



**Applying the OECD Water Governance Indicators to the Great Lakes Region
at the Transboundary Scale**

DRAFT REPORT

Prepared by: Carolyn Johns and Deborah VanNijnatten

April 1, 2019



Funding for this project provided under a Social Sciences and Humanities Research Council of Canada (SSHRC) Insight Grant

Table of Contents

| | |
|--------------------------------------------------------------------------------------------------------------|----|
| <i>Background</i> | 3 |
| <i>Methodology</i> | 4 |
| <i>Preliminary Findings from Application of OECD Water Governance Indicators to Great Lakes Region</i> | 5 |
| <i>Preliminary Findings from Qualitative Questions in Questionnaire</i> | 8 |
| <i>Additional Insights from Interviews</i> | 12 |
| <i>Conclusions:</i> | 15 |

Background

In 2015, the OECD conducted a comprehensive inventory of water governance indicators and developed 12 Water Governance Principles that were endorsed by the 34 OECD member countries.¹ The Principles provide a framework for understanding water governance systems and help generate dialogue and change on how to improve water governance. The 12 Principles are intended to apply to all levels of government, all water management functions, and all water uses. They are clustered around three main dimensions: effectiveness; efficiency; trust and engagement.

To support the implementation of the OECD WG Principles, in 2016-17 the OECD developed 36 indicators, three for each of the 12 water governance principles.² In 2017-18, the OECD pilot tested the 36 water governance indicators (WGIS) in 12 OECD jurisdictions at various scales: basin, national, regional, and local. The approach is based on a voluntary self-assessment framework and multi-stakeholder dialogue to assess how water governance systems are performing at a given moment in time (static) or are expected to perform over time (dynamic). The OECD's WGIS were designed to be *perception-based*, on the view of experts or various types of stakeholders, and *fact-based*, using available/objective data.

At the World Water Forum in March 2018, the full list of water governance indicators and methodology options were publicly released in the report *Water Governance at a Glance*.³ Findings from the first round of applications in 12 pilot jurisdictions were also presented.

To date, applications have been within various OECD member countries at various scales. However, there have been no applications in Canada or the US, and there have been no applications in transboundary water basins. As part of our SSHRC project on water governance indicators in the Great Lakes and the Rio Grande/Rio Bravo regions, we have adopted and adapted the OECD's WGIS to apply them to two transboundary cases.

¹ OECD 2015, *Principles on Water Governance* <https://www.oecd.org/cfe/regional-policy/OECD-Principles-on-Water-Governance.pdf>

² OECD 2018, *Implementing the OECD Principles on Water Governance: Indicator Framework and Evolving Practices*, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/9789264292659-en>.

³ OECD 2018. *OECD Water Governance Indicator Framework*, <http://www.oecd.org/regional/OECD-Water-Governance-Indicator-Framework.pdf>

Methodology

In summer 2018 our research team reviewed the OECD's water governance indicators and methodology options related to applications in transboundary cases. We then adopted the 36 indicators and adapted the methodology for application in the Great Lakes region at the transboundary scale. The research design and methods were approved by the Ryerson Research Ethics Board and the Wilfrid Laurier University Research Ethics Board in May 2018. In summer 2018, a backgrounder on the OECD water governance principles and indicators was developed, data collection instruments were created, a pre-test was conducted with 6 experts in the region, and the methodology was modified for clarification and to incorporate an iterative component.

Between November 2018 and February 2019, we invited 43 key stakeholders with expertise related to water governance in the Great Lakes region at the transboundary scale to participate in our research project. We asked participants to complete a worksheet containing all 36 of the OECD's water governance indicators and complete a questionnaire with five questions related to the OECD's indicators and their applicability and value in the Great Lakes region. We received 17 completed responses. As part of the questionnaire, participants were asked if they wished to provide additional feedback or comments in a follow up interview. We conducted 8 online interviews to probe responses provided by some participants.

Results from this phase of data collection have been aggregated and this draft report includes our preliminary findings. All study participants are being provided with this draft report and the opportunity to provide any additional feedback before our findings are finalized. In keeping with our ethics requirements, all data was aggregated without any identifying information and aggregated findings in this draft report do not include any attribution to ensure all participants remain anonymous and their responses remain confidential.

A final version of this summary report will be posted on the Great Lakes Policy Research Network website. Preliminary results and conference papers will be presented at conferences in spring/summer 2019 and a journal article will be produced for *Water Policy* and/or the *Journal of Great Lakes Research*.

Application of the OECD water governance indicators to the Rio Grande/Rio Bravo case began in January 2019. We hope to have a summary report for the Rio Grande case posted on our website and a journal article on the Rio Grande case by Fall 2019. In addition to having a report and article on each case, we hope to make a submission to the OECD Water Governance programme for their next *Water Governance at a Glance* report and produce a journal article that compares the application of the OECD water governance indicators in both of these transboundary water governance systems. This will complete Phase 1 of our SSHRC project.

Preliminary Findings from Application of OECD Water Governance Indicators to Great Lakes Region

OECD Water Governance Indicators Worksheet: Summary of Submissions November 2018 – February 2019

| Indicator | In place, functioning | In place, partly implemented | In place, not implemented | Under development | Not in place | Not applicable | No Response Don't Know |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------|---------------------------|-------------------|--------------|----------------|------------------------|
| 1a. existence of water agreement/law | | | | | | | |
| 1b. designated lead agencies | | | | | | | |
| 1c. formal review mechanisms | | | | | | | |
| 2a. cooperative mechanisms | | | | | | | |
| 2b. institutions at basin-wide scale | | | | | | | |
| 2c. cooperation across all water users | | | | | | | |
| 3a. cross-sector approach/policies | | | | | | | |
| 3b. transboundary horizontal coordination | | | | | | | |
| 3c. mechanisms to review cross-sector barriers and policy coherence | | | | | | | |
| 4a. merit based independent implementers | | | | | | | |
| 4b. mechanisms to identify and address capacity gaps | | | | | | | |
| 4c. transboundary/domestic education and training programmes for water professionals | | | | | | | |
| 5a. transboundary water information systems | | | | | | | |
| 5b. standardized, harmonized, official, basin-wide water-related statistics | | | | | | | |
| 5c. mechanisms to identify data gaps | | | | | | | |
| 6a. frameworks to collect necessary revenues to meet mandates | | | | | | | |
| 6b. domestic revenues and allocations related to water | | | | | | | |
| 6c. mechanisms to assess short, medium and long-term investment needs | | | | | | | |
| 7a. sound water management regulatory frameworks | | | | | | | |
| 7b. dedicated public institutions with key regulatory functions | | | | | | | |
| 7c. regulatory tools for both water quality and quantity | | | | | | | |
| 8a. transboundary policy framework/incentives to foster innovation | | | | | | | |
| 8b. transboundary institutions encouraging bottom up initiatives, dialogue and learning | | | | | | | |
| 8c. transboundary knowledge and experience sharing mechanisms | | | | | | | |
| 9a. legal and institutional frameworks on integrity and transparency | | | | | | | |
| 9b. independent audit/adjudication to investigate and safeguard public interest | | | | | | | |
| 9c. mechanisms to identify corruption | | | | | | | |
| 10a. transboundary legal frameworks to engage stakeholders | | | | | | | |
| 10b. structures to engage stakeholders | | | | | | | |
| 10c. mechanisms to diagnose/review stakeholder engagement | | | | | | | |
| 11a. formal provisions/legal frameworks fostering equity across water users | | | | | | | |
| 11b. transboundary ombuds/institution to protect water users including vulnerable groups | | | | | | | |
| 11c. mechanisms to manage trade-offs across users | | | | | | | |
| 12a. regular transboundary monitoring and evaluation of water policy/governance | | | | | | | |
| 12b. transboundary monitoring and evaluation to assess policies/practices and help adjust | | | | | | | |
| 12c. transboundary monitoring and evaluation mechanisms to measure extent to which water policy fulfils intended outcomes and water governance framework fits its purpose | | | | | | | |

*all responses may not total to the total 'n' as some participants did not respond to all 36 indicators indicating a 'don't know' or 'unsure' response

NOTES

Corresponding colour indicates clear majority of responses

Two colours indicate split in responses

Purple indicates distribution of responses across more than two response categories

All of the participants were able to complete the indicators data collection sheet. Some, however, did indicate on the data collection sheet that they had difficulties understanding certain indicators by inserting “?” instead of “X” or leaving responses for some indicators blank. Many participants then elaborated on the ability to respond using the data collection sheet, on the indicators themselves and on the response categories in their qualitative responses in the questionnaire and follow-up interviews.

The summary sheet indicates that, overall, many of the participants indicated the indicators are in place and functioning, or in place and partly implemented. For most indicators there was a majority consensus on responses with over 50% responding similarly to the same response option. Some of the responses were split. In most cases these were in the first two response categories (in place/functioning and in place/partly implemented). There was some indication that OECD WGI 5b (standardized, harmonized, official, basin-wide water-related statistics) and 6c (mechanisms to assess short-, medium- and long-term investment needs) are currently under development, and six of the indicators are not in place in the region at all. However, indicator 4c, related to education and training of water professionals, received mixed responses. This is likely due to interpretation as jurisdictions do have domestic education and training programs for water professionals but some respondents were indicating that no specifically *transboundary* education and training programs exist. There were also some split responses related to indicator 6b (domestic revenues and allocations related to water). This may be the result of different responses from Canadian and American participants, or the result of interpreting what this indicator means.

The purple coding in the summary indicates several indicators where there was a wide distribution of responses and no consensus [3c: mechanisms to review cross-sector policy coherence; 4a merit based independent implementers, 8a transboundary policy frameworks/incentives to foster innovation, 9c mechanisms to identify corruption and 11b transboundary ombuds/institution to protect water users including vulnerable groups]. While it may be more obvious why 9c (mechanisms to deal with corruption) is more difficult to ascertain in the North American context, the other indicators highlight some confusion as to whether there are transboundary accountability mechanisms (ombudsperson; merit-based implementation) or transboundary mechanisms that can encourage push the boundaries of conventional forms of policy-making (the ability to bring about cross-sectoral coordination and policy coherence; mechanisms for transboundary policy innovation). This distribution may indicate disagreement on the state of the indicator or difference in interpretation of the indicator. Indeed, open-ended responses to the questionnaire suggest that these indicators were difficult to apply and, in some cases, deemed not applicable in the Great Lakes case.

Four indicators 6a, 6b [related to revenues and resources related to water governance in the region] and 9b, 9c [related to independent audit and mechanisms to identify corruption] were identified as not applicable by more than 20% of respondents. These indicators deal with resourcing and with accountability mechanisms, perhaps indicating that these functions remain firmly rooted in domestic authorities and have not migrated to the transboundary level.

This draft report indicates there is some consensus around several of the indicators and that the Great Lakes has many of the 36 indicators 'in place and functioning' or 'in place and partly implemented'. Consensus on these indicators may suggest a high level of agreement on the presence of knowledge-sharing and collaborative institutions as well as participatory, bottom-up mechanisms for stakeholders and water users. It may also suggest agreement on the clarity of roles and responsibilities. At the same time, it highlights that additional feedback is required beyond the worksheet itself in order to better assess the value and challenges with applying the OECD water governance indicators at the transboundary scale in the Great Lakes. Some of this information was collected through the qualitative questionnaire and follow-up interviews with study participants.

Preliminary Findings from Qualitative Questions in Questionnaire

All study participants were asked to respond to five follow up questions about the OECD water governance indicators and their applicability at the transboundary scale in the Great Lakes region [see Appendix II]. Overall, all of the participants submitted responses to the questions in the questionnaire. The vast majority of the participants found the indicators could be applied at the transboundary scale, and they expressed that the exercise was positive and useful. However, the qualitative questions indicated there were strengths, limitations and challenges in applying the indicators.

| | |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strengths | <ul style="list-style-type: none"> • comprehensive, very broad • generally applicable to the Great Lakes Region • appropriate for the mature governance structures in the region • applicable enough to provide a valuable framework and apply in a number of different contexts • generally, they reflect that the GL region is doing well yet there is room for improvement • it is clear these were developed somewhere else but they apply fairly well • they generally capture the activities of the main organizations involved in regional governance |
| Limitations | <ul style="list-style-type: none"> • very focused on institutions; formal things in place • challenging to apply across different aspects of water governance such as water quality and water quantity • do not capture that the application of these indicators is not always consistent or harmonized across all jurisdictions in the region • in need of more detailed definitions and specificity • some very open ended and can engender different interpretations in responses • perhaps need for some consideration of similar/shared culture, language, attitudes and values • only relate to a given point in time and cannot describe overall condition or historical conditions • responses require a more detailed qualitative assessment • limited in terms of one's perspective when responding • not well suited as there is not a single transboundary authority and shared governance • seem too simplistic because the status of each indicator is complex • indicators just don't tell the full story of the Great Lakes • not sure the OECD approach is suitable for the Great Lakes as most, if not all, are in place and functioning but not in an integrated and fully coordinated manner • there is a bias towards transboundary mechanisms which may have benefit in some context but are not needed/optimal in a mature relationship |

In terms of additional comments related to applicability respondents noted:

- most indicators have some applicability to the Great Lakes
- none are inapplicable but some are tricky to apply
- some are quite broad and vague
- some do not really apply such as 9c – mechanisms to identify corruption (several respondents indicate this either on the indicators worksheet or in their comments)
- perhaps need to advance and further develop some of the indicators that are highly relevant for the Great Lakes
- 6a and 6b hard to see how collecting necessary revenues and resources at transboundary scale and similarly domestic revenues and allocations
- 9b independent audit/adjudication to safeguard public interest; agreements themselves serve this function and domestic agencies can audit, not clear why a transboundary approach would be helpful
- 11b transboundary ombuds/institution to protect water users including vulnerable groups, not sure vulnerable groups are truly transboundary
- not really a question of applicability but more how do you use them to determine and establish priorities
- some are better handled on a smaller scale
- 4b and 5c do not provide enough specificity
- 2c asks about the level of cooperation across all water users, which is difficult to assess given there are so many various types of water users
- perhaps the indicators can highlight what the barriers are and what needs to change

Several commented on methodological aspects of the indicators data collection sheet:

- I think the response sheet is in need of a different set of choices for the assessment (note: the response categories were adopted directly from OECD)
- need for a 'don't know' or 'not sure' response option
- Perhaps different assessment criteria such as 'high, moderate or low' instead of 'in place functioning and not in place' [the response categories adopted from the OECDs methodology]
- in need of option to indicate that element is operating in parts of the basin under specific jurisdiction and not at the transboundary scale
- helpful to have a space to provide comments to explain one's responses
- instead of a scorecard, written responses to each of the questions providing a fuller picture
- include a response column to allow people to indicate they do not feel comfortable providing an assessment due to lack of knowledge on a particular subject
- I like that there was an opportunity to follow up and add that other indicators would be helpful on different aspects of water governance in the region

Value of the OECD water governance indicators:

- several of the indicators are not applicable given our highly evolved context, while others are sufficiently vague and general to have limited applicability, the Great Lakes basin has arguably the most highly developed governance framework in the world with a high degree of institutional strength
- it would be very helpful if a subset of the OECD indicators could be further developed for application in the region
- definite value for some level of comparison with basins around the globe
- it would serve the Great Lakes well to have an honest assessment of the indicators
- they can show areas of greater and lesser development and give ideas for improvement
- more of a three-dimensional matrix where different aspects of water management can be scored differently and then different aspects within the basis compared to each other
- the unique nature of the Great Lakes warrants basin-specific indicators
- perhaps connected to indicators that provide a way to measure if the lakes are healthy and conditions are improving or degrading
- an interesting exercise, application to other transboundary waters in North America would be of greater value
- may not provide too-much in terms of value-add, could be used as a diagnostic tool to help identify areas for improvement within the existing governance structures; four areas for improvement became apparent (1) mechanisms to review cross-sector barriers and policy coherence/ mechanisms to identify and address capacity gaps; (2) mechanisms to assess short, medium and long-term investment needs; (3) transboundary horizontal/cross-sector coordination; and, (4) mechanisms to ensure equity and manage trade-offs across water users. Each of these four areas are addressed to a certain extent within the individual jurisdictions of the Great Lakes region
- some elements could be handled within or across specific jurisdictions (e.g. state or provincial)
- this presents one frame to understand important aspects of water governance even if some aspects are more applicable to some regions more than others
- it forces us to pick apart what we do, don't do, but ought to do to collectively arrive at better outcomes for everyone; just going through the matrix stimulated much thought and internal questioning
- very valuable; application will identify gaps in structures, mechanisms, investments, and involvement of users
- applying certain indicators can be a very telling exercise; 5b points to gaps that have bedeviled the 'State of Great Lakes' reporting exercise
- perhaps more value for some parameters than others; indicator 9c may not have been well-studied and indicator 4b strikes me as a weakness of nearly all environmental policy processes and frameworks
- there is certainly value in comparing this region to others

Additional Comments:

- it would be wonderful to see some contextualization of the OECD indicator set
- I think there is a more cohesive community around water quality than around water quantity; researchers would need to consider what sort of biases like these are going to influence the results and the implications of that for making comparisons between different basins
- there are some overlaps between certain indicators
- there may be opportunity to condense or amalgamate some of the 36 indicators
- indicator descriptions on the worksheet were truncated and slightly over simplified
- an additional important factor is that truly effective and sustainable water governance requires strong and sustained political and social will of all parties, coupled with sustained investment, this factor was not captured
- each of the numbered subheadings needed one or two sentences to frame the context of the indicator
- needs to be some thought as to degree of agreement, the notion of 'functioning' is not a measure of agreement
- I would be interested in knowing how OECD countries are actually using them; are they being used to re-orient programming and investment in these regions
- it would be useful if the 36 indicators were expanded to include levels of governance
- there should be indicators about educating the public and youth; indicators about the public's behavior, governments can only do so much
- these indicators seem generalizable to any transboundary environmental medium, system or process, rather than specific to water
- it is not clear how they include upstream-downstream, nearshore/offshore, intersections of built and natural systems, cultural and rights aspects of water, Indigenous considerations, or a focus on the aquatic ecosystem beyond water as a resource
- the indicators are opinion based but I would like to know what others opinions are

Overall, participants were able to complete the data collection worksheet and all respondents provided additional comments using the questionnaire. As noted above, most participants found the indicators broadly applicable and valuable. Some participants found the indicators challenging to apply in a transboundary, multi-level, multi-organization, multi-agency water governance system and some noted that not all indicators aligned to attributes of water governance such as domestic vs. transboundary mechanisms in the Great Lakes region.

Additional Insights from Interviews

In general, the follow-up interviews allowed participants to elaborate on the comments they provided to the five written qualitative questions. However, there was some broader discussions of governance, water governance and adaptation of water governance in the region. Some interviewees commented that the use of the OECD water governance indicators depends on how you think about water governance. As noted by one interviewee: “I am not really sure what water governance is; it depends on whether you think of governance as a human system or like an ecosystem”. The OECD indicators helped some think about water governance. However, as noted by one interviewee: “I think they are heavily institutionally focused; focused on formal things in place; they are comprehensive but I struggled with the scale and what does ‘functioning’ mean? Just because they are in place does not mean they are effective”. Another noted governance in the Great Lakes region can be summed up, “in three words: collaborative, cooperative, but unaccountable”.

From the interviews, several themes were elaborated on and extended through some additional questions [see Appendix III].

Applicability at different scales:

The first group of comments flowed from follow-up questions about applicability at different scales. As noted above, participants felt the OECD WGIs were broadly applicable at the transboundary scale; they noted, “it is hard for practitioners to have a big picture, this type of synthesis is useful”. However, several participants provided comments that they found it challenging to apply the indicators in a multi-level governance system like the Great Lakes. This was probed further in interviews with the question:

Do you think the OECD Water Governance Indicators could be applied at other scales in the region (national, state/provincial, municipal, Indigenous communities, Annex, LAMPs, Areas of Concern, other)?

Interviewees noted the value of applying them at the transboundary scale but also argued that for a fuller picture they “need to be applied at different scales”; “they may be useful at relevant scales”, “they may be useful to uncover things at other scales”, and there is a “need to consider how these various indicators at the transboundary scale might differ at other scales”. One interviewee stated, “Yes, depending on what is being examined they could be used related to binational efforts, GLEC and LAMPs”. However, another noted, “they don’t really get at whether the system is centralized or decentralized or the need for balance of these at various scales” and yet another interviewee commented that, “I am not really sure how watersheds fit in”. Some interviewees also commented that they felt issues at other scales were difficult to capture, noting that: “I don’t think they capture issues and cross-issue work very well”; “they don’t capture water quality that well” and “thinking about governance of quality and quantity will become more of a problem [in the future]”. This gap in an ability of transboundary institutions to work horizontally, across issues, comes through in the worksheet responses as well.

Application related to existing governance and reporting systems in the region:

Several interviewees elaborated on the value of the OECD water governance indicators, stating that: “perhaps they can highlight what the barriers are and what needs to change; it is clear that there is a need for more individual and organizational change.” Another noted that, “they do emphasize accountability somewhat but the emphasis is on reporting, not really accountability”. Additional comments along these lines included “gap analysis is only part of it”; “they are only useful if practitioners are interested in examining their own governance structures”; and “it really depends on the appetite for reflection and change”.

There were some who outlined that governance indicators and findings from applying the OECD water governance indicators need to be brought into alignment with current assessment and progress reporting in the region. Several interviewees made comments such as: “Just because they are in place does not mean they are effective”; “the challenge is to correlate these with existing performance indicators”; and “this is a system based on agreements and accountability. Although the IJC plays an assessment role it is good to have an extraterritorial perspective; there are other examples of regional governance around the world”. Further, one interviewee stated that, “the value might be in the comparison to other transboundary systems”.

Additional insights related to dynamic nature of water governance and adaptation in the region:

Another follow-up question in interviews asked about applicability related to the dynamic and adaptive nature of water governance in the region.

Several interviewees noted the need for the OECD WGIs to be applied over time. Interviewees commented that the indicators apply to a specific point in time but can't tell us much about progress and change unless used over time and alongside existing reporting and other indicators. “The State of the Great Lakes report indicates overall that water governance in the region is fair and unchanging; there is some progress but things cannot improve significantly in the near future; resources are a major factor in this. Number 6 in the OECD indicators tries to get at this”. Another noted that, “here is nothing to gage over time in terms of adaptiveness and resilience. There is a sense we are not adapting fast enough but what would constitute adapting in terms of the environment and water quality?”

Further, similar to comments about the meaning of water governance, a few interviewees commented with respect to adaptiveness that: “depends on what you mean by ability to adapt”; “governance in the region has the potential for flexibility in principle but in practice things are rigid; human and organizational behavior are rigid”, there is “not a lot of institutional innovation and change; the reporting regime is a good example and the challenge of a clearer role and voice for municipalities and First Nations communities”; and “this is where case studies are more useful for example new work on nutrient management, rapid response and invasive species illustrate how the system adapts”. However, another interviewee commented that: “I think in

terms of water governance adaptability we do pretty well comparatively. With the GLWQA and Compact we do have governance for both quality and quantity. Implementation challenges and resource challenges will always exist”.

All interviewees did indicate that water governance in the region is adapting, but did not reveal any consensus about this or consensus on whether the OECD indicators provide any value related to this. Those who commented about this noted that having some assessment over time would be useful as the indicator set in the data collection worksheet only provides a snapshot in time from a limited number of participants with high-level knowledge of water governance at the transboundary scale.⁴

When asked about obstacles to change and adaptation, several interviewees noted the following: “there are some governance obstacles, some not unique to the Great Lakes region”; “existing governance needs to initiate more innovation; perhaps an external, independent audit and report on both the IJC and Parties reports. It is so dependent on the commissioners and federal leads. There is a need for more thinking beyond GLEC, IJC staff and commissioners. Different thinkers and ideas needed. Sometimes this comes with new issues”. Another noted that, “the community does have a sense of responsibility and does good work; sharing information is important but there is no penalty for inaction and the community is very comfortable with the status quo”. As another noted: “who is responsible for what is important. Annexes are good for this but there are limitations on what they can do”. Others suggested that “resources and people are limitations”; and indicated a need for more “harmonization of binational efforts”. Another interviewee noted examples: “perhaps nutrient management in Lake Erie and invasive species in Annex 7”. Another noted, “we have good science, but on some issues, science is limited”. This is part of the OECD indicators [indicators 5 and 8]. One interviewee noted an important aspect is missing from the indicators and discussions of adaptation - “political will”.

In terms of the future value of the OECD water governance indicators and adaptation a few interviewees noted the following: “there needs to be more integration of water quality and quantity efforts”; “we need to think more about this [governance] and have the time to think about it”; and “there needs to be more interdisciplinarity; more capacity to deal with emerging and future issues”.

⁴ The OECD does have a temporal dimension as part of their methodology to allow for some reflections and analysis of expected progress over a 3-year time frame. Please see conclusion section below for more details. These are limitations that are part of the methodology and were considered by the research team when adopting and adapting the OECD’s methodology for application in our transboundary cases

Conclusions:

Phase 1 of our SSHRC research project focuses on applying the OECD's water governance indicators in two complex transboundary water governance cases in North America: the Great Lakes and the Rio Grande/Rio Bravo. Results from this first case applying the indicators to the North American Great Lakes indicate that those with high-level knowledge of water governance in the region were able to apply the OECD's water governance indicators and found some value in doing so.

The primary values of applying the OECD water governance indicators identified by participants included: i) the ability to think about the state of water governance in the region using a set of indicators developed by the OECD and other jurisdictions; ii) the opportunity to think about different aspects of water governance; iii) the ability to reflect on the institutions and mechanisms at the transboundary scale; and to identify gaps or indicators that may identify opportunities for attention; and iv) the potential value of gaining insights from the findings in comparison to other transboundary water governance systems.

However, findings from applications in this case also reveal that there are several challenges related to applying the OECD water governance indicators including: i) interpretation of various indicators; ii) inapplicability of some of the indicators at the transboundary scale; iii) general inapplicability of some indicators to the Great Lakes region; iv) doubts about the value-added of using the indicators in a well-studied and highly developed water governance system; v) limitations in applying indicators only at the transboundary/macro scale; vi) limitations in connecting the indicators to existing progress reporting and ecosystem indicators; vii) limitations in using the indicators at only one point in time; viii) limitations in using the indicators to gage adaptation of the water governance system; and ix) confusion about the scale at which the indicators apply, given the multi-scalar reality of transboundary interactions.

In addition, the findings revealed some limitations with adapting the methodology using a data collection worksheet, qualitative questionnaire and follow-up interviews. First, response rates were low. The initial findings could be more robust with more study participants. However, those who did respond have in-depth knowledge of transboundary water governance in the region making the findings more robust. Second, the qualitative responses through the questionnaire and follow-up interviews provided valuable feedback on the indicators and the worksheet instrument. By having participants respond to the draft report, and possibly having the researchers present and collect feedback at upcoming Great Lakes forums, we hope the results can be strengthened by gaging if there is a general consensus about the findings supported by key actors and organizations involved in water governance in the region. The OECD workshop methodology⁵ also tries to gage the degree of consensus for each indicator. In their workshop methodology they allow stakeholders to indicate if there is a 'strong' consensus on the assessment of each indicator; 'acceptable' consensus; or 'weak' consensus. Third, several participants noted the need for temporal and more

⁵ OECD 2018, *Implementing the OECD Principles on Water Governance: Indicator Framework and Evolving Practices*, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/9789264292659-en>.

iterative use of the indicators. The OECD does have a temporal dimension as part of their methodology to allow for some reflections and analysis of expected progress over a 3-year time frame. In addition to asking experts and stakeholders to assess the current situation, in their workshop methodology they do ask participants to assess whether changes are expected for each indicator over the next three years using three options: improvement expected; stable; decreases expected. For this first phase of our research, gaging whether the indicators included a dynamic element and ability to gage change over time was something we asked about in follow up interviews. Our team had to make some methodological choices about what to use and include from the OECD's methodology but this additional temporal data could be collected through follow up workshops or supplementary methods.

In addition to applying the OECD WGI in the Great Lakes we are currently using the same methodology to apply the indicators in the Rio Grande/Rio Bravo region at the transboundary scale. Data collection for this case will be completed by the end of May 2019. Findings for that case will be written up in a second report. In addition to summary reports for both cases that will be posted on our website, both cases will be written up in the context of scholarly literature and published in journal articles. Findings from both cases will then be compared and a journal article comparing the cases will be produced. This will conclude Phase 1 of our study.

Phase 1 is being followed by Phase 2 of our study which focuses on engagement indicators. The indicators for this phase of our project are currently under development and will be applied at a variety of scales in both of our cases beginning in June 2019.