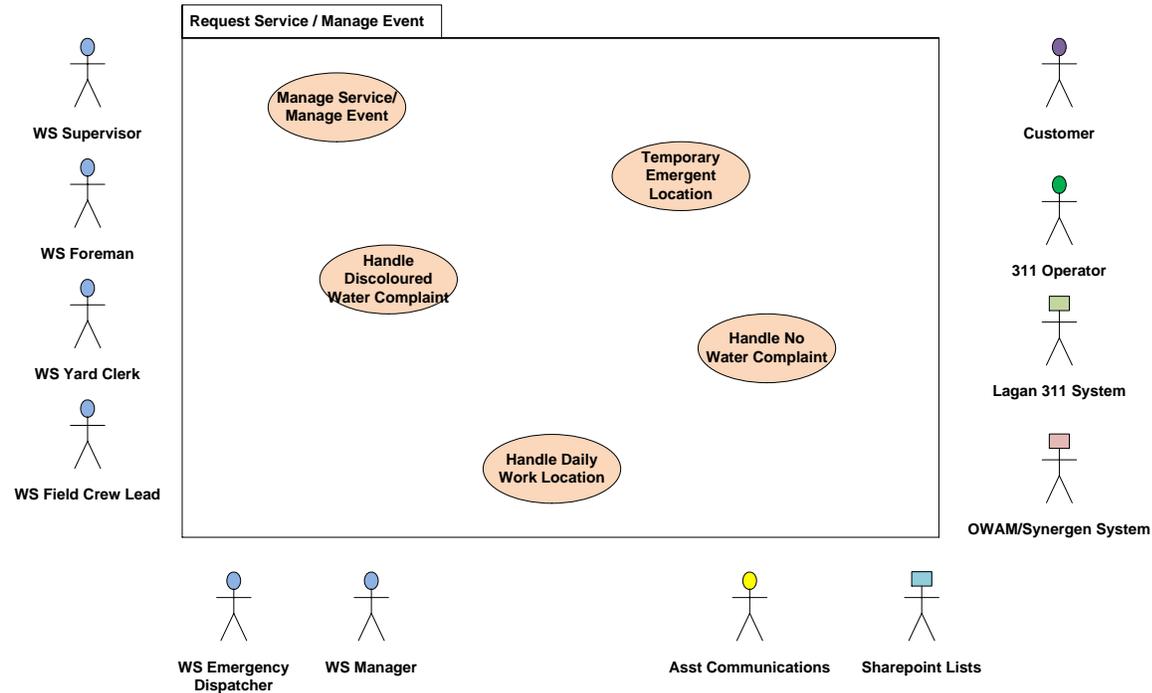


Appendix D Water Services Use Cases

Request Service/Manage Event



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| Title | Request Service / Manage Event (SR) |
| Description | 1. Customer contacts 311 with a concern or inquiry. This may be considered an informational request (IR) where 311 provides information and no further action is required. A service request may be created to address the concern or inquiry. If follow up work is required after an initial investigation, a work order may be created. The purpose of a service request is to satisfy the customer need, whatever category that happens to be. Service requests are updated on an ongoing basis, until a resolution is reached. SRs are viewed and/or updated by multiple groups. SRs are classified using standard categories/problem codes. |
| Trigger | 1. Customer contacts 311 2. Internal WS staff creates SR |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), OWAM, WS Supervisor, WS Yard Clerk, WS Foreman, WS Field Crew Lead, WS Emergency Services Dispatcher, F&A Communications Coordinator |

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| Title | Temporary Emergent Location |
| Description | This is a mechanism to alleviate a large number of service requests for the same incident. This is a function in SharePoint that indicates that there is an incident that may result in a high volume of customers calling. If this is used, there may not be an IR or SR for the incident. Work order(s) will be created as needed. |
| Trigger | High impact incident occurs (e.g. water main break in high volume traffic area) |

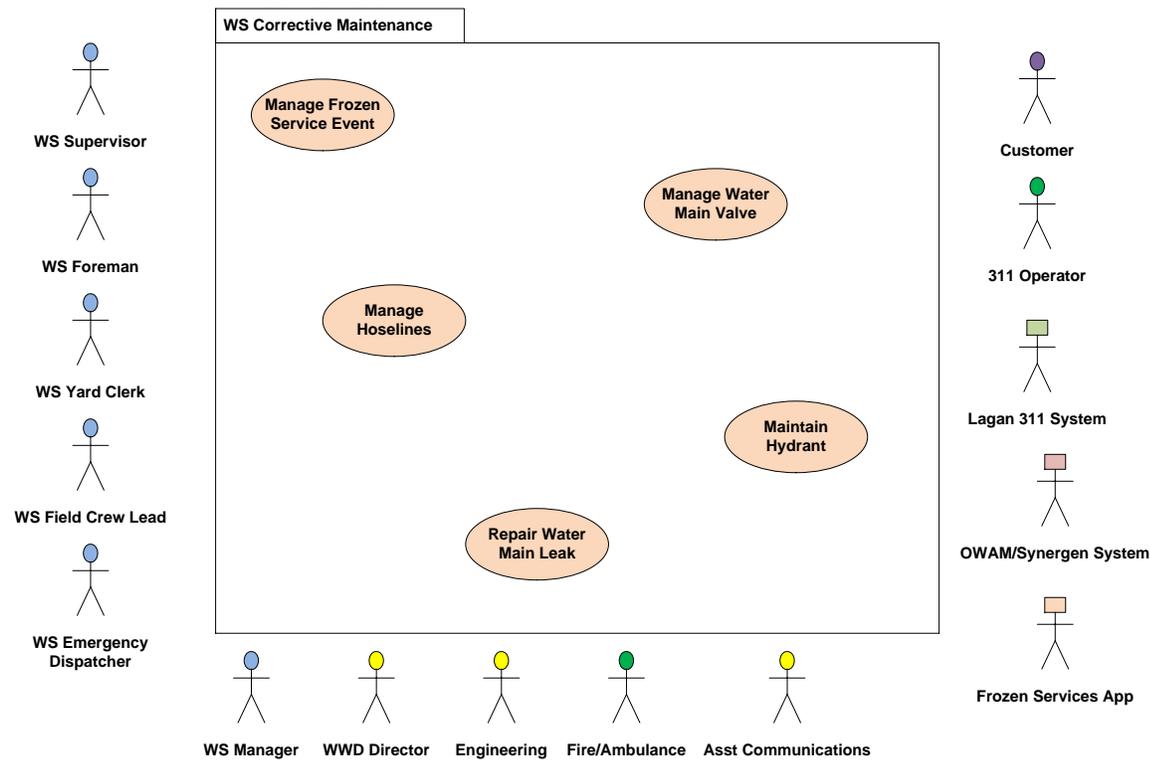
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| Actor(s) | 311 Operator, 311 System (Lagan/Kana), SharePoint, F&A Communications Coordinator, WS Emergency Services Dispatcher, WS Supervisor, WS Yard Clerk, WS Field Services Engineer, WS Manager |
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| Title | Handle Discoloured Water Complaint |
| Description | The purpose is to satisfy a discoloured water concern for a customer or customers. <ol style="list-style-type: none"> 1. This is a standard type of SR, created when a customer calls in a concern/complaint regarding water quality. This may lead to an inspection or may be resolved by talking the customer through standard flushing. 2. A cluster of complaints may be identified and an investigation is triggered. A large volume of water complaints may result in a Temporary Emergent Location being created. |
| Trigger | <ol style="list-style-type: none"> 1. Customer contacts 311 2. Multiple customers contact 311 and WS staff notice a cluster of complaints |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), SharePoint, WS Supervisor, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, F&A Communications Coordinator, WS Field Services Engineer, WS Manager |

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| Title | Handle No Water Complaint |
| Description | The purpose is to satisfy a no water concern for a customer or customers. <ol style="list-style-type: none"> 1. This is a standard type of SR, created when a customer calls in a concern/complaint regarding a lack of water services. 2. A cluster of complaints may be identified and an investigation is triggered. A large volume of no water complaints may result in a Temporary Emergent Location being created. |
| Trigger | <ol style="list-style-type: none"> 1. Customer contacts 311 2. Multiple customers contact 311 and WS staff notice a cluster of complaints |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), SharePoint, WS Supervisor, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, F&A Communications Coordinator, WS Field Services Engineer, WS Manager |

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| Title | Handle Daily Work Location |
| Description | The purpose is to provide customers with information on work locations for the day. Any known work for the day is published in Sharepoint the morning-of. This work may or may not have been planned well in advance. Any necessary work orders would already exist in OWAM; there may or may not be any related SR. Capital projects, such as planned water main repairs, are visible to 311 as a view in iView. |
| Trigger | Customer contacts 311. |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), SharePoint, WS Supervisor, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, F&A Communications Coordinator, WS Field Services Engineer, WS Manager |

Corrective Maintenance



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| Title | Manage Frozen Service Event |
| Description | A seasonal type of SR, occurring in winter months. A technician was dispatched via a SR to investigate the root cause of a lack of water complaint, and has determined the root cause to be frozen pipes. Frozen Service Events are tracked separately from standard SRs, and have a dedicated system for tracking historical information and pertinent status items, in addition to OWAM SR and WO tracking. A WO is not required if a typical thaw service can handle the issue. If there is a larger issue that the thaw crew cannot address, a WO will be created. |
| Trigger | Customer contacts 311 for a lack of water complaint and a technician has determined that the root cause is frozen pipe(s) |
| Actor(s) | Customer, 311 Operator, OWAM, Frozen Services App, Field Crew, WS Foreman, Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

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| Title | Manage Hoselines |
| Description | This is an SR to install, maintain, or remove a hoseline. A hoseline may be required temporarily when there is a lack of water via the standard water distribution system. This may be triggered by a frozen services event, planned repairs, or other root cause. If a secondary water source can be found, a hoseline is used to provide water to the residence or commercial property on a temporary basis. The hoseline may require maintenance while in place. The hoseline must be removed once it is no longer required. |
| Trigger | Customer contacts 311 |
| Actor(s) | Customer, 311 Operator, OWAM, Frozen Services App, WS Field Crew, WS Foreman, Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

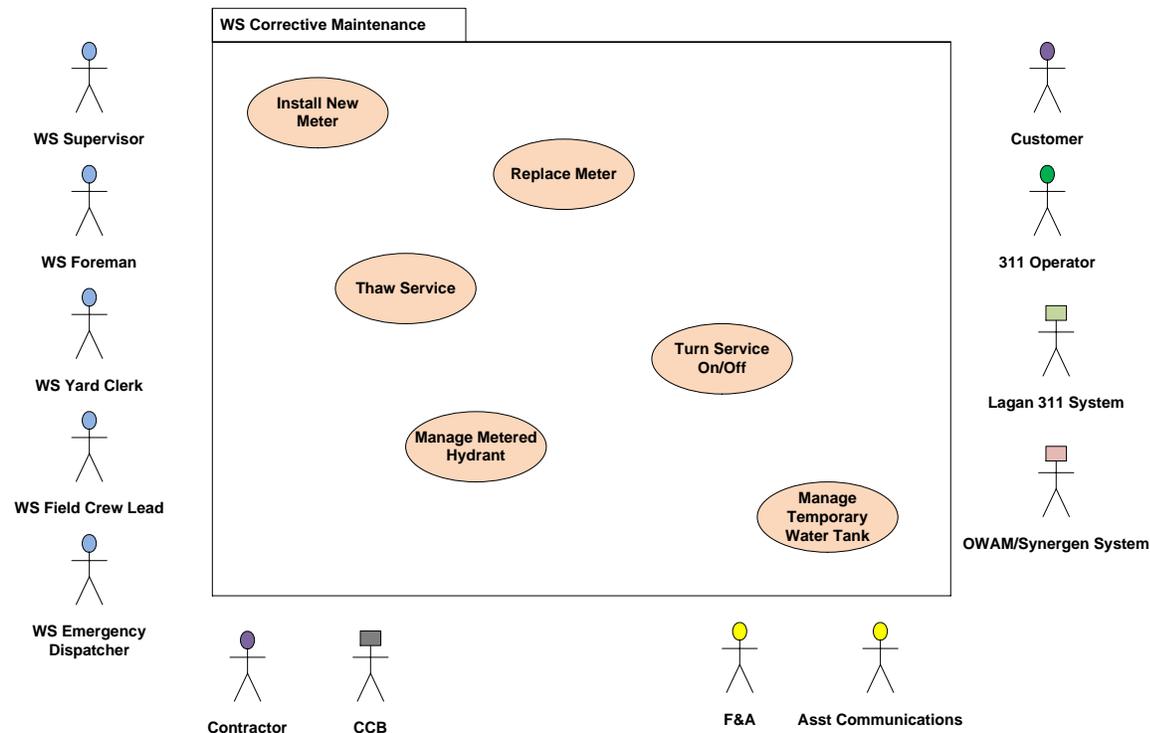
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| Title | Repair Water Main Leak |
| Description | <ol style="list-style-type: none"> 1. Corrective maintenance is required for a water main, due to a leak or other deficiency. A service request is initiated by a customer calling in to identify a water leak. A field crew is dispatched to investigate. If an issue with the distribution system is discovered, a work order is generated to make a repair. A distribution system issue may be emergent and in this case a temporary emergent location is created and external communications are required. In the case of a high impact leak, additional escalation may be required and higher level WS staff may be engaged. 2. If an issue is discovered by internal WS staff or contractors during sewer televising program they will contact WS and an SR or WO may be created to investigate the WO. 3. If a leak inspector detects an issue, they will report to WS Process Improvement Coordinator to create an SR for investigate. A WO may be created for follow on work as required. |
| Trigger | <ol style="list-style-type: none"> 1. Customer contacts 311 to indicate a water main leak 2. The sewer televising inspection program uncovers an issue with a water main pipe 3. The leak survey program uncovers an issue with a water main pipe |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), WS Field Service Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator, WS Director, WS Manager, Engineering (analyze data from the sewer televising program) |

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| Title | Maintain Water Main Valve |
| Description | <ol style="list-style-type: none"> 1. Corrective maintenance for water main valves. A customer identifies a water leak or a missing/damaged component. A technician is dispatched to investigate the root cause and may correct the issue (e.g. missing valve lid). Once the investigation is complete, depending on the root cause, a WO may be created to address a corrective maintenance action for the water main valve. A large volume of calls regarding a leak may result in a Temporary Emergent Location being created. 2. A technician is doing other work and identifies a need for a corrective action to a water main valve. |
| Trigger | <ol style="list-style-type: none"> 1. Customer contacts 311 2. Internal WS staff creates an SR |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), WS Field Service Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

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| Title | Maintain Hydrant |
| Description | <p>Corrective maintenance for fire hydrants.</p> <ol style="list-style-type: none"> 1. A customer identifies a leak, visible damage or missing components for fire hydrant. A technician is dispatched to investigate the root cause and may correct the issue (e.g. missing component). Once the investigation is complete, depending on the root cause, a WO may be created to address a corrective maintenance action for the fire hydrant. 2. A technician is doing other work and identifies a need for a corrective action to a fire hydrant. 3. A hydrant inspector identifies a need for a corrective action to a fire hydrant. 4. A fire hydrant user (E.G. fire dept) identifies a need for corrective action – calls emergency services to log the SR. |
| Trigger | <ol style="list-style-type: none"> 1. Customer contacts 311 2. Internal WS staff creates an SR 3. Fire hydrant inspector identifies a need to corrective action |

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| | 4. Hydrant user (e.g. fire dept) identifies a need for corrective action |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), WS Field Service Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator, Fire Hydrant Inspector, Hydrant User |

Customer Service Delivery



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| Title | Install New Meter |
| Description | A customer service program where a residential or commercial customer can request the installation of a net new water meter. This is typically done for new properties; the current volume is ~6-7K annually. Commercial and residential customers contact water billing services and a SR is created by F&A for an appointment to install the meter. Water Services performs the installation. |
| Trigger | Customer makes a request via F&A billing |
| Actor(s) | Customer, OWAM, CCB, F&A Billing, WS Field Service Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

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| Title | Replace Meter |
| Description | <ol style="list-style-type: none"> 1. If a customer has a meter concern they contact 311 and an SR is created to inspect the meter. If an issue is identified then the meter will be replaced by water services. 2. If F&A identifies a meter concern based on billing, an SR is created and an appointment is made with the customer (by F&A) to replace the meter. 3. If internal WS staff identifies a meter issue during other work on-site, they will replace the meter and add a comment to the call history for the existing SR for the other work. |
| Trigger | <ol style="list-style-type: none"> 1. Customer has a meter concern 2. F&A identifies a meter concern based on billing 3. Internal WS staff identifies a meter concern during the course of other work at the property |
| Actor(s) | Customer, 311 (Lagan), 311 Operator, OWAM, CCB, F&A Billing, WS Field Service |

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| | Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |
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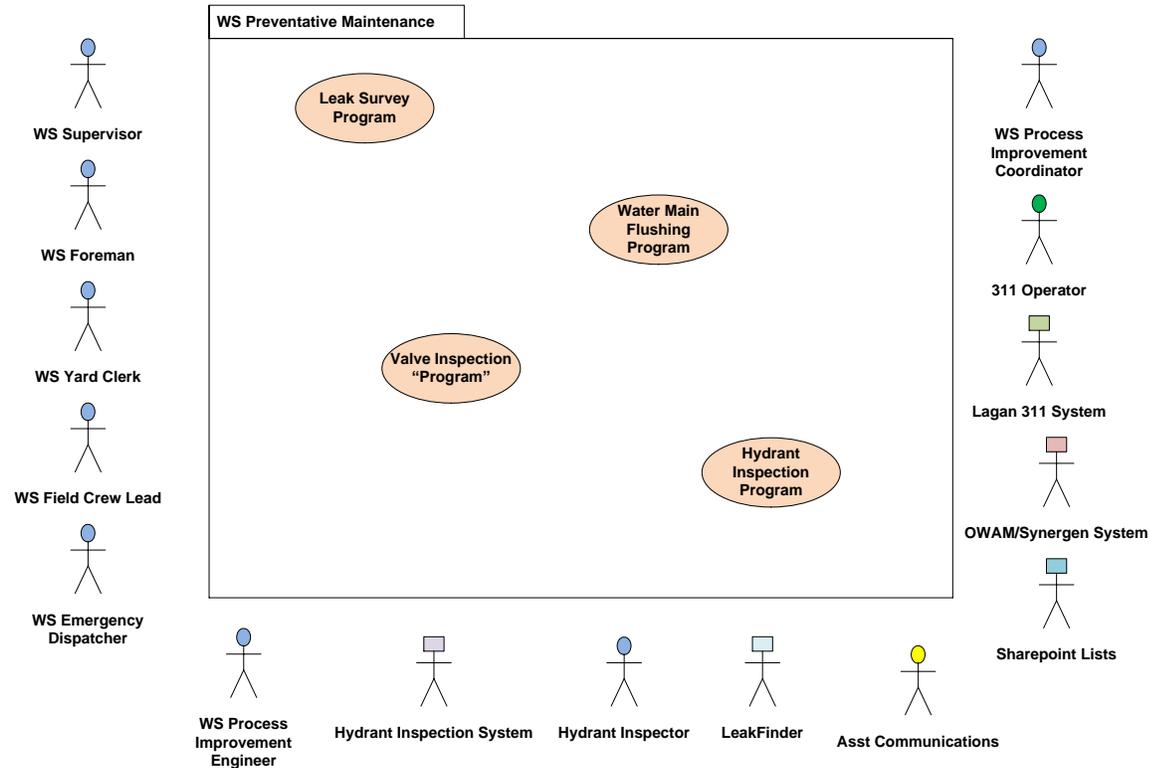
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| Title | Thaw Service |
| Description | This is a customer service program. In the case of a frozen pipe event that is found to be on residential or commercial property, the customer may choose to hire Water Services to perform a thaw service. The service request is initiated for a no water complaint and the root cause is frozen non-city pipes. The customer may choose to hire the city to perform the service. No work order is created unless there is follow up work required, for example excavation is required. |
| Trigger | Customer logs a no water complaint via 311 and the root cause is non-city frozen pipes. The customer has the option to request the service. |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), OWAM, WS Field Service Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

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| Title | Turn Service On/Off |
| Description | <p>Turn water services on or off for a customer.</p> <ol style="list-style-type: none"> 1. When a customer is delinquent for payment of water services, F&A will generate a request to turn off services. This is done in CC&B. The request is sent to water services to fulfill. No SR or WO is created for the turn off. Once the customer has paid, they contact 311 and request the service to be turned back on. A service request is created for the turn on and an appointment with the customer is scheduled. 2. When a customer requests a non-emergent turn off/turn on service, an SR is created and an appointment is scheduled for the customer. Some requests are emergent and the request is high priority and is handled as quickly as possible. 3. Seasonal services are also available to private residents and internal COW departments. These are initiated via F&A and result in an SR for both the turn on/turn off, generated by F&A in OWAM. |
| Trigger | <ol style="list-style-type: none"> 1. Customer is non-compliant for payment and F&A initiates a turn off or turn on once compliant 2. Customer requests service turn off/turn on 3. Seasonal services are required privately or by the City |
| Actor(s) | Customer, 311 Operator, 311 System (Lagan/Kana), OWAM, CCB, F&A Billing, WS Field Service Crew, WS Foreman, WS Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

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| Title | Manage Temporary Water Tanks |
| Description | <p>This is a temporary source of water which is delivered by a tow-able trailer that contains ~300 gallons of fresh clean potable water.</p> <ol style="list-style-type: none"> 1. The city leases these tanks to private or commercial clients. An SR is created if a customer rents a tank. 2. (and 3) The city provides them for free during a time of a heat advisory or emergent water shut off. Water tank locations are posted and published in Share Point and are viewable by 311. No SR is created if the city is providing a tank. SRs for no water service from the tank may be created by customers calling 311 to report an issue with the tank. |
| Trigger | <ol style="list-style-type: none"> 1. Customer contacts 311 to rent a tank 2. The city has determined a need to provide a temporary water tank during a heat advisory 3. There is a emergent water shutoff for an area and the city provides a temporary water tank for impacted citizens (highest volume) |
| Actor(s) | Customer, 311 Operator, OWAM, Field Crew, WS Foreman, WS Yard Clerk, WS |

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| | Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |
| Title | Manage Metered Hydrant |
| Description | This is managing hydrant usage by a contractor. A contractor contacts 311 to arrange the use of a hydrant over a given amount of time. The city arranges to turn the hydrant on and off for the contractor through SRs. After the contractor is finished using the hydrant, a work order is created to flush the hydrant. |
| Trigger | Contractor contacts 311 to rent a tank |
| Actor(s) | Contractor, 311 Operator, OWAM, Field Crew, WS Foreman, WS Yard Clerk, WS Supervisor, F&A Communications Coordinator |

Preventative Maintenance



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| Title | Hydrant Inspection Program |
| Description | Preventative maintenance program for fire hydrants. 3 rounds of inspection per year are performed. Round 1 and round 2 inspections are required for insurance compliance purposes. The round 3 inspection is not required, but is performed for the purposes of ensuring data quality relative to hydrant assets in the GIS. All hydrants are inspected during each round. The purpose of the inspection is to identify the condition of the hydrant and to identify if any corrective maintenance is required. There are secondary PM programs for hydrants – painting program and marker program, that are undertaken as time and resources permit. Inspectors record the condition of the hydrant and if any corrective maintenance is required, an SR is generated via the Yard Clerk. A hydrant may be taken out of service based on the condition of the hydrant. In this case, the yard clerk would need to coordinate with the fire department to inform them of the OOS hydrant. |
| Trigger | Maintenance schedule |
| Actor(s) | OWAM, HIS, Hydrant Inspector, Yard Clerk, WS Foreman, WS Emergency Services Dispatcher, WS Supervisor |

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| Title | Valve Inspection "Program" |
| Description | Preventative maintenance program for valves. Internal function where WS initiates an area specific valve inspection program. Currently this would only be triggered by a water main cleaning program. When performing the water main cleaning, valves in the area may be inspected and exercised. Currently this function is very tightly coupled with the water main cleaning program, however in the future it is desirable to have an independent formal valve inspection and exercising program. Valves must be |

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| | inspected regularly for compliance purposes. |
| Trigger | Water Main Cleaning Program initiation |
| Actor(s) | WS Field Crew Lead |

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| Title | Water Main Flushing (UDF – unidirectional flushing) Program |
| Description | Preventative maintenance program for Water Mains. The program was initiated to prepare for the implementation of the Water Treatment Plant (WTP). The purpose was to clean the water mains prior to introducing the now filtered water from the WTP. Currently the program is run seasonally May – Sept. During this period we perform water main cleaning on a selected geographical area within the city. All areas of the city are covered off in a 5 year period. Based on internal standards, ideally the program should be continue to be completed in 5 years, however if efficiencies can be gained a shorter cycle period is desired. Water Services staff perform the cleaning, and progress is tracked in Share Point. If a deficiency is noted on any component of the water main, an SR and/or WO may be created for the follow up work required. |
| Trigger | Maintenance schedule (by geographical area – generated by engineering) |
| Actor(s) | 311 Operator, 311 System (Lagan/Kana), SharePoint, OWAM, Field Service Crew, Foreman, Yard Clerk, WS Emergency Services Dispatcher, WS Supervisor, F&A Communications Coordinator |

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| Title | Leak Survey Program |
| Description | Preventative maintenance for water mains. This is a seasonal program (May – Sept) that is performed in order to detect unknown leaks in the water distribution system. Annual, 90% of pre 1950s cast iron, A/C pipes are electronically correlated. Leak detection software and specialized sensors are used to detect leaks. If a leak is confirmed an SR is created for corrective maintenance. A WO may be required for any additional follow up work e.g. excavation. |
| Trigger | Maintenance schedule |
| Actor(s) | LeakFinder RT, Leak Inspector, Field Crew, WS Foreman, Yard Clerk, WS Process Improvement Coordinator |