

Metro Vancouver: Improving upon Performance Measures

Author: Kipp Sezginalp

Client: Ann Rowan (Metro Vancouver)

Supervisor: Dr. Jim MacGregor

Second Reader: Dr. Rebecca Warburton

Chair: Dr. Kim Speers

School of Public Administration, University of Victoria

Date: March 14, 2016

Table of Contents

EXECUTIVE SUMMARY	4
INTRODUCTION	7
ISSUE – DEFINING THE PROBLEM.....	7
CLIENT: METRO VANCOUVER.....	8
Air Quality	9
External Relations	10
PROJECT OBJECTIVES	11
METHODOLOGY.....	11
ORGANIZATION OF REPORT	12
LITERATURE REVIEW.....	12
WHAT IS PERFORMANCE MEASUREMENT?	12
WHY ARE PERFORMANCE MEASURES BEING USED?	14
Accountability	15
Performance: Motivation, Monitoring and Evaluation	15
Providing Useful Information	16
WHAT ARE THE CHARACTERISTICS OF “GOOD” PERFORMANCE MEASURES?	17
Benchmarking and Baselines	17
Establishing Goals	18
Organizational Commitment	19
Measurement Criteria	19
Reporting	20
Keep It Simple	20
DESIGNING PERFORMANCE MEASURES AND LOGIC MODELS.....	21
Program Objectives	21
Designing Logic Models	21
LOGIC MODEL TO PERFORMANCE MEASURES	24
Purpose	24
Summative vs. Formative	25
Considerations for Qualitative/Subjective Evaluation	26
AIR QUALITY AND CLIMATE CHANGE CURRENT STATE ANALYSIS OF PERFORMANCE MANAGEMENT SYSTEM	29
AIR QUALITY AND CLIMATE CHANGE CROSS JURISDICTIONAL SCAN	31
CITY OF BOSTON, MASSACHUSETTS.....	31
KING COUNTY, WASHINGTON.....	32
CITY OF SAN FRANCISCO, CALIFORNIA.....	35
CITY OF EDMONTON, ALBERTA.....	38
CITY OF PORTLAND AND MULTNOMAH COUNTY, OREGON.....	41
EXTERNAL RELATIONS CURRENT STATE ANALYSIS OF PERFORMANCE MANAGEMENT SYSTEM.....	46
EXTERNAL RELATIONS CROSS JURISDICTIONAL SCAN.....	48
CITY OF SEATTLE, WASHINGTON.....	48
CITY OF AUSTIN, TEXAS.....	48
CITY OF NANAIMO, BRITISH COLUMBIA	50
COUNTY DURHAM, UNITED KINGDOM	50
CITY OF GUELPH, ONTARIO	52

CITY OF GRANDE PRAIRIE, ALBERTA	54
ANALYSIS	55
AIR QUALITY AND CLIMATE CHANGE:.....	55
EXTERNAL RELATIONS:.....	57
RECOMMENDATIONS	60
CONCLUSION	61
REFERENCES	62
APPENDICES	66
APPENDIX A:.....	66
APPENDIX B:.....	67
APPENDIX C:	68
APPENDIX D:	69
APPENDIX E: EMISSIONS INVENTORY.....	70
APPENDIX F: CREATE MEMORIES NOT GARBAGE LOGIC MODEL.....	71

Executive Summary

The issue that this project is addressing is that the current performance indicators utilized by Metro Vancouver do not adequately and effectively measure the performance of two business areas: Air Quality and Climate Change, and External Relations. Current performance measures in Metro Vancouver's Annual Business Plan do not accurately reflect the group's work and do not provide sufficient information on the overall performance of the business area. The current indicators, particularly for External Relations, do not adequately capture the success or effectiveness of the services provided, some of which produce mainly qualitative results, such as behavioural change in a target audience.

Metro Vancouver is a political body made up of four separate legal entities. It is comprised of 23 members, including 21 municipalities in the greater Vancouver region, one treaty First Nation and one electoral area. The staff at Metro Vancouver are accountable to the elected representatives and citizens within their jurisdiction to deliver core services they are mandated to provide. It is imperative that the performance measures in place accurately measure the performance of the business areas that deliver these services so staff can adjust or change initiatives and services as required. Air Quality and Climate Change is a business area within Metro Vancouver that is responsible for managing air quality in the region, protecting public health and the environment and minimizing the region's contribution to global climate change. External Relations is a business area that provides support and leadership across the organization on the best means for increasing the public's awareness of services provided, collaboration with member municipalities and effective engagement with other levels of government and agencies.

This project has two purposes. The first is to inform Metro Vancouver about the trends and best practices that are being identified in academic literature on performance measures in the public sector and specifically local government. The second purpose is to identify which best practices from a cross-jurisdictional scan would be most appropriate to adopt and implement within the business areas of Air Quality and Climate Change and External Relations.

This project primarily analyzes qualitative information gathered through a cross jurisdictional scan of North American local governments, with the exception of one British jurisdiction, and a review of performance measurement literature. Two focus groups with the Air Quality and Climate Change group and External Relations group, respectively were conducted to provide qualitative data for the current state analysis of the two business areas' performance management systems.

Performance measurement, in a general sense, is the ability to monitor the performance of a program, department, or an entire organization. Performance measures are used for a variety of reasons such as accountability, evaluation,

and providing valuable information for decision makers. A good performance measure varies by context but some key characteristics persist such as, setting performance targets from benchmarks or baselines, having established clear consistent goals, and using measurement criteria that address efficiency, quality, effectiveness and outcomes.

Designing performance measures is best aided with the development of logic models. Managers and staff can benefit from developing logic models as it helps developers understand the relationship among resources needed, implementation activities and the results a program intends to achieve.

Through the examination of the current state analysis of Air Quality and Climate change it was revealed that some of the business plan indicators seem to be missing some of the key characteristics that were described in the literature review, specifically: purpose and goal clarity. These indicators are providing information that does not help inform stakeholders in the evaluation of a business area's performance, which the annual business plan indicators are meant to achieve. For External Relations the current measures for their campaigns display an attribution problem, in which it is difficult to determine if the outcome was a result of the campaign or external factors.

The cross-jurisdictional scan and literature review provide a variety of examples that would be helpful to the two business areas. The County Durham recycling campaign provides useful techniques to address the challenges faced by External Relations in measuring the effectiveness of their campaigns. The City of Seattle displays a helpful website performance measure and the cities of Austin and Nanaimo display how surveys can be used on annual basis for performance measuring. King County provides an example on how to develop a Tracking Framework to help guide and measure climate change policy development. The cities of Boston and San Francisco provide a valuable transportation measure and the City of Portland provides a carbon-intensity measure that can be a valuable tool to measure behaviour change from one source of energy to another.

The author identified several recommendations for the two business areas through the analysis from the cross-jurisdictional scan and the literature review. Based on this the recommendations are:

Air Quality and Climate Change:

- Replace performance indicators in the business plan that measure outputs with performance indicators that measure outcomes of a program/policy
- Develop GHG Tracking Framework, as King County does, to help guide and measure policy development

- Consider to adopt carbon-intensity measures as displayed by the City of Portland
- Consider to adopt a vehicle distance travelled measure as displayed by the cities of Boston and San Francisco.
- Develop and use logic models for new programs/policies to help identify the things that can be measured and the linking constructs that may be measurable to determine the success of a new program or service (Look to Appendix E for a template)

External Relations:

- Adopt other website performance indicators that can provide more insightful information (i.e. unique visitors) *Look to appendix D
- Include questions in pre and post-campaign surveys that can be used to provide information for measures that can be included in the annual business plan (i.e. Citizen awareness of External Relations' campaigns; Citizen awareness of the services provided by Metro Vancouver)
- Develop and use logic models for new programs/policies to help identify the things that can be measured and the linking constructs that may be measurable to determine the success of a new program or service (Look to Appendix F for template)

This report provides an outline and analysis of promising practice models for performance measuring in local governments. Findings in this report should provide immediate value to Metro Vancouver but continued success in performance measurement will require ongoing contributions by staff and management.

Introduction

Issue – Defining the problem

The issue that this project is addressing is that the current performance indicators utilized by Metro Vancouver do not adequately and effectively measure the performance of two business areas: Air Quality and Climate Change, and External Relations.

Performance indicators are included in the annual business plans for business areas within Metro Vancouver during the budget process. Performance indicators at Metro Vancouver are used to inform the Board and therefore the public, of how well a business area is doing, in terms of meeting its objectives as defined by legislation, policy, regional management plans and the Board Strategic Plan. Performance indicators included in the Business Plans are quantitative in nature and should provide year over year comparisons of progress. Progress is measured both in relation to the Metro Vancouver trend or industry benchmarks and to annual objectives identified by the business area.

One of the issues is that the criteria for performance measures at Metro Vancouver preclude using and reporting on an indicator for a specific project which may be single or multi-year in nature but in any case could not be something reported year after year. An example would be a communications campaign for External Relations which is not ongoing. Currently Metro Vancouver uses indicators such as the “number of website pages visited” and the “number of people following Metro Vancouver on twitter” (Metro Vancouver, 2015). These indicators do not provide insight on the quality or effectiveness of the campaign and do not provide sufficient information on the overall performance of the business area.

Another issue, particularly for Air Quality and Climate Change, is that the current indicators in the business plan do not reflect the actual performance of the business area. For example, there is a 24-hour objective for Particulate Matter (PM_{2.5}) that is exceeded occasionally during the summer months because of forest fires in the region. Factors, such as forest fires, are out of the control of the performance of the business area. This 24-hour objective is a performance indicator measuring how well the business area is achieving its stated goals in the business plan. In turn, the exceedances of this objective by rare occurrences such as forest fires do not accurately reflect the work and successes of the group.

The last issue, particularly for External Relations, is capturing the success or effectiveness of the services they provide when the services produce mainly qualitative results, such as behavioural change in a target audience. Quantitative performance indicators can measure some of aspects of these qualitative results, such as an increase in website visits, but they do not provide an indication about

the quality of the engagement with the audience. Metro Vancouver is curious to find out if there is a more effective way of using performance indicators within External Relations.

Client: Metro Vancouver

Metro Vancouver is a political body made up of four separate legal entities:

- Greater Vancouver Regional District (GVRD)
- Greater Vancouver Water District (GVWD)
- Greater Vancouver Sewerage & Drainage District (GVS&DD)
- Metro Vancouver Housing Corporation (MVHC)

Each of these entities is governed by a separate Board of Directors composed of elected representatives from the respective members who have chosen to participate in the provision of the service (Metro Vancouver, 2012).

Metro Vancouver is comprised of 23 members, including 21 municipalities in the greater Vancouver region, one treaty First Nation and one electoral area. The region is expected to grow with an approximate 50% increase in the number of people and jobs by 2041 (Metro Vancouver, 2012). Services provided by Metro Vancouver are in more demand as the region grows. Efficiency and effectiveness of services provided will prove to be more valuable as demand increases. One of Metro Vancouver's broad roles as outlined within their Board Strategic Plan is to "deliver core services by attaining the highest possible levels of excellence in meeting [their] service delivery responsibilities" (Metro Vancouver, 2012). To fulfill this role as explained by the strategic plan, Metro Vancouver must have the right performance measures in place for their business areas.

The staff at Metro Vancouver are accountable to the elected representatives and citizens within their jurisdiction. It is imperative that the performance measures in place accurately measure the performance of the business areas so staff can adjust or change initiatives and services as required. Appropriate performance measures will help fulfill the organization's accountability obligation to demonstrate, review and take responsibility for performance.

The performance measures for the provision of core utilities and regional planning functions are relatively strong or at the least are similar to the indicators used by other jurisdictions. These indicators provide a basis for year over year comparison in performance using quantitative data.

The business areas that will be the focus of this project represent areas where qualitative measures and/or project specific indicators could also be utilized. Metro Vancouver wants to provide the basis through performance measures to recognize success and identify areas of improvement in order to support continuous improvement.

The mode of reporting on performance to the Board is through the annual Business Plans for each business area, which summarizes key information related to the proposed budgets and enables the public to better understand the scope of work for each business area. The Business Plans report on:

- Long term goals and strategic direction for the interim;
- Budget requests;
- Performance measures and annual objectives; and
- Key actions (Metro Vancouver, 2012)

Air Quality

Air Quality and Climate Change is a business area under the department of Planning, Policy and Environment within Metro Vancouver that is responsible for managing air quality in the region. This is accomplished through the development of air quality management plans that recognize the strong connections between air quality, health and climate, and integrate actions, whenever possible, to reduce both air contaminants and greenhouse gas (GHG) emissions across the region. Environmental Regulatory and Enforcement Services implement and enforce the policies and bylaws that Air Quality and Climate Change develop, as well as negotiate and issues permits, orders and licenses within the region. Environmental Regulatory and Enforcement Services is a business area under the department of Legal and Legislative Services (Metro Vancouver, 2014a).

Through the services and programs, they deliver, Air Quality and Climate Change work toward three main objectives:

- Protect public health and the environment
- Improve visual air quality
- Minimize the region's contribution to global climate change

Air Quality and Climate Change work collaboratively with a variety of agencies and stakeholders to implement several plans that address air quality, regional ground-level ozone and GHG emissions. Under the *BC Environmental Management Act*, the province has delegated authority to Metro Vancouver to manage air quality within the Metro Vancouver Region (Metro Vancouver, 2014b). The group measures and tracks air quality and develops the plans and policies that regulate residential, industrial and commercial emissions. The group develops informative materials to educate the public on air quality and climate change issues in the region (Air Quality and Climate Change, 2015).

Air Quality and Climate Change serves internal and external clients. The internal clients are the other business areas and departments within Metro Vancouver. It provides a support function to the other business areas for their programs and services, providing information and guidance with activities that involve or affect air quality or emissions

The external users and clients include the public, elected officials (within Metro Vancouver and other levels of government), senior levels of government, government agencies, member municipalities, industry, small businesses, industry associations, international groups and governments. Some of the activities with these users and clients include consultation, permit granting, information sharing, reporting, and educational outreach.

External Relations

External Relations is a business area within Metro Vancouver that provides support and leadership across the organization on the best means for increasing the public's awareness and understanding of Metro Vancouver's services and policies. External Relations also enhances communication, engagement and collaboration with member municipalities and more effectively engages other levels of government and agencies in support of regional priorities (Metro Vancouver, 2014). This is accomplished by four divisions within the business area: Corporate Communications, Media Relations, Multimedia Services and Stakeholder Engagement. With 28 full time staff the business area provides a variety of programs and services from advertising campaigns within the Metro Vancouver area, to being the Secretariat and founder for the National Zero Waste Council, a multi-stakeholder leadership initiative to promote waste prevention and reduction in Canada.

Through the services and programs, they deliver, External Relations works towards three main objectives:

- Increasing public awareness, understanding and alignment with Metro Vancouver services and policies;
- Enhancing communication, engagement and collaboration with member municipalities; and
- More effectively engaging other levels of government and their agencies in support of regional priorities (Metro Vancouver Business Plan, 2015)

External Relations also takes every opportunity to raise the profile of Metro Vancouver. It is their role to inform and promote Metro Vancouver and build trust and social capital with the public.

External Relations is one of four business areas within Metro Vancouver that are considered support departments. External Relations serves the other business areas with anything involving communications, stakeholder engagement, inter-governmental relations and media needs.

External Relations also has external clients. The 2.4 million residents living in the region are exposed to external relations programs, services and campaigns. The member municipalities that make up Metro Vancouver are also clients. In many instances, External Relations will develop the creative material for a campaign and provide it to member municipalities to use in their buildings and communities.

Project Objectives

This project has two purposes. The first is to inform Metro Vancouver about the trends and best practices that are being identified in academic literature on performance measures in the public sector and specifically local government. The second purpose is to identify which promising practices best practices from a cross-jurisdictional scan would be most appropriate to adopt and implement within the business areas of Air Quality and Climate Change and External Relations.

Research Question: The primary research question being addressed by the project is: what indicators can Metro Vancouver implement to effectively measure performance in the following business areas: Air Quality and Climate Change and External Relations?

Methodology

This project primarily analyzes qualitative information gathered through a jurisdictional scan of North American local governments, one British jurisdiction, and a literature review. This is accomplished through document reviews of performance measurement literature and local governments' websites and reports on their performance management systems. Two focus groups with the Air Quality and Climate Change group and External Relations group, respectively were conducted to provide qualitative data for the current state analysis of the two groups' performance management systems.

The literature review and cross-jurisdictional scan comprised of internet database searches including UVIC Summons, Google and Google Scholar. The search terms used included combinations of the following: "performance," "measures," "indicators," "qualitative," "quantitative," "public sector," "local government," "external relations," "communications," "climate change" and with the names of each jurisdiction included. By request of the director of the business area, the cross-jurisdictional scan for Air Quality and Climate Change focused on local governments' climate change performance measurement systems and not air quality.

The primary research methodology is the promising practice research approach. Promising practice research approach is based on the idea that organizations can develop and implement practices that have proven to work somewhere else. For purposes of this project, promising practices will be defined as good practices that have proven to work well, have led to good results and can be transferred as functional sets (Vesely, 2011). The criteria for practices that have worked well will be any practice that does not carry a significant cost and can

benefit Metro Vancouver by filling gaps identified in the current state analysis. The cost should be proportional to the benefits provided by the practice.

The methodology of this study is thus based on the theoretical perspective of interpretivism. Information and commentary will be suggestive rather than conclusive. Opinions and recommendations will aim to be plausible and convincing but will not be presented as the *only* true way of doing things (Crotty, 1998).

Organization of Report

This report is organized into a number of sections. Firstly, the literature review will:

- define what performance measurement is
- explain why it is being used
- discuss what are good performance measure characteristics
- and explain how to design logic models and performance measures.

Second, the cross-jurisdictional is divided into two parts. The first part of the cross-jurisdictional scan will follow the current state analysis of the Air Quality and Climate Change performance measurement system and provide examples of how other jurisdictions are measuring performance in climate change emissions. The second part of the cross-jurisdictional scan will follow the current state analysis of External Relations and will provide examples of how other jurisdictions are measuring performance in communications. Third, an analysis section will follow the cross jurisdictional scan and provide commentary on the current state of the two business areas and where elements from the literature review and cross-jurisdictional scan can provide value to the two groups. The paper will conclude with a recommendations section and conclusion. The appendices will provide additional, useful information including two logic models for programs implemented by the two business areas.

Literature Review

What is Performance Measurement?

Performance measurement is made up of many components and encompasses a variety of terms so this section will define some of the key vocabulary elements that are used when discussing performance measurement.

Performance measurement, in a general sense, is the ability to monitor the performance of a program, department, or an entire organization. By collecting data, and measuring it against targets, performance measures can provide defensible information to stakeholders whether the program accomplished its intended goals (McDavid & Hawthorn 2006). Generally, performance measurement, is a practice that is continuous and ongoing. Data is collected and

tracked from performance measures on a regular schedule and analyzed periodically for reporting to internal and external stakeholders. It is typically on an annual basis where the department or organization will develop an annual report and determine if the performance measures should be modified to reflect changing goals or objectives for the department and/or organization. This is in contrast to program evaluation, where evaluation takes place on a specific agency or program on an ad hoc basis and a report is developed at that time.

A **performance measure** is a specific quantitative measure or qualitative assessment of an activity or outcome. Performance measures are also referred to as performance metrics and key performance indicators, or KPIs. Performance can be measured in a variety of ways so it is important that the design of the performance measure isolates exactly what the organization wants to measure. The most common designs of performance measures focus on measuring inputs, outputs, efficiency, and outcomes of a program or service.

Inputs are the resources expended to produce a service or administer a program. Examples of inputs could be the dollars spent or the staff hours used for a service or program.

Outputs are the final outcomes of a program or service as a direct result of the program or service. An example of this could be library books checked out for measuring the performance of a library promotion, or the number of children immunized in a child health awareness campaign. Outputs typically are quantifiable goods and services delivered to external or internal stakeholders. Outputs however, do not measure or describe the quality of the service.

Efficiency measures are expressed as a unit-cost ratio. The most commonly used efficiency measure is the input-output ratio. For example, to measure cost per service, it would be the total program inputs to total output. With the child immunization example mentioned above, the total inputs would be the monetary cost of delivering the service and the output would be the number of children immunized. The cost or input does not need to be monetary, for example it can also be staff hours. For instance, the staff hours required for each child immunization. Similar to outputs, efficiency measures do not measure the quality of service only how well the resources are being used for the delivery of the program or service.

Outcomes are the results or effectiveness of a service for stakeholders and on the wider community. Outcomes are distinguishable from outputs. Outputs are what the program directly produced, whereas outcomes are the consequences of the program, which may also be affected by external factors. For example, there is a program to provide job training to youths in a specific community. The outputs to this program are the number of youth who were trained. The outcomes could be an increase in job skills and employment. Outcome measures are typically expressed in rates or percentages. The outcome measure could be the percentage of youth that went through the program and obtained employment

(Controller's Office City Services Auditor, 2015).

All performance measures are paired with goals or targets. **Targets** are the desired performance level for the organization or department. Targets can be fixed annually or can be set for a specific length of time. Target performance levels can be set by previous performance history, known as **baselines**, research data from citizen surveys, standards set by technical/scientific studies or by benchmarks (Ministry of Municipal Affairs and Housing, 2007).

Benchmarks are performance level targets that other organizations in that field or industry have already set for their organization's performance (Controller's Office City Services Auditor, 2015). For example, City A has a performance measure to lower the crime rate within their city by 25% by 2020. The neighbouring municipality, City B, may set their performance measure for reducing their crime rate also by 25% by 2020, choosing the benchmark set by City A. City A and City B may share a lot of similarities in terms of demographics and resources so it is an appropriate standard to measure performance by. Although City A and City B are quite similar there will always be differences and factors that may affect performance data so conclusions reached through benchmarking must be carefully considered (National Performance Management Advisory Commission, 2010.)

Performance management is an organizational management practice that relies on evidence from program and policy accomplishments to connect strategic priorities to outcomes and make decisions about future direction for the organization (McDavid & Hawthorn, 2006)

Why are performance measures being used?

New public management (NPM) is a management system that emphasizes that concepts and practices used in the private sector can also be used in the public sector. The NPM school of thought advocates that governments should adopt private sector practices that emphasize the importance of clearly stated objectives, efficiency, and attention to the bottom line. Performance measurement plays a key role in this school of thought (McDavid & Hawthorn, 2006)

Performance measurement can serve multiple purposes for an organization, such as to monitor and evaluate program performance, promote transparency and accountability within an organization and provide stakeholders with valuable information thus enhancing stakeholder decision making. Performance measuring will identify areas where a program can be improved upon, it will hold the government and its employees accountable to clearly stated objectives and it will ultimately enhance the decision making process for stakeholders (McDavid & Hawthorn, 2006)

The goal for local governments today, amidst this permeation of the NPM school of thought, is to be able to provide the best services to its communities at the most efficient cost, and with clear accountability to the public (Ministry of Municipal Affairs and Housing, 2007). Local governments have embraced performance measures because it can do these things while managing the scarce available resources typically available to local governments (McDavid & Hawthorn, 2006)

Behn (2003) describes that performance measures can be used by an organization for eight things: to evaluate, control, budget, motivate, promote, celebrate, learn and improve. An organization can use these eight tools to promote mainly three things within their organization: Accountability, Performance, and Information.

Accountability

Having performance measures set within an organization strengthens the accountability for the staff and managers to themselves but also to elected officials and the public at large. Setting performance targets that are known and can be accessed by anyone who wishes, places a level of accountability with the organization to the public. Setting targets also establishes an understanding between staff and council, in which all parties have a clear understanding of the expected results within each service area. The accountability towards the public becomes shared between the staff and the council, as both are privy to the performance targets and can affect the work in achieving the targets set by the organization (Ministry of Municipal Affairs and Housing, 2007).

Performance measures can also be used when an organization is contracting out one of the services they provide. By establishing performance measures beforehand with a contractor, the organization can hold the contractor accountable to complete the assigned work to a certain level of satisfaction. This is known as performance-based contracting (Controller's Office City Services Auditor, 2015).

Performance: Motivation, Monitoring and Evaluation

Performance measures can help improve the performance of programs and services, and the employees who deliver them. With stated performance targets, employees' day-to-day and longer term work can be monitored by managers with the progress made towards the performance target in mind. It makes the evaluation of employees much easier and it makes the employee's work more focused (Controller's Office City Services Auditor, 2015).

Performance measures can be used to incentivize workers' efforts. The Ministry of Municipal Affairs and Housing (2007) states that municipalities in Ontario, including Brampton, Kingston and Ajax, have used performance measures to create incentives and rewards to stimulate productivity and creativity. By having

daily, weekly, or monthly targets that employees work towards, workers can be rewarded for reaching these targets. There is a motivating power to nonmonetary incentives by managers when they monitor the performance data of their employees, when they praise good performance, and when employees know how well their operating team is doing in meeting its targets in comparison to other teams (Ammons & Roenigk, 2015).

Performance measures simply make it easier for employees and managers to evaluate if something is successful or not. Performance measures provide evidence that can be used to compare or judge performance. Managers can evaluate their employees much more easily if their performance is assessed against established performance standards. Managers and employees alike can determine much more easily if a program or service is achieving its intended goals by the performance measures that are in place. Performance measures can help identify services that are effective in reaching their intended targets or services where changes may need to be made to improve performance (McDavid & Hawthorn, 2006)

Performance measures can play a significant role in an organization's employee performance. If there are performance measures in place in a certain area, then the work there will get done to satisfy reaching those targets. If performance measures are in place, then it will be easier for the organization to recognize success. When success is identified then the organization can reward it and try to duplicate its successful traits. If performance measures are in place, then it will be easier for an organization to recognize failure. When failure is identified the organization can make changes to correct it (Controller's Office City Services Auditor, 2015).

Providing Useful Information

Performance measures provide valuable information to organizations and greatly support decision making processes. Organizations that use performance measures use performance data to inform their policy and management decisions, track progress on key objectives, support the budgetary development process and improve service quality and efficiency (Ammons & Roenigk, 2015). Measures can inform decision makers on a wide variety of topics, including quantity, efficiency, quality, effectiveness, and impact. It is imperative for an organization to have timely and reliable performance data to report pertinent information to stakeholders and managers so well informed decisions can be made (National Performance Management Advisory Commission, 2010).

Performance measures can improve budget processes. The data that is produced through performance measures, such as cost and benefits of programs, can help organizations develop budgets based on this information. Decisions about allocation can be made that are supported by evidential data, instead of simply developing a budget on historical patterns of resource allocation. Data garnered from performance measures can help determine if

more or less resources need to be moved to and from a specific service area. The monitoring of an organization's budget after it has been decided can also be aided by performance measures with expected services that are predicted to be met at certain time intervals (Ministry of Municipal Affairs and Housing, 2007).

The information and data garnered from performance measures also can be used to communicate the priorities and expectations of the organization to relevant stakeholders, such as elected officials and the public at large. Reporting of performance data and results may foster a public discourse on important issues that require the public's support (Controller's Office City Services Auditor, 2015).

Performance measures can provide a variety of information useful to a variety of audiences. Performance measure data can be communicated to department and program management, elected officials, and the public. Elected officials in some regards are the principle users of this information as they will have the power in some cases to begin or end a program depending on the information derived from performance measures (McDavid & Hawthorn, 2006). At regular intervals this information will be communicated and typically at the end of the year an annual report will be developed to provide a summary of how successful the organization was in meeting their performance targets (National Performance Management Advisory Commission, 2010).

What are the characteristics of “good” performance measures?

Performance measures can greatly benefit an organization if they are developed with the right criteria in mind. Despite efforts by some, there is no unanimity on what constitutes the best practice for developing performance measures (Bevan & Hood, 2006). The content below highlights some of the common features that are promoted for best practices in the development of performance measures.

Benchmarking and Baselines

Benchmarking is a common feature that is utilized by performance managers. Benchmarking is a logical and straightforward way to understand an organization's performance. It works by comparing an organization's performance to that of a similar organization, such as an organization in the same jurisdiction or in the same industry. It is very difficult to make a true comparison to another organization even if they share very similar characteristics, so conclusions reached through benchmarking must be carefully considered (National Performance Management Advisory Commission, 2010). Sharing performance data is a critical pre-requisite for benchmarking. Benchmark figures for a particular performance measure are not arbitrarily set but are instead based on results achieved by a counterpart organization (Ammons, Coe, & Lombardo, 2001). Benchmarking with similar organizations can help reveal the success of other organizations and the management or service delivery methods

that are enabling them to reach these achievements. There will certainly be differences or factors beyond the organization's control that may skew the comparison between organizations but benchmark performance data can still help both taxpayers and elected officials understand issues and the degree to which they are being addressed (Ministry of Municipal Affairs and Housing, 2007). Benchmarking targets can also be derived from performance standards established through detailed technical studies, private and public sector association data, and research into client needs in the form of surveys, consultative panels, focus groups etc. (Ministry of Municipal Affairs and Housing, 2007).

Baselines are seen as a starting point for measurement, where future performance will be based against. Historical data of the organization's performance is typically used as the starting baseline. If there is no historical data, an estimate can be made of the organization's performance. Determining baselines should be a reflective process, as baselines should not be set arbitrarily (McDavid & Hawthorn, 2006). The baseline figure should be relatively close to the actual outcome so it can provide insight on whether the performance of the organization or program was successful or not.

The usefulness of performance measures increases when there is comparative analysis set up with baselines or benchmarks. Making comparisons contributes valuable reference points that enable elected officials and staff to identify the strong and weak parts to the programs and services provided. With this information at hand, decision makers can take corrective action so that goals may be still be reached with programs and services that they administer (Galera, Rodríguez & Hernández, 2008).

Establishing Goals

Performance measures are only useful if they measure things that the organization actually wants done. An organization needs to establish goals and performance targets that are important and meaningful to its internal and external stakeholders (National Performance Management Advisory Commission, 2010). Whether achieved through strategic planning or otherwise, goal clarity is fundamental to performance management. Once goals and objectives can be determined that are relevant to stakeholders and that meet the needs and expectations of them, then performance indicators can be developed to supplement these goals (Ammons & Roenigk, 2015). By setting goals and performance measures, an organization's resources and efforts can be focused towards achieving results that provide the greatest benefit to its stakeholders (National Performance Management Advisory Commission, 2010). At the municipal level, strategic priorities are set and the main emphasis is developing performance indicators that enable the tracking of strategic priorities (Boyle, 2000). Ideally there should be a consistency of goals from the top-down of the organization. Individual and business area goals should be aligned, which in turn

should align with the organization's goals. Measuring performance at all levels of an organization will complement one another and in turn promote the effective management of organizational performance (McDavid & Hawthorn, 2006).

Organizational Commitment

A performance measurement system becomes beneficial to an organization when managers and staff within the organization make a sustained effort to use performance management practices routinely, when they believe in performance measures and the data they provide, and when they set the expectation that decisions will be based on performance information (National Performance Management Advisory Commission, 2010). Performance measures should be introduced to an organization with the clear message that they are there to help managers make informed decisions, to help identify areas where improvements can be made, and to help the organization do a better job in managing the scarce resources that are available to them. It is with this message that managers will be motivated to get involved in creating a performance management system. Once there is a consensus within the organization that performance measures are beneficial, managers and staff will also have to accept that no matter how sophisticated the design of the performance measures are, they will still need to exercise professional judgment in their work (McDavid & Hawthorn, 2006). The risk for organizations is that their performance measures will undermine the motivation and morale of staff by focusing on compliance and ensuring staff, "tick all the boxes" before proceeding with their work (Arnaboldi, Lapsley & Steccolini, 2015). Performance measures will not remove the requirement that managers and staff will still need to think critically and creatively when developing, implementing and assessing work. It is up to the organization to monitor the staff's engagement with performance measures and ensure that they are not having a negative effect on staff.

Measurement Criteria

For a performance management system to provide optimal value to an organization, sets of performance measures must include measures that address efficiency, quality, effectiveness, and outcomes. Managers and staff must monitor these performance measures regularly to inform them of whether they are on track or not with their targets (Ammons, 2010). Performance management systems are best served when they use a combination of subjective and objective data. The combination of both types of data provides a more well-rounded picture of result-specific information with quality of service. For example, Gilly (1987) describes an agency that received and resolved complaints and he found that the number of days involved in resolving a complaint was not that important, but instead the complainant's perception of how quickly the complaint was handled was what was important (Shingler et. al, 2008). This speaks to the value in measuring quality of service as opposed to the quantity of service. Subjective measures that gather qualitative data complement results-specific, objective measures, and provide a well rounded performance management

system that addresses results and quality.

Successful performance management systems will require three things: first, the measures must provide results-specific information that either confirms that desired targets are being reached or reveals that there are performance gaps; second, there needs to be sufficient capacity within the organization to enable managers and staff to close identified performance gaps; and third, there must be incentives in place that motivate them to close these gaps (Ammons & Roenigk, 2015).

Reporting

Reporting is not necessarily a component of an individual good performance measure, but it is a component of good performance management systems. It is important that the stakeholders of a service provided or, more generally, the public at large, are informed of the performance successes of the organization. Typically for the public, their attention is only captured when there is bad news being reported from a governmental organization. The public then takes for granted the things that governments do well. The performance focus for the majority of the public is on public organizations' failures and not their success. A good performance management system celebrates reaching or exceeding performance targets. Internally this is celebrated with praise and recognition for staff and managers. Externally this is celebrated by reporting out successes to the public at large. It is the right of all citizens that their tax dollars are spent as efficiently and effectively as possible but it is also important that citizens are notified and understand the results of government programs. This is why reporting is an essential component to performance management (Ingraham, 2005).

Organizations are advised to encourage or require programs to provide explanatory information at least for performance data indicating unexpectedly bad or very good results; make this step a formal part of the process. This is likely to considerably improve users' knowledge of what has happened and what needs to be done. It should also help allay public officials' fears that their outcome data will be misused if they have the opportunity to provide explanations.

Keep It Simple

When developing performance measures there is no advantage to tracking hundreds of measures that are rarely used. An organization must decide upon the right measures for each business area. The right measures are the ones that provide relevant information and that do not overlap or duplicate the information that is provided by another measure (Controller's Office City Services Auditor, 2015). The right measures are also the ones that provide the most information given the business area's resources and ability to track them. Human and financial resources can play a factor in what measures are the most appropriate

to implement. If there are too many measures that demand too much human and financial resources, then the performance management system needs to be adjusted.

The measures should be well understood and use language that is appropriate to its audience. A clear definition of measures and data will ensure that staff, managers and elected officials are able to use the information appropriately. Measurement information may be relevant to one audience and not understood by another. Measures should be developed to serve multiple audiences to avoid this problem. If technical jargon or information is necessary for a particular measure, an organization can produce multiple measures that can serve multiple stakeholder groups (National Performance Management Advisory Commission, 2010).

Designing Performance Measures and Logic Models

Note: Principles and concepts described in the previous chapter should be applied below where appropriate when developing performance measures.

Program Objectives

It is important that clear objectives for a program or service are determined before developing a logic model and selecting performance measures.

Program objectives state the intended outcome for a program. As McDavid and Hawthorn (2006) explain:

“Program Objectives need to state an expected change or improvement if the program works (reducing the number of drug-related crime), an expected magnitude of change (reduce the number of drug-related crime by 20%), a target audience/population (reduce the number of drug related crime by 20% in Harrisburg, Pennsylvania), and a time frame for achieving the intended result (reduce the number of drug related crime by 20% in Harrisburg, Pennsylvania in 2 years).”

Establishing a clear objective that satisfies all stakeholders lays the groundwork for developing logic models and the performance measures that will be drawn out from it.

Designing Logic Models

Note: Look to Appendix 1 and 2 for logic model examples for Air Quality and Climate Change and External Relations, respectively.

Logic models can be a useful tool to create performance measures. Logic

models provide a description of the program and the activities and the outputs that it entails. The model is intended to be read from left to right as “if-then” statements that describe the sequence of activities and components that comprise the program (Boyle, 2000). Managers and staff can benefit from developing logic models together as it helps developers understand the relationship among resources needed, implementation activities and the results the program intends to achieve. It becomes a visual representation, defining these relationships for all stakeholders to understand.

The components of a logic model are straightforward as illustrated in Table 1 below, which provides a visual representation of definitions. Firstly, there are **Inputs**. Inputs are the resources that are required to implement the program. Developers can determine inputs by asking themselves what resources are needed to accomplish the activities that are set out for this program (Controller’s Office City Services Auditor, 2015). Resource examples are listed in the table below. Inputs that are not monetary can be converted to equivalent dollar values if the purpose of a performance measurement system is to compare program costs to outputs, program costs to outcomes or compare costs to a monetized value of outcomes (McDavid & Hawthorn, 2006).

Components are the activities that comprise the program. In other words, the activities that will be done to produce the intended outputs.

Implementation Objectives are required for each activity that is listed. Implementation objectives state the work that is required by program staff for each activity. Look to Table 1 below for implementation objective examples. Implementation objectives are not the same and should not be confused with program objectives. Successful implementation of an activity does not guarantee an intended outcome so the language used in implementation objectives should reflect that. For example, an implementation objective that reads, “To provide work skills training for clients that will enhance their employability”, would be stating an intended outcome that may not necessarily happen (McDavid & Hawthorn, 2006).

Program outputs are the results that are expected once activities are underway or completed. Typically, outputs can be counted are the most tangible result of a program. For example, an output could be “the number of clients trained”. With this same example in mind, we could also count the output as “the total number of hours of training delivered” or estimate the average number of hours training per client (McDavid & Hawthorn, 2006).

Linking constructs are the transitions or assumptions from the outputs produced by the program to the intended outcomes. For example, suppose there is a job skills training program for youth in a community that is intended to increase the employment rate for youth in that community. The program delivers job skills training, including resume and interview practice, to a significant portion of youth in the community. The program does not offer participants any

employment opportunities, just training. The participants are then surveyed after six months of completing the program to see if they are gainfully employed. The success of the program is dependent on participants being able to obtain employment after completing the program. The linking construct or assumption for the success of this program is that a significant portion of them actually will obtain employment. If at some point after the six months, youth employment in that community does increase, it may be difficult to attribute this increase to the program and not to other factors, such as, economic growth or shortage of labour in the community.

Table 1 - Logic Model Framework

Inputs	Components	Objectives	Outputs	Linking Constructs	Outcomes
In order to accomplish our set of activities we will need the following: Money People Equipment Technology Facilities	In order to address our problem we will conduct the following activities:	What are we trying to accomplish? To provide... To give... To do... To make... "To assess the training needs of clients"	Work done Program activities completed	Transition factors that connect outputs to outcomes (i.e. Assumptions)	Intended by the design of the program Outcomes or impacts related to program objectives Short-term: Medium-term: Long-term:

McDavid & Hawthorn, 2006.

Not all logic models will require linking constructs. Developers of the model must know what the program objectives are, what the outcomes are, and then ask themselves if there are any steps in the logic that need to occur in order to translate outputs to outcomes (McDavid & Hawthorn, 2006).

Program outcomes are the intended results deriving from the program objectives. Typically, a program will have several outcomes that are differentiated by time period, such as short, medium and long term outcomes. There are also environmental factors that may affect program outcomes in a positive and/or negative way. These factors do not need to be stated on the logic model but may be something that should be addressed when it comes to evaluating the program and determining whether it has met its program outcome goals (McDavid & Hawthorn, 2006).

Logic Model to Performance Measures

The visual representation of the program in a logic model along with the linking constructs, if there are any, will provide a variety of candidates for performance measures. By listing the inputs, components, outputs, and outcomes it also provides an inventory of things to measure. With this information laid out it becomes much easier to think of performance indicators that can measure “program efficiency (comparing inputs to outputs), program quality (whether outputs meet some specified quality standard), and program effectiveness (whether intended outcomes have been achieved) (Martin and Kettner, 1996 as cited in McDavid and Hawthorn, 2006).

Purpose

Before thinking about how a performance measure will be designed it is important for the manager to determine the purpose of this specific performance measure. Performance measures can achieve a variety of things but a performance measure that is particularly appropriate for one purpose may be completely useless for another purpose. That is why managers and staff must determine what exactly they want out of their individual performance measures and performance measurement system (Behn, 2003). Below is a table with a list of purposes for performance measures. This list is not exhaustive but gives an idea of some common purposes that performance measures can be used for.

Table 2 - Eight Purposes that Public Managers have for Measuring Performance

The purpose	The public manager's question that the performance measure can help answer
Evaluate	How well is my public agency performing?
Control	How can I ensure that my subordinates are doing the right thing?
Budget	On what programs, people, or projects should my agency spend the public's money?
Motivate	How can I motivate line staff, middle managers, nonprofit and for-profit collaborators, stakeholders, and citizens to do the things necessary to improve performance?
Promote	How can I convince political superiors, legislators, stakeholders, journalists, and citizens that my agency is doing a good job?
Celebrate	What accomplishments are worthy of the important organizational ritual of celebrating success?
Learn	Why is what working or not working?
Improve	What exactly should who do differently to improve performance?

Behn, 2003.

For example, picking from the list above, if the purpose of the performance measure is budgetary then it would be likely that the performance measure would need to include a financial or human capacity component that provides information such as the efficiency of the program or service. If the purpose of the performance measure was to motivate then the performance measure would likely be focused on real time outputs compared to production targets. By determining the purpose of the performance measure it will make the process of developing a performance measure much easier for staff and managers.

Summative vs. Formative

Another component to determining the purpose of a performance measure and a performance measurement system is to decide whether it will be summative or formative. A summative performance measurement system will provide information on whether or not a program will be continued, expanded, or contracted/cancelled. Summative measures will typically focus on the financial targets and costs in relation to outcomes. A formative performance measurement system will provide information solely for the improvement of the program. For example, an organization may announce a new program and state the intention that results from performance measures will only be used formatively for a certain time period until the program is established enough to develop summative

measures that meaningfully measure the program's performance (McDavid & Hawthorn, 2006). Organizational goals can change over time so it is possible to refocus a formative performance measurement system to a summative one by increasing the relevance of some measures and decreasing the relevance of others (McDavid & Hawthorn, 2006).

**** Please look to Appendix A and B for questions that developers of performance measures should ask themselves and the SMART technique, respectively.**

Considerations for Qualitative/Subjective Evaluation

For some programs or services, it is more difficult to evaluate success in terms of numbers or quantifiable results. To measure the success of these programs, qualitative methods need to be used to collect and analyze data that does not readily reduce into numbers (McDavid & Hawthorn, 2006). Some groups may feel it is better to try and translate qualitative outcomes into quantitative figures. It does not reflect the key outcomes of some of these programs, however, when quantitative performance measures are used that represent the performance of the program in numbers. For example, some non-profit and public sector organizations measure their success by the positive influence on their clients' lives and do not feel that quantitative figures can capture the success of these results (McDavid & Hawthorn, 2006). There are some qualitative methods of evaluation however, that can complement a performance measurement system and provide insight on qualitative successes.

Qualitative methods include interviews, focus groups, surveys or questionnaires, field notes from observations, and other written documents. Focus groups and surveys are common tools to garner a better understanding of how a program or organization is performing.

Focus groups are an exploratory research method that involves a moderator who leads a discussion on a specific topic with several participants, typically between six to ten. Focus groups are relatively small so their results cannot be generalized to a larger population, however they can be useful to provide a deeper insight into people's opinions and ideas about specific topics. They can provide insight into how a particular program or communications campaign affected a target population. They can also be a precursor to the development of a survey as the information gathered in the focus group can help formulate the creation of survey questions (WRAP, 2006).

Surveys are a list of questions delivered to an audience in a variety of formats. Information gathered in surveys can be either quantitative or qualitative depending on how questions are worded. Qualitative information obtained through surveys, similar to focus groups, can provide insight into people's opinions and ideas about specific topics. Surveys can be conducted:

- Face-to-face

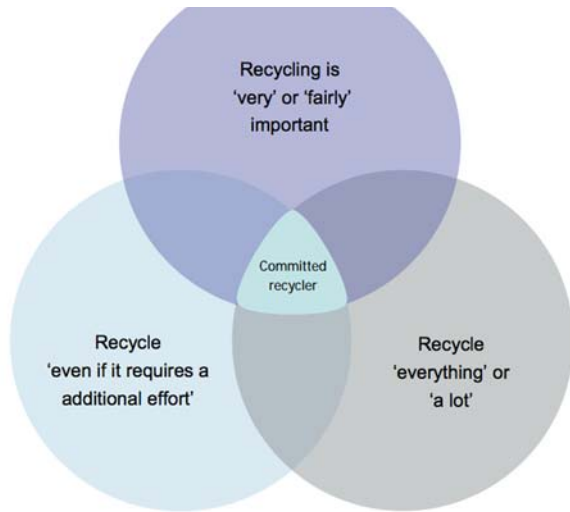
- By telephone
- Paper-based self completion
- Web-based self completion

Through the different formats surveys can measure an audience's satisfaction with a program or organization, their awareness of a service or campaign, their understanding of an issue, their usage of a service, as well as many other things. Surveys can also help identify unaccounted for factors that may have affected the outcome of a program or service, providing insights that quantitative measures could not capture. These insights can be provided through open-ended or closed-ended questions. Closed-ended questions can be answered by the respondent with either a "yes" or "no" response. Open-ended questions provide the opportunity for the respondent to answer the question with elaboration and detail that a closed-ended question would not provide.

The way people respond to surveys does not necessarily mean that they believe or act a certain way. For example, asking whether a respondent feels they 'must or should' recycle will not help surveyors identify the people who are committed or conscientious recyclers because studies have shown that 95% of respondents will agree with this statement (WRAP, 2006). To identify committed recyclers, instead ask if they would agree with the following three statements in Figure 1.

If they respond in the affirmative to all three, then it would be reasonable to consider the respondent a committed recycler. Use different combinations of statements or questions to reinforce confidence that the respondent's answer or opinion is truly theirs.

Figure 1 - Survey Questions



WRAP, 2006. Improving Upon Waste Diversion Schemes: A Good Practice Guide to Monitoring and Evaluation

Air Quality and Climate Change Current State Analysis of Performance Management System

The performance measurement system currently in place through the business plan for Air Quality and Climate Change consists of five performance indicators that are assessed on an annual basis. These performance indicators were developed with input from the Air Quality and Climate Change group, senior government standards and Ann Rowan, Sustainability Strategist at Metro Vancouver. Below are the current indicators presented in the 2014 Business Plan:

Indicator	Historical and/or Industry benchmark	Current Performance	2015 Performance Objective
Net corporate greenhouse gas emissions (tonnes of CO ₂ e)	1997: 13,900 2007: 7,937 2012: 8,315	2013: 1,334	0 (carbon neutral)
Regional greenhouse gas emissions per capita (tonnes of CO ₂ e)	MV 2007: 7.3 Canada 2007: 22.8 Greater Toronto 2010: 11.6	2014 projected: 6.0	5.7 Target: Reduce GHG by 10% from 2007 levels
Number of non-road diesel engines, within the region, registered for diesel particulate (DPM) emissions	2012: 1404 Tier 0	2013: 1707 Tier 0 320 Tier 1	Registration of all applicable Tier 0 and Tier 1 non-road diesel engines
Compliance with MV air quality	2011: Compliant with all Metro Vancouver air quality objectives	2013: Single day exceedance of 24-hour objective for PM _{2.5} ; compliant with	Compliance with all MV air quality objectives (no exceedances)

		all other objectives	
Total number of permits for discharges to airshed that must be managed and monitored	2013: 152	2014 YTD: 152	157

Metro Vancouver, 2014a.

The business area also has performance indicators that are used within the group, some of which are stated in the Integrated Air Quality and Greenhouse Gas Management Plan Progress Report (IAQGGMP). The performance indicators stated in this report are more specific and are more closely related to the programs implemented and administered to the group, where as the business plan indicators are more “high-level” to how the group as a whole is performing. For GHG emissions, Metro Vancouver has established regional targets:

- a 33% reduction from 2007 levels by 2020
- a 80% reduction from 2007 levels by 2050 (Metro Vancouver, 2014b)

The business plan indicators are meant to be “high-level” performance measures that indicate how the business area is performing in relation to established goals. These goals include the the protection of public health and the environment, improving visual air quality and minimizing the region’s contribution to global climate change.

These measures are typically not used to inform elected officials on significant policy change or development. If the staff believes a significant policy change is required they will provide information through research and reports to aid this decision or rely on indicators from specific programs or those stated in the Integrated Air Quality and Greenhouse Gas Management Plan Progress Report.

Some measures stated within the IAQGGMP are determined by following the mandated standards established by the provincial or federal government. Other measures are developed within the business area. When the business area develops or changes a measure for a particular pollutant for example, there is a public consultation process with stakeholders within the region to determine an appropriate objective. The measures mandated by senior levels of government will have also gone through a consultation process when developing the measure.

On a day-to-day basis, staff within the business area are well aware of the mandated standards and when they are required to report to other levels of government. A lot of effort is used to track and report out on these standards.

As explained during a focus group by members of the business area, the performance measures that are used for specific programs within the business area are constantly evolving. The programs and campaigns that the group administers are frequently being adjusted to more effectively gather useful information and to lead the programs more effectively towards their intended outcomes. In turn, the performance measures for these programs and campaigns are adjusted to reflect these changes (Focus Group with Internal Relations, February 15, 2016).

Air Quality and Climate Change Cross Jurisdictional Scan

City of Boston, Massachusetts

The City of Boston addresses climate change by focusing on three significant sectors: Residential, Commercial, and Transportation. The programs and services that the City of Boston plans to implement and that have already been implemented to combat climate change and GHGs are directed specifically to one or more of these three sectors. The performance measures and targets that the City has developed have followed in this emphasis to provide insights into how their programs are doing in achieving their goals of reducing GHGs directly or indirectly.

Boston's residential neighborhoods account for approximately 20% of the city's total GHG emissions. In the residential sector, the City has a target of reducing greenhouse gas emission by 7.8% between 2014 and 2020, or approximately 100,000 metric tonnes. The City has implemented building incentives, energy audits, tree expansion programs, and a sustainability initiative that focuses on engagement and education with the community to reach this target. The City is currently in the process of developing more performance measures that can be used to measure the success of these programs in the residential sector.

The commercial sector accounts for approximately 52% of the city's total GHG emissions. In the commercial sector, the City has a target of reducing the energy consumption in all buildings that have been accounted for in the Building Energy Reporting and Disclosure Ordinance by 7% by 2020. For large buildings and institutions there are also measures:

- 60 million square foot buildings: reduction of 5% by 2020
- 40 million square foot buildings: reduction of 12.5% by 2020
- 20 million square foot buildings: reduction of 25% by 2020

There is also a carbon dioxide measure for the commercial sector. In 2013, 3.2 million metric tonnes of carbon dioxide were emitted from the commercial sector. The City has a target to reduce this figure 12.5% by 2020. The city has implemented an incentive energy program, outreach with stakeholders, piloting

the creation of net-zero buildings, and energy codes and reporting requirements targeted at the commercial sector to meet this targets.

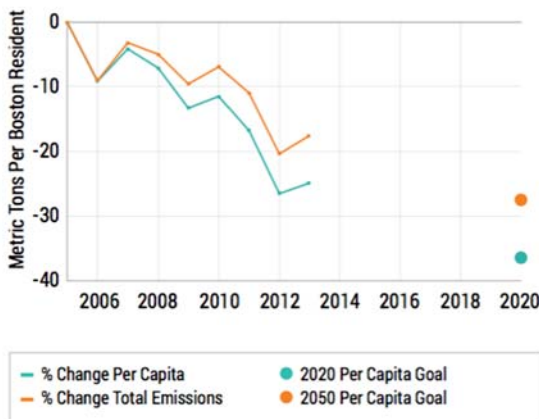
The transportation sector makes up approximately 27% of the city’s total GHG emissions. In the transportation sector, the City has multiple targets:

- to reduce vehicle miles traveled by 5.5% below 2005 levels by 2020.
- to reduce carbon dioxide emissions from the transportation sector 17% from 1.65 million metric tonnes in 2013 to a targeted 1.35 million metric tonnes by 2020
- a residency rate target of 45%

The residency rate may seem odd to be included in the transportation sector but Bostonians who live and work in Boston are twice as likely to not drive to work as those who work and live elsewhere in the Greater Boston Area. If the residency rate can rise by attracting more jobs and people to Boston, then transportation carbon emissions can be reduced significantly.

The City of Boston does not state any per capita performance targets however they did produce a few figures that acknowledge the value in accounting for growth and per-capita figures (City of Boston, 2014)

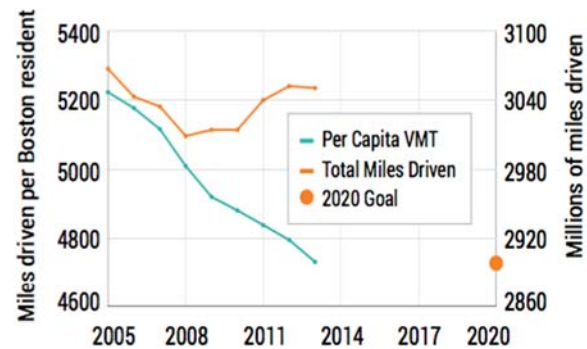
Figure 2 - Per Capita vs. Total GHG Emissions (2005-2013)



Per capita emission reductions have outpaced absolute emissions reduction. If there had been no growth, emissions would have decreased 24.9%. Growth added roughly 7% to GHG emissions between 2005 and 2013.

City of Boston, 2014.

Figure 3 - Per Capita Vehicles Miles Traveled (VMTs) vs. Total VMTs



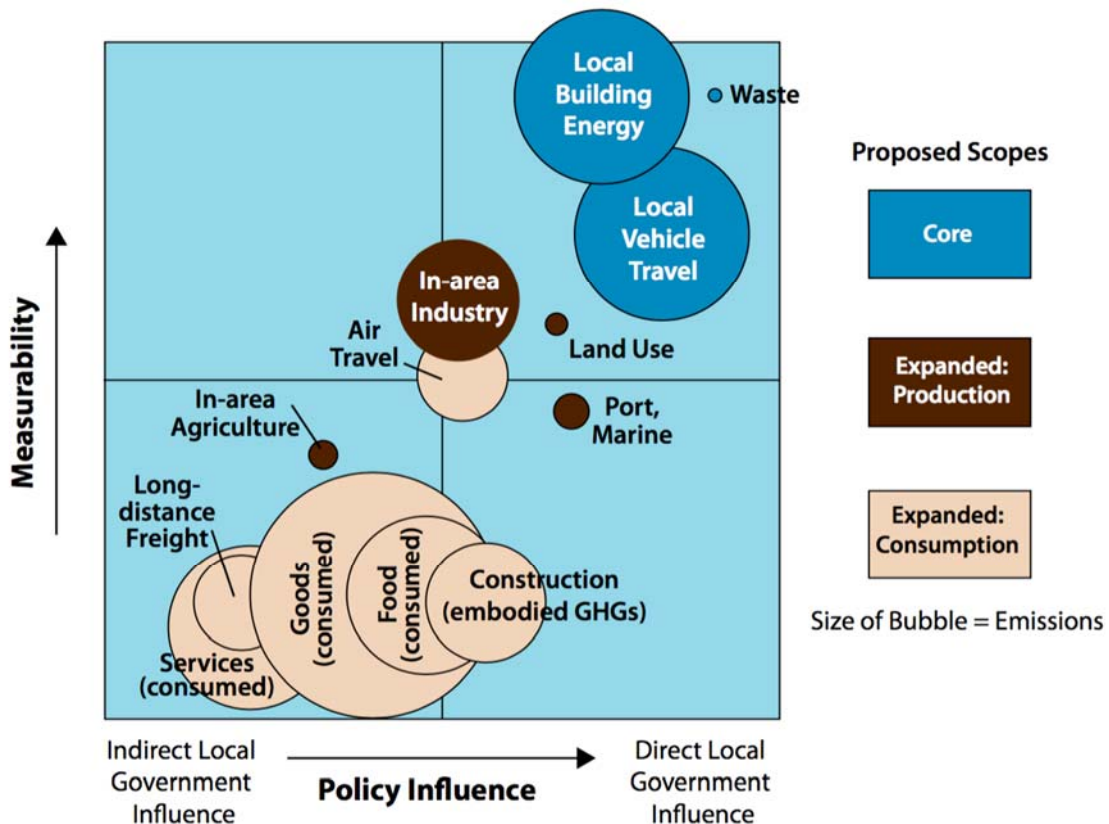
People in Boston have continuously driven less since 2005, but Boston has been growing at a rapid pace since the Great Recession ended. Growth is the source of nearly all the City’s VMT.

King County, Washington

King County uses a “GHG Tracking Framework” to continuously account for the most relevant emissions sources and emissions drivers in the region. Through the tracking framework King County divides the emissions sources by scope of measurability and policy influence. Please refer to the figure below:

The exercise above helps King County determine what emissions they should use for performance measuring. They place on the graph what their GHG inventories currently account for by how easy and accurate it is to measure the emission and how much policy influence King County could have on it. As local building energy, local vehicle travel, and waste are all relatively measurable and King County can potentially have policy influence on them, they are deemed to be Core emissions. Core denotes that they can be cost-effectively tracked and accounted for on an annual basis. The other two “expanded” emissions could be tracked on an annual basis but due to low measurability and low policy influence, King County recommends that they be tracked every 3 to 5 years, ideally coinciding with the preparation of a full GHG inventories.

Figure 4 - Greenhouse Gas Emissions in King County - Tracking Framework



King County, 2012a.

With the Core emissions decided upon, King County determined performance measures that track GHGs in total and per person in the sectors of transport, building and waste. They also included an overall performance measure that can be used to assess progress across all core sectors. Please refer to the two tables below:

Table 3 - GHG Emissions and Measures

King County,

Emissions Source	Key Policy Levers	Overall Metric	Activity Metric	Intensity Metric
Core				
Transportation: Road (Vehicle Travel)	<ul style="list-style-type: none"> Land use planning Road & transit infrastructure Parking and road pricing Trip reduction programs 	GHGs (total and per person)	VMT (total and per person)	GHGs / VMT
Buildings: Residential & Commercial (excluding mobile equipment)	<ul style="list-style-type: none"> Building codes Electricity supply 	GHGs (total and per person)	Energy use, in BTU (total, per capita, and per-person-HDD)	GHGs / BTU
Waste	<ul style="list-style-type: none"> Waste infrastructure Landfill operation / contracts 	GHGs (total and perperson, including carbon storage)	Tons disposed (total and per person)	GHGs / Ton
Total (Sum of Above)	--	GHGs (total and per person)	--	--

Table 4 - GHG Tracking Framework for King County

Emissions Source	2003	2008	2010
Core			
Transportation: Road			
Emissions (Million MTCO ₂ e)	9.2	8.9	9.0
Emissions per person (MTCO ₂ e /resident)	5.2	4.7	4.6
Passenger emissions per person (MTCO ₂ e /resident)	3.4	3.1	3.0
Freight emissions per person (tCO ₂ e/resident)	1.7	1.7	1.6
Passenger VMT per person (thousand miles/resident)	7.4	6.9	6.8
Freight VMT per person (thousand miles/resident)	1.1	1.1	1.0
Passenger emissions per mile (kgCO ₂ e/VMT)	0.46	0.44	0.44
Freight emissions per mile (kgCO ₂ e/VMT)	1.53	1.57	1.58
Buildings: Residential & Commercial			
Emissions (Million MTCO ₂ e)	7.0	7.8	7.8
Emissions per person (MTCO ₂ e /resident)	3.9	4.1	4.0
Residential emissions per person (MTCO ₂ e /resident)	2.1	2.2	2.1
Commercial emissions per person (MTCO ₂ e /resident)	1.8	1.9	2.0
Residential energy per person (MBTU ³ /resident)	33.5	34.8	31.3
Commercial energy per person (MBTU/employee)	59.3	61.9	61.9
Heating Degree Days (HDD)	4,509	5,022	4,512
Cooling Degree Days (CDD)	277	195	163
Residential GHG intensity of energy (kg CO ₂ e/MBTU)	62.6	62.3	66.3
Commercial GHG intensity of energy (kg CO ₂ e/MBTU)	58.9	59.0	63.7
Waste: Landfills (CH ₄ Commitment Basis)			
Emissions (MTCO ₂ e)	(0.25)	(0.22)	(0.20)
Emissions per person (MTCO ₂ e /resident)	(0.14)	(0.12)	(0.10)
Residential waste disposed per person (tons / resident)	0.39	0.34	0.30
Nonresidential waste disposed per person (tons / employee)	0.80	0.68	0.59
Total Core Emissions			
Total Emissions (Million MTCO₂e)	15.9	16.4	16.6
Population (million residents)	1.77	1.88	1.94
Employment (million commercial employees)	0.93	1.01	0.97
Emissions per person (MTCO₂e /resident)	9.0	8.7	8.6

Aside from the tracking framework, King County has some overall performance measures and targets for GHG reduction. King County aims to reduce countywide sources of GHG emission, compared to a 2007 baseline by:

- 25% by 2020 – 8.5 metric tons of carbon dioxide equivalent (MTCO₂e)
- 50% by 2030 – 5 MTCO₂e
- 80% by 2050 – 1.5 MTCO₂e

King County aims to reduce total greenhouse gas emissions from government operations, compared to a 2007 baseline by:

- 15% by 2015
- 25% by 2020
- 50% by 2030 (King County, 2015).

City of San Francisco, California

San Francisco has been making large efforts to address climate change and reduce their GHG emissions. San Francisco's GHG emissions reported for 2012 were 23% below 1990, surpassing their reduction goal of 20% below 1990 levels by the end of 2012 (SF Environment, 2015). These figures put San Francisco well ahead of targets set by state, federal government and the international Kyoto Protocol (San Francisco Department of Environment, 2013).

The Climate Action Strategy (CAS), updated last in 2013, illustrates the five sectors that the plan focuses on. All of these efforts are put together to reach two main long term goals:

- To reduce GHG emissions 25% below 1990 levels by the year 2017
- To reduce GHG emissions 40% below 1990 levels by the year 2025

Below in Table 5 is the 2010 GHG emissions inventory for the City. The figures for cars and trucks are developed by the vehicle miles travelled from in-city and inbound commuter trips. The electricity and natural gas figures are developed by accounting for the electricity and natural gas uses in commercial, residential and municipal sectors. Waste is determined by the commercial, residential, and municipal waste sent to landfills that generated methane gas. The public transit figures are developed by the diesel, biodiesel and electricity consumed. The figure shown for forestry is in brackets because it is the tonnes of emissions sequestered by trees in San Francisco.

Table 5 - 2010 San Francisco GHG Emissions by Sector

Source	CO ₂ e (mT)	%
Cars & Trucks	2,118,863	40.0
Commercial Electricity	928,785	18.0
Residential Natural Gas	782,960	14.8
Commercial Natural Gas	609,521	11.0
Waste	244,625	5.0
Residential Electricity	335,195	6.0
Municipal Electricity	12,489	0.2
Municipal Natural Gas	119,860	2.0
Rail (BART & Caltrain)	68,046	1.0
Ferry	34,103	1.0
Muni	45,310	1.0
TOTAL	5,299,757	100.0
Forestry (sink)	(4,717)	-0.1
TOTAL with Sink	5,295,040	

(San Francisco Department of Environment, 2013)

The CAS illustrates the City's efforts to address climate change in five sectors:

- Energy Use in Buildings
- Transportation
- Zero Waste
- Municipal Operations

According to 2010 figures, energy use in the City's residential and commercial buildings make up just over 52% of the City's GHG emissions. Emissions from building trends have been accounted to guide policy decisions and new program implementations. Below is Table 6 showing the emissions trends from 1990-2010. These metrics help guide the City's building performance law, education and community outreach, implementation of incentives, and a variety of other programs.

Table 6 - San Francisco Emissions Trends

metric		2010 trend
GHG Emissions in Buildings (mT CO ₂ e)	↓	-20.3%
Electricity Use (MWh)	↑	11.2%
PG&E Emissions Factor (lbs CO ₂ /MWh)	↓	-19.6%
SFPUC Emissions Factor (lbs CO ₂ /MWh)	↓	-77.7%
Electricity GHG Emissions (mT CO ₂ e)	↓	-34.2%
Natural Gas Use	↓	-2.7%
Natural Gas GHG Emissions (mT CO ₂ e)	↓	-2.9%

*Pacific Gas and Electric (PG&E)
 **San Francisco Public Utilities

Commission (SFPUC)
 (San Francisco Department of Environment, 2013)

According to 2010 figures, transportation makes up 43% San Francisco’s GHG emissions. These emissions are quantified by determining vehicle miles travelled by cars and trucks in personal automobiles. For the transportation sector The City uses four performance measures:

- Total GHG emissions in the transportation sector
- vehicle miles traveled
- fuel economy of vehicles
- the number of bike commuters

Through land use integration, street parking reforms, priority transit, increase in bike lanes, transitioning to cleaner vehicles, and fuel for transit and municipal fleet vehicles, the City is trying to curb the transportation sector’s impact of GHG emissions. The City aims to have GHG emissions from the transportation sector in 2030 to be 508,000 mT lower than 2010 levels.

According to 2010 figures, the GHG emissions generated by waste sent to landfill made up approximately 5%, or 245,000 metric tons (mT) of the City’s total GHG emissions. Methane gas, which is a particularly strong GHG, is produced when waste decomposes in the landfill. San Francisco measures the diversion rate of waste to recycling or composting. In 2010 the City’s diversion rate was 80%. Through its programs and campaigns, the City aims to promote its zero waste agenda and reach its goal of a diversion rate of 100% by 2030.

The City would like to expand its tree canopy as way to sequester carbon and reduce GHG emissions. According to a study conducted in 2007 the trees in San Francisco collectively store 178,000 mT of carbon and sequester an additional 4,717 mT of carbon each year. As seen in the table below, the tree cover was 11.9% in 2008. The City’s long term goal is to increase the tree cover to 25% by 2030 and to sequester over 20,000 mT of carbon annually.

Table 7 - SF Urban Forest, 2008

Measure	Value
Number of Trees	669,000
Tree Cover	11.9%
Most Common Species	Blue Gum eucalyptus Monterey pine Monterey cypress
Pct of Trees < 6" diameter	51.5%
Pollution Removal	236 mT/yr (\$1.3 million/yr)
Carbon Storage	177,808 mT (\$3.6 million)
Carbon Sequestration	4,717 mT/yr (\$95,000/yr)
Structural Value	\$1.7 billion

Environment, 2013)

(San Francisco Department of

According to 2010 figures, municipal operations made up just under 4% of GHG emissions by the energy consumed by their buildings, fleet vehicles, services and departments. Since 2008 every City department reports its environmental requirements and emissions impact in an annual Departmental Climate Action Plan. Performance measures within these plan include:

- consumption of electricity in municipal facilities
- consumption of natural gas in municipal facilities
- emissions from diesel use in fleet vehicles
- the consumption of less carbon-intensive biodiesel in fleet vehicles total gallons of diesel consumed (San Francisco Department of Environment, 2013)

City of Edmonton, Alberta

The City of Edmonton has an interactive performance measuring web page for select services that the City provides. The webpage is called, "Edmonton's Citizen Dashboard" and it includes performance indicators for 6 categories:

- Transportation
- Livability
- Environment
- Urban Form
- Economy
- Finance

Within each category there are performance measures that include a variety of details such as:

- The Goal
- Data Graph/Chart
- Measure Description
- Measure Importance
- Historical Data
- Explanation of Performance

The measures within each category are also colour coded to denote whether the performance measure has met its target, is near its target, needs improvement, is being measured, and is collecting data. Refer to figure x below of a screen shot of the webpage displaying some of the performance measures within the Environment category.

“City Operations Greenhouse Gases” is a performance measure under the Environment category of the Citizen Dashboard. The performance target is to achieve a 50% reduction in GHG emission from City Operations by 2020 (from 2008 levels), an 80% reduction by 2050, and carbon neutrality as the eventual long-term outcome. As of December 2014 their current figure is 328, 868 tonnes of carbon dioxide equivalent and their target for 2020 is 154, 507 tonnes. The City reaches these figures by measuring the amount of GHG emissions from five sources: City buildings and facilities, streetlights, landfill waste degradation, the municipal fleet, and an estimate of the reduction in GHG emissions that is generated by the trees the City maintains.

“Community Greenhouse Gas Emissions” is a performance measure on the Citizen Dashboard. The performance target is to reduce GHG emissions to 14 million tonnes of carbon dioxide equivalent by December 2018. As of December 2014 their current figure is approximately 16.5 million tonnes of carbon dioxide equivalent. The performance measure accounts for the GHG emissions from Edmonton’s residential, commercial, industrial and transportation sources. The sources of Edmonton’s GHG emissions are displayed in Table 7.

City of Edmonton Citizen Dashboard, accessed February 9, 2016.

Figure 5 - City of Edmonton Citizen Dashboard - Environment

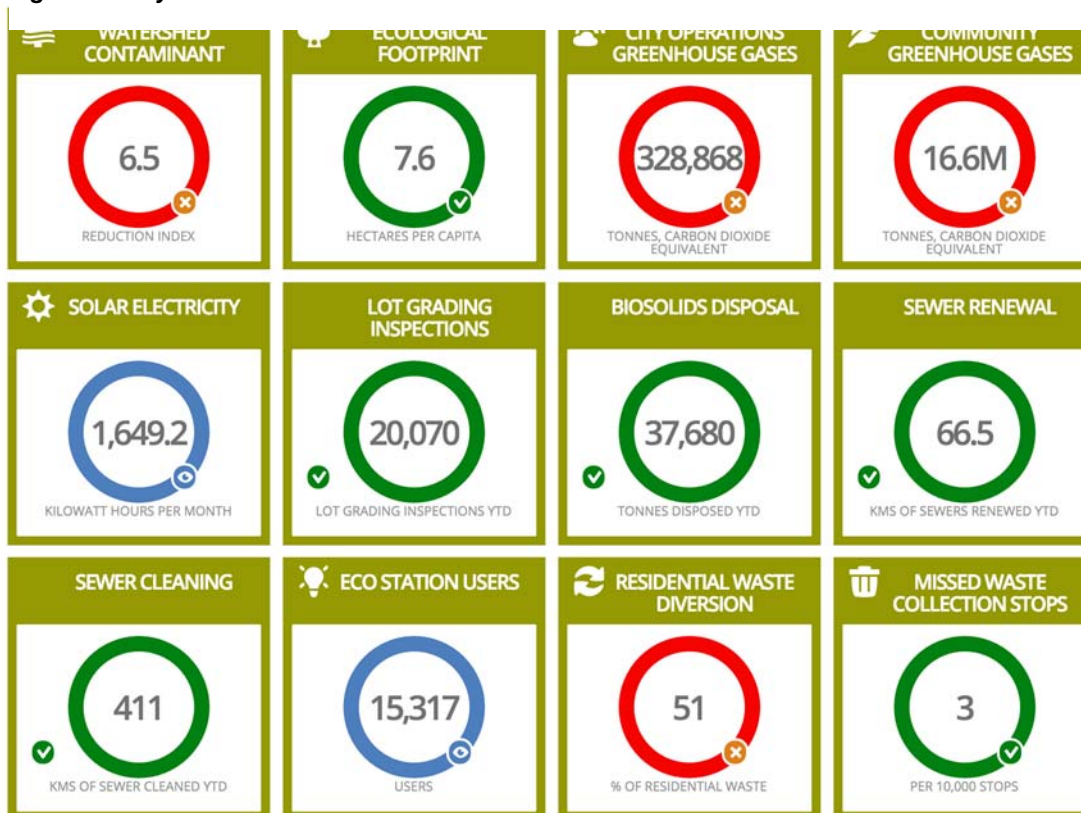


Table 7 - Edmonton GHG Emissions

Source of GHG Emissions	GHG Emissions (2010) ktCO ₂ e	% of Total
Residential Buildings		
GHGs from Electricity	1,578	19.3%
GHGs from Natural Gas	1,376	
Large / ICI Buildings		
GHGs from Electricity	1,284	19.3%
GHGs from Natural Gas	1,667	
Industry		
GHGs from Electricity	3,225	25.0%
GHGs from Natural Gas	592	
Transportation		
GHGs from Diesel	1,920	30.4%
GHGs from Gasoline	2,720	
Other		
GHGs from Chemical Processes	750	5.9%
GHGs from Landfills	158	
TOTAL	15,270	100.0%

City of Edmonton, 2015

From the information provided in the table above, programs and policies, described in the City of Edmonton’s Energy Transition Energy Strategy (2015), have been implemented to target these specific sectors and the specific sources of emissions from these sectors.

“Solar Electricity” is a performance measure on the citizen dashboard. The performance goal is to measure the amount of grid-connected, small scale, solar electricity capacity within the city boundaries. This indicator measures the amount of installed, grid connected solar electricity capacity within the City of Edmonton’s municipal boundaries in kilowatt hours per month (City of Edmonton Citizen Dashboard, accessed February 9, 2016).

City of Portland and Multnomah County, Oregon

Portland uses a sector based emissions inventory to track progress of some of their emission goals. The main sectors that Portland has focused on are transportation, residential, industry, commercial and waste disposal. Data is divided or brought together and different measures are set to highlight specific areas of interest. In Table 8, industry, commercial and residential are combined into “Building energy” and the target for this sector is set for an 80% reduction in GHG emissions from 1990 levels by 2050.

Table 8

	1990	2013	Percent Change from 1990	2030	Percent Change from 1990	2050	Percent Change from 1990
Building energy	5,512,000	4,772,000	-13%	3,707,000	-33%	1,112,000	-80%
Transportation	2,979,000	2,830,000	-5%	1,661,000	-44%	655,000	-78%
Waste disposal	498,000	93,000	-81%	40,000	-92%	10,000	-98%
Total	8,989,460	7,695,000	-14.4%	5,408,000	-40%	1,777,000	-80%

Composition of Multnomah County carbon emission (in metric tons CO₂e).
City of Portland & Multnomah County, 2015

The City and County also track the five sectors per capita emissions:

Table 9

PER CAPITA EMISSIONS (METRIC TONS CO₂ EQUIVALENT)

	1990	1995	2000	2005	2010	2011	2012	2013	Change since 1990	Change since 2005
Residential	3.0	2.8	3.0	2.4	2.1	2.2	2.0	2.0	-32%	-17%
Commercial	3.2	3.3	3.6	3.0	2.6	2.6	2.5	2.5	-24%	-17%
Industrial	3.3	3.4	3.5	2.2	1.8	1.9	1.8	1.8	-46%	-20%
Transportation	5.1	5.0	4.7	4.7	4.0	3.9	3.7	3.7	-28%	-20%
Solid waste	0.9	0.8	0.6	0.7	0.1	0.1	0.1	0.1	-86%	-62%
Total	15.4	15.3	15.5	12.9	10.6	10.6	10.1	10.0	-35%	-19%
% change from 1990		-1%	1%	-16%	-31%	-31%	-35%	-35%		

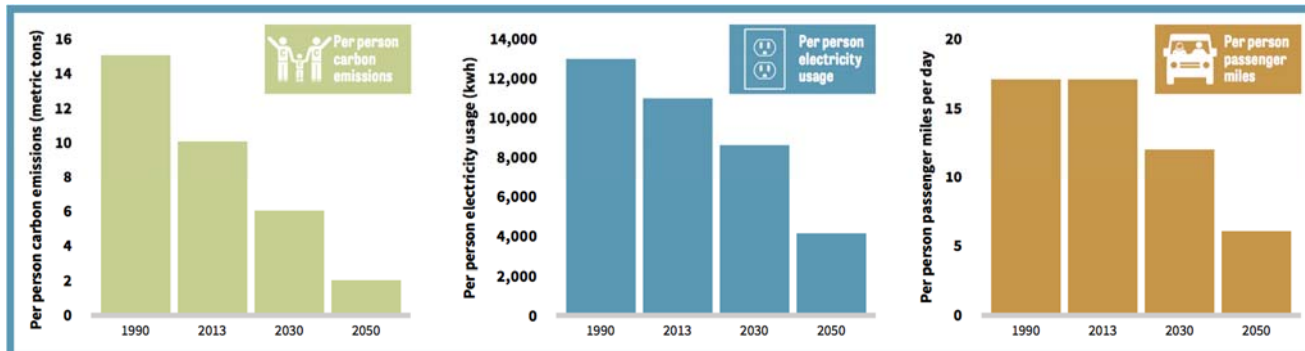
City of Portland & Multnomah County, 2015

The City and County also collect data for measures that indirectly affect carbon emissions. In Figure 6 it shows per capita goals that include per person electricity usage and per person passenger miles that can greatly affect GHG emissions.

There are two factors that influence emissions trends over time:

- the amount of energy used in the different sectors and,
- the carbon intensity (carbon emissions per unit of energy) of the energy source (eg. Electricity, natural gas, gasoline, diesel)

Figure 6 - Per person carbon emissions, electricity usage, and passenger miles in 2030 and 2050



City of Portland & Multnomah County, 2015

In other words, different energy sources emit different amounts of GHG gases so continuing the same activity but switching the energy source can affect emissions. This can be seen in a switch from fossil fuels to natural gas for heating buildings or to renewable energy sources such as solar or wind. The City of Portland and Multnomah County have been tracking the carbon intensity of energy use by sector and also (per capita):

- Residential: reduction of carbon emissions per unit of energy (reduction of home energy used per person)
- Commercial and Industry: reduction of carbon emissions per unit of energy (reduction of commercial and industrial energy use per job)
- Transportation: reduction of carbon emissions per unit of energy reduced (reduction in transportation energy use per person)
- Waste Disposal: (reduction in waste disposal carbon emissions per person)

The City and County measured the intensity of energy used in all sectors in Multnomah County. In 2013, carbon emissions per unit of energy were 16 percent lower than in 1990.

The City and County also use a consumption-based inventory that includes the emissions attributed to the local consumption of goods and services regardless of where the goods were produced. The inventory measures are based on

spending by all households, government organizations and purchases made by businesses. The consumption-based inventory excludes the emissions from goods that are exported from Multnomah County and that are consumed by those who do not reside within the county. It does include the emissions of household uses of electricity and fuel and the consumption of goods and services that are produced within the county. Below is a consumption-based inventory used by the City and County:

Table 10 - Consumption based carbon emissions

Category	Total GHG emissions	Production	Pre-purchase transportation	Wholesale and retail	Use	Post-consumer disposal	Percent of total emissions
Vehicles and parts	2,822	298	14	1	2,508	0.2	18%
Food and beverages	2,312	2,121	151	3	—	37	15%
Appliances	2,064	63	2	0.1	1,998	0.1	13%
Services	1,488	1,390	93	2	—	4	9%
Other manufactured goods	1,216	1,162	52	2	—	1	8%
Transportation services*	1,102	66	1,036	0.2	—	—	7%
Healthcare	1,060	997	60	3	—	1	7%
Construction	1,056	961	77	4	—	14	7%
Furnishings and supplies	637	588	32	1	—	17	4%
Retailers**	524	316	37	171	—	—	3%
Electronics	523	328	10	1	184	0.5	3%
Clothing	333	330	2	0.1	—	1	2%
Lighting and fixtures	294	7	0.2	0.01	286	0.01	2%
Wholesale**	160	78	13	69	—	—	1%
Other	142	132	10	0.4	—	0.1	1%
Water and wastewater	72	71	1	0.03	—	0.04	0%
TOTAL	15,806	8,907	1,590	258	4,977	74	100%
Percent of Total Emissions	100%	56%	10%	2%	31%	0.5%	

*Emissions from "Transportation services" are from the services that transport people, such as buses, taxis and airplanes, as well as the transportation of finished products from the final producer through wholesale and retail channels. Emissions from personal vehicle use are included in "Vehicles and parts." Emissions from transportation of unfinished goods (supply chain transportation) are included in the respective categories, such as food and clothing.

**Emissions from "Wholesale" and "Retailers" come from the operation of their facilities, including heating, cooling, lighting, refrigeration and other equipment like forklifts. This category also includes the lifecycle emissions of operational supplies that retailers or wholesalers consume but don't sell to their customers, like paper bags or receipts.

City of Portland & Multnomah County, 2015

Consumption based inventories, such as the one above, include data for lifecycle emissions. Lifecycle emissions include emissions from:

- producing and distributing a product before it's ever purchased by a consumer
- the use of the product
- decomposition of the product in a landfill

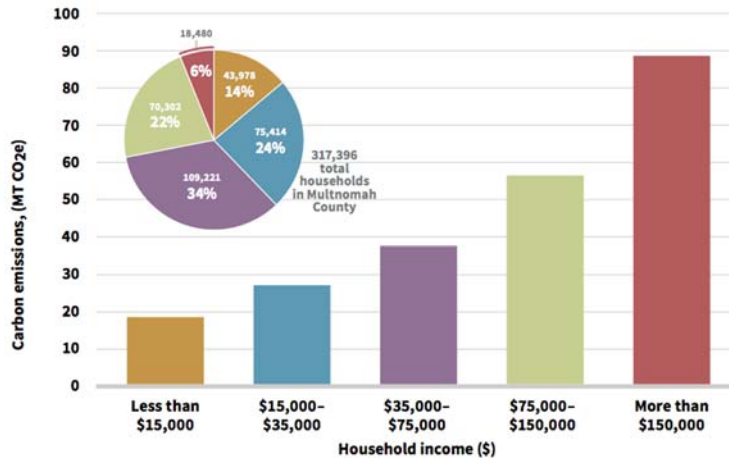
Lifecycle emissions can speak to consumer choices and the goods that consumers are buying and their subsequent use of them. If consumers in the county are purchasing electronics that have significant production emissions, for example, and the use and post-consumer disposal of the electronic emits a significant amount of GHG emissions then perhaps other electronic substitutes that have lower lifecycle emissions should be promoted to county consumers.

Consumption based inventories can be used to measure how different groups of the citizenry are consuming. Figure 7 below shows that the smallest demographic, by household, produces the most carbon emissions through consumption.

The overall goals for the City of Portland and the County of Multnomah are:

- an 80% reduction from 1990 GHG emission levels by 2050
- an interim goal of 40% reduction from 1990 GHG emission level by 2030

Figure 7 - Carbon emissions from consumption of goods and services for average Multnomah County households by income



City of Portland & Multnomah County, 2015

The building and energy sector goals are to:

- reduce the total energy use of all buildings built before 2010 by 25 percent by 2030.
- Achieve zero net carbon emissions in all new buildings and homes built after 2030
- Supply 50% of all energy used in buildings from renewable resources, with 10 percent produced within Multnomah County from on-site renewable sources, such as solar, by 2030.

The urban form and transportation sector goals are to:

- reduce transportation-related carbon emissions below 1990 levels:
 - 10 percent by 2015
 - 25 percent by 2020
 - 40 percent by 2030
 - 80 percent by 2050.
- reduce lifecycle carbon emissions of transportation fuels by 20% by 2030

The local government operations goals are to:

reduce carbon emissions from City and County operations by 53 percent from FY 2006-07 levels by 2030 (City of Portland & Multnomah County, 2015).

External Relations Current State Analysis of Performance Management System

The performance measurement system currently in place for External Relations consists of five performance indicators that are assessed on an annual basis. These performance indicators were developed with input from the External Relations group and Ann Rowan, Sustainability Strategist at Metro Vancouver. Below are the current indicators presented in the 2016 Metro Vancouver Business Plan:

Indicator	Historical and/or Industry benchmark	Current Performance	2016 Performance Objective
Number of website page visits www.metrovancouver.org	MV 4-year average: 2,306,134 (2011-14) 2014: 2,793,350 2013: 2,257,119 2012: 2,074,035 2011: 2,100,030	Projected for 2015: 3,653,000	3,659,000
Number of video views	2014: 132,702 2013: 122,625 2012: 87,506	Projected for 2015: 99,700	139,000
Number of Mailing List subscribers	2014: 5,121	Projected for 2015: 5,751	6,038 (5% increase)
Number of Metro Vancouver followers on Twitter	August 2014: 17,071 July 2013: 11,645	August 2015: 24,046	30,000 (20% increase)

Number of Metro Vancouver followers on Facebook	August 2014: 3,387 July 2013: 2,093	August 2015: 4,261	4,600 (10% increase)
---	--	------------------------------	----------------------

**Note: In 2015, Metro Vancouver updated its website to SharePoint 2013. Due to changes in site architecture and google indexing of videos, webpages, 2015 metrics are not directly comparable to 2014 metric.*

External relations determined these measures by brainstorming the different types of quantitative measures that can be realistically measured and reported on an annual basis. As presented above, performance objectives for the coming year are set with consideration to previous years' performance. Benchmarking performance indicators from similar organizations, such as member municipalities within Metro Vancouver, was not possible as External Relations management stated, there is not really a comparable department within these organizations and they do not have the human capacity to significantly research the benchmarks that are currently being used by others. The performance measures above, were determined with consideration that all services and programs offered by External Relations must be in alignment with the Board's Strategic Plan and more specifically, the various management plans across the organizations. Earned media and reporting on the tone of articles published concerning Metro Vancouver was considered as a performance measure but was decided against after discussions that it was too subjective and did not provide data that was needed (Focus Group, External Relations, January 28th).

The performance measures used for conferences and campaigns delivered by External Relations are not included in the Business Plan. The conferences use a performance measure based on participation, simply accounting for the number of participants at each event.

For the campaigns that External Relations leads, a rigorous survey is done by a polling company that reaches citizens either by phone or through the internet. The survey asks questions such as, 'have you seen the advertisements from campaign', 'has your behaviour changed as a result of seeing the advertisement?'. The data garnered from these surveys are not included in the business plans because the campaigns and survey questions are constantly changing. Each campaign is different and their budgets change from year to year.

Performance measure results are used by elected officials to inform their decision making. Business plan performance indicators are analyzed when the budget for the upcoming year is discussed and campaign performance measures are analyzed at the appropriate, corresponding committee. The measures for the

campaigns are changed or altered whenever staff feel the measures are not providing enough valuable information. Business Plan measures are typically terminated or substituted on a yearly basis when the budget for the upcoming year is discussed (Focus Group, External Relations, January 28th).

External Relations Cross Jurisdictional Scan

City of Seattle, Washington

The City of Seattle does not have a communications or external relations department on their website but their programs and performance measures deal with similar issues to Metro Vancouver's, such as measuring behavioural change.

The City of Seattle has a program called Fresh Bucks that is delivered through the department of Environmental Conservation and Sustainability. The program targets low income Seattle residents. At Seattle's farmer's markets, for every dollar spent using a SNAP (Supplemental Nutrition Assistance Program) card, low income shoppers receive up to \$10 to buy more fruits and vegetables. The program's objective is to increase access to healthy food for Seattle residents. The measure they are using is to "Track the percentage of Fresh Bucks participants eating more fruits and vegetables." To accomplish this, the City of Seattle conducts in person surveys with Fresh Bucks shoppers. Questions are related to typical consumption of fruits and vegetables, if and how much they are taking advantage of the Fresh Bucks program, the perceived impact of Fresh Bucks on family diet, produce purchased and demographic data. Through the information garnered from the survey questions, the City of Seattle can measure the effectiveness of their Fresh Bucks program (Performance Seattle, 2015).

Through the department of Technology Operations and Engagement, the City of Seattle wants to measure the amount of engagement Seattle residents have with their online presence. Their target is to increase the online engagement to 80.4 million pages viewed during 2015. The City is currently migrating their webpages into a content management system which allows the City to track site analytics such as page views and unique visitors to the webpages. Data is gathered through the City's main webpage, blogs, the Seattle Channel, Facebook and Twitter. By collecting this data they are able to calculate the number of people reached and engaged with through their online presence (Performance Seattle, 2015).

City of Austin, Texas

Through the Department of Communications and Public Information, The City of Austin has a variety of activities and programs coupled with performance

measures. The first activity is Community Engagement. The purpose of Community Engagement is to create a consistent and effective communication, engagement and participation process for City of Austin personnel, the general public and the media. There are four performance measures for Community Engagement. Two of the measures require data from a citizen survey that is sent out to residents of Austin. The two measures are:

- Percent of residents satisfied with City communications
- Percent of residents that believe Austin values dialogue between residents and government

The other two measures are:

- Percent of employee respondents reporting knowledge of specific City issues
- Number of facilitated community engagement events or activities

On the City of Austin website, these four measures include data starting back from 2013 and include targets for 2015 and 2016.

The program Web Services and Graphic Design includes two performance measures. Web Services and Graphic Design provides 24-hour access to the public on information about the City of Austin's services and events. Two performance measures that are used for this program are:

- Total number of unique visits to the City website
- Percent of users who find information easy to find on the website

It does not explicitly say how they obtain the users' opinions for the second performance measure but a citizen survey seems to be a likely method, as the City sends out a citizen survey for other performance measures requiring the public's input.

The last program under the department of Communications and Public Information is the Video Production Services. The purpose of the Video Production Services activity is to make City government meetings and special community events accessible to the public via cable television broadcast and streaming video, and to provide electronic media production services for internal and external customers. The measures used for this program are:

- Number of meetings covered
- Number of original video production
- Percent of residents accessing ATXN (City of Austin government television channel) programming (City of Austin, 2015).

City of Nanaimo, British Columbia

The City of Nanaimo has a Balanced Scorecard that provides all of the targets and measures of each department. As well the City of Nanaimo's Communication Plan of 2013 provides a robust picture of how they are measuring communications and engagement with their citizens.

The City of Nanaimo has a performance measure titled, Satisfaction with level and quality of City Services. The target has yet to be determined however, the measure they use is the percent of citizen satisfaction with the level and quality of City services. They derive this citizen satisfaction feedback by using the Ipsos Reid "Citizen Satisfaction and Syndicated Survey" (Please refer to Appendix C for more information on Ipsos Reid).

Another performance measure the City of Nanaimo uses is titled, Satisfaction with Communication with Citizens. The target has yet to be determined however the measure is the percent of citizen satisfaction with the level and quality of City communication. Information is gathered from the Ipsos Reid survey (City of Nanaimo, 2015)

The City of Nanaimo's communication policy also speaks to some of their communication goals that could be measured. The City of Nanaimo wants to promote the ideas of measuring and improving upon services and programs delivered to the community. They want to introduce new opportunities for citizen feedback on the City's website. To solicit this feedback, they are considering ideas such as inviting website users to rate the value of posted content on each page and increase the number of outlets for citizens to submit comments to staff. The intent is that it will increase public participation, establish a dialogue between City staff and the public, and keep citizens informed while improving upon the content that is being delivered to them (City of Nanaimo, 2013).

County Durham, United Kingdom

County Durham had a recycling campaign in 2003 that provided an informative case study to measure behavioural change as a result of a communications campaign. County Durham introduced the 'Kerb-it' campaign in 2003 to all districts but with targeted messages in identified low performing areas, to encourage participation in household recycling. The campaign included radio advertising, posters, leaflets, public transportation advertisements, and door-to-door canvassing in those identified low performing areas. The campaign's specific objectives were:

- to increase participation by 10% in both the lower performing 'Kerb It' areas, and in the student areas within 12 months from November 2006;

- to increase by 25%, the proportion of people in the lower performing areas who indicate their awareness of a curb side collection scheme, within 12 months from November 2006;
- to increase by 25%, the proportion of people in the lower performing areas who indicate that they are aware that the curb side collection scheme is called Kerb-it, within 12 months from November 2006;
- to increase by 10%, the tonnage of dry recyclables recovered through the Kerb-it scheme in the lower performing and student areas, within 12 months from November 2006.

The pre-campaign monitoring of participation took place in November 2006, over six weeks long, or three recycling pick-up periods, and the post-campaign monitoring took place between October and November 2007. Monitoring participation consisted of a visual assessment of which households had their recycling out for pick up. A questionnaire survey was also used pre- and post-campaign during the same time periods as participation monitoring. Tonnage data of waste for the 1100 properties identified within each of the four districts of County Durham were also collected and recorded pre- and post-campaign.

They had five performance objectives with five performance measures. See table below.

The results of the campaign were positive. Participation increased by 9.5% in the low performing areas and specifically the student areas, which were the worst performing areas, increased by 16.8%. Awareness of the Kerb-it campaign in the low performing areas increased from 13.1% pre-campaign to 21% post-campaign and tonnage of dry recyclables increased by 11.7% in these areas. From the survey results, post-campaign respondents from three out of the four target areas, stated that recycling is either very or fairly important to them (WRAP, 2006). Below is a table showing the objectives, the performance measures, and the corresponding methods of administering the measures:

Table 11

Monitoring aim	Monitoring objective(s)	KPIs used	Monitoring method used
To undertake performance monitoring and evaluation activities to assess the effect of the Kerb-it communications campaign on the Kerb-it scheme	To monitor participation levels across a representative sample of households in low performing and student areas of the Kerb-it scheme, pre- and post the communications campaign (i.e. November 2006 and October 2007)	Participation rate (%)	Participation monitoring
	To measure the number of households in the campaign target areas who were aware of the kerbside collection and the Kerb-it campaign by October 2007	% of households aware of the kerbside recycling scheme, the Kerb-it name and the materials collected % of residents aware of the Kerb-it communication campaign	Survey
	To calculate the change in committed recyclers in low performing Kerb-it areas before and after the communication campaign (i.e. November 2006 and October 2007)	% committed recyclers	Survey
	To measure the tonnage of dry recyclables collected monthly from the Kerb-it scheme from the low performing and student areas during the communications campaign period (i.e. November 2006 to October 2007)	Tonnes	Tonnage monitoring
	To measure contamination levels in the student areas before and after the communication campaign (i.e. November 2006 to October 2007)	% contamination	Contamination monitoring

WRAP, 2006.

City of Guelph, Ontario

The City of Guelph has a Corporate Communications department that mirrors some of the same responsibilities and duties to that of Metro Vancouver’s External Relations. The department handles external communication campaigns, media relations, strategic communication plans for various departments, issues management and internal employee communications.

Below is their performance dashboard from their 2012 Annual Performance Report:

Figure 8



City of Guelph, 2013

The Legend of positive, caution and negative colours denotes that the department has performance measures or anecdotal information to show that the specific performance falls within those three colours. The specifics of the performance measures are not provided in the communications plan but it is mentioned that for some indicators the City lacks the ability, at present, to track the progress of these indicators. This lack of tracking may explain why the City currently relies on anecdotal information for some measures.

The communications plan includes a media analysis section with performance measures. The City uses the industry standard Media Relations Rating Points (MRRP), which is endorsed by the Canadian Public Relations Society. With the performance measures listed below, the City analyzed 1,053 media stories from 25 media outlets (City of Guelph, 2013).

Table 12

2011-2012 Media Analysis

Report	Total number of stories	Tone Positive	Tone Balanced	Tone Negative	City/ brand mention	Spokesperson quoted	Key messages	Call to action	Total reach
Annual July 1, 2011 to June 30, 2012	1,053	28%	63%	9%	99%	56%	59%	14%	64,570,636
2011 July 1 to December 29, 2011	614	27%	63%	10%	98%	55%	59%	12%	34,058,357
2012 Jan 3 to June 30, 2012	438	28%	65%	8%	98%	55%	59%	16%	30,556,276

City of Guelph, 2013

City of Grande Prairie, Alberta

The city of Grande Prairie’s Marketing and Communications department has a 2013 Communications Plan that includes detailed information of their activities, goals and performance measures. The communications plan presents the department’s four main goals and then lists the activities and performance measures for each activity. Refer below for example:

Table 13

Goal 3:

To ensure consistent and proactive external communication

Method	Initiative	Partners	Time Frame/Deadline	Measures of Success
Good News Stories	Review meeting agendas/liase with Council/Departments for good news stories	Council/All Departments	Ongoing	One good news story is released every 2 weeks and one provincial/national article gained quarterly
Issues Management	Monitor media/Council liaison	Council/CLT	Ongoing	Enhanced GP story in community and externally (i.e. Crime stats)
Working with Local Media	Media releases	Local media	Weekly	At least 1 media release weekly
	Paid ads/commercials	Local media	As needed	Four paid ad campaigns per year
Publications	City Matters/Community Connections	Recreation	Quarterly	Residents feel more informed
	Develop online newsletter & e-notification system	All Departments	February	An online newspaper is sent to 500 citizens by June 2013
Social Media	Facebook posts	All Departments	Daily	At least 1 Facebook post is made daily at an organizational level
	Twitter tweets	All Departments	Daily	At least one tweet is sent out daily at Corporate level
	Revise Social Media guidelines	Strategic Services	April	Completion
Website	Promote website as primary source for City information	Strategic Services	Ongoing	Reduced general enquiries calls by 5%, media releases on web simultaneously with distribution, events & other marketing on web as first info source (80%) by Dec. 2013
Communications Training	Develop communications module for Corporate University	HR/Strategic Services	April	Module offered in Fall 2013
311 Service	Report on development of a 311 information line	Departments with high volume calls	January	Completion

Grande Prairie, 2013

This layout is clear and the performance measures can be transferred to an annual report.

Analysis

Air Quality and Climate Change:

The measures currently used in the annual business plan do not reflect the performance of the business area. Staff have expressed that the performance measures attached to specific programs administered by the business area speak more to their performance than the annual business plan measures. The business plan measures remain relatively unaffected by their performance because the measures are too “high level” and are too far removed from the work they are doing (Focus Group, February 15, 2015). Specifically, one of the measures included in the business plan is measuring the performance of the regulations and enforcement group, over which the Air Quality and Climate Change staff have no control. The staff also expressed that it was difficult to develop performance measures that would “resonate” with elected officials.

The business plan indicators seem to be missing some of the key characteristics that were described in the literature review specifically: purpose and goal clarity. The business area of Air Quality and Climate Change has three main goals that are stated in the business plan:

- Protect public health and the environment
- Improve visual air quality
- Minimize the region’s contribution to global climate change

When performance measures are developed it is critical to decide what the purpose of the measure is going to be because a measure that is particularly appropriate for one purpose may be completely useless for another. In the context of a business plan, the purpose of the performance measures will most likely be evaluative. The performance measures in a business plan are there to provide an evaluative tool for stakeholders. The expectation of stakeholders and particularly elected officials with regard to the business plan, is that the performance measures will be an evaluative tool that will inform them about how well the business area is doing at progressing towards its stated goals.

The programs implemented by the business area should have intended outcomes, or goals, that align themselves with the three main goals of the business area. The outputs that result from the programs are not as important as the outcomes from the programs. For example, the current measure: “the total number of non-road diesel engines, within the region, registered for diesel particulate matter emissions” (Metro Vancouver, 2015), is measuring an output of this particular policy. Informing stakeholders on the number of non-road diesel engines registered does not help them evaluate how the business area is progressing towards its stated goals. It leaves them to make an assumption that

the number of non-road diesel engines registered implies a positive contribution towards the progress of one, two, or all three of the business area's goals. If the performance measure instead included an outcome of this non-road diesel engine policy, assuming that an outcome of this policy is aligned with the business area's goals, then it would provide insight on how well the policy is contributing to the progression of one or more of the stated goals.

The performance measures and data inventories that were included in the IAQGGMP fare well in comparison to the local governments included in the cross-jurisdictional scan. There are still some performance measures and practices presented in the scan that could be of value.

The Cities of Boston and San Francisco use vehicle miles travelled as an indicator for the Transportation sector in their respective cities. The transportation sector is a significant contributor of GHG emissions in Metro Vancouver, Boston, and San Francisco so there is value in knowing if people are travelling more or less in their cars. Determining vehicle miles travelled may be accomplished through car insurance providers, such as ICBC. The region of Metro Vancouver has a variety of factors that could affect the transportation sector including continued population growth, a new Skytrain line to Port Moody and Coquitlam, and the increasing cost of living in Metro Vancouver. These factors and others can affect the amount that people drive so vehicle miles travelled can prove to be a valuable measure in determining the impact of these factors, as well as potential programs and policies the organization may implement.

King County's GHG Tracking Framework is a useful tool to help determine what sectors should be measured and where to target policy development. This framework would be an insightful exercise for staff and managers within the Air Quality and Climate Change business area to decide where their efforts should be divided and where they can make the biggest difference. Currently the Air Quality and Climate Change business area produces this framework every five years. In terms of bolstering the performance measures in the annual business plan the GHG Tracking Framework may reveal some significant sectors that would warrant its own measure within the annual business plan. If there is one sector that proves to be a significant contributor of GHG emissions and it triggers substantial policy development to address it, then that specific sector's GHG emissions would be an appropriate measure to include in reports such as the annual business plan.

In the Building sector, which comprises of commercial and residential buildings, King County measures residential and commercial energy use per person in MBTU (Million British Thermal Units). The building sector is a significant contributor to GHG emissions in King County and Metro Vancouver so a measure such as this would provide opportunity to measure behaviour change, for example, through outreach programs and campaigns.

Edmonton's dashboard and included measures are a useful tool to inform stakeholders and especially the public on how well their city is performing towards meeting their goals. Instead of finding and reading through large reports, the public is able to quickly and easily see the dashboard through the main city website. All local governments, including Metro Vancouver, would benefit from a tool such as this.

The City of Portland had two useful performance measuring tools that could measure and guide policy. The carbon intensity measure, which measure carbon emissions per unit of energy, would be a valuable measure if a campaign or program is encouraging a specific group of people to switch from one energy source to another. The consumption-based inventory can also be a helpful tool providing insights on emissions produced through consumption and could be used to measure the consumption habits of different demographics of the population in the region. The Air Quality and Climate Change business area could benefit from these measures as they implement similar behaviour changing campaigns.

External Relations:

The measures used in the annual business plan do not necessarily equate to the performance of the business area. For example, if the number of email subscribers to the regional database goes down then it does not necessarily mean that the business area is underperforming. This indicator may speak more to people's email habits instead of the performance of the group.

Some measures that are being used for the campaigns have an attribution problem. A campaign is successful, in terms of the intended outcome being achieved but it is not clear if it was the campaign that was the direct cause of the outcome. For example, the Zero Waste Campaign's objective was to reduce the amount of waste going to regional landfills. The amount of waste was recorded at transfer stations showing that there was a reduction in waste. It is not certain however that this reduction was caused by the campaign or if there are other factors involved.

The cross-jurisdictional scan outlines many performance measures that are currently being used to measure communications efforts in public sector organizations that may fill these gaps. It is clear from the examples that there is not a standard set of performance measures from communications departments or those with similar responsibilities. Overall, however the cross-jurisdictional scan does provide insightful examples of how organizations are currently trying to measure their efforts to address their unique situations by the programs and services they deliver.

A reoccurring area of emphasis for many of the examples was measuring performance through analysis of website information. The City of Seattle has a

content management system that tracks all of their pages and measures the number of unique visitors to their web pages. Unique visitors to the webpage can be an insightful indicator as it measures new individuals who are being exposed to the website. In contrast to External Relations' current indicator of "website pages visits", unique visitors as an indicator measures website exposure to the public more effectively as it does not re-count the same visitor to the page who has accessed the page multiple times. The City of Seattle website does not state the specific content management system the City is using, however there are a various software packages that can be used to track and monitor an organization's website (WRAP, 2006). There are also a variety of other performance indicators that can be used for a website through content management software that would greatly benefit the External Relations business area in measuring performance of the website. The reliability of some of the data provided from these types of software must be considered before developing performance measures that use this data. For a more complete list of website performance indicators please refer to Appendix D.

The cities of Austin and Nanaimo display uncomplicated performance measures through the use of surveys and simple, straightforward questions. Both of these cities use surveys on an annual basis to collect data about the opinions of their citizens. Both cities would like to know and measure their citizens' satisfaction with the communications department so they simply ask them in their annual survey. This is a measure that is included in their annual business plan and can be measured, relatively easily, and on annual basis. External Relations could use this survey method when trying to measure public recognition of the organization or the public's understanding about the services offered by Metro Vancouver. These survey questions could be utilized when External Relations does pre and post surveys with their behaviour change campaigns.

The County Durham campaign case study is an informative example on the ways to measure success of a campaign aiming to change citizen behaviour and to remedy the attribution problem. The County of Durham uses five performance measures to provide insightful information through various methodologies (pre and post: participation monitoring, tonnage monitoring, contamination monitoring, and survey). Some of these performance measures would not be included in the annual business plan, however the case study lays out the process and appropriate measures in conducting a behaviour changing campaign. This case study can be insightful to adopting measures that could be implemented in the campaigns implemented by External Relations.

The City of Seattle also provides an intriguing practice with their in-person interviews with the Fresh Bucks campaign. Surveys that take place at the particular location where a communications campaign is directed to are known as intercept surveys. They are named this because the conductors of the survey "intercept" members of their target audience where the campaign is taking place. This can be an effective performance measuring method for surveys as respondents have the issue and potentially campaign messages currently in

mind (Communications Network, 2008). Intercept surveys may be a useful information gathering tool for External Relations as they hold many conferences and information sessions/breakfasts which would be ideal locations for intercept surveys.

The City of Guelph's Corporate Communications Dashboard and the City of Grand Prairie's Communication Plan activity-performance layout are examples of what other jurisdictions are currently doing to measure seemingly impossible tasks. It is clear from the literature that success is more difficult to measure within the field of communications, however that does not mean that there are not things that can be measured and that can in turn inform decision makers. The City of Guelph's Dashboard uses a colour coded system to inform stakeholders how well a specific area is doing. It even states that anecdotal information may have been used to help determine which colour was assigned to a specific area. Although, this level of vagueness is not ideal, it can still inform stakeholders to at least investigate an issue further. For example, one of the measures is "Quality of city-stakeholder relationships" and a yellow colour is given here, denoting that it is satisfactory but it may be moving in the wrong direction. If this dashboard is being reviewed at an annual meeting, it at least presents the opportunity for elected officials and other stakeholders to ask questions to staff about how they came to this "yellow" performance result. City-stakeholder relationships are difficult to measure with a metric so staff will now have the opportunity to explain to elected officials and stakeholders how they came to this conclusion and it may perhaps inform decision makers to develop a course of action to correct this result or gather more information. If there were no performance measure for this topic, because of the seemingly-impossible task of measuring city-stakeholder relations, then perhaps decision makers would not have brought this up and no corrective measures would have been taken. Once again, this is not ideal but if there is an issue, program, or service that should be measured and recognized, a simple, colour coded system such as this one is better than no measures at all.

The City of Grand Prairie Communication Plan is laid out well with activities listed to accomplish the stated goal and performance measures to accompany activities. The measures are quite rudimentary and in some instances the quantitative figures seem arbitrarily assigned. The layout, however is presented well to inform stakeholders of the activities and the indicators used to measure their success. One indicator stands out to be quite insightful and that is the measure connected to the website performance. The website is intended to be the primary source for city information so to measure if there is a reduction in the amount of general enquiry calls is an astute indicator to measure the effectiveness of the website in informing the public of city information.

Recommendations

Air Quality and Climate Change:

- Replace performance indicators in the business plan that measure outputs with performance indicators that measure outcomes of a program/policy
- Consider adopting consumption-based inventory as displayed by the City of Portland
- Develop and use logic models for new programs/policies to help identify the things that can be measured and the linking constructs that may be measurable to determine the success of a new program or service (Look to Appendix E for template)

External Relations:

- Adopt enhanced website performance indicators that can provide more insightful information (e.g. unique visitors) See Appendix D for a list of eighteen possible indicators.
- Include questions in pre- and post-campaign surveys that can be used to provide information for measures that can be included in the annual business plan (eg. Citizen awareness of External Relations' campaigns; Citizen awareness of the services provided by Metro Vancouver)
- Develop and use logic models for new programs/policies to help identify the things that can be measured and the outcomes that may be measurable to determine the success of a new program or service (Look to Appendix F for template)

Conclusion

This report provides an outline and analysis of promising practice models for performance measuring in local governments. A cross-jurisdictional scan has highlighted other jurisdictions that are faced with similar challenges in performance measuring. The performance management systems they display provide insightful indicators that measure the performance of climate change initiatives and external relations. Each jurisdiction, including Metro Vancouver, faces unique issues and circumstances. The characteristics of good performance measures described in the literature review, however, provide the fundamentals to develop performance measures that can address these unique conditions and better measure the performance of programs and departments.

The findings in this report should provide immediate value to Metro Vancouver but continued success in performance measurement will require ongoing contributions by staff and management. Performance measurement is not a one-time or static practice but something that must continue to evolve as goals and practices evolve within the organization. A strong organizational commitment to performance measurement will provide the most benefit to managers, elected officials, and the organization. Once managers and elected officials believe in performance measures then they can use the data from these measures to inform and justify the decisions that they make. The benefits of performance measuring will be fully realized once this commitment is achieved.

References

- Air Quality and Climate Change. (2015). Retrieved from <http://www.metrovancouver.org/about/departments/ppe/air-quality/Pages/default.aspx>
- Ammons, D. N. (2010). Determining the Purpose of the Performance Measurement System: An Important First Step. Retrieved from http://www.gfoa.org/sites/default/files/GFR_OCT_10_63.pdf
- Ammons, D. N., Coe, C., & Lombardo, M. (2001). Performance-Comparison Projects in Local Government: Participants' Perspectives. *Public Administration Review*, 61(1), 100-110.
- Ammons, D. N., & Roenigk, D. J. (2015). Performance Management in Local Government: Is Practice Influenced by Doctrine? *Public Performance & Management Review*, 38(3), 514-541.
- Arnaboldi, M., Lapsley, I., & Steccolini, I. (2015). Performance Management in the Public Sector: The Ultimate Challenge. *Financial Accountability & Management*, 31(1), 1-22.
- Behn, R. D. (2003). Why measure performance? Different purposes require different measures. *Public administration review*, 63(5), 586-606.
- Bevan, G. & C. Hood. (2006). What's Measured is What Matters: Targets and Gaming in the English Public Health Care System. *Public Administration*, 84(3), 517-38.
- Boyle, R. (2000). Performance measurement in local government. Retrieved from http://www.ipa.ie/pdf/cpmr/CPMR_DP_15_Performance_Measurement_in_Local_Government.pdf
- City of Austin. (2015). Retrieved from <http://www.ci.austin.tx.us/budget/eperf/index.cfm>
- City of Boston. (2014). Greenovate Boston: 2014 Climate Action Plan Update. Retrieved from https://www.cityofboston.gov/eeos/pdfs/Greenovate%20Boston%202014%20CAP%20Update_Full.pdf
- City of Edmonton Citizen Dashboard. (February 9, 2016). Retrieved from <https://dashboard.edmonton.ca/green>
- City of Edmonton. (2015). Edmonton's Community Energy Transition Strategy: A framework for reducing greenhouse gas emissions, increasing energy

efficiency and promoting resilient energy systems in Edmonton.
Retrieved from
http://www.edmonton.ca/city_government/documents/EnergyTransitionStrategy.pdf

City of Grande Prairie. (2013). City of Grande Prairie Communications Plan.
Retrieved from
<http://www.cityofgp.com/modules/showdocument.aspx?documentid=6593>

City of Guelph. (2013). City of Guelph: Corporate Communications Annual Performance Report 2012.

City of Nanaimo. (2015). Retrieved from
<http://www.nanaimo.ca/PerformanceMeasurement/BalancedScorecard>

City of Nanaimo (2013). City of Nanaimo Communication Plan. Retrieved from
<https://www.nanaimo.ca/assets/Whats~New/PDFs/2013/CNComPlanDraft.pdf>

City of Portland & Multnomah County. (2015). Climate Action Plan: Local Strategies to Address Climate Change. Retrieved from
<https://multco.us/file/42549/download>

Communications Network. (2008). Are We There Yet: A Communications Evaluation Guide. Retrieved from
<https://issuu.com/comnetwork/docs/arewethereyet?mode=embed&layout=http%3A%2F%2Fskin.issuu.com%2Fv%2Fflight%2Flayout.xml&showFlipBtn=true>

Controller's Office City Services Auditor. (2015). Guide to Good Measures.
Retrieved from <http://icma.org/Documents/Document/Document/307551>

Crotty, M. (1998). The foundations of social research: Meaning and perspective in the research process. Thousand Oaks, Calif; London: Sage.

Galera, A. N., Rodríguez, D. O., & Hernández, A. M. L. (2008). Identifying barriers to the application of standardized performance indicators in local government. *Public Management Review*, 10(2), 241-262.

Ipsos. (2016). Canadian Citizen Satisfaction. Retrieved from
<http://www.ipsos.ca/en/products-tools/public-affairs/public-sector-research/canadian-citizen-satisfaction.aspx>

Ingraham, P. W. (2005). Performance: Promises to Keep and Miles to Go. *Public Administration Review*, 65(4), 390-395.

King County. (2012a). Greenhouse Gas Emissions in King County: An Updated Geographic-plus Inventory, a Consumption-based Inventory, and an Ongoing Tracking Framework. Retrieved from <http://your.kingcounty.gov/dnrp/library/dnrp-directors-office/climate/2008-emissions-inventory/ghg-inventory-summary.pdf>

King County. (2012b). Greenhouse Gas Tracking Framework for King County: 2010 Update. Retrieved from http://your.kingcounty.gov/dnrp/climate/documents/2010_King%20County_Core_GHG_Emissions.pdf

King County. (2015). Strategic Climate Action Plan: November 2015. Retrieved from http://your.kingcounty.gov/dnrp/climate/documents/2015_King_County_SCAP-Full_Plan.pdf

McDavid, J. C., & Hawthorn, L. R. (2006). Program evaluation & performance measurement: An introduction to practice. Sage.

Metro Vancouver. (2015). 2016 Budget and Business Plan. Retrieved from http://www.metrovancouver.org/boards/GVSDD/SD_2015-Oct-30_3.1aReference.pdf

Metro Vancouver. (2012). Board Strategic Plan. Retrieved from <http://www.metrovancouver.org/about/aboutuspublications/BoardStrategicPlan.pdf>

Metro Vancouver. (2014a). Metro Vancouver Districts: 2015 Financial Information.

Metro Vancouver. (2014b). Integrated Air Quality and Greenhouse Gas Management Plan Progress Report. Retrieved from <http://www.metrovancouver.org/services/air-quality/AirQualityPublications/2014IAQGGMPPProgressReport.pdf>

Ministry of Municipal Affairs and Housing. (2007). Municipal Performance Measurement Program. Retrieved from <http://www.mah.gov.on.ca/AssetFactory.aspx?did=4873>

National Performance Management Advisory Commission. (2010). A Performance Management Framework for State and Local Government: From Measurement and Reporting to Management and Improving.

Retrieved from
<http://www.gfoa.org/sites/default/files/APerformanceManagementFramework.pdf>

Performance Seattle. (2015). Retrieved from
<https://performance.seattle.gov/stat/goals/8tdg-dkwe/gjng-cadr/gzqa-2kkx>

San Francisco Department of the Environment. (2013). San Francisco: Climate Action Strategy. Retrieved from
http://sfenvironment.org/sites/default/files/engagement_files/sfe_cc_ClimateActionStrategyUpdate2013.pdf

SF Environment. (2015, January 26). Mayor Lee & Board President Breed Announce San Francisco Exceeds Greenhouse Gas Emissions Reduction Goal. Retrieved from <http://sfenvironment.org/news/press-release/mayor-lee-board-president-breed-announce-san-francisco-exceeds-greenhouse-gas-emissions-reduction-goal>

Shingler, J., Van Loon, M. E., Alter, T. R., & Bridger, J. C. (2008). The Importance of Subjective Data for Public Agency Performance Evaluation. *Public Administration Review*, 68(6), 1101-1111.

Veselý, A. (2011). Theory and methodology of best practice research: A critical review of the current state. *Central European Journal of Public Policy*, 5(2), 98-117.

Waste and Resource Action Programme (WRAP). (2006). Improving the Performance of Waste Diversion Schemes: A Good Practice Guide to Monitoring and Evaluation. Retrieved from
<http://www.pbmsolutions.co.uk/11%20Knowledge%20Sharing%20Centre/WRAP%20A%20Good%20Practice%20Guide%20to%20Monitoring%20and%20evaluation%20guidance.pdf>

Appendices

Appendix A:

Helpful Tips

- Thought Process of creating measures
 - **Who are the stakeholders and customers? What are their expectations?**
 - Example: Fire Department - residents of the City and County of San Francisco (customers), expect prompt responses to fire calls
 - **Describe ways to find out if you are fulfilling the expectations.**
 - Express the expectation you describe above as an outcome or output of your work
 - Describe what would happen if you meet your customer's expectations and if you fail to meet them
 - Describe some ways to measure achievement of expectations. That is, describe a way that you, or anybody else who was interested, could come to know if you are successful. Think about how well the measure you have selected is connected to the outcome or output of your work.
 - **Describe how often you should measure the indicators**
 - How much will it cost to measure? Will you measure it often enough to learn something? Would it be more useful to measure more (or less) frequently?
 - **What comparisons will be used to make the measure meaningful (baseline, benchmark?)**
 - Example: Pick comparable jurisdictions and compare your average response time to theirs
 - Will you use benchmarks? How will you get them?
 - Do you need a baseline? Baseline data will provide you with something to measure your performance data against and shows how a change, impacts performance
 - **What is a reasonable performance target, or the right level of performance?**
 - Is there a reasonable performance target for your measure? If so, what would happen if you do not achieve it? What would happen if you do?
 - Specify the trigger points that would require decisions or other action. What would those decisions or actions be? (Controller's Office City Services Auditor, 2015).

Appendix B:

SMART Technique

S	Specific	<p>Be clear on what you are trying to achieve and measure.</p> <p>Users should understand what is measured and reported.</p>
M	Measurable	<p>Ensure that things you want to measure are actually measurable.</p> <p>Identify expected outcomes and how they will be measured (e.g., quantity, quality, accuracy, time, cost, or safety). Is the data available in an accurate, timely, and cost-effective manner? Performance measures should be accurate and exhibit little variation due to subjectivity or use by different raters. Do not select measures that program personnel can easily manipulate to their advantage.</p>
A	Achievable	<p>Good targets are attainable, yet require you to stretch to achieve them.</p> <p>They should not be so difficult that you set yourself up for failure, nor so easy that you are not challenged by them.</p>
R	Results Oriented/Relevant	<p>Focus on results, rather than process or activities. Relevant means that you align individual goals with broader organizational goals.</p> <p>A good measure provides insight on the achievement of goals and objectives. Output and outcome measures should be written in terms of results or conditions to be achieved, rather than activities to be performed.</p>
T	Time Based	<p>Establish clear milestones to measure progress.</p> <p>Measures are compiled and distributed promptly and regularly enough to be of value to operating managers or policymakers.</p>

Appendix C:

****Below are excerpts taken directly from the Ipsos' website**

Ipsos Reid's Citizen Satisfaction syndicated research study examines your citizens' perceptions of their community and municipal government performance and then puts these into context by comparing them to those seen in other Canadian municipalities.

Key topics covered in the Citizen Satisfaction syndicated study include:

- Top-of-mind local issues;
- Quality of life;
- Perceptions of staff and Council;
- Satisfaction with municipal services;
- Perceived value for taxes and preferred funding options; and,
- Communication and information needs.

Ipsos Reid believes that one of the best ways to understand how well your municipality is performing is to compare your results to those of other Canadian municipalities.

For Ipsos Reid's Citizen Satisfaction syndicated research study, we will conduct a telephone survey of 300 citizens aged 18 years or older in each municipality that decides to participate in the research. This will provide overall results that are accurate to within $\pm 5.7\%$ (19 times out of 20) and will also allow for analysis by key demographic subgroups such as age, gender, etc. (Ipsos, 2016).

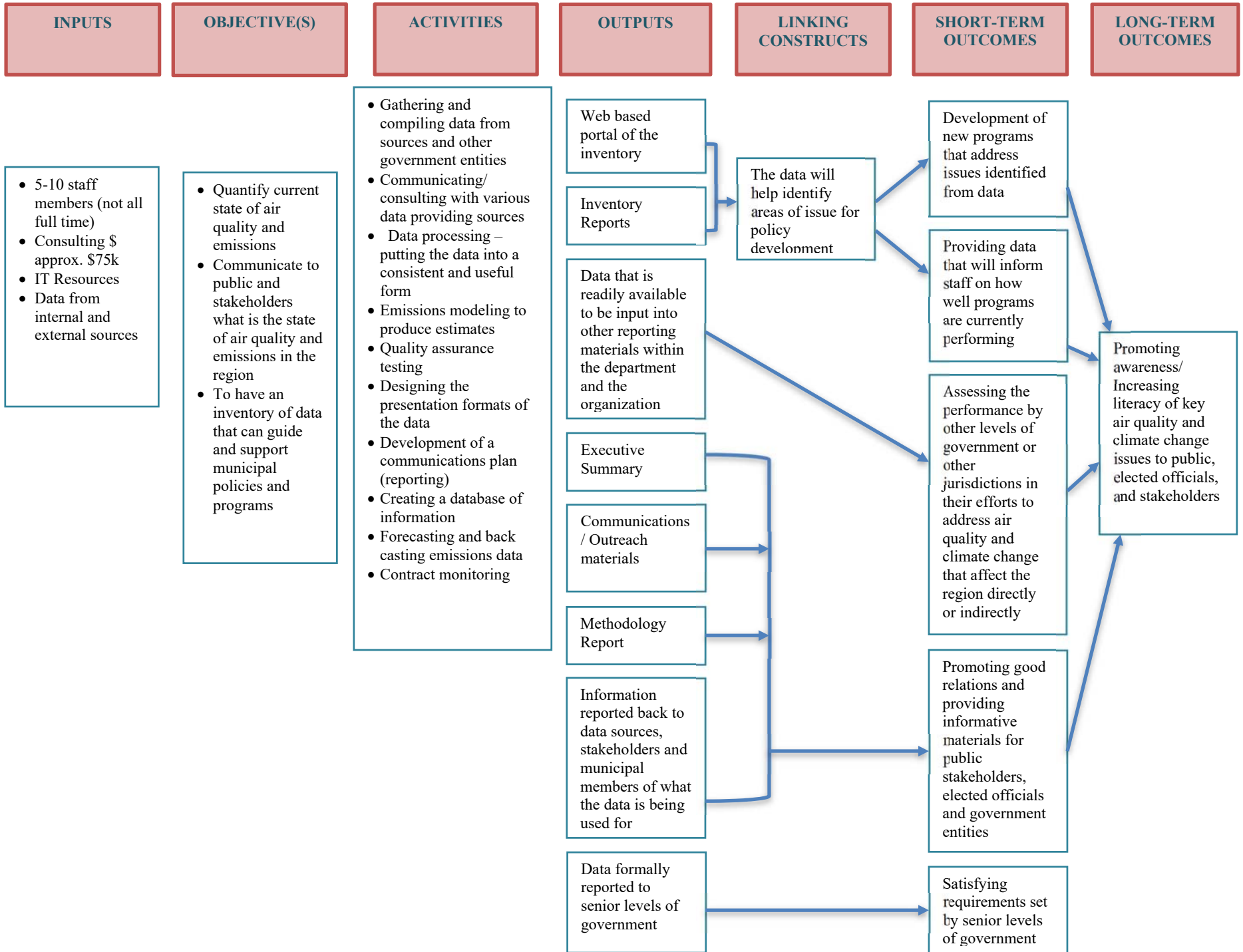
Appendix D:

List provided by WRAP communications (2006):

The key to gaining specific and relevant data for your campaign or website reports is to identify which indicators you need to monitor in advance. The following are some of the indicators for which you can collect data:

- number of visitors and unique visitors to a site; [L] [SEP]
- number / percentage of 'returning' site visitors (calculated by dividing the [L] [SEP] number of unique visitors by the total number of visits to obtain a 'repeat [L] [SEP] visit' ratio); [L] [SEP]
- total unique visitor figures with specific information on new and returning [L] [SEP] visitors; [L] [SEP]
- unique visitors to campaign landing pages; [L] [SEP]
- number of pages viewed and average page views per visitor; [L] [SEP]
- number of documents downloaded; [L] [SEP]
- number of referrals from other sites where web advertising is placed; [L] [SEP]
- the amount of time visitors are spending on the site;
- percentage of visitors who 'bookmark' your site;
- number / percentage of direct links to your site; [L] [SEP]
- number of search engine or directory search results (useful if you are using search engine optimization services); and [L] [SEP]
- bounce rate (the number of visitors that do not click past the landing page)
- most popular 'entry' and 'exit' pages;
- most / least popular pages;
- page views and 'click paths', i.e. the different routes taken by visitors;
- website visitor pathways;
- transactions undertaken; and
- page addresses for all downloaded documents.

Appendix E: Emissions Inventory



Appendix F: Create Memories Not Garbage Logic Model

Metro Vancouver: Improving upon Performance Measures

71

