



BUSINESS OF THE CITY COUNCIL CITY OF MERCER ISLAND

AB 6529
September 17, 2024
Regular Business

AGENDA BILL INFORMATION

TITLE:	AB 6529: AMI Data Collector Authorization	<input type="checkbox"/> Discussion Only <input checked="" type="checkbox"/> Action Needed: <input checked="" type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution
RECOMMENDED ACTION:	Authorize staff to proceed with permitting, installation, and operation of three AMI data collector stations.	

DEPARTMENT:	Public Works
STAFF:	Jason Kintner, Chief of Operations Alaine Sommargren, Deputy Public Works Director
COUNCIL LIAISON:	Jake Jacobson
EXHIBITS:	1. AMI Data Collector Locations and Current Status 2. Data Collector Photo Renderings
CITY COUNCIL PRIORITY:	3. Make once-in-a-generation investments to update and modernize aging infrastructure, capital facilities, and parks.

AMOUNT OF EXPENDITURE	\$ 7,352,916
AMOUNT BUDGETED	\$ 7,352,916
APPROPRIATION REQUIRED	\$ n/a

EXECUTIVE SUMMARY

The purpose of this agenda bill is to present information on the status of the Advanced Metering Infrastructure (AMI) meter replacement project and receive authorization to proceed with permitting and installing the remaining equipment needed to fully implement the AMI system.

- The City Council approved the Water Meter Replacement contract on July 19, 2022 to replace all water meters on Mercer Island with an AMI system ([AB 6112](#)).
- The substantial replacement of water meters was completed in August 2024.
- Data collection equipment, which is needed to fully implement the AMI system and customer portal, has been installed at two locations. Four additional data collection stations are needed to complete the system.
- Staff presented information about public feedback and alternative locations for the remaining data collection stations to City Council at the March 5, 2024 Regular Meeting ([AB 6422](#)).
- City Council directed staff to proceed with installation of one of the remaining locations (near Roanoke Park) and return with additional information for the remaining three locations.

Permitting is currently underway for the Council approved location in the right-of-way adjacent to Roanoke Park. Staff recommends applying for permits for the three remaining data collector stations, and if permits are approved, installing and activating them for use with the AMI system.

BACKGROUND

PROJECT BACKGROUND

In 2018, Mercer Island began an assessment of the City's water metering program and current technology options to meet the City's needs. Ultimately the City, in consultation with the Utility Board, decided to pursue "smart meters" through an Advanced Metering Infrastructure (AMI) system. This system automatically transmits water usage data from the meters via a secure, cloud-based network to the utility billing software.

Fully implemented, AMI systems provide precise, hourly water use data that helps support conservation activities with improved leak detection and allows staff to focus on addressing water issues by significantly reducing or eliminating the amount of walking and driving to individual meters.

After issuing a Request for Proposals, the City selected Ferguson Enterprises, LLC as the contractor for project implementation in July 2022 ([AB 6112](#)). Ferguson is using Sensus AMI Solutions equipment in the project implementation. Ferguson's installation subcontractor, Pedal Valves Inc., began installing meters in March 2024 and completed installations in early August.

WATER METER INFRASTRUCTURE

The City of Mercer Island owns and maintains approximately 7,900 water meters, almost all of which have now been upgraded to the new digital models with data transceivers. This Island-wide replacement program is expected to not only reduce leaks and unaccounted water loss associated with water services but will also standardize maintenance and repairs of the meter system.

For the City to collect data from these new smart meters, data collection equipment must be installed at key locations around the Island and positioned to capture signals from nearly every water meter. Reliable signal coverage on Mercer Island can be particularly difficult due to the steep topography and tree canopy in some areas. The data collector equipment consists of an antenna, which range 7'-9' tall, and 1.5" to 6" wide, and a base station box, which is approximately 22" square. The base stations, which are located lower on each pole, will be painted brown to minimize their visibility.

PERMITTING AND PUBLIC OUTREACH PROCESS

In order to install and activate the data collectors, each must be permitted by the City. The AMI system equipment is an essential public facility (EPF), which is defined in MICC 19.16 as "any public facility or facilities owned or operated by a unit of local or state government, public or private utility, transportation company, or any other entity that provides a public service as its primary mission and is difficult to site."

EPFs require a Conditional Use Permit (CUP) in all zones. In addition to the requirements for a pre-application meeting, Notice of Application, a Public Hearing with the Hearing Examiner, and a Notice of Decision, a Conditional Use Permit also requires the applicant to implement a substantial public participation process.

The public engagement process for the siting of each data collector includes the following elements:

- A letter and Frequently Asked Questions flier mailed to every address within at least 300' of each of the proposed location.
- Doorhangers about the project hung at every parcel within the same radius.
- Let's Talk page with specific information about each location, including a map of the area, information about the equipment dimensions and height, and a photo rendering of the new equipment.

Each element of the outreach program encourages the public to provide comments and questions to staff through the Let’s Talk page or via e-mail.

ISSUE/DISCUSSION

DATA COLLECTOR STATUS

Two of the data collection equipment stations have been permitted, installed, and activated. The propagation study conducted in early 2024 ([AB 6422](#)) identified the locations of four additional data collection stations. At the March 5, 2024 meeting, the City Council supported staff initiating the permitting and installation process for one of these sites, which is in the right-of-way adjacent to Roanoke Park. Today, staff is seeking Council’s authorization to proceed with the necessary steps to activate the three remaining data collection stations and complete the implementation of the AMI system.

Information about each data collection station is shown in the table below, and more detailed information is presented below. Exhibit 1 indicates each location on the Mercer Island map.

Location	Antenna mount height	Current status
1 - Roanoke/70 th & 20 th	50’	Permit review in process, PSE pole replacement application under review
2 - WMW & 32 nd	50’	Permit not started
3 - Crestwood	50’	Permit not started
4 - WMW & EMW	50’	Permit not started
5 - City Reservoir	110’	Permit approved, equipment installed and activated
6 - Island Crest Park	80’	Permit approved, equipment installed and activated

City Reservoir and Island Crest Park

Data collectors were installed at the City reservoir (Location 5) and Island Crest Park (Location 6) and activated in June 2024 following the public engagement process and approval of their respective Conditional Use Permits. Due to their centralized locations on Mercer Island, they are able to reliably receive data from approximately 80% of water meters. Currently, Utility Billing staff can access this data and retrieve hourly water use data in response to a customers’ request, as long as their meters are within range of the existing data collectors.

Approximately 1,500-1,600 water meters are not currently being captured by these two data collectors, primarily due to the topography of the island, as well as the longer distances from the antennae. For the system to read the data from these remaining meters, four additional data collectors must be installed.

Roanoke

The data collector proposed for installation in the right-of-way adjacent to Roanoke Park (Location 1) is currently in the City permitting process. The public participation process for this site took place in late 2023, and City staff applied for a Conditional Use Permit on May 21, 2024. The public hearing for the Roanoke data collector is scheduled to take place on September 26, 2024.

The antenna at the Roanoke site must be mounted at 55' high, necessitating the replacement of the PSE pole on which it will be mounted. The process to replace the pole with a taller pole was initiated in June 2024, and PSE is currently reviewing the City's application.

If both the City's permit application and the PSE application are successful, the equipment will be installed on the pole and activated in 2025.

West Mercer Way & SE 32nd St

The propagation study indicates that one data collector station is needed near the intersection of West Mercer Way and SE 32nd St (Location 2), in order to capture data from meters in the northwest portion of the island. Because this is a predominantly residential area, staff recommends mounting the data collection equipment on a PSE-owned pole to eliminate the need for a new pole. Like the Roanoke pole, a PSE pole in this location will need to be replaced with a 55' tall pole. A photo rendering of an example pole replacement in this area is shown in Exhibit 2.

Crestwood Place

A data collector east of the reservoir, in the Crestwood Place vicinity (Location 3), is also indicated in the propagation study as a necessary component of the complete system. This area is also residential and the installation of equipment on a replacement PSE or other utility pole is recommended. A photo rendering of a pole replacement in this area is shown in Exhibit 2.

West Mercer Way & East Mercer Way

The sixth data collector, which is needed to capture data from meters at the south end of Mercer Island, is slated for placement near the transition between East and West Mercer Ways (Location 4). Although there is currently a utility pole at this location that supports other communication equipment, it is unable to host additional equipment due to clearance requirements between devices. Therefore, staff recommend that the AMI data collector equipment be mounted on a new 55' tall utility pole adjacent to the existing pole, as shown in the photo rendering in Exhibit 2. This installation is unlikely to present a significant visual change, as it is located on an arterial roadway in a heavily wooded area.

PROJECT COST

The cost to permit, install, and activate the three remaining data collectors, including pole replacement/installation, is approximately \$475,000. This amount falls within the current project budget, and implementation of the recommendations presented here would not require additional project funding.

NEXT STEPS

If City Council authorizes staff to proceed with the remaining three data collection stations, staff will begin the public outreach process for each location immediately. Once complete, CUP applications for each site will be submitted to the City and coordination efforts with PSE and other utilities for pole replacement and installation will begin. The timeline for PSE pole replacement is currently estimated at one year, indicating that the new data collectors would likely be activated in late 2025.

CUSTOMER PORTAL

Staff continue to work on establishing the customer portal, an online site where residents and business owners can track their hourly water usage, set water use alerts for their accounts, and receive notifications

about potential leaks. The site is expected to launch in fall 2024. The City will implement a robust public outreach effort to ensure that customers are aware of the free online tool and can access their information. In the interim, customers with questions about their water bills or usage are encouraged to reach out to the Utility Billing team.

RECOMMENDED ACTION

Authorize staff to apply for permits for the three remaining data collector stations, and if permits are approved, install and activate them for use with the AMI system.