Summary of Meeting

Date held: April 22, 2015	**Time held: 10 AM – 4 PM**	**Location held: SME Offices in Oakville, ON**
Working Group Members and Observers	**Company Name**	**Attendance Status** (A)ttended; (R)egrets; (S)ubstitute; (P) Phone Participant
White, Adam	Aitia Analytics	A
Evenson, Jeff	Canadian Urban Institute	A
Kerr, Rob	City of Guelph	R
Griffiths, Sarah	EnerNOC, Inc.	A
Gordon, Jennifer	Halton Hills Hydro	A
Lennie, Brian	Horizon Utilities	A
Barakat, Sally	Hydro Ottawa	A
Smith, Stuart	London Hydro	A
Carter, Karen	Ministry of Education	A
Newsham, Guy	National Research Council	P
Webster, Jessica	National Resources Canada	A
Sloan, Drew	Opower	S (for Marisa Uchin)
Gliga-Belavic, Adriana	PricewaterhouseCoopers LLP	S (for David Craig)
Ellis, Gord	Soft Grid Analytics Corporation	R
Myers,Kevin	Veridian	A
Byrnes, Brian (Observer)	Ministry of Energy	A
Gore, Janet (Observer)	Information & Privacy Commissioner	A
Barrette, Renee (Observer)	Information & Privacy Commissioner	A
Foundation Project Team	**Company Name**	**Attendance Status** (A)ttended; (R)egrets; (S)ubstitute; (P) Phone Participant
Barnet, Lisa	IESO	A
Barrett, David	IESO	A
Geraghty, Simon	IESO	A
Guberman, Bob	IESO	A
King, Ryan	IESO	A
McNally, Julia	IESO	A
Tomczak, Przemek	IESO	A
Tuff, Chris	IESO	A
Please report any corrections, additions or deletions to: stakeholder.engagement@ieso.ca		

Please note that the views represented in the summary below reflect the diverse views of members of the FWG and not necessarily those of the IESO. Links to the presentation materials are provided with each item.

Item 1 Foundation Project Plan Overview
http://www.ieso.ca/Documents/consult/Foundation/Foundation-20150422-Project_Plan_Overview.pdf

The purpose of Project Plan Overview is to familiarize stakeholders with the main aspects of the Foundation project. The material reviews the IESO's mandate and the objectives and scope of the project. The major work streams are laid out along with the schedule of work targeted for completion in October 2015. The following highlights discussions and clarifications that took place during this presentation.

Review of Current Initiatives involving MDM/R Information

- Foundation Project: The Meter Data Management/Repository is a multi-phased project. The initial focus of the Meter Data Management/Repository (MDM/R) implementation was to support the introduction of time-of-use billing to promote a culture of conservation within the Province of Ontario, and the emphasis was not on ensuring the completion and accuracy of all data fields. Foundation objectives are to recommend what is necessary to accurately complete the information in the MDM/R to enable analysis of the data set, and to recommend the rules to enable third party access to the data in the MDM/R. The Foundation project does not include the implementation of any of the recommendations.
- MDM/R Data Access Platform (MDAP): MDAP is exploring the creation of a platform where multiple data sets, including those in the MDMR, can be combined. It was suggested that, in addition to gaining better customer intelligence through analysis, gaining better market intelligence by analyzing information about the distribution systems and the local distribution companies (LDC) is needed to improve efficiencies in operating the power grid. This type of information might be considered as part of MDAP.
- The Green Button Initiative (GBI) allows local distribution company (LDC) customers to grant third party organizations access to their energy consumption data. Where the data for the GBI comes from depends on the specific LDC involved. Of two GBI pilots currently underway, electricity consumption data for one comes from the MDM/R and data for the other comes from the LDC's in-house system. However, in both cases, the customer interfaces only with the LDC.
- The IESO is involved in all three initiatives and there is frequent communication between the leadership of these projects to maintain continuity and coordinate them.

Data Needs and Privacy/Security of Personal Information

- While the current MDM/R data generally does not contain personal identifiable information, adding additional data to the set and attaching other data sets to enhance

the usefulness of the data may result in the creation of personal information and consequently must be protected for privacy.

- The FWG heard from some that the most granular level of the data is necessary to take full advantage of the information. Aggregating data removes the ability to make useful comparisons of individual variations over the ambient.
- It is very possible that one or more third party experts will be involved to work with the IESO in the area of privacy and security.

Item 2 Adoption of Foundation Working Group Terms of Reference
http://www.ieso.ca/Documents/consult/Foundation/Foundation-Terms_of_Reference.pdf

The proposed Terms of Reference for the FWG were unanimously adopted without modification.

Item 3 Overview of the MDM/R System and its Information
http://www.ieso.ca/Documents/consult/Foundation/Foundation-20150422-MDMR_Overview.pdf

The purpose of MDM/R System Overview is to familiarize stakeholders with the main aspects of the system and its specific data elements that are relevant to the Foundation project. The material reviews the smart meter system components and the information flows between them. The functional processes and reporting in the MDM/R are also highlighted. References to reports addressing MDM/R security and privacy are provided. The following highlights discussions and clarifications that took place during this presentation.

MDM/R Functional Details

- The MDM/R system receives raw meter data from the LDCs, validates it and sends back the appropriate billing determinants for the LDCs to bill their customers. Loss adjustments are applied by the LDCs.
- The MDM/R web services facility supports requests for both hourly interval consumption data and time-of-use buckets consumption. These requests are for individual interactive LDC web presentment sessions with their customers. Requests by LDCs for larger sets of data are handled on a specific case-by-case basis.
- The current standards for all technical details on the interfaces to the MDM/R are available in MDM/R technical specifications documents that are provided to authorized MDM/R service recipients. These specifications are not publically available.
- Master Data is the collection of all parameters and relationships about each point where energy consumption is measured with a smart meter. Each measuring point is called a "Service Delivery Point" (SDP). The Master Data is the primary information that informs the MDM/R how to process smart meter data and calculate billing

determinants. If a parameter or relationship associated with an SDP is changed the current parameter or relationship with the SDP is terminated and a new parameter or relationship with the SDP is created.

- If there is a move in/move out, the LDC has the option to either handle these changes through the MDM/R or within their own systems. If handled through the MDM/R the relationship between customer account identifier and the SDP is changed. The management of all these relationships is handled through the MDM/R synchronization process.
- Currently there is some customer information, but no customer identifiable information, contained in the MDM/R reports. An LDC can only see information within its jurisdiction and the same is true for its authorized agents.

MDM/R Data Fields Relevant to the Foundation Project

- The mnemonic "SDP" is the abbreviation for "Service Delivery Point" which is the point where energy consumption is measured. The "SDP ID" forms a unique identifier within each LDC, but it is not unique across the province. A "Universal Service Delivery Point ID", or "USDP ID", is generated by the MDM/R for each LDC's SDPs and this identifier is unique across the entire province.
- Address fields in the MDM/R are mandatory fields but the content of those fields varies from LDC to LDC. Part of the Foundation project scope is to determine what address information is needed and establish its required format.
- The Account ID field in the MDM/R is an optional field.
- There exist four demographic/firmographic fields in the MDM/R that are reserved for future use. Demographic information is about individuals and firmographic information is about organizations; however, there is flexibility within the MDM/R as to the future use of these fields.

Scope of MDM/R Audit

An annual audit examines the MDM/R operations, processes, and procedures. The audit is conducted in accordance with the Canadian Standard on Assurance Engagements for Reporting Controls at a Service Organization ("CSAE 3416"), set out in Chartered Professional Accountant (CPA) Canada Handbook – Assurance. The scope of this audit includes an assessment of the IESO's controls over access to systems, interfaces, and data, as well as controls to prevent unauthorized access to data. An annual report of the audit findings is provided for the use of the IESO, MDM/R service recipients and their auditors.

Item 4 Geo-location and Customer Identification Information
http://www.ieso.ca/Documents/consult/Foundation/Foundation-20150422-Geolocation.pdf

This presentation showed how geo-location and/or customer identification information, when coupled with energy consumption data, was used to analyze or develop consumer energy programs. None of the use case studies presented could be conducted with the data set, as it currently exists, in the MDM/R. The following highlights discussions and clarifications that took place during this presentation.

Use Case Summaries

- The Horizon Utilities Use Case demonstrated how electricity data, integrated with demographic and structure data for each property in their territory, was used to increase the uptake of conservation and demand management (CDM) programs. The integrated data set informed where the opportunities were for all sectors and for all Province-wide CDM programs. Annual electricity consumption, demographic data at the six-digit postal code level, and structure data at the property level was used. Aggregated non-standardized building-type and customer segmentation definitions were applied to all structures and properties in the dataset to enable analysis and reporting.
- The Sault Ste. Marie Use Case demonstrated how an integrated geographic information system (GIS) dataset was used to notify emergency 911 services when vulnerable persons (people whose health depends on electricity supply) were without power. The GIS dataset had a list of addresses mapped to meters, transformer stations, and the entire grid in Sault Ste. Marie. During a power outage the list of addresses without power was crossed referenced with the vulnerable persons list and 911 services were notified of any vulnerable persons at risk.
- The Time of Use (TOU) Use Case demonstrated how a third party, the former OPA, used MDM/R data to verify electricity savings associated with the TOU billing rates. In order to allow the OPA access to the MDM/R data, a non-identifying TOU key was used to strip the data of all of its identifiable attributes. A completed Account ID data field and address data fields in the MDM/R would have simplified the analysis and significantly reduced the level of effort (i.e. time and cost) for the IESO, the OPA, and most of all, the LDCs to assemble the data in a usable form. However, keeping customer account information up to date in the MDM/R may impose additional costs for some of the LDCs.

Geo-location and Customer Identification Information Experience

- Address and customer move in/move out information are key elements to add to the data set to make it useful for analysis

- Automated matching techniques achieved an approximately 85% match rate that was insufficient for analysis. A much higher match rate (e.g. 99%) between data sets is necessary. Manually matching the last 14% is very costly and time consuming. The Tract and Neighbourhood Data Modelling (TaNDM) project in British Columbia geocoded the data, which significantly reduced the required level of effort. Once matched, in many cases data can be aggregated for reporting.
- There was agreement among members of the FWG that attributes about the customer and the location are also important information that enables further analyses. Square footage, building type, and demographic/firmographic attributes were all mentioned as needed data.
- Need almost all consumption points mapped to identify energy efficiency and make it useful to planners, especially for conservation and demand management.

Item 5 Privacy, Security and Third Party Access
http://www.ieso.ca/Documents/consult/Foundation/Foundation-20150422-Privacy_Security.pdf

This presentation is designed to provide a framework for tackling the complex issues involved in establishing rules for third party access to MDM/R data and for the protection of customer identifiable information. Although time constraints prevented completing the presentation, there was good discussion and debate on the areas covered. The following highlights discussions and clarifications that took place during this presentation.

Third Party Access

- Foundation is to develop the rules for third party access; it is not to develop new interfaces or mechanisms for fulfilling that access.
- There are different use cases for different third parties, for example a green house gas (GHG) inventory for a municipality versus targeted sales by a private company. The spectrum of use cases needs a spectrum of data granularity access.
- If there is concern about third parties using data for predatory sales, the discussion should be about how to protect customers rather than withholding data.
- Consumers' personal data needs to be protected through privacy and security protection measures, not through the withholding of their data from stakeholders.
- Controls at the SME and the MDM/R include those to prevent unauthorized organizations and users from accessing data. The annual MDM/R audit includes an assessment of controls over access to systems and data.

Protecting Privacy

- The IESO is bound by the Freedom of Information and Projection of Privacy Act (FIPPA).
- Information that is adequately de-identified (not personally identifiable) is not "personal information" as defined in FIPPA.
- There are many techniques to de-identify personal identifiable information.
- One way to protect privacy may be for the IESO to do the analysis and publish the results in de-identified form.
- Use of firewalls and data clean rooms may help in ensuring privacy while enabling analysis of granular information subject to appropriate terms and conditions.

Item 6 Cost Recovery
http://www.ieso.ca/Documents/consult/Foundation/Foundation-20150422-Cost_Recovery.pdf

Due to time considerations, the Cost Recovery presentation was postponed to a future meeting.

Item 7 Future Meetings

The following dates were proposed for subsequent meetings of the FWG (all of which were confirmed except the last one which was moved to the date set out below):

- May 20th
- June 17th
- July 22nd
- September 2nd (moved to and confirmed as September 16th)

The May and July sessions will be broader stakeholder forums, inviting other interested parties to attend and participate in the discussions. Meeting locations will depend on availability of the facilities, but it was noted that downtown Toronto was a preferred location for most participants.

Action Item Summary					
#	Date	Action	Owner	Status	Comments
1	22 April 2015	IESO to provide copy of the joint IPC and IESO issued paper, "Building Privacy into Ontario's Smart Meter Data Management System: A Control Framework" to the members of the FWG	PT	Open	