns with the direction set out for the water and waste department in Our Winnipeg, its policies and initiatives. The CSO Master Plan project was one of the example projects outlined in Our Winnipeg.

In progress:

- COMMITTEE MEMBERS: Book the following tentative dates and times for upcoming meetings at the Buchwald Room, 2nd Floor, 251 Donald St.
 - o Thursday, March 12, 2015, 3:45-6:00pm
 - o Thursday, April 9, 2015, 3:45-6:00pm
 - o Thursday, May 28, 2015, 3:45-6:00pm
- CITY PROJECT TEAM: Produce hard copies of meeting notes, PowerPoint presentation and reference materials for Committee members at next meeting.
- CITY PROJECT TEAM: Share meeting notes and PowerPoint presentation publicly on City of Winnipeg project website following Committee feedback.
- CITY PROJECT TEAM: Prepare a presentation on Experience Elsewhere.

Appendix D: Meeting 2 Notes & Presentation (November 19, 2014)

City of Winnipeg's

Combined Sewer Overflow

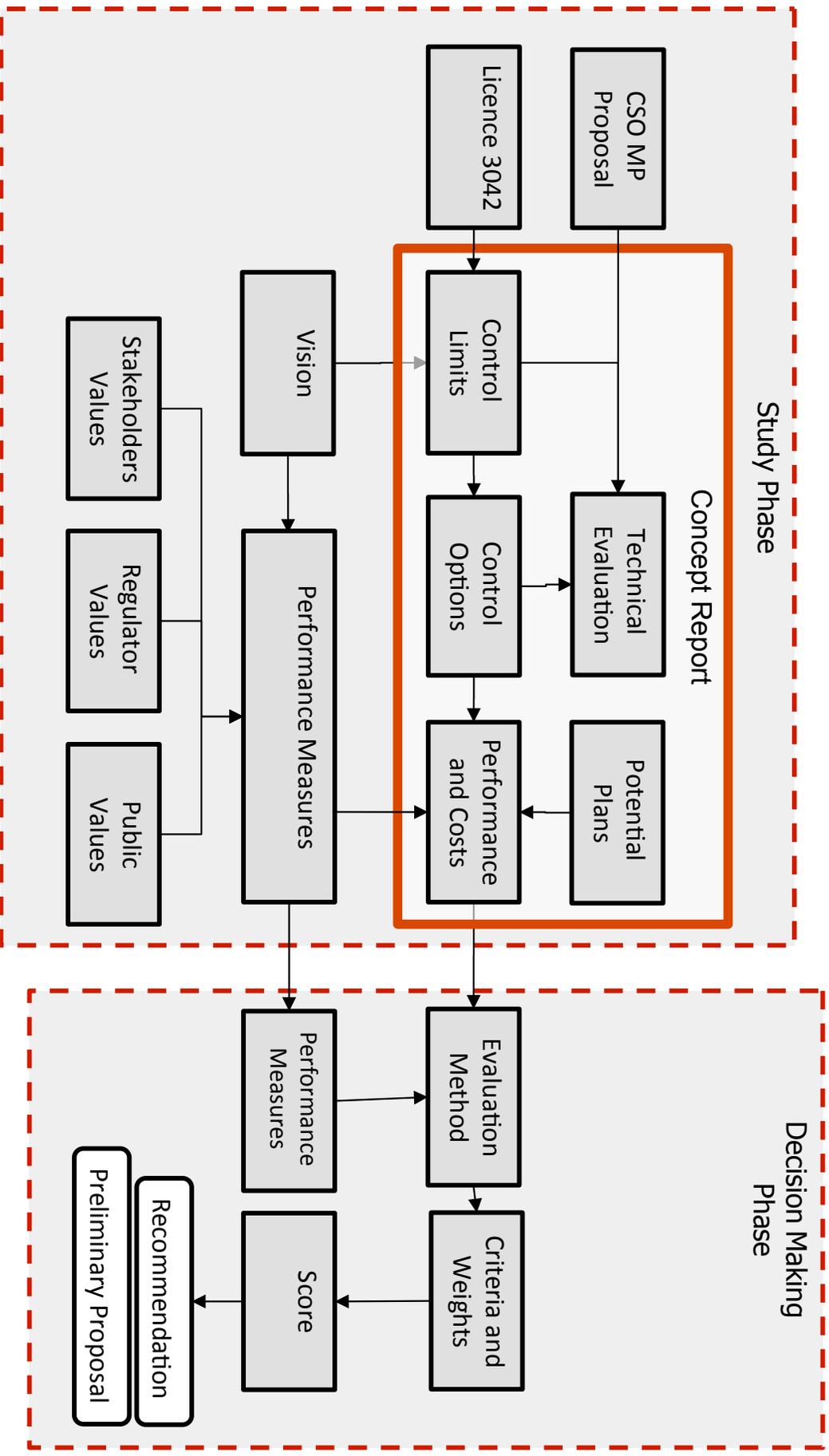
Master Plan

SAC Mtg. #2

What CSO Control Limit do we want to achieve and how are we going to do it?

- We want to develop an acceptable limit for the number of CSOs
- We are going to look at a range of modifications to the existing combined sewer system
- We will evaluate the options using criteria specific to Winnipeg
- We will include the input of regulators, stakeholders and the public

Decision Making Roadmap



Decision Making Process

- Analysis of Control Options
- Experience Elsewhere – lessons learned
- Performance Measures
- Input from regulator, stakeholders and public
- Weight criteria and scoring exercise based on weighted criteria
- Recommendation submitted to Province by Dec 2015

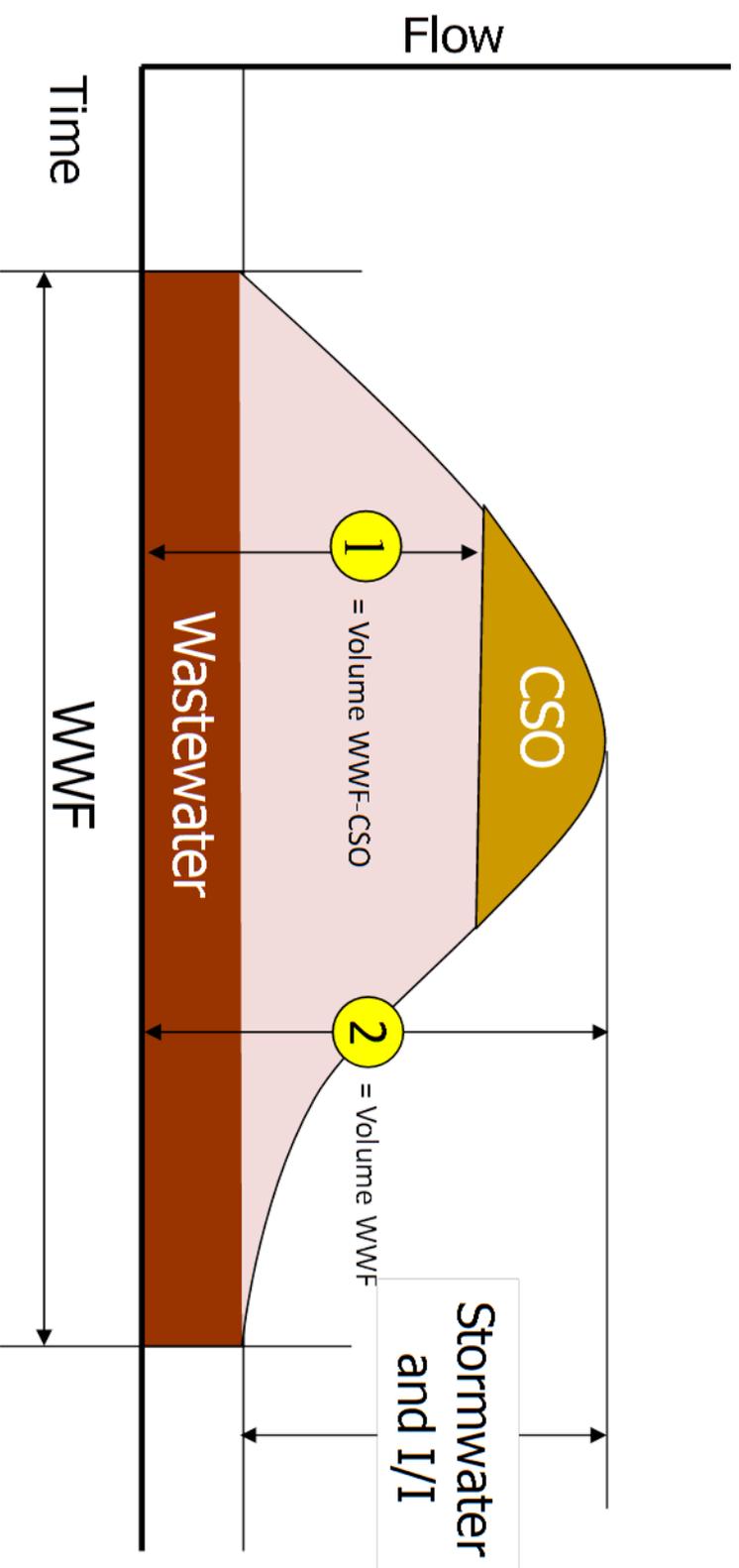
Control Limits

- As part of the CSO licence we are looking at what modifications need to be made to our combined sewer system to limit CSOs to:
 - zero overflows,
 - four overflows,
 - a minimum of 85% volume capture of wet weather flow with a maximum of four overflows, and
 - a range of other limits.

Control Limits Cont'd

- Other approaches being considered:
 - Watershed Approach
 - Environmental Equivalent of Separation
 - Water Quality Performance
 - Maximum use of existing infrastructure
 - “Knee-of-the-Curve” or best use of resources

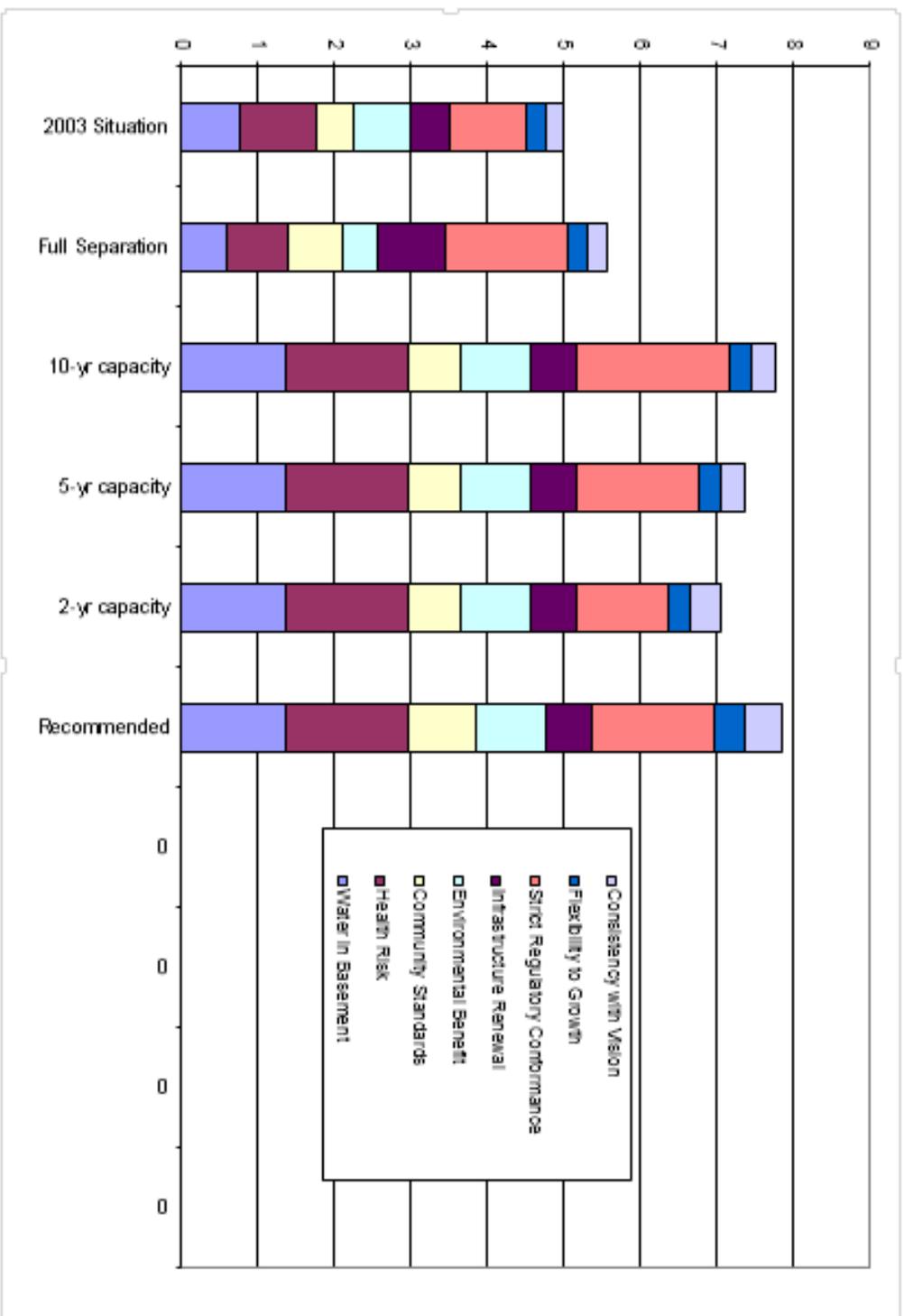
Control Limits Cont'd



Develop a Common Vision for the CSO Master Plan

- Environmentally responsible
- Affordable
- Sustainable
- Regulatory compliance
- Politically acceptable
- Preventing Basement Flooding
- Community Values

Scoring Matrix – Example



Developing Performance Measures for Winnipeg CSO Control

- System performance measures:
- Environmental performance measures:
- Number of overflow events
- Volume of overflows
- Duration of overflow
- Flow diverted to treatment
- Water Quality
- Nutrients
- Aesthetics

Developing Performance Measures for Winnipeg CSO Control Cont'd

- **Affordability**
 - Utility Rates
 - Whole Life cost
- **Regulatory Compliance**
- **Community Values**
 - Construction industry
 - Traffic disruption
 - Sustainability
 - Feasibility

Questions?

**Combined Sewer Overflow Master Plan
Stakeholder Advisory Committee (SAC)
Meeting #2 Notes**

Wednesday, November 19, 2014, 4:15 PM – 6:30 PM

Anhang Room, Millennium Library, 251 Donald Street

In Attendance:

Henry David (Hank) Venema	International Institute of Sustainable Development
Ani Terton	Manitoba Eco-Network
Chris Lorenc	Manitoba Heavy Construction Association
Dale Karasiuk	Chalmers Neighbourhood Renewal Corporation
Julie Turenne-Maynard	Rivers West
Joy Kennedy	Manitoba Conservation and Water Stewardship (Water Quality)
Yvonne Hawryliuk	Manitoba Conservation and Water Stewardship (Environmental Compliance and Enforcement)
Andrew McMillan	City of Winnipeg – Water and Waste
Patrick Coote	City of Winnipeg – Water and Waste
Tiffany Skomro	City of Winnipeg – Water and Waste
Duane Griffin	City of Winnipeg – Water and Waste
Michelle Kuly Holland	Facilitator
Dennis Heinrichs	Consultant – Dillon
Brendan Salakoh	Consultant – Dillon

Regrets:

Ho Lau	City of Winnipeg – Water and Waste
David Marsh	Consultant – Dillon
Tracey Braun	Manitoba Conservation and Water Stewardship (Environmental Approvals)
Carmine Militano	Winnipeg Chamber of Commerce
Colleen Mayer	Old St. Vital Biz
Colleen Sklar	Lake Friendly Manitoba; Partnership of the Manitoba Capital Region
Gloria Desorcy	Consumer Association of Canada
Dorothea Blandford	Winnipeg Rowing Club

Agenda:

1. Session opening & administrative items
2. Licence background and context from regulator
3. Committee perspectives on CSO planning:
 - a. What perspectives are around the table, and why are they important
 - b. Important considerations for planning (issues, opportunities, constraints)
 - c. What would help increase public understanding and interest about CSO Master Plan

4. Decision making on control limits: process and criteria
5. Session wrap up and next steps

1. Session opening & administrative items

Introductions were given. Administrative items were noted. The previous meeting's notes were adopted.

It was noted that the Millennium Library would serve as the primary venue for future meetings and events.

Binders were circulated and, along with the Basecamp website, will serve as a repository for SAC information (e.g. agendas, notes, presentations, background information, and terms of reference).

Meeting #2 Purpose:

- To learn more about the context, perspectives, and experiences of SAC members;
- To begin gathering input on important considerations and criteria for the CSO Master Plan, including issues, opportunities and constraints;
- To gather preliminary input into defining a guiding vision for the CSO Master Plan; and,
- To set the criteria for defining control limits.

SAC members were asked what their personal objectives were for the meeting.

Responses included:

- Understanding different perspectives;
- Understanding the process;
- To absorb and learn;
- To ensure that the proposed solutions are cost effective (value for money), efficient, sustainable, innovative (e.g. green infrastructure), and in the public interest;
- To make connections with different groups; and,
- To ensure that decisions are not made in silos, and that solutions are made in concert with related initiatives (e.g. other river or lake programs).

2. Licence background and context from regulator

Tracey Braun (Manitoba Conservation and Water Stewardship – Environmental Approvals) sent her regrets, and was not able to present on this agenda item. Tracey

offered to respond to any question or concerns regarding the licence and asked that be forwarded to the Province. Questions included:

- How do some of the new, larger developments in the City of Winnipeg comply with clause #8 of the licence?
- How were the Province's targets and metrics developed? How did they arrive at their measures?

Additional discussion regarding the licence:

- Clause #12 outlines the effluent quality standards, which are non-negotiable.
- Clause #11 prescribes the development of the CSO Master Plan; it's up to the City to determine how they will meet the Province's targets. #11 also outlines the minimum requirements.

3. Committee perspectives on CSO planning

Discussion on the hydraulic model:

The City noted that the consulting team is developing a hydraulic model. The water quality model, takes into account every CSO outfall in the City. It was noted that while bio-retention systems are not typically modeled in detail for these types of studies, flow can be taken out of the model (e.g. through area reduction) to simulate the effects that such green infrastructure might have on flows. It was also noted that 2D run-off was not simulated in the model. This type of run-off overland flow modelling is not necessary for this study and is more likely to be used in very detailed flood modeling (rather than in CSO and river quality modeling) and is very costly.

- How does the modeling fit in with river and waterfront development plans (Go To the Waterfront, Vision 2030)?
- How is climate change being considered in the model?

Discussion on CSO and licence context:

It was noted that both the modeling and licence discussions might be too technical for some of the SAC members, particularly without the licence's context being presented.

- It was added that the licence needs to be presented and understood, including its background and intent, before the SAC can provide meaningful feedback.

It was noted that CSOs' impacts (and why they are problematic) need to be understood before any solutions can be debated. It was not clear to some SAC

members whether CSOs were an aesthetic problem, a public health problem, a water quality problem, a problem for Lake Winnipeg, or some combination of those problems.

It was suggested that a video (or other form of graphic content) could be prepared to explain the CSO context. The City added that an animation explaining CSOs is currently being developed.

There was discussion about what the animation should include. It was reiterated that context, understanding, and the definition of the problem is needed first.

- A concise background brief (whether in video, presentation, or document format) would be helpful, as would an explanation as to what the group is trying to achieve.

There was some discussion as to whether CSOs have any discernible impact on Lake Winnipeg. It was noted that the nutrient load from all Winnipeg discharges (wastewater plants and CSOs) versus loading from the watershed as a whole was in the range of approximately 7% of Manitoba based sources or 3% of watershed sources. Rather, it is agricultural run-off from fertilizer (potassium and nitrogen) that is having a major impact on the lake, some argued. This is exacerbated by the fact that drainage works have sped up the flow to rivers, while wetlands (which naturally retain and filter water) have continued to be filled.

- Some asked whether this is being taken into account in the licence discussion, and whether the City is being unfairly targeted.
 - o It was noted that all municipalities must comply with effluent quality standards (clause #12 in the licence), not just the City of Winnipeg.

It was reiterated that the intent or objective of the licence is unclear. It was asked whether the purpose of the Master Plan is to:

- Protect Lake Winnipeg from nutrient loading?
- Protect the rivers' ecosystems?
- Ensure that the rivers are aesthetically pleasing?
- Meet a public policy objective?

It was noted that until there is a clear answer, it will be difficult to develop any meaningful stakeholder advisory process and input towards deciding on solutions to mitigate CSOs and comply with the licence.

Some felt that this was not a two-way dialogue – rather, they felt as though the terms of the licence were mandated by the Province with minimal consultation, and without consideration of the potential financial impacts on the City. The broader view of where CSO fits in environmental management needs to be understood by the SAC. These meetings need to address this need.

Discussion regarding public education / symposium:

It was noted that prior to going to the wider public, it is necessary that the SAC and project team have a better understanding of the context, impacts, and intent of the licence. There must also be answers to outstanding questions, or the project might not be well received by the community (particularly if the costs are going to be significant). People must be shown that there is value for money in mitigating CSOs. The Province must also understand that at a certain point, the costs of mitigation begin to outweigh its benefits (incremental benefits/ diminishing returns) – therefore, there needs to be some balance. It was noted that trade-offs would have to be discussed, and that a discussion regarding the potential tax burden would have to take place with the larger community.

The symposium date has been tentatively set for January 28, 2015. There was some discussion as to whether the group was ready for the symposium, and whether an additional SAC meeting needed to be held prior. Some were hesitant to have their names associated with the SAC, in that a symposium with few answers and little background context might reflect poorly on the group.

Discussion on innovative solutions:

Some noted that the City must demonstrate leadership, seeking innovative solutions to mitigating CSOs. Some innovations discussed included:

- Green infrastructure
- A system of trading credits. For example, the City pays a farmer upstream to reduce the runoff their farm drains into the river; the amount investing has greater return than that of a City solution, but sees the equivalent or greater amount of nutrient reduction, making the “trade” more cost effective. An example in Ottawa was alluded to.

4. Decision making on control limits: process and criteria

The City made a brief Power Point presentation to give an overview of the decision process for selecting an acceptable control limit for CSOs and where stakeholders fit into the process.

Reference: The Control Limits SAC Presentation November 19, 2014 will be circulated and posted on the project website.

5. Session wrap up

Future meeting dates/times/locations are as follows:

- Thursday, March 12, 2015, 3:45-6:00pm
- Thursday, April 9, 2015, 3:45-6:00pm
- Thursday, May 28, 2015, 3:45-6:00pm

All meetings to be held at the Millennium Library (Buchwald or Anhang Room, 2nd Floor) at 251 Donald Street.

The symposium is tentatively set for Wednesday, January 28, 2015 (tentatively 5 - 8 PM) in the Carol Shields Room Auditorium (Millennium Library, 251 Donald Street).

Attendees were thanked for their participation, and the meeting was adjourned.

6. Summary of Action Items and Administrative Follow-ups

Complete:

- Where possible, CITY PROJECT TEAM: provided additional information in response to questions and comments raised at the meeting.
 - *Responses and additional information provided below.*
- How is runoff represented in the hydraulic model?
 - o Runoff is represented in the collections model based on the amount of permeable and impermeable area draining to the combined, land drainage and wastewater sewer networks being studied.
- How does the modeling fit in with river and waterfront development plans (Go to the Waterfront, Vision 2030)?
 - o For the first phase of the project we would look to identify a "Value" to include in our vision for the project such as master plan coordination. Following the first phase when we have selected a control limit we will be looking at the ways we can achieve and deliver it in the second phase. This is where we would look at coordination with other projects, which can provide significant cost savings, reduce disruption and achieve better results through development efficiencies.
- How is climate change being considered in the model?
 - o We are looking at our historic rainfall record and using statistical analysis. We are also looking at risk analysis. Looking at climate change is all about risk. E.g.: There is a risk of larger more intense

rainfall events - in terms of the existing combined system this would result in future larger CSO events but there may be less small events. E.g.: There is a risk of an extended dry period - in terms of the existing combined system this would result in less future CSO events.

- Some noted that the nutrient load from all Winnipeg discharges (wastewater plants and CSOs) versus loading from the watershed as a whole was in the range of approximately 7% of Manitoba based sources or 3% of watershed sources.
 - o This comment is referring to a November 2002 nutrient loading report undertaken by the Province (A Preliminary Estimate of TN and TP Loading to Streams in Manitoba). This report and another relevant earlier nutrient trend report can be found here. http://www.gov.mb.ca/conservation/waterstewardship/water_quality/index.html
 - o The 2002 report is based on long term (1994 -2001) river monitoring data and estimates total nutrient contributions from the City of Winnipeg to Lake Winnipeg These estimates are TN (total nitrogen) is 5.7% and of TP (total phosphorus) 6.7%. As these percentages cover the three sewerage treatment plants, land drainage and CSO discharges, the report estimates CSO only make up 79 tons a year or 0.1% of TN and 16 tons a year or 0.3% of TP.
 - o Lake Winnipeg is estimated to receive 63,207 tons a year of TN and 5,838 tons a year of TP.

In progress:

- J. TURENNE-MAYNARD/H. VENEMA: Opportunity to follow up by email or phone to provide additional information on hydraulic modelling.
- FACILITATOR/CITY PROJECT TEAM: Provide feedback, questions, and clarifications on licence to Province for response.
- PROVINCE: Prepare a background brief of the licence context (video, presentation, or document format) and explanation as to what the group is trying to achieve as it relates to the licence.
- CITY PROJECT TEAM/FACILITATOR: Confirm and provide further details for symposium, 2015 meetings to SAC.
- FACILITATOR: Circulate meeting #2 notes to Committee members and alternates for feedback and comment prior to posting on project webpage.

- FACILITATOR: Post meeting #2 notes and PowerPoint presentation and reference materials on shared site for Committee members.
- CITY PROJECT TEAM: Produce hard copies of final meeting #2 notes and presentation for Committee members at next meeting.
- CITY PROJECT TEAM: Share meeting notes and presentation publicly on City of Winnipeg project website following Committee feedback.

Appendix E: Meeting 3 Notes & Presentation (January 28, 2015)

Regulatory Considerations: Combined Sewer Overflows (CSOs)

Siobhan Burland Ross, M.Eng., P.Eng.

Manager, Municipal and Industrial

Environmental Approvals Branch

Manitoba Conservation and Water Stewardship

January 28, 2015

Manitoba



Combined Sewer Overflows (CSOs)

- Both storm water and wastewater, including domestic and industrial wastewater
- Storm water is dilute
- High and variable flows

Clean Environment Commission (CEC)

- CEC Report on Public Hearings (2003):
 - City’s original plan: 2053
 - CEC’s recommendation: 2023 – 2028 with significant action taken by 2006
- Current Licence: 2030

Clean Environment Commission (CEC)

- CEC recommended:
 - managing CSOs on an annual basis and not just during the recreational season
 - targeting CSO districts on a priority basis
 - implementing public notification for release of raw sewage

Canada-Wide Strategy

- **CSOs/SSOs included in Strategy – Manitoba signed in 2009:**
- CSO/SSO do not increase in frequency due to development
- Within 7 years (2016) meet the national overflow standards for CSO/SSO
- Within 7 years (2016) have long term plans in place to reduce CSOs and capture substances

Canada-Wide Strategy

National Standards in Strategy:

- No increase in CSO frequency due to development or redevelopment
- No CSO discharge during dry weather
- Removal of floatable materials



Wastewater Systems Effluent Regulation

Federal W/SER requires that facilities identify the location of all CSOs and report on the quantity of wastewater discharged via CSO

Manitoba Water Quality Standards, Objectives and Guidelines

- Regulation in 2011
- Phosphorus limit of 1 mg/L applies to existing facilities >820 kg TP (~2000 persons)
- Cumulative load includes multiple treatment facilities and combined sewer overflows



Environment Act Licence

- Conservation and Water Stewardship issued Environment Act Licence No. 3042 to address CSOs that contains a requirement for the City to develop a plan for approval by 2017 to be implemented by 2030.

Environment Act Licence

- No increase in CSOs due to development
- Use of green technology
- Public notification/education plans
- Require a plan to meet requirements by 2030
- Minimum requirements for treatment
- Reporting requirements

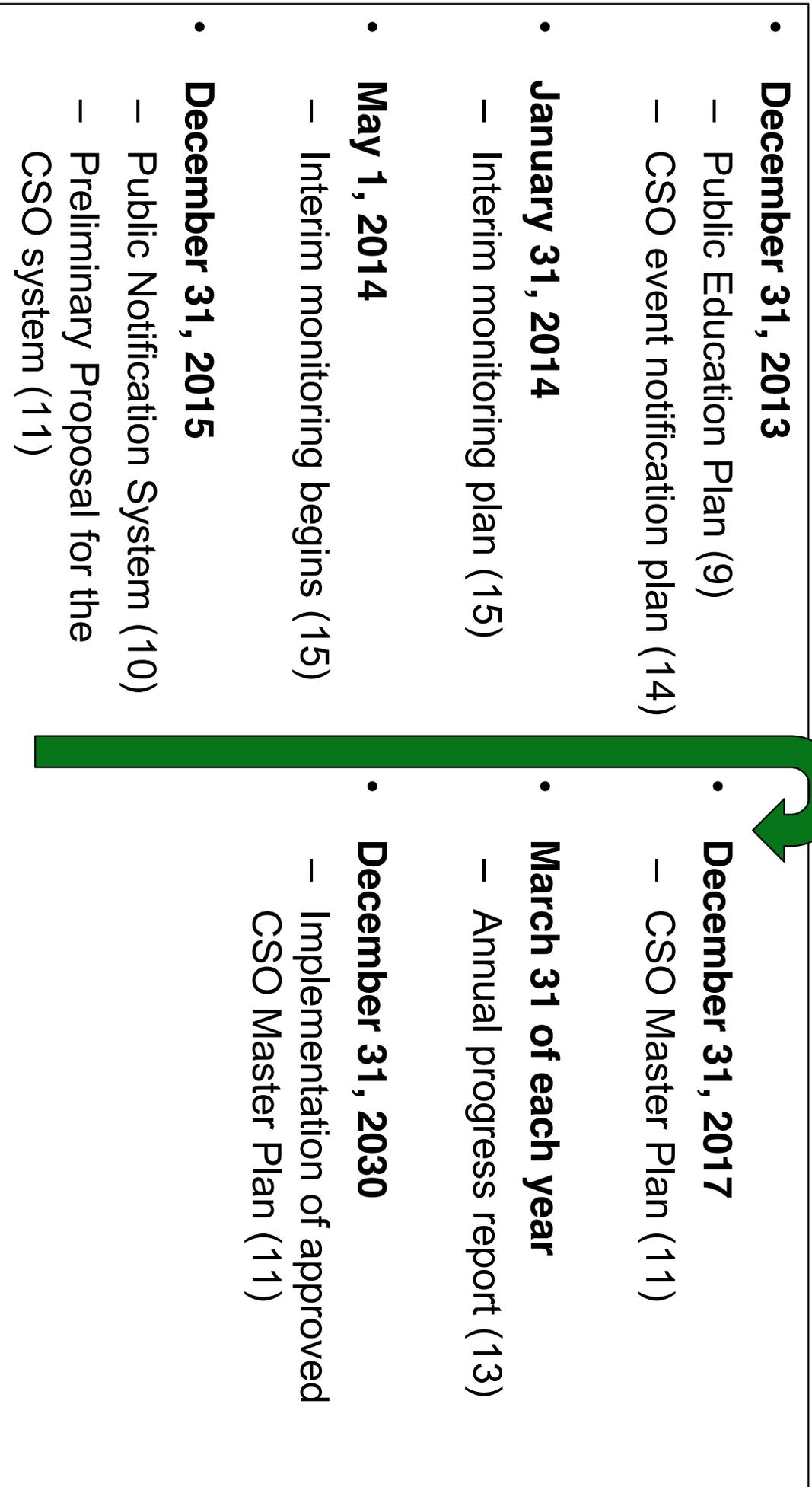
Environment Act Licence

- Intent of the requirements is to provide the equivalent of primary treatment to the majority of the wastewater collected in the CSO system (85%)
- Requires that the City propose in the plan submitted per Clause 11 how the requirements of Clause 12 will be met.

Environment Act Licence

- **Clause 12 Requirements:**
 - Removal of floatable materials
 - Effluent quality (at least 85%):
 - BOD5 < 50 mg/L
 - TSS < 50 mg/L
 - Total phosphorus < 1 mg/L
 - E.coli < 1000/100 mL

Licence Timelines



**Combined Sewer Overflow Master Plan
Stakeholder Advisory Committee (SAC)
Meeting #3 Notes**

Wednesday, January 28, 2014, 4:00 PM – 6:30 PM
Carol Shields Auditorium, Millennium Library, 251 Donald Street

In Attendance:

Ani Terton	Manitoba Eco-Network
Dale Karasiuk	Chalmers Neighbourhood Renewal Corporation
Carmine Militano	Winnipeg Chamber of Commerce
Colleen Mayer	Old St Vital Biz
Colleen Sklar	Lake Friendly Manitoba; Partnership of the Manitoba Capital Region
Joy Kennedy	Manitoba Conservation and Water Stewardship (Water Quality)
Siobhan Burland Ross	Manitoba Conservation and Water Stewardship (Environmental Approvals)
Yvonne Hawryliuk	Manitoba Conservation and Water Stewardship (Environmental Compliance and Enforcement)
Andrew McMillan	City of Winnipeg – Water and Waste
Patrick Coote	City of Winnipeg – Water and Waste
Tiffany Skomro	City of Winnipeg – Water and Waste
Michelle Kuly Holland	Facilitator
Dennis Heinrichs	Consultant – Dillon
David Marsh	Consultant – Dillon

Regrets:

Chris Lorenc	Manitoba Heavy Construction Association
Henry David (Hank) Venema	International Institute of Sustainable Development
Gloria Desorcy	Consumer Association of Canada
Julie Turenne-Maynard	Rivers West
Dorothea Blandford	Winnipeg Rowing Club

Agenda:

1. Session opening & administrative items
2. Licence background and context from regulator
3. City of Winnipeg update and presentation of animation video
4. CSO Symposium details review and feedback
5. Session wrap up and next steps

1. Session opening & administrative items

Introductions were given. Administrative items were noted. The previous meeting's notes were adopted via email.

Meeting #3 Purpose:

- To clarify the intent and details of CSO licence;
- To have an update on the CSO Master Plan;
- To review and discuss an outline of the Symposium event.

SAC members were asked what their personal objectives were for the meeting. Answers included:

- Looking forward to hearing from the Province in regards to the licence and getting additional detail
- Understanding the format of the Symposium, and obtaining additional detail

The Facilitator proposed to amend agenda to flip Agenda Items #2 & #3 in terms of order, which was accepted by the SAC members.

2. City of Winnipeg update and presentation of animation video

The City provided an introduction on the animation video, providing background for why it was created. The intent of the animation is provide the general public with a high level overview of CSOs, history of combined sewer systems, what a CSO event is, and how a CSO event occurs. The animation explains in additional detail the physical components of the CSO system and its operation in dry weather in light rain or snow melt and in heavy rain or snow melt.

The animation was presented to the SAC members, who had the following comments and observations:

- Is the animation available to the public and can it be shared? The City indicated that it will be available in the immediate future, as there are some minor technical issues being resolved. The intent is for the animation to be shared, and the City encourages this, with proper attribution.
- Animation indicates that 32% of the City by area is located in CS districts. Has this gone down, and wasn't this originally higher? The City explained that some districts have been 'decombined' (separated), and that the overall percentage has lowered as City infrastructure improvements.
- Nutrient loading is indirectly indicated in the animation, including its impacts downstream on Lake Winnipeg. Will there be any explanation about nutrient loading, and what other cities, towns, and industry are doing?

- Animation is good at indicating that CSOs are one of multiple sources that impact river water.

The City indicated that the animation would be shown at the Symposium event, and the SAC members would be informed via email when the animation is publically available.

3. Licence background and context from regulator

Siobhan Burland Ross (MB Conservation & Water Stewardship) delivered a presentation regarding CSOs, regulations, and background behind the City's Environmental Licence. A copy of the presentation was distributed to the SAC members in advance of the meeting, and is on the website.

During the presentation the Province indicated that two other jurisdictions in Manitoba have combined sewer systems, but not at the scale of the Winnipeg system. It was also indicated that the Licence is in essence a 'licence to plan', and that a new licence will be issued after the CSO Master Plan has been submitted and reviewed. Conditions and terms of the existing licence will be revisited and altered then. The Province also indicated the need for flexibility in the final plan to adapt and grow as knowledge of the combined sewer system expands and experience of the success of solutions is incorporated back into the plan.

Discussion on MB Conservation presentation and CSO Licence:

The following observations and points were made during follow up discussion with the SAC members:

- When the Province was negotiating on national standards, how was new development in CS districts addressed? There have been developments in CS districts in Winnipeg, and how were these addressed? The Province indicated that the municipal wastewater strategy was signed in 2009, and new developments are not permitted to increase CSO events. The City also indicated that their regulations require new development to be restricted to pre equals post flows, and cannot increase the overall rate of flows.
- Is the timeline shown still valid? It was indicated that the timeline is still valid.
- What is the role of the federal government in these regulations? The federal regulation requires the identification of CSO locations and monitoring of CSO events with regular reporting.
- A question was raised regarding the previous CEC report on CSOs, which identified priorities, including specifically targeting Combined Sewer (CS)

districts. Is this being addressed in the current CSO Master Plan? The City indicated yes, and that all 42 CS districts are being looked at and examined as part of the Master Plan. Monitoring and reporting has occurred since the previous CEC report, and the current CSO Master Plan will identify which CS districts should be prioritized, and with what mitigation and / or control measures.

- There are a lot of Licenses being issued to the City by the Province but are they all of equal importance? Is there anyone looking at the bigger picture of how all these are going to be prioritized?

4. CSO Symposium details review and feedback

An overview of the outline for the CSO Symposium Event was provided. The CSO Symposium is tentatively scheduled for March 5th, 2015 in the Carol Shields Auditorium.

The Symposium format proposes that the event would begin with presentations and a panel discussion, followed by a breakout session with attendees.

The City is exploring the potential for partnership with a member of the media to moderate the panel discussion and assist in promoting the Symposium prior to the event. There will also be an on-line presence for the event, placing materials online, aimed for those who are interested but cannot attend or those looking for additional information. The City is looking at potentially integrating real time voting technology for the event.

The breakout session will have discussion questions to get a greater understanding around CSO issues and how they should be approached.

The SAC members had the following comments and observations:

- Can inputs from industry be included in the overview, e.g. what is actually being discharged into the rivers? There is an education component here and there is a need to explain why this issue is important to average citizens.
- Can someone on the discussion panel address what local businesses and industries are doing to help address this issue? There is a need to emphasize that all parties are part of the solution, and government cannot do it alone. The City indicated that there are regulations for business and industrial to meet discharge standards and monitoring to assess quality. Regarding what industry was doing the City would request that this be addressed in one of the panel member presentations.
- CSOs are a complex problem, and that these types of problems require a three-headed solution working together: government, businesses, and Non-

Government organisations (NGOs). This approach is occurring in many other complex areas, and there is a need to have a conversation about this.

- Are the impacts of climate change are being considered as part of the CSO Master Plan? The City indicated that climate change was being considered. Rain events and severe weather will be more extreme, and localized, in the future. Proposed infrastructure and CSO controls must take this into account.
- There is a clear need to clearly identify the ‘why am I here’ and ‘why is this important’ in the Symposium event. This is important for the messaging of the event, and in materials in advance of the meeting.
- What does the City want and / or need from SAC members for the Symposium event? The facilitator indicated that SAC members are encouraged to attend and participate; report back to others what you heard in the discussions at the event; and that the City would request that SAC members help reach out to people and groups who should attend the event. Follow up questions were asked regarding what materials or information would assist SAC members in getting the word out, and what lead times might be required. The following ideas were provided by the SAC members:
 - Social media, email, twitter – electronic formats that are easy to distribute;
 - One-pager overview – what is this event about, timelines, why we need you to come, why is it important to you, a couple links to resources, include link to CSO animation & webpage;
 - There is still a need for hard copy materials to complement electronic formats;
 - A “Save the Date” email notice, then follow up notice with materials.
- A question was raised in regards to whether students are being engaged in the process or this event, as they are future tax payers, and whether post-secondary education institutions are being included. There was discussion about including representatives from Sustainability Offices of the post-secondary institutions, as they are often aware of the research and initiatives that are occurring on campus.
- A question was whether other environmental groups in the City would be invited, such as Save Our Seine. The City indicated that they would reach out to these groups and invite them to the Symposium.

5. Session wrap up

Future meeting dates/times/locations are as follows:

- Thursday, April 9, 2015, 3:45-6:00pm

- Thursday, May 28, 2015, 3:45-6:00pm

All meetings to be held at the Millennium Library (Carol Shields Auditorium, Buchwald or Anhang Room, 2nd Floor) at 251 Donald Street.

Attendees were thanked for their participation, and the meeting was adjourned.

6. Summary of Action Items and Administrative Follow-ups

In progress:

- All SAC MEMBERS – Provide information on any groups that should be invited to the CSO Symposium.
- CITY – Inform SAC members when CSO animation is publically available on the City's website.

Appendix F: Meeting 4 Notes & Presentation (April 9, 2015)

City of Winnipeg's

Combined Sewer Overflow

Master Plan

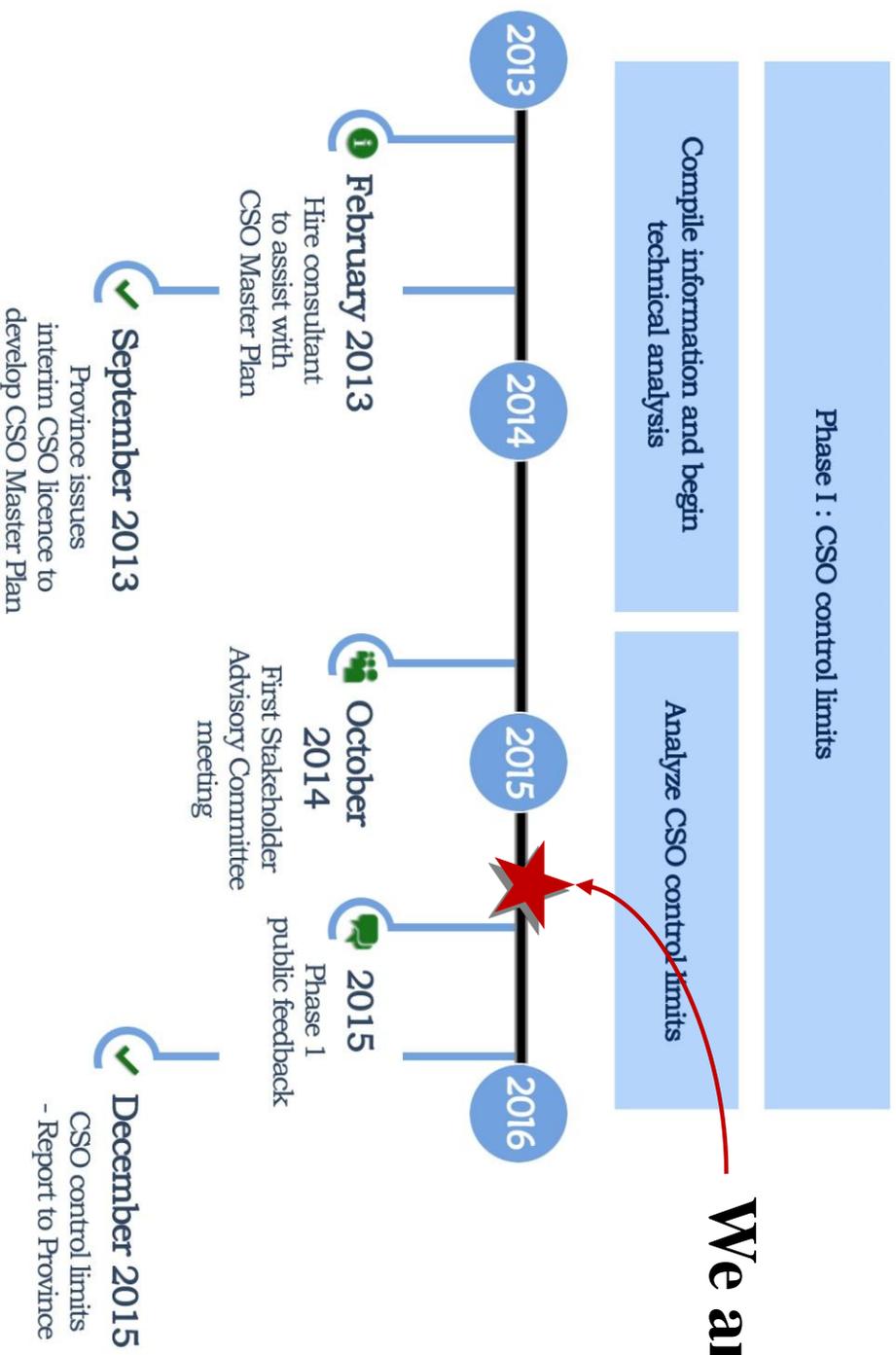
SAC Mtg. #4

Progress Update

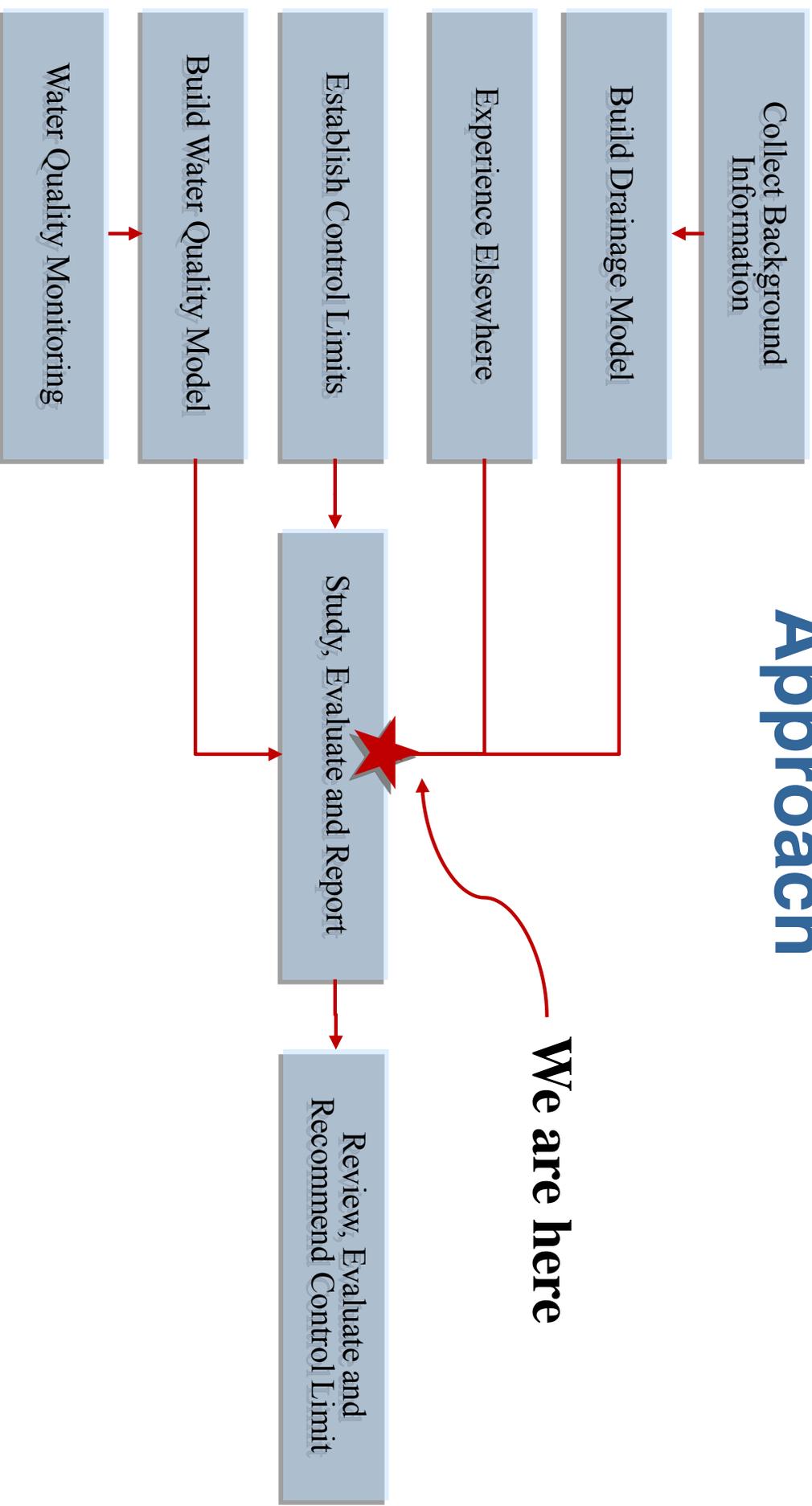
Purpose

- Update on Master Plan progress
- Review the decision making process, values and evaluation criteria

CSO Master Plan Timeline



Approach



Background and Modelling Progress

- **Build Drainage Model**
 - city-wide wastewater model (InfoWorks)
 - used to design and evaluate control options
 - develop potential plans from control options
- **Water Quality Model**
 - continuing to monitor water quality
 - evaluating river water quality using WASP7
- **Control Limits**
 - on-going discussions with the province on clarifications

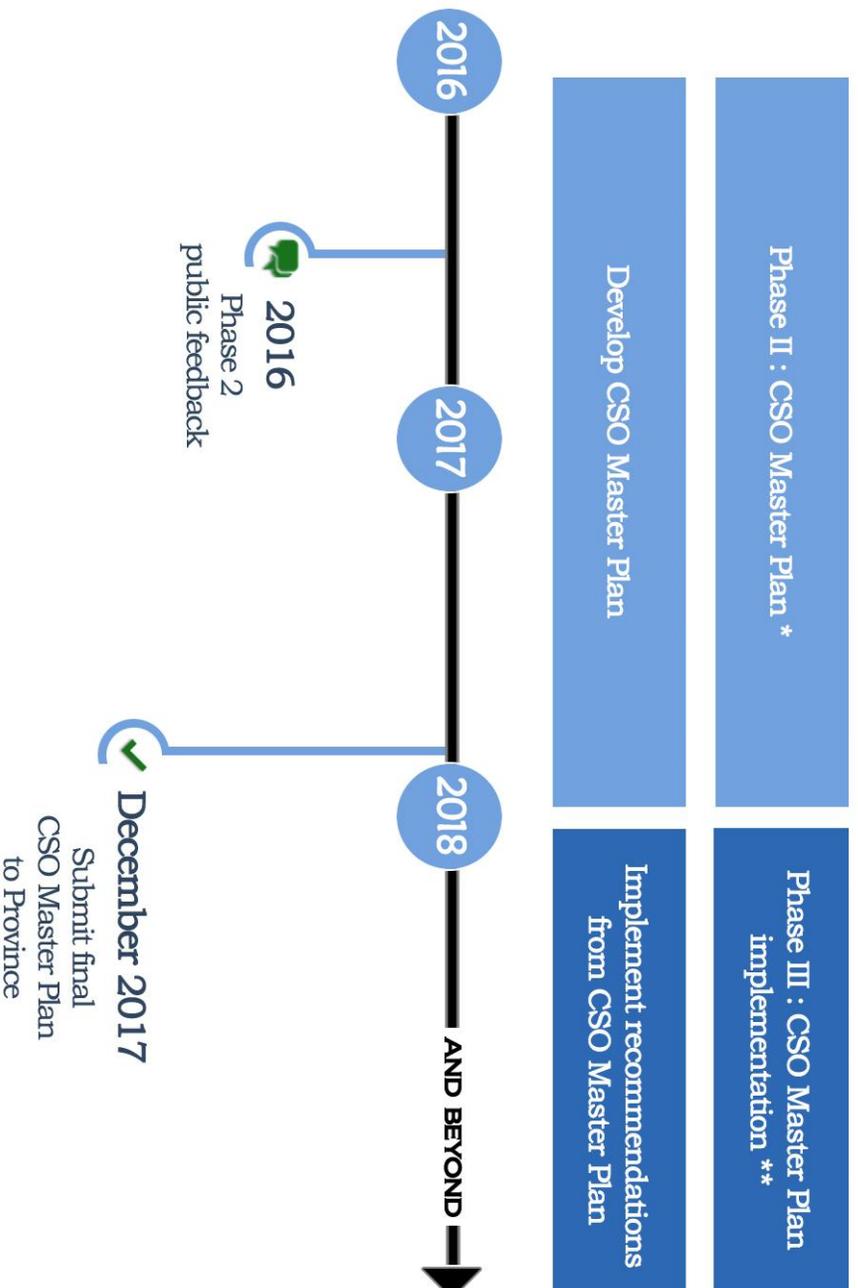
Evaluating and Reporting Progress

- Preliminary Proposal Report – In progress
 - technical document including background, potential plan development, cost estimates, performance evaluations
- Preliminary Proposal Decision Report – Pending
 - reader-friendly – potential plans, benefits and costs
 - to include public input – “*what is important*”
 - provide the basis for comparing, evaluating and recommending potential plans (one for each control limit)

Evaluating and Reporting Progress (cont'd)

- Preliminary Proposal Submission
 - report with analysis and recommendation
 - required under CSO Licence 3042, clause 11 – by end of Dec. 2015

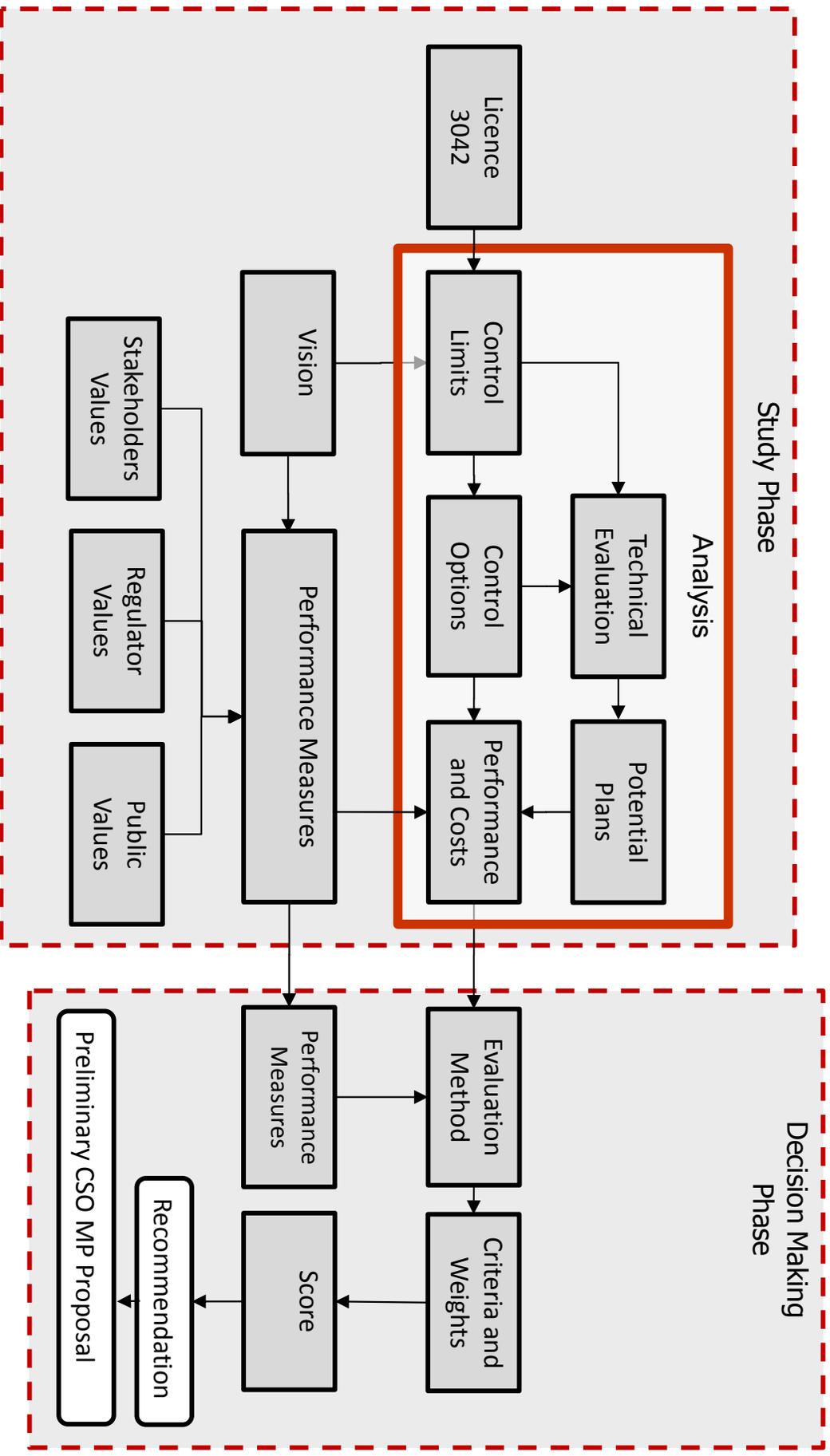
CSO Master Plan Timeline



* Timeline is dependent upon provincial response to the CSO control limits report

** Subject to provincial approval of the Master Plan

Decision Making Roadmap



Decision Making Process

- Analysis of control options
- Experience elsewhere – lessons learned
- Establish performance measures
- Input from regulator, stakeholders and public
- Scoring exercise based on weighted criteria
- Recommendation submitted to Province by Dec. 2015

Control Limits

- Part of the CSO licence
- Evaluate modifications to combined sewer system to reduce CSOs to:
 - zero overflows per year
 - four overflows per year
 - a minimum of 85% volume capture of wet weather flow with a maximum of four overflows

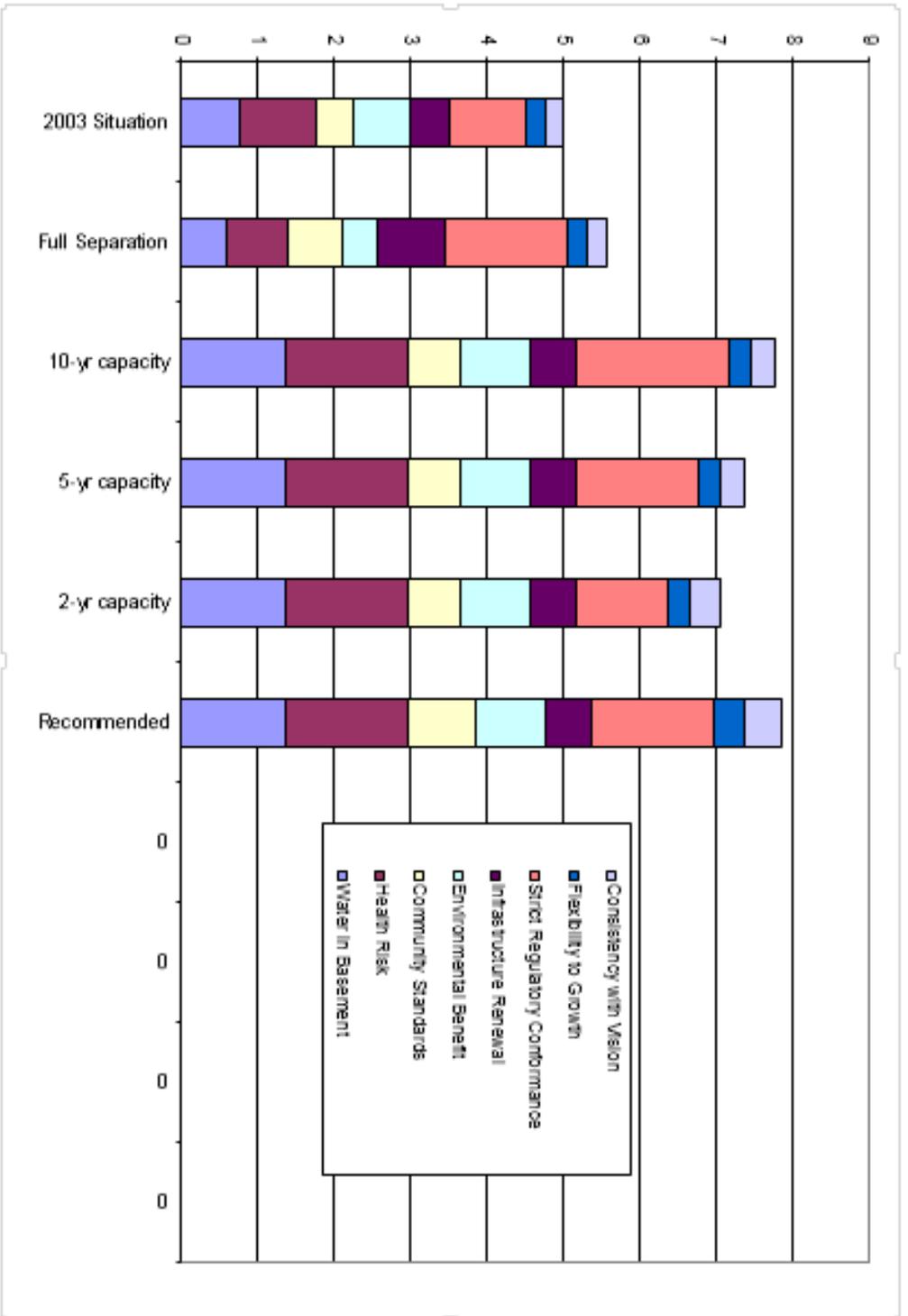
Control Limits Cont'd

- Assessing other approaches:
 - watershed approach
 - environmental equivalent of separation
 - water quality performance
 - maximum use of existing infrastructure
 - “Knee-of-the-Curve” or best use of resources

Develop a Common Vision for the CSO Master Plan

- Environmentally responsible
- Affordable
- Sustainable
- Regulatory compliant
- Politically acceptable
- Preventing basement flooding
- Community values

Scoring Matrix – Example



Developing Performance Measures for Winnipeg CSO Control

- System performance
- Environmental performance measures:
 - number of overflow events
 - volume of overflows
 - public health (Pathogens)
 - nutrients
 - aesthetics (floatables)

Developing Performance Measures for Winnipeg CSO Control Cont'd

- **Affordability**
 - water and sewer utility rates
 - whole life cost
- **Regulatory compliance**
- **Community values**
 - construction industry
 - traffic disruption
 - sustainability
 - competing priorities for funding in Winnipeg
- **river use**

Questions?

**Combined Sewer Overflow Master Plan
Stakeholder Advisory Committee (SAC)
Meeting #4 Notes**

Thursday, April 9th, 2014, 4:00 PM – 5:40 PM
Buchwald Conference Room, Millennium Library, 251 Donald Street

In Attendance:

Karla Zubrycki	International Institute of Sustainable Development
Megan Krohn	Manitoba Eco-Network
Dale Karasiuk	Chalmers Neighbourhood Renewal Corporation
Carmine Militano	Winnipeg Chamber of Commerce
Siobhan Burland Ross	Manitoba Conservation and Water Stewardship (Environmental Approvals)
Christine Hutlet	Lake Friendly Stewards Alliance
Andrew McMillan	City of Winnipeg – Water and Waste
Patrick Coote	City of Winnipeg – Water and Waste
Tiffany Skomro	City of Winnipeg – Water and Waste
Michelle Kuly Holland	Facilitator
David Marsh	Consultant – Dillon

Regrets:

Joy Kennedy	Manitoba Conservation and Water Stewardship (Water Quality)
Henry David (Hank) Venema	International Institute of Sustainable Development
Chris Lorenc	Manitoba Heavy Construction Association
Colleen Mayer	Old St. Vital BIZ
Yvonne Hawryliuk	Manitoba Conservation and Water Stewardship (Environmental Operations Compliance and Enforcement)
Colleen Sklar	Lake Friendly Manitoba; Partnership of the Manitoba Capital Region
Dennis Heinrichs	Consultant – Dillon

Agenda:

1. Session opening & administrative items
2. CSO Symposium update and review
3. City of Winnipeg CSO Master Plan update
4. Input on vision & community values for CSO Master Plan
5. Session wrap up and next steps

1. Session opening & administrative items

Introductions were given. Administrative items were noted. The previous meeting's notes were adopted.

Meeting #4 Purpose:

- To review and recap the CSO Symposium Event
- To provide an update on the overall Winnipeg CSO Master Plan project
- To provide input on Vision & Community Values for CSO Master Plan

2. CSO Symposium Debrief and Discussion

Tiffany Skomro provided an update and overview of the CSO Symposium event. A Word Cloud graphic was presented to summarize key words heard during the facilitated table conversations.

SAC members had the following comments and observations about the CSO Symposium event:

- Liked having facilitators at each table to facilitate discussions;
- Presentations & speakers were very good: interactive, use of technology, dialogue at the tables show the diversity of views and opinions;
- Good energy in the room, people were engaged in the event; size and number of people were good; how do we move from 'spend' to 'investment'?
- Having speakers first may have introduced some 'bias' into the conversations e.g. Winnipeg's CSOs 1% contribution to Lake Winnipeg phosphorus. How do we avoid or address bias from having dialogue after speakers? Understood that speakers needed to provide some context for discussion.

June Public Events

Tiffany Skomro provided an overview and update for the public engagement events. Sessions will be held in the afternoon and evening, and dates will be sent out to the SAC members when confirmed. The content/format of the June public events are being refined, but will include:

- Information for the public on different options;
- Focus will be on the control options, and input from the public on the values and criteria that should be used to evaluate the various control options;
- Will involve a combination of engagement approaches, including polling technology, open house boards, and presentation.

3. Update on CSO Master Plan Process

Patrick Coote presented an update on the overall CSO Master Plan project, including:

- Current project status;
- Overall timelines;
- Approach;
- Background and modeling progress;
- Regulatory liaison meetings with the Province;
- Evaluating and Reporting Progress;
- Decision Making Roadmap;
- Control Limits;
- Developing a Common Vision for the CSO Master Plan; and
- Developing Performance Measures for CSO.

The SAC members received this update as information.

4. Input on Vision & Community Values for CSO Master Plan

Michelle Kuly Holland provided introduction on vision and community values in regards to the CSO Master Plan, and provided a handout summarizing community values identified in input gathered to-date from SAC meetings and the public symposium. Michelle introduced a discussion exercise for the SAC members to review and dialogue on these values, in order to provide additional detail and thoughts for inclusion in the June public event materials.

The SAC members then broke into two sub-groups to work through themes, and reconvened to back brief the wider group and discuss.

The following points were raised by SAC members during their discussion:

- Lake Winnipeg – impact on nutrients, lake health and use
- Value for Money – maximize benefits, basement flooding (integration), low hanging fruit (best value for money)
- CSOs in broader context – recognize other contributors and factors related to water quality, coordinate with related initiatives
- Vision - need to keep in mind future generations, social acceptability (image)
- Innovation & Transformation – keeping in mind the cost of doing business in Winnipeg, cost of retaining good talent, costs & innovation, incentives (where do they fit in), disincentives, coordination with other projects
- Construction Industry – capacity of industry, potential to create artificial economy and reduce buying power
- Livability – Construction fatigue (residents getting fed up with the extent and duration of construction related disruption)

- River Use – Coordinate with other plans & projects, perception of what will actually be achieved in river quality
- Social acceptability – New category suggested. Image, doing our part, education awareness

The feedback was taken by the City to use in finalizing the criteria to go to the public in June.

5. Session wrap up

Next steps:

- Once vision & values are defined, what are the relative importance of these in terms of to each other, and to each control option;
- Update on submission to Province;
- SAC members invited to attend and participate in the June public events.

Next SAC meeting:

- There was a discussion amongst those in attendance about the need to have a SAC meeting in May, versus capturing feedback on-line. SAC members generally concurred, but wanted the decision to be made by the wider group.
- There will be no SAC meeting in the fall. An update will be provided via email in regards to the submission to Province.

Attendees were thanked for their participation, and the meeting was adjourned.

6. Summary of Action Items and Administrative Follow-ups

In progress:

- CITY PROJECT TEAM/FACILITATOR: Confirm and provide further details for the June Public Events to SAC. SAC members are encouraged to attend and participate.
- FACILITATOR: Confirm cancellation of May SAC meeting to SAC members.
- CITY PROJECT TEAM: Share meeting notes and PowerPoint presentation publicly on City of Winnipeg project website following Committee feedback.
- CITY PROJECT TEAM: To provide email update on status of provincial submittal in the fall.