SACRAMENTO AREA SEWER DISTRICT
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ADDENDUM NO. 1 TO
REQUEST FOR PROPOSALS NO. 9157
FOR FLEET MANAGEMENT INFORMATION SYSTEM

SACRAMENTO AREA SEWER DISTRICT
INTERNAL SERVICES DEPARTMENT
IT PROJECT MANAGEMENT OFFICE

Request for Proposals (RFP) No. 9157 is amended as follows:

1. The following replaces the entirety of Section 4, RFP TIMELINE:

Event or Action	Deadline
Release of RFP	September 10, 2025
Confidentiality and Non-Disclosure Agreements to be received by SacSewer	September 24, 2025, by 3:00 PM Pacific Time (PT)
Pre-Proposal Conference	October 2, 2025, 9:00 AM to 11 AM PT
Submission of additional questions on this RFP	October 15, 2025, by 5:00 PM PT
Final date to provide Responses to Questions on Business Opportunities webpage	October 22, 2025
Proposals to be received by SacSewer	October 30, 2025, 3:00 PM PT
Product Offering Demonstrations, Evaluation (2 to 4 hours in length)	To occur between November 17 and December 5, or later, if necessary
Notice of Intent to Award	December 10, 2025, or later

2. Attachment F – Fleet System Capabilities is herein attached and incorporated into the RFP.

Thank you,

Alexander Montes
Senior Contract Services Officer

Attachment F

Fleet System Capabilities

Jira Initiative	INITIATIVE-225 - SacSewer Fleet Management System Implementation Planning
Jira Issue	ITSD-24150 - Request to Implement a Fleet Management Application for SacSewer Closed
Application(s)	Fleet Management Application for SacSewer
Business Analyst	Tom Franyovich
Reference Document	https://sacsewer.atlassian.net/wiki/x/F4BIV
Document Status	APPROVED

Document Purpose

This document documents system capabilities elicited in support of Fleet Management Software Solution with an application or system to be developed or enhanced in the Development phase of the Project's lifecycle.

Application Overview

With SacSewer separating from the County, SacSewer needs its own Fleet Management Plan and software. This project aims to select and implement a comprehensive fleet management solution for SacSewer staff. Implement a fleet management solution allowing SacSewer to manage its fleet efficiently and effectively while complying with regulatory requirements. The project scope is as follows:

- Implement a fleet management software solution
- Purchasing and implementing any hardware required for a fleet management solution
- Analytics Reporting
- Regulatory and business compliance for local, state, and federal mandates
- Maintenance and service contracts related to fleet management solution
- Required Training for users of the Fleet Management System
- Assess the fleet management capabilities in SacSewer's Collection Systems Operations (CSO) Maximo based on the approved Business Requirements Document (BRD)
- Import, entry, and mapping of data from existing systems
- Data validation

Application Capabilities

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The following describes a fleet management solution’s system capabilities. The new solution will have several key areas to implement:

- Integrate with Vehicle Tracking and GPS
- Fleet Inventory Management
- Maintenance Management
- Integrate with the Fuel application
- Regulatory Compliance and Reporting
- Cost Management and Budgeting
- Integration and Data Management
- User Management and Security
- Electric Vehicles (EV) and Zero Emission Vehicles (ZEV)
- User Interface and Experience
- Scalability and Right Size of the Fleet
- Analytics and Reporting
- Templates Generation
- Training

System Capabilities

The term "Fleet" refers to all vehicles and equipment within the fleet. If a capability applies specifically to a vehicle or piece of equipment, it will be clearly identified as such. This section specifies the system capabilities (SC).

Attachment F

Fleet Inventory Management (FIM)

Key@	Capabilities Description	Source	Priority	Links	Notes

IT-FIM225-SC-001	The solution must maintain a **comprehensive database** of all fleet assets. The database must record the following data: • **Fixed Asset ID number** • **Fleet Unit Number** • **Vehicle Acquisition Date** • **Year** • **Make** • **Model** • **Mileage** • **Drive Train** • **VIN/Serial Number** • **Vehicle License Plate Number** • **Vehicle Class** • **Gross Vehicle Weight (GVW)** • **Body Serial Number** • **Chassis Serial Number** • **Current Vehicle Status** • **Engine Serial Number** • **Tire Size** • **Vehicle Department** • **Warranty Information** • **Billing Code/Cost Center** • **Vehicle Regulatory Compliance** • **Vehicle Physical Location Code** • **Owner/Operator** • **Expected Lifecycle** • **Disposal Date** • **A picture of the vehicle on the main record screen** • **Link to open work orders**	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-002	Billing code to define how costs captured for this piece of equipment are to be billed. Multiple user-defined billing schemes must be supported.

IT-FIM225-SC-002	The solution must allow categorization of vehicles and equipment by type.	Gus	Must Have	IT-FMS225-BR-001	(e.g., dump trucks, pickups, trailers)
IT-FIM225-SC-003	The solution must provide real-time reporting on availability and status within each category of asset type.	Gus	Must Have	IT-FMS225-BR-001	Valid statuses are in IT-FIM225-SC-011.
IT-FIM225-SC-004	The solution must be able to **add** fleet assets to the fleet database.	Gus	Must Have	IT-FMS225-BR-001	IT-FIM225-SC-040
IT-FIM225-SC-005	The solution must be able to **update** fleet assets in the fleet database.	Gus	Must Have	IT-FMS225-BR-001	IT-FIM225-SC-040
IT-FIM225-SC-006	The solution must be able to **delete** fleet assets in the fleet database.	Gus	Must Have	IT-FMS225-BR-001	See IT-FIM225-SC-040

IT-FIM225-SC-007	The solution must have an **in-service** process for tracking fleet asset acquisition. The database must capture the following information: • **Fixed Asset ID number** • **Fleet Unit Number** • **Vehicle Acquisition Date** • **Year** • **Make** • **Model** • **Mileage** • **Drive Train** • **VIN/Serial Number** • **Vehicle License Plate Number** • **Vehicle Class** • **Gross Vehicle Weight (GVW)** • **Body Serial Number** • **Chassis Serial Number** • **Current Vehicle Status** • **Engine Serial Number** • **Tire Size** • **Vehicle Department** • **Warranty Information** • **Billing Code/Cost Center** • **Vehicle Regulatory Compliance** • **Vehicle Physical Location Code** • **Owner/Operator** • **Expected Lifecycle** • **Disposal Date** • **A picture of the vehicle on the main record screen**	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-002	• Tracking Vehicle Acquisition is for the purchase • The Finance team provides the fixed Asset Number • Fleet Unit Number is assigned by Gus (Fleet Management Team) to designate 569 (purchased by SacSewer CSO) ○ light duty vehicles: cars, trucks, vans • Current Vehicle status includes “Pending in Service” and “Decommissioned.” • We need to separate the existing two cost centers.

	• **Links to open work orders**				
IT-FIM225-SC-008	The solution must enable the **archiving** of vehicles in the fleet database that meet predefined criteria and are no longer in use.	Gus	Must Have	IT-FMS225-BR-001	The data retention period is TBD. Gus will provide this post-RFP.

IT-FIM225-SC-009	The solution must allow users to **search** the database for fleet assets based on the following attributes or a combination of attributes: • **Fixed Asset Number** • **Fleet Unit Number** • **Vehicle Acquisition Date** • **Year** • **Make** • **Model** • **Mileage** • **Drive Train** • **VIN/Serial Number** • **Vehicle License Plate Number** • **Vehicle Class** • **Gross Vehicle Weight (GVW)** • **Body Serial Number** • **Chassis Serial Number** • **Current Vehicle Status** • **Engine Serial Number** • **Tire Size** • **Vehicle Department** • **Warranty Information** • **Billing Code/Cost Center** • **Vehicle Regulatory Compliance** • **Vehicle Physical Location Code** • **Owner/Operator** • **Expected Lifecycle** • **Disposal Date**	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-002	Search based on specific time intervals, such as weekly, Monthly, or yearly. Users can choose any time interval, such as March 2 to April 17, or any date range. • Search criteria do not need to include color, as all vehicles are white. • Vehicle Acquisition dates shall provide the ability to search by time frame, in months or years.

IT-FIM225-SC-010	The solution must allow users to **filter** the database for fleet assets based on the following attributes or a combination of attributes: • **Fixed Asset Number** • **Fleet Unit Number** • **Vehicle Acquisition Date** • **Year** • **Make** • **Model** • **Mileage** • **Drive Train** • **VIN/Serial Number** • **Vehicle License Plate Number** • **Vehicle Class** • **Gross Vehicle Weight (GVW)** • **Body Serial Number** • **Chassis Serial Number** • **Current Vehicle Status** • **Engine Serial Number** • **Tire Size** • **Vehicle Department** • **Billing Code/Cost Center** • **Vehicle Regulatory Compliance** • **Vehicle Physical Location Code** • **Owner/Operator** • **Expected Lifecycle** • **Disposal Date**	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-002	

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IT-FIM225-SC-011	The solution must have the capability to electronically log fleet asset "**status"** in the database. Valid statuses are: • **In-service** • **Out-of-service** • **Pending Decommission** • **Waiting for Parts** • **Wait for Maintenance** • **Sold/Surplus** • **Pending Sale**	Gus	Must Have	IT-FMS225-BR-001	What does the new solution provide? Do we have the ability to add our own? TBD when a solution is known. • In service • Pending Decommission • Out of Service • Waiting for Parts The ability to assign status will be role-based—roles to be defined after RFP.

IT-FIM225-SC-012	The solution must maintain a **history log** for fleet assets **maintenance** details.
	
	• Vehicle Maintenance Invoice
	  ○ Date of maintenance (mm/dd/yyyy)
	  ○ Type of Maintenance/Repair
	  ▪ Warranty Service
	  ▪ Scheduled Maintenance
	  ○ Maintenance Location
	  ▪ Physical address of the maintenance facility
	  ○ Cost of Maintenance
	  ○ Internal Provider/External Provider
	  ▪ Total Cost ($) parts cost, labor, Tax, travel time
	  ▪ Parts Replaced
	  ▪ Part Number
	  ▪ Part description
		Gus	Must Have	IT-FMS225-BR-001	We want to track a vehicle's invoice and work order records in the database.
					
					Both internal costs and external (vendors) costs.
					
					• This captures the vehicle maintenance.
					  ○ All services performed
					  ○ vehicle repairs
					  ○ accidents
					• Costs include parts, labor, tax, and travel time.
					• Some maintenance is performed internally. These are charged staff time with labor performed.
					• There is a distinction between internal maintenance and external maintenance
					  ○ Internal maintenance is:
					  ▪ minor repairs on trucks
					  ▪ Jumpstarts
					  ▪ Detailed repairs on the generator
					• Vehicle repair types add "accidents" and "recalls"
					• Repair Location is not a physical address but the name

					of the vendor providing the service.

IT-FIM225-SC-013	The solution must maintain a history log for fleet assets' **repair history**. The log must record the following data:
	• Vehicle Repairs Invoice
	  ○ Date of repair (mm/dd/yyyy)
	  ○ Reason for repair
	  ○ Type of repair
	  ▪ Warranty Service
	  ▪ Scheduled Maintenance
	  ▪ Accident
	  ▪ Recalls
	  ○ Repair Location
	  ▪ Vendor service name
	  ○ Cost of Repair
	  ▪ Parts Description
	  ▪ Parts cost
	  ▪ Labor Cost
	  ▪ SUBTOTAL Cost ($)
	  ▪ TAX ($)
	  ▪ Total Cost ($)
	  ▪ Parts Replaced
	  ▪ Part Number
	  ▪ Part description
		Gus	Must Have	IT-FMS225-BR-001	• Each vehicle has the same data. One asset tag will display all the information about the repair.

IT-FIM225-SC-014	The solution must maintain a history log for fleet assets' **incident** history.	Gus	Must Have	IT-FMS225-BR-001	Incidents include Accidents, recalls, and any other incident type.

IT-FIM225-SC-015	The solution must track the **utilization** of fleet assets in real-time.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-010	Tracking the amount of time it is used and how often. Integrate with GPS.
IT-FIM225-SC-016	The system must be capable of tracking both a Current meter reading and a Life-to-Date Meter Reading	Gus	Must Have	IT-FMS225-BR-001	
IT-FIM225-SC-017	The solution must provide the ability for the user to track the **condition** of fleet assets in real-time.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-010	Gus advised that the “condition” is arbitrary and different for each vehicle and equipment type. We need to refine it further for each type.
IT-FIM225-SC-018	The solution must track the fleet assets' **depreciation**.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-010	This will be defined in the post-RFP. Users will have preset criteria to be depreciated and defined later. This is defined by our Finance Department.
IT-FIM225-SC-019	The solution must recommend when a vehicle should be replaced based on its **mileage**.	Gus	Must Have	IT-FMS225-BR-001	Based on a predefined criterion.
IT-FIM225-SC-020	The solution must recommend when a fleet asset should be replaced based on its **maintenance** history.	Gus	Must Have	IT-FMS225-BR-001	Based on a predefined criterion.

IT-FIM225-SC-021	The solution must recommend when a fleet asset should be replaced based on its **utilization**.	Gus	Must Have	IT-FMS225-BR-001	Based on a predefined criterion. • Utilization is a better term, and the vendors should know the definition. This integrates with GPS and Telematics.
IT-FIM225-SC-022	The solution must allow users to **upload** documents as needed.	Gus	Must Have	IT-FMS225-BR-001	
IT-FIM225-SC-023	The solution must allow users to **view** documents as needed.	Gus	Must Have	IT-FMS225-BR-001	
IT-FIM225-SC-024	The solution must allow users to **edit** documents as needed.	Gus	Must Have	IT-FMS225-BR-001	
IT-FIM225-SC-025	The solution must allow users to **delete** documents as needed.	Gus	Must have	IT-FMS225-BR-001	
IT-FIM225-SC-026	The solution must generate comprehensive fleet asset history reports, including all service records, for internal reviews or external audits.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-002	The solution will report on all vehicle history and equipment service records, including registration, insurance warranties, and maintenance records. Each type of report should have its own requirements.

IT-FIM225-SC-027	The solution must be able to generate detailed reports for all compliance certificate documentation, internal reviews, or external audits.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-002	Each type of report should have its own requirements.
IT-FIM225-SC-028	The solution must be able to generate end-of-life alerts when a fleet asset, based on its **age**, nears the end of its useful life.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-009	
IT-FIM225-SC-029	The solution must be able to generate end-of-life alerts when a fleet asset is approaching the end of its useful life **based on mileage.**	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-009	
IT-FIM225-SC-030	The solution must be able to generate end-of-life alerts when a fleet asset approaches the end of its useful life due to **increasing maintenance costs.**	Gus	Must Have	IT-FMS225-BR-009	

IT-FIM225-SC-031	The solution must be able to generate end-of-life alerts when a fleet asset, based on its overall **condition,** nears the end of its useful life.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-009	The age and value of the fleet as it depreciates. Depreciation is different for all types of vehicles and equipment. Further details will be provided after the RFP.
IT-FIM225-SC-032	The solution must have a record of the fleet disposal method (e.g., sale, auction, scrapping).	Gus	Nice to Have	IT-FMS225-BR-005	
IT-FIM225-SC-033	The solution must have a record of any proceeds as a result of the fleet disposal.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-005	
IT-FIM225-SC-034	The solution must maintain a record of all costs incurred during the disposal process, including transportation costs.	Gus	Nice to Have	IT-FMS225-BR-005	

IT-FIM225-SC-035	The solution must track idle time data to help identify cost savings and support greenhouse gas emissions reporting.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-010 IT-FMS225-BR-001	Integrate GPS data into usable reporting.
IT-FIM225-SC-036	The solution must be able to **create** Fleet Services forms.	Gus	Nice to Have	IT-FMS225-BR-001	What are the forms? This is related to forms. Not logs or tracking or work orders.
IT-FIM225-SC-037	The solution must be able to **edit** Fleet Services forms.	Gus	Nice to Have	IT-FMS225-BR-001	
IT-FIM225-FR-038	The solution must be able to **delete** Fleet Services forms.	Gus	Nice to Have	IT-FMS225-BR-001	
IT-FIM225-SC-039	The solution must provide the option to cancel a fleet's scheduled maintenance or services.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-009	

IT-FIM225-SC-040	The solution must integrate with existing GPS applications, specifically Verizon Connect, which is the current GPS product used at Goethe.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-004	Used for the collection's fleet at both Goethe & NACY. The data elements to be passed will be defined post-RFP. NACY has Verizon. It is broken into Collections and EchoWater. Any other vendors are out of scope.
IT-FIM225-SC-041	The solution must integrate with our existing GPS applications, specifically Samsara, EchoWater's current GPS product.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-004	The data elements to be passed will be defined post-RFP.
IT-FIM225-SC-042	The solution must be capable of generating scheduled maintenance using integrated services.	Gus	Must Have	IT-FMS225-BR-004	Utilizing meter readings from integrated GPS to
IT-FIM225-SC-043	The solution must have the ability to log the following types of actions: • Adding a fleet asset • Updating a fleet asset • Deleting a fleet asset	Helen	Must Have	IT-FMS225-BR-001	What data will be logged to be determined after a vendor is onboarded.

Maintenance Management (MM)

- Offers comprehensive maintenance management features to monitor fleet health, schedule repairs, and manage service records. Ability to utilize a job code to determine what type of maintenance will be performed. Follow VMRS coding.

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Key	Capability Description	Source	Priority	Links	Notes
IT-MM225-SC-001	The solution will **automatically** schedule routine maintenance based on predefined criteria.	Gus	Must Have	IT-FMS225-BR-001 IT-FMS225-BR-009	Criteria such as mileage or time intervals should be considered when scheduling maintenance. For example, maintenance can be scheduled when a vehicle reaches 10,000 miles or after a specified period. Maintenance can be categorized as time-based, mileage-based, or usage-based. Additionally, routine maintenance tasks can be grouped together, allowing multiple services to be performed simultaneously.
IT-MM225-SC-002	The system must allow reporting by **inspection type** (e.g., preventative maintenance, safety, BIT) across all asset categories.	Gus	Must Have	IT-FMS225-BR-001	
IT-MM225-SC-003	The solution must be able to generate a report for **upcoming** fleet maintenance.	Gus	Must Have.	IT-FMS225-BR-001	This is related to reports, not scheduling. When and how often the alerts occur will be determined after the RFP.

IT-MM225-SC-004	The solution must be able to generate reports to display information about upcoming fleet **overdue** services and inspections.	Gus	Nice to Have	IT-FMS225-BR-001	Need to determine when a service is overdue. After it passes the mileage requirement, for example? It could include things like: 1. **Vehicle/Asset Overview** 2. **Upcoming Service Dates** 3. **Overdue Services** 4. **Maintenance Priority** 5. **Maintenance Costs** 6. **Fuel and Usage Data** 7. **Visual Indicators and Alerts** 8. **Service Location & Vendor Information** 9. **Compliance and Regulatory Reminders** 10. **Maintenance Trends and Analysis** 11. **Actionable Insights**
IT-MM225-SC-005	The solution must include a system for managing **priority levels for repairs**, maintenance, and disposal.	Gus	Must Have	IT-FMS225-BR-001	A system might look at things like: • Categorization of Priority Levels • Automated Workflows and Alerts • Task Management and Tracking • Integration with Telematics and Diagnostics • Reporting and Analytics • Vendor and Service Provider Integration • Lifecycle Management for Disposal

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IT-MM225-SC-006	The solution must include a reporting feature that enables users to search for completed work orders that require final review.	Gus	Nice to have	IT-FMS225-BR-001 IT-FMS225-BR-002	Work orders are not from Maximo. Confirm with Gus.
IT-MM225-SC-007	The solution must be capable of recommending adjustments to maintenance time intervals based on historical maintenance data.	Gus	Nice to Have	IT-FMS225-BR-001	Historical data might include: • Maintenance Logs • Vehicle Performance Data • Repair History • Vehicle Usage Data • Preventive Maintenance (PM) Schedules • Warranty Data • Inspection Reports • Maintenance Costs • Failure Data
IT-MM225-SC-008	The solution must include a feature that supports automated service reminders.	Gus	Must Have	IT-FMS225-BR-001	Configurable by mileage, engine hours, or time. Example: A preventive maintenance scheduler.
IT-MM225-SC-009	The system shall include a preventive maintenance scheduler that supports automated service reminders.	Gus	Must Have	IT-FMS225-BR-001	

IT-MM225-SC-010	The solution must have a dashboard and be able to generate **warranty warnings** to optimize maintenance costs.	Gus	Nice to Have	IT-FMS225-BR-001	IT-FIM225-FR-017 Examples could be: • Warranty Coverage on a New Repair • Warranty Reminder for Upcoming Service or Inspection • Warranty Claims Tracking for Recurring Issues • Notification of Warranty Expiration Based on Fleet Usage • Upcoming Warranty Expiration for Fleet-Specific Component • Warranty Overlap Warning • Warranty Claims for Replaced Components • Warranty Coverage Reminder for Preventive Maintenance Tasks
IT-MM225-SC-011	The solution must be able to manage warranty claims by categorizing work orders as warranty work orders and processing them in the same manner as other work orders.	Gus	Nice to Have	IT-FMS225-BR-001	IT-FIM225-FR-017
IT-MM225-SC-012	The solution must analyze maintenance costs over time to determine if replacing a fleet asset is more cost-effective than continuing maintenance. It should flag fleet assets with consistently high maintenance costs as candidates for replacement.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-009	Analyze and flag. Vehicle Maintenance Reporting Standards (VMRS) provides a concise coding convention for managing Fleet assets and analyzing maintenance costs.

IT-MM225-SC-013	The solution must provide **easy access and links** to each asset's profile.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-010	
IT-MM225-SC-014	The solution must **generate and manage work orders** for maintenance tasks.	Gus	Nice to Have	IT-FMS225-BR-001	

IT-MM225-SC-015	The solution must have the **ability to attach relevant documents** to work orders.	Gus	Must have	IT-FMS225-BR-001	1. **Fleet Maintenance History** – A record of previous repairs, maintenance tasks, and service intervals. 2. **Inspection Reports** – Documents detailing the results of routine fleet inspections. 3. **Parts and Labor Invoices** – Detailed billing for parts and labor used in previous repairs or services. 4. **Service Manual** – Manufacturer's guidelines for the fleet, including recommended maintenance schedules and procedures. 5. **Work Order Logs** – A history of past work orders detailing the scope of previous repairs and services performed. 6. **Warranty Information** – Documentation regarding the fleet or parts under warranty. 7. **Diagnostic Reports** – Results from any diagnostic tests or evaluations done on the fleet. 8. **Fuel Usage Records** – Information on fuel consumption, which can sometimes relate to maintenance needs. 9. **Accident or Damage Reports** – Documentation of any accidents or damages that may affect the fleet's condition or maintenance needs. 10. **Compliance or Regulatory Documents** – Any certifications, inspections, or compliance-related documents required by law for fleet vehicles.

					11. **Photographs** - Any incident or accident photos.
IT-MM225-SC-016	Once an asset is flagged for disposal, the solution must generate an alert to notify the user and help prevent unnecessary maintenance.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-010	Fleet decides when an asset is to be disposed of. The decommission flow involves creating a work order for the team to prepare and ready the fleet for auction, after which the warehouse handles the sale.
IT-MM225-SC-017	The system must support a **final inspection** before fleet disposal to ensure all maintenance and legal requirements are met before the fleet is sold or scrapped.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-009	Final Inspection could be things like: • Maintenance and Mechanical Condition • Legal and Regulatory Compliance • Documentation and Record-Keeping (maintenance Logs, etc.) • Condition of the fleet Exterior and Interior • Safety Features and Equipment • Tires, Brakes, and Suspension • Compliance with disposal regulations

IT-MM225-SC-018	The solution must **include a process** to add new fleet assets to the fleet system.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-009	This is a process. The addition of new assets is specified in IT-FIM225-FR-003 Processes might include: 1. **Asset Acquisition and Initial Documentation** 2. **Data Entry into Fleet Management System** 3. **Insurance and Legal Compliance** 4. **Customization or Upfitting (if needed)** 5. **Maintenance and Service Schedule Setup** 6. **Assigning Drivers or Operators** 7. **Asset Utilization and Operational Integration** 8. **Inventory and Cost Tracking** 9. **Review and Final Confirmation** 10. **Ongoing Monitoring and Adjustments**
IT-MM225-SC-019	The solution must be able to **create** a point-based replacement comparison analysis to assess fleet condition.	Gus	Nice to Have	IT-FMS225-BR-001	Define what is included in a point-scaling replacement comparison. A point-based replacement comparison analysis evaluates a fleet's condition by assigning scores to factors such as age, mileage, maintenance costs, repair frequency, performance, and safety. The total score helps determine whether the fleet should be replaced or continue in service based on the cost-effectiveness of maintenance versus replacement.

IT-MM225-SC-020	The solution must be able to **report** on the point-scaling replacement comparison analysis.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-009	
IT-MM225-SC-021	If a fleet asset is scheduled for routine maintenance, the solution should notify the user if any additional maintenance tasks can be performed simultaneously.	Gus	Nice to Have	IT-FMS225-BR-001 IT-FMS225-BR-009	Routine maintenance should be combined with system alert maintenance when applicable.
IT-MM225-SC-022	The solution must support customizable reports and dashboards for ongoing evaluation of vendor performance.	Gus	Must Have	IT-FMS225-BR-001	From Gus: Integration of performance ratings or feedback from internal staff on vendor-provided services.
IT-MM225-SC-023	The system must provide analytical tools to identify trends, outliers, and areas for vendor performance improvement.	Gus	Must Have	IT-FMS225-BR-001	

Regulatory Compliance and Reporting (CR)

- It provides tools to ensure compliance with regulations and generates detailed reports for audits and performance assessments. It is a way to identify which fleets follow what compliance. Use the Job codes of VMRS. Codes will ensure compliance with the work order.
- See the complete list of regulations in the Business Rules section of this document.

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Key	Capability Description	Source	Priority	Links	Notes
IT-CR225-SC-001	The solution must include reporting and dashboard features to review regulatory categories for compliance.	Gus	Must Have	IT-FMS225-BR-002	• **Inspection Compliance Rate**: Tracks the percentage of vehicles passing safety and regulatory inspections on the first attempt. • **Vehicle Registration and Licensing Compliance**: Monitors the status of vehicle registrations and licenses to ensure that all fleet vehicles are up to date. • **Hours of Service (HOS) Compliance**: Monitors driver working hours to ensure compliance with regulations on driving hours, rest periods, and logs. • **Environmental Compliance**: Measures adherence to emissions standards and environmental regulations (e.g., CO2 emissions, clean air standards). • **Safety Equipment Compliance**: Tracks whether required safety equipment (e.g., fire extinguishers, reflective vests, first-aid kits) is present and maintained. • **Fleet Maintenance and Repairs Compliance**: Ensures vehicles receive required maintenance and repairs, as outlined by regulations (e.g., brake inspections and emissions checks). • **Fleet Inspection Frequency**: Measures how often fleet assets are inspected according to regulatory requirements (e.g., annual, bi-annual inspections)

Attachment F

IT-CR225-SC-002	The solution must be able to oversee and ensure fleet assets comply with **local, state, and federal** regulatory rules and laws.	Gus	Must Have	IT-FMS225-BR-002	Comply with regulations and laws. • Most systems allow a Work order property range of 1 for High, 2 for Medium, and so on. Vehicle Maintenance Reporting Standards (VMRS) provides a concise coding convention for managing Fleet assets and analyzing maintenance costs.
IT-CR225-SC-003	The solution must maintain a centralized repository to store all necessary documentation required for regulatory compliance and mandated data storage.	Gus	Must Have	IT-FMS225-BR-002	This could include: 1. **Digital Document Storage System** 2. **Asset-Specific Compliance Files** 3. **Centralized Compliance Dashboard** 4. **Document Version Control** 5. **Access Control and Permissions** 6. **Compliance Audits and Reports** 7. **Physical Document Storage (Backup)**
IT-CR225-SC-004	The solution must allow for the **electronic submission** of inspection reports.	Gus	Must Have	IT-FMS225-BR-002	
IT-CR225-SC-005	The solution must offer **real-time access** to information and reports.	Gus	Nice to Have	IT-FMS225-BR-002	Check Priority with Gus.

IT-CR225-SC-006	The solution must **monitor compliance** to ensure precise tracking of mileage over user-defined intervals and adherence to regulatory standards.	Gus	Must Have	IT-FMS225-BR-002	1. **Inspection Schedules**: Ensure inspections are conducted at required intervals (e.g., annual, semi-annual) as mandated by regulations. 2. **Inspection Results**: Track the outcomes of each inspection, including passed or failed status and any corrective actions taken. 3. **Certification and Documentation**: Maintain records of inspection certificates, including dates, inspectors, and compliance with local or federal regulations. 4. **Fleet Inspection History**: Keep a complete log of all past inspections for each fleet asset, including any issues flagged and resolutions. 5. **Inspection Compliance Rate**: Monitor the percentage of fleet assets passing inspections on the first attempt and track any recurring issues. 6. **Expired or Upcoming Inspections**: To avoid non-compliance, set reminders or alerts for fleet assets with upcoming or expired inspection dates. 7. **Regulatory Changes**: Stay updated on changes to local, state, or federal regulations and ensure inspections align with the latest standards. 8. **Qualified Inspectors**: Verify that inspections are conducted by certified or qualified inspectors according to regulatory requirements. 9. **Safety and Maintenance Standards**: Ensure that safety equipment, emissions standards, and maintenance requirements are part of the inspection process and are consistently met.

					10. **Inspection Documentation Availability**: Ensure that inspection records, either in physical or electronic format, are easily accessible for audits or compliance reviews.

Cost Management and Budgeting (CMB)

- Integrates cost tracking and budgeting capabilities to help manage fleet expenditures and optimize financial planning.

Key	Capability Description	Source	Priority	Links	Notes	
IT-CMB225-SC-001	The solution must **track all fleet-related expenses**, including but not limited to maintenance, repairs, insurance, and licensing.	Gus	Must Have	IT-FMS225-BR-003	Expense Tracking	
IT-CMB225-SC-002	The solution must **categorize** expenses into specific categories, such as material, labor hours, and other relevant fleet-related costs.	Gus	Must Have	IT-FMS225-BR-003	Document Categorization The solution tracks labor hours associated with maintenance and repair activities.	
IT-CMB225-SC-003	The solution must allow users to **store** and **sort** receipts and invoices related to fleet expenses.	Gus	Must Have	IT-FMS225-BR-003	Receipt and Invoice Management	
IT-CMB225-SC-004	The solution must allow all expense-related documents to be **easily accessible** for audit purposes.	Gus	Must Have	IT-FMS225-BR-003	Define all documents (e.g., receipts, invoices, approvals).	

IT-CMB225-SC-005	The solution must support **financial analysis** by organizing and summarizing fleet-related expenses.	Gus	Must Have	IT-FMS225-BR-003	These subjects support financial analysis: 1. **Fleet Management Software (FMS)** Tracks and organizes costs such as fuel, maintenance, leasing, and repairs. 2. **Enterprise Resource Planning (ERP) Systems** – Integrates fleet expenses with broader business operations and financial data. 3. **Fuel Management Systems** – Tracks and analyzes fuel consumption and costs. 4. **Maintenance Management Systems** – Organizes and tracks repair and maintenance costs. 5. **Accounting and Reporting Tools** – Summarizes expenses and supports financial reporting. 6. **Data Analytics Tools** – Provides deeper insights into cost trends, inefficiencies, and opportunities for savings. 7. **Telematics Systems** – Collects data on fleet asset performance and driver behavior to optimize costs. 8. **Expense Breakdown Reports** – Categorizes expenses for better cost control and decision-making.	

IT-CMB225-SC-006	The solution must **generate reports** for conducting financial analysis.	Gus	Must Have	IT-FMS225-BR-003		
IT-CMB225-SC-007	The solution must **set and monitor budgets** for different aspects of fleet management and operations.	Gus	Nice to Have	IT-FMS225-BR-003		
IT-CMB225-SC-008	The solution must **offer tools** for detailed analysis of cost trends.	Gus	Nice to Have	IT-FMS225-BR-003	Cost trends refer to comparing costs over time to manage costs. This is a precursor to forecasting cost trends.	
IT-CMB225-SC-009	The solution must allow for importing and exporting data in standard formats (such as CSV, Excel, or XML).	Gus	Must Have	IT-FMS225-BR-003	To facilitate easy sharing and analysis of information.	
IT-CMB225-SC-010	The solution must include the capability for budgeting and forecasting the costs associated with fleet replacement.	Gus	Nice to Have	IT-FMS225-BR-003	It should suggest optimal replacement timing to align with budget cycles or financial planning.	
IT-CMB225-SC-011	The solution must allow users to define custom date ranges for reporting on labor time.	Gus	Must Have	IT-FMS225-BR-003	See IT-FIM225-SC-009 (e.g., weekly, monthly, quarterly, annually)	
IT-CMB225-SC-012	The solution must provide filtering and grouping options when analyzing labor time data.	Gus	Must Have		IT-FMS225-BR-003 (e.g., by vendor, job type, asset, or technician)	
IT-CMB225-SC-013	The system shall support exporting labor time reports for further analysis or auditing purposes	Gus	Must Have	IT-FMS225-BR-003		

Attachment F

Integration and Data Management (IDM)

- Capable of integrating with various data sources and managing information effectively to support decision-making processes.
- Seamlessly interface with existing applications, including automated fuel vending systems and general accounting software, facilitating integrated operations.

Key	Capability Description	Source	Priority	Links	Notes
IT-IDM225-SC-001	The solution will ensure that disposed-of assets are removed from active asset lists.	Gus	Must Have	IT-FMS225-BR-004 IT-FMS225-BR-005	Examples might be: 1. **Confirmation of Asset Disposal**: Documentation and approvals. 2. **Asset Disposal Process**: Sell, scrap, donate, or transfer the asset. 3. **Valuation and Depreciation Adjustments**: Update depreciation and account for any gain or loss. 4. **Update Asset Register**: Remove the asset from the system and change its status. 5. **Record the Date of Disposal**: Document the disposal date for accurate accounting. 6. **Compliance with Legal and Regulatory Requirements**: Ensure compliance with local laws and regulations. 7. **Notify Relevant Departments**: Inform accounting, inventory, IT, and other departments. 8. **Backup Documentation for Audits**: Keep all disposal records for future reference. 9. **Security and Data Protection (for IT Assets)**: Ensure data is securely wiped from IT assets.

IT-IDM225-SC-002	The solution must integrate fleet replacement data with ERP and financial systems.	Gus	Must Have	IT-FMS225-BR-004 IT-FMS225-BR-005	To ensure replacement decisions align with financial strategies and capital expenditure plans.
IT-IDM225-SC-003	The solution must be able to integrate with SacSewer's current GPS applications.	Gus	Must Have	IT-FMS225-BR-004	The level of integration will not be known until after the RFP process.
IT-IDM225-SC-004	The solution must be able to integrate with SacSewer's Fuel Management system.	Gus	Must Have	IT-FMS225-BR-004	The level of integration will not be known until after the RFP process.

IT-IDM225-SC-005	The solution must provide API access to integrate third-party applications and services.	Gus	Must Have	IT-FMS225-BR-004 IT-FMS225-BR-005	1. **Example**: **Expense Reporting Integration** ○ **API Access**: The fleet system provides an API to sync fleet-related expenses (fuel, maintenance, leasing costs) directly with accounting software (e.g., QuickBooks, Xero). ○ **Outcome**: Automatically creates and categorizes expense reports and invoices, reducing the manual effort of data entry for accountants. 2. **Example**: **Budgeting and Financial Forecasting** ○ **API Access**: The fleet system integrates with financial planning tools to automatically sync fleet cost data. This integration can help predict future maintenance, fuel, and leasing costs. ○ **Outcome**: Financial models can be updated in real-time with fleet-related data, improving budgeting accuracy and financial forecasting. ○ Fleet systems often need to integrate with **ERP** or **inventory management** platforms for managing spare parts, vehicles, and equipment. ▪ **Example**: **Parts Inventory Management** ▪ **API Access**: The fleet management system provides API access to integrate with third-party inventory systems to track parts availability. When a vehicle requires maintenance, parts can be

					ordered directly from the inventory management system. ▪ **Outcome**: Streamlined parts ordering process, ensuring timely maintenance and reducing downtime. ▪ **Example**: **Vehicle Procurement Integration** ▪ **API Access**: The fleet management system integrates with third-party suppliers or fleet asset dealers through an API to pull data on fleet asset availability, pricing, and specifications. ▪ **Outcome**: Fleet managers can automatically update their fleet asset procurement database, ensuring they are purchasing fleet assets that fit the required specifications.

IT-IDM225-SC-006	The solution must establish a vendor portal to automate communications.	Gus	Nice to Have	IT-FMS225-BR-004 IT-FMS225-BR-005	To ensure efficient management and compliance with procurement regulations. Track and store detailed vendor performance data, including service quality, turnaround time, cost-efficiency, SLA compliance, and service issue frequency. Some possible attributes of a vendor portal include: 1. **Vendor Registration and Onboarding**: Automated vendor profiles, approvals, and document management. 2. **Order Management**: Automated PO generation, real-time order status tracking, and invoice submission. Confirm with Finance. 3. **Communication Tools**: Messaging, notifications, and real-time chat for seamless interaction. 4. **Document Management**: Contract storage, compliance tracking, and audit trail. 5. **Payment and Invoice Processing**: Invoice submission, payment tracking, and dispute management. 6. **Supplier Collaboration and Feedback**: Collaboration spaces, surveys, and feedback loops. 7. **Compliance and Risk Management**: Risk profiling, alerts for non-compliance, and regulatory monitoring. 8. **Reporting and Analytics**: Custom reports, trend analysis, and purchasing forecasts. 9. **Supplier Portal Customization**: User access control, multi-language/currency support, and personalized dashboards. 10. **Inventory and Stock Management**: Stock level updates and replenishment alerts.

					11. **Quality Assurance and Returns Management**: RMA systems, quality control logs, and issue reporting.
IT-IDM225-SC-007	The solution must have the capability to utilize a **Vendor Performance Dashboard** with KPIs to assist in evaluating vendor performance.	Gus	Must Have	IT-FMS225-BR-005	Track vendor performance.

IT-IDM225-SC-008	The solution must provide comprehensive documentation for data integration processes.	Gus	Must Have	IT-FMS225-BR-004
				
				IT-FMS225-BR-005
					Things to consider:
					
					• **Data Sources and Targets**:
					  ○ Source Systems
					  ○ Target Systems
					  ○ Data Flow Diagram
					• **Data Mapping and Transformation Rules**:
					  ○ Field Mapping
					  ○ Data Transformation Logic
					  ○ Business Rules
					• **Integration Methodology and Approach**:
					  ○ ETL vs. ELT
					  ○ Batch vs. Real-time Processing
					  ○ Data Synchronization Frequency
					  ○ Error Handling and Data Quality
					  ○ Data Validation and Cleansing
					• **Technology Stack and Tools**:
					  ○ Integration Tools
					  ○ Database Systems
					  ○ Data Integration APIs/Connectors
					  ○ Middleware and Message Brokers
					  ○ Security Tools
					• **Data Integration Process Workflow**:
					  ○ Step-by-Step Process
					  ○ Scheduling and Monitoring
					  ○ Data Versioning
					• **Error Handling and Exception Management**:
					  ○ Error Logging
					  ○ Recovery Procedures
					  ○ Data Integrity Checks
					• **Security and Compliance**:
					  ○ Data Encryption
					  ○ Access Control

					◦ Audit Trails ◦ Regulatory Compliance • **Performance Monitoring and Optimization**: ◦ Performance Metrics ◦ Optimization Techniques ◦ Scalability • **Testing and Validation**: ◦ Unit Testing ◦ End-to-End Testing ◦ Data Reconciliation ◦ Regression Testing • **Change Management and Version Control**: ◦ Version Control ◦ Change Log ◦ Deployment Strategy • **Post-Integration Maintenance and Support**: ◦ Ongoing Monitoring ◦ Support Procedures ◦ Documentation Updates
IT-IDM225-SC-009	The solution must perform regular data backups and offer data recovery tools in case of a system failure.	Gus	Must Have	IT-FMS225-BR-004 IT-FMS225-BR-005	Need a backup schedule. What gets backed up? Need to define.

IT-IDM225-SC-010	The solution must have robust security measures to protect sensitive data.	Gus	Must Have	IT-FMS225-BR-004 IT-FMS225-BR-005	• **Data Encryption**: Encrypt data in transit (TLS/SSL) and at rest (AES-256), using end-to-end encryption for sensitive exchanges. • **Authentication & Authorization**: Implement multi-factor authentication (MFA) and role-based access control (RBAC), with OAuth2 for secure third-party access. • **API Security**: Secure APIs with authentication, rate limiting, and input validation to prevent misuse. • **Data Integrity & Availability**: Ensure data integrity with validation checks and implement backup and recovery plans. • **Network Security**: Use firewalls, intrusion detection, and VPNs, and isolate sensitive systems. • **Audits & Penetration Testing**: Conduct regular security audits, penetration tests, and code reviews to identify vulnerabilities. • **User Activity Monitoring**: Log and monitor user activities for suspicious behavior, maintaining audit trails. • **Compliance**: Follow data protection regulations (GDPR, HIPAA, CCPA) and secure data retention policies. • **Third-Party Security**: Ensure vendors meet the same data protection standards.

IT-IDM225-SC-011	The solutions must facilitate communication between **stakeholders** regarding data integration issues, with the ability to document these discussions and resolutions.	Gus	Must Have	IT-FMS225-BR-004 IT-FMS225-BR-005	A solution that supports collaboration and clear communication between all involved parties about issues related to data integration. Data integration is the process of combining data from different sources into a unified view. 1. **Facilitate communication between stakeholders**: The solution should allow different individuals or groups, such as data engineers, analysts, business users, IT teams, and others, to easily communicate. It should also bridge gaps in understanding. 2. **Data integration issues** arise when combining data from various sources. 3. **Ability to document these discussions and resolutions**: The solution should not only support real-time communication (e.g., chat, meetings, etc.) but also allow for the recording and archiving of these conversations.
IT-IDM225-SC-012	The solution must enable communication and integration with **service providers** through the system.	Gus	Nice to Have	IT-FMS225-BR-004 IT-FMS225-BR-005	
IT-IDM225-SC-013	When disposed assets are removed from active asset lists, the solution must **update data** across integrated systems such as accounting and asset management platforms.	Gus	Nice to Have	IT-FMS225-BR-005	

IT-IDM225-SC-014	The solution will have **Integration and Data Syncing:** Charging Station and Telematics Integration, ERP and Accounting Software Integration, and API Integration for Third-Party Systems.	Gus	Must Have	IT-FMS225-BR-004	

User Management and Security (UMS)

- Strong user management capabilities that ensure secure access controls and personalized user roles while allowing SacSewer staff to customize features to fit site-specific operations for a tailored user experience.
- These capabilities are to be reviewed by Catherine Wild after a vendor has been selected.

Key	Capability Description	Source	Priority	Links	Notes

IT-UMS225-SC-001	The Fleet Management solution must comply with SacSewer's security requirements.	Gus	Must Have	IT-FMS225-BR-006	**SacSewer's Security Requirements:**
					• **Data Protection**:
					  ○ Encrypt data in transit and at rest.
					  ○ Use role-based access control (RBAC) for sensitive information.
					  ○ Ensure data integrity, especially for billing and compliance data.
					• **Operational Continuity**:
					  ○ Regular data backups and disaster recovery plans.
					  ○ Redundant systems for critical operations (e.g., wastewater treatment).
					• **Network Security**:
					  ○ Firewalls and intrusion detection for unauthorized access.
					  ○ VPNs for secure remote communication.
					• **Regulatory Compliance**:
					  ○ Adhere to EPA standards and industry certifications (ISO/IEC, NIST).
					  ○ Maintain audit trails for system access and changes.
					• **Physical Security**:
					  ○ Secure physical access to critical infrastructure.
					  ○ Use surveillance systems for asset protection.
					• **Employee Training**:
					  ○ Provide security awareness and incident response training.

					• **Incident Response**:
					  ○ Have a tested plan for detecting, mitigating, and reporting security incidents.
					  ○ Implement communication protocols for relevant stakeholders.
					• **Third-Party Security**:
					  ○ Assess and ensure third-party vendors meet the same security standards.

IT-UMS225-SC-002	The solution must implement role-based access controls to manage feature access based on user roles.	Gus	Must Have	IT-FMS225-BR-006	Need an exact list of all user types and what features they can use. Some common examples of RBAC include: 1. **Admin**: o Full access to all system features and settings, including user management, system configuration, and audit logs. 2. **Manager**: o Access to specific resources related to their team or department, such as reports, user performance, and certain system settings, but without full administrative privileges. 3. **User**: o Limited access to basic features, such as viewing and updating personal information or submitting requests, but without permissions to modify system settings or access sensitive data. 4. **Guest**: o Very limited access, usually read-only, to certain publicly available resources or information within the system. 5. **Support**: o Access to troubleshoot issues or assist users, often with limited permissions, to view or modify user accounts or system configurations.

					6. **Auditor**: o Read-only access to audit logs and system reports to review compliance or system activity without making any changes.

IT-UMS225-SC-003	Provide a solution that uses secure authentication methods to access the system.	Gus	Must Have	IT-FMS225-BR-006	Do we want to specify a two-factor authentication process?
					
					1. **Password-based Authentication**:
					  o Users provide a secret password to gain access.
					  o Best practices include enforcing strong password policies (e.g., minimum length, complexity) and periodic password changes.
					2. **Multi-factor Authentication (MFA)**:
					  o Requires two or more forms of identification: something you know (password), something you have (security token or smartphone app), or something you are (biometric data).
					  o Examples:
					  ▪ **SMS or Email Codes**: A one-time code sent via SMS or email.
					  ▪ **Authenticator Apps**: Codes generated by apps like Google Authenticator or Authy.
					  ▪ **Hardware Tokens**: Physical devices like a YubiKey.
					3. **Biometric Authentication**:
					  o Uses unique biological traits to verify identity, such as:
					  ▪ **Fingerprint Scans**
					  ▪ **Facial Recognition**
					  ▪ **Iris Scans**

					▪ **Voice Recognition** 4. **Single Sign-On (SSO)**: o Allows users to log in once to gain access to multiple systems without needing to re-enter credentials for each one. o It simplifies user experience while enhancing security by centralizing authentication. 5. **Certificate-based Authentication**: o Uses digital certificates, typically stored on a user's device or a smart card, to authenticate access to a system. o Common in environments with high-security needs, like enterprise systems. 6. **OAuth and OpenID Connect**: o **OAuth** allows users to authorize third-party applications to access resources on their behalf without sharing passwords (e.g., "Log in with Google"). o **OpenID Connect** is an identity layer built on OAuth that provides authentication using external identity providers. 7. **Token-based Authentication**: o Users authenticate with a password once, then receive a secure token (like a JWT - JSON Web Token) for subsequent access requests.

					○ This is commonly used in web applications and APIs to avoid repeated logins. 8. **Behavioral Biometrics**: ○ Identifies users based on patterns of behavior such as typing speed, mouse movement, or device usage. ○ Often used as an additional layer of authentication for continuous verification.
IT-UMS225-SC-004	The solution must achieve FedRAMP or StateRAMP Ready status within 90 days of the agreement and full authorization within 12 months for the relevant security category. To maintain these authorizations, it will also comply with continuous monitoring requirements.	Gus	Must Have	IT-FMS225-BR-006	

IT-UMS225-SC-005	Provide a solution that tracks and logs all user activities for security and compliance.	Gus	Must Have	IT-FMS225-BR-006	**Tracking by User/Employee ID:** • **Data Encryption**: Encrypt data in transit (TLS/SSL) and at rest (AES-256); use end-to-end encryption for sensitive exchanges. • **Authentication & Authorization**: Enforce MFA and RBAC; use OAuth2 for third-party integrations. • **API Security**: Secure APIs with authentication, rate limiting, and input validation. • **Data Integrity & Availability**: Ensure data integrity with validation checks; implement backup and recovery plans. • **Network Security**: Use firewalls, intrusion detection, and VPNs; isolate sensitive systems. • **Audits & Penetration Testing**: Regularly conduct audits, penetration tests, and code reviews. • **User Activity Monitoring**: Log and monitor user activities; maintain audit trails. • **Endpoint Security**: Secure devices with MDM and up-to-date antivirus. • **Compliance**: Adhere to GDPR, HIPAA, CCPA, and secure data retention policies. • **Third-Party Security**: Ensure vendors follow the same security standards.

IT-UMS225-SC-006	The solution must include secure password management, with recovery options and reminders for periodic changes.	Gus	Must Have	IT-FMS225-BR-006	**Some examples are: Access Parameters:** • **Password Expiration**: Require password changes every 60–90 days. • **Failed Attempts**: Lock the account after a specified number of failed login attempts (e.g., 5 attempts). **Password Security:** • **Hashing**: Store passwords securely with hashing (e.g., bcrypt, Argon2) and a unique salt for each password. • **Complexity**: Enforce strong passwords (e.g., minimum length, mix of characters). • **Blacklist**: Prevent commonly known or breached passwords. **Multi-factor Authentication (MFA):** • **MFA**: Require additional security (e.g., OTP, fingerprint scan) with the password. **Password Recovery:** • **Recovery Methods**: Use email/SMS verification or two-factor verification for password recovery. **Secure Password Storage:**

					• **Encryption**: Use encryption (e.g., AES-256) for password storage in addition to hashing. • **Key Management**: Store encryption keys securely (e.g., using a vault or HSM). **Password Vaulting:** • **Password Manager**: Encourage the use of secure password managers for complex passwords. • **Enterprise Vaulting**: Use enterprise tools to manage critical system passwords securely. **Access Logs and Monitoring:** • **Audit Logs**: Record password changes/reset requests with IP and timestamps. • **Anomaly Detection**: Monitor for unusual password reset patterns. **Role-based Access:** • **Restricted Permissions**: Limit access to password management based on roles (e.g., admins manage access, users change their own passwords). **User Education:**

					• **Training**: Educate users on strong passwords and security practices. • **Awareness**: Inform users about phishing and security risks.

IT-UMS225-SC-007	The solution must store documentation on user accounts, roles, and permissions, including records of access or role changes.	Gus	Must Have	IT-FMS225-BR-006	Need to **define** user accounts, roles, and permissions, including records of access or role changes. Example:
					• **User**: Alice Johnson
					  ○ **Account Status**: Active
					  ○ **Role**: Admin
					  ○ **Permissions**: Full system access (CRUD on all records, user and role management)
					  ○ **Recent Activity**:
					  ▪ Changed Bob Smith's role from Viewer to Editor (2025-02-17).
					  ▪ Last login: 2025-02-18 at 08:30 am.
					  ○ **Access Logs**: Logged in successfully at 08:30 am from IP 192.168.1.10.

IT-UMS225-SC-008	The solution must have spell check and grammar assistance for free-text fields (notes).	Gus	Must Have	IT-FMS225-BR-006	

IT-UMS225-SC-009	The solution must be work order-based and capable of printing detailed copies of all work.	Gus	Must Have	IT-FMS225-BR-006	The solution's capability for managing and documenting maintenance and repair tasks for fleet vehicles is "work order-based." This means that all maintenance or repair activities are tracked and managed using work orders.
IT-UMS225-SC-010	The solution will notify relevant parties about security procedures, updates, and incidents while recording all communications for auditing.	Gus	Must Have	IT-FMS225-BR-006	Define Relevant parties. How will they be notified? (Email group?) How often will they be notified? What are the security procedures they need to be notified about? **Focus**: The emphasis is on **notification** and **recording**. The solution should notify relevant parties about security matters and ensure that all communications are recorded for auditing purposes. **Action**: It outlines two primary actions: notifying and recording.
IT-UMS225-SC-011	The solution must be able to document, store, and communicate security protocols, updates, and breaches to relevant stakeholders.	Gus	Must Have	IT-FMS225-BR-006	**Focus**: This sentence is broader in scope. It states that the solution **must document**, **store**, and **communicate** security protocols, updates, and breaches. It also highlights the need to communicate these matters to stakeholders. **Action**: It includes a broader set of responsibilities—documenting, storing, and communicating—implying a more comprehensive approach to handling security information.

IT-UMS225-SC-012	The solution must send in-app notifications, emails, or SMS alerts for important events, such as upcoming maintenance, compliance deadlines, disposal dates, and required actions in the disposal process.	Gus	Must Have	IT-FMS225-BR-006	1. **In-App Notification**: "Scheduled maintenance on [date and time]. Save your work before then." 2. **Email Alert**: "Reminder: System maintenance on [date] from [start time] to [end time]. Some features may be unavailable." 3. **SMS Alert**: "Reminder: System maintenance on [date and time]. Prepare accordingly."
IT-UMS225-SC-013	The solution must support **change management** capabilities.	Gus	Must Have	IT-FMS225-BR-007	Change Management, in this context, refers to the ability to change the solution if the business needs change after implementation.

Electric Vehicles (EV) and Zero Emission Vehicles (ZEV)

Key	Capability Description	Source	Priority	Links	Notes
IT-EV225-SC-001	The system must use a coding system with the capability of defining a specific maintenance action being performed.	Gus	Must Have	IT-FMS225-BR-002	Something like a coding system.
IT-EV225-SC-002	The solution must include **Regulatory Compliance and Reporting,** including ZEV Mandate Compliance, Emissions Reporting, and Fleet Sustainability Reporting.	Gus	Nice to Have	IT-FMS225-BR-002 IT-FMS225-BR-005	

IT-EV225-SC-003	The solution must include the ability to create custom fleet performance metrics.
	
	1. Vehicle Utilization
	
	2. Maintenance and Downtime
	3. Asset Lifetime and Depreciation
	4. Fleet Cost per Mile/Kilometer
	5. Compliance and Regulatory Adherence
	6. Fleet Size and Growth
	7. Customer Satisfaction and Service Delivery
	8. Environmental Impact
	9. Idle time by section
		Gus	Must Have	IT-FMS225-BR-005	• **Vehicle Utilization**
					  ○ **Vehicle Availability**: Percentage of time vehicles are available for use.
					  ○ **Utilization Rate**: Time vehicles are used vs. available time (e.g., operating vs. idle time).
					• **Maintenance and Downtime**
					  ○ **Maintenance Costs per Vehicle**: Tracks vehicle maintenance costs to identify underperforming assets.
					  ○ **Vehicle Downtime**: Time vehicles are out of service for maintenance or repairs, impacting productivity.
					  ○ **Mean Time Between Failures (MTBF)**: Average time between vehicle breakdowns, indicating reliability.
					  ○ **Mean Time to Repair (MTTR)**: Average repair time, reflecting repair efficiency.
					• **Asset Lifetime and Depreciation**
					  ○ **Vehicle Depreciation**: Value reduction over time, aiding in fleet replacement planning.
					  ○ **Vehicle Age**: Average fleet vehicle age, informing maintenance or renewal decisions.
					• **Fleet Cost per Mile/Kilometer**

					○ **Cost per Mile**: Total cost (fuel, maintenance, insurance) per mile driven for cost control insights. • **Compliance and Regulatory Adherence** ○ **Inspection Pass Rate**: Percentage of vehicles passing regulatory inspections, ensuring compliance. ○ **Licensing and Certification Compliance**: Monitoring vehicle and driver licensing to avoid legal issues. • **Fleet Size and Growth** ○ **Fleet Growth Rate**: Rate of fleet expansion or reduction based on operational needs. ○ **Fleet Composition**: Breakdown of vehicle types, ensuring alignment with business needs. • **Customer Satisfaction and Service Delivery** ○ **On-time Delivery Rate**: Percentage of timely deliveries, reflecting fleet efficiency. ○ **Customer Feedback/Complaints**: Tracking service-related customer feedback influenced by fleet performance. • **Environmental Impact** ○ **CO2 Emissions**: Total fleet emissions, helping assess environmental impact. ○ **Electric Vehicle (EV) Adoption**: Percentage of electric or hybrid

					vehicles in the fleet, tracking sustainability progress.

User Interface and Experience (UIE)

- The system's intuitive user interface enhances user experience and facilitates quick adoption by SacSewer staff.

Key	Capability Description	Source	Priority	Links	Notes

IT-UIE225-SC-001	User interface (UI) design: The system should have an intuitive, user-friendly interface that makes it easy for fleet managers and other users to perform tasks like scheduling maintenance, tracking vehicles, and generating reports. The capabilities are: 1. **Intuitive Interface** – Designed for ease of use without requiring extensive training. 2. **Streamlined Navigation** – Clear and logical flow for users to accomplish tasks efficiently. 3. **Accessible Design** – Compliant with accessibility standards (e.g., WCAG) for all users. 4. **Consistent User Experience** – Maintains uniformity across pages and features. 5. **Efficient Workflow** – Minimizes steps and reduces friction in task completion. 6. **Clear Call-to-Actions (CTAs)** – Prominent and easily understandable actions for users. 7. **Responsive and Adaptive** – Optimized for different devices and screen sizes. 8. **Error-Resistant Design** – Helps prevent user errors with validation and guidance.	Gus	Must Have	IT-FMS225-BR-006	

	9. **Context-Aware UI** – Dynamically adjusts based on user input or behavior. 10. **Guided Interactions** – Provides tooltips, walkthroughs, or wizards for usability.				
IT-UIE225-SC-002	The solution must provide an intuitive workflow or wizard for fleet managers to follow when disposing of fleet assets.	Gus	Nice to Have	IT-FMS225-BR-006	The solution should provide a process that is easy to understand and use, even for those who might not be familiar with all the technical details. The "workflow" refers to the sequence of steps or actions the fleet manager needs to take to accomplish a task.
IT-UIE225-SC-003	The solution must have a powerful, comprehensive searching capability for fast onscreen viewing of data throughout the system.	Gus	Must Have	IT-FMS225-BR-006	
IT-UIE225-SC-004	The solution must have a dedicated dashboard for fleet managers to monitor fleet asset health in real-time and make informed replacement decisions.	Gus	Must Have	IT-FMS225-BR-006	The dashboard will display key metrics such as fleet asset age, maintenance costs, and replacement recommendations.
IT-UIE225-SC-005	The solution must allow users to customize their reports and dashboards to display key metrics and information relevant to their roles in real time.	Gus	Nice to have	IT-FMS225-BR-006	We discussed that admins should do this for sensitive dashboards, and it will be controlled by role-based access.
IT-UIE225-SC-006	The solution must allow for **dynamic links** to other screens within the UI.	Gus	Must Have	IT-FMS225-BR-006	

IT-UIE225-SC-007	The solution must include in-app user manuals to help users navigate the application, understand its features, access FAQs, and find customer support contact details.	Gus	Nice to Have	IT-FMS225-BR-006	
IT-UIE225-SC-008	The solution must document user accounts, roles, and permissions and record any changes to user access or roles.	Gus	Must Have	IT-FMS225-BR-006	

Scalability and Right Size of the Fleet (SFP)

- The system is scalable to accommodate growth and evolving business needs, ensuring long-term viability. The fleet size will remain steady with a variable of +-20%.

Key	Capability Description	Source	Priority	Links	Notes
IT-SFP225-SC-001	The solution must be scalable to accommodate the growing volume of data related to fleet assets, drivers, and maintenance operations as the fleet expands.	Gus	Must Have	IT-FMS225-BR-007	
IT-SFP225-SC-002	The solution must be capable of scaling to add new data in real-time without impacting performance.	Gus	Must Have	IT-FMS225-BR-007	Other data to be determined in system planning.
IT-SFP225-SC-003	The solution must enable seamless management of user additions or deletions.	Gus	Must Have	IT-FMS225-BR-007	(drivers, managers, fleet owners, maintenance teams),
IT-SFP225-SC-004	The solution must support the management of multiple locations offering centralized control with the option for localized management when necessary.	Gus	Must Have	IT-FMS225-BR-007	

IT-SFP225-SC-005	The solution must continuously monitor system performance in real-time.	Gus	Must Have	IT-FMS225-BR-007	
IT-SFP225-SC-006	As the fleet expands, the solution must offer tools and dashboards to help administrators efficiently manage system resources.	Gus	Must Have	IT-FMS225-BR-007	
IT-SFP225-SC-007	The solution must be designed with a modular approach, enabling the addition of new features and capabilities as business requirements evolve and need to expand.	Gus	Must Have	IT-FMS225-BR-007	**Code quality**: The software should be developed with clean, modular code that is easy to update, fix, and enhance over time.
IT-SFP225-SC-008	The solution must be scalable to 575 assets +-20%.	Gus	Must Have	IT-FMS225-BR-007	

Analytics and Reporting (AR)

- Includes advanced analytics and reporting functions to provide insights into fleet performance, driving data-driven decisions.

Key	Capability Description	Source	Priority	Links	Notes
IT-AR225-SC-001	The solution must provide charts, graphs, and other visual tools for analyzing fleet data.	Gus	Must Have	IT-FMS225-BR-005	
IT-AR225-SC-002	The solution must use predictive analytics to forecast maintenance needs, fuel consumption patterns, and cost estimates.	Gus	Must Have	IT-FMS225-BR-005	

IT-AR225-SC-003	The system must provide reporting on miles driven and fuel consumed over user-defined time intervals, and it must be able to generate reports for individual assets or grouped vehicles and equipment.	Gus	Must Have	IT-FMS225-BR-005	
IT-AR225-SC-004	The solution must enable users to generate custom reports based on specific data points and metrics.	Gus	Must Have	IT-FMS225-BR-005	
IT-AR225-SC-005	The solution must be able to generate a daily out-of-service report and send it to users, providing updates on equipment status.	Gus	Must Have	IT-FMS225-BR-005	
IT-AR225-SC-006	The solution must use predictive analytics to forecast when fleet assets will likely require replacement based on usage patterns, costs, and industry benchmarks.	Gus	Nice to Have	IT-FMS225-BR-005	Customizable so Stakeholders can select different replacement benchmarks.
IT-AR225-SC-007	The solution must evaluate the effectiveness of the disposal process by comparing the expected financial impact of disposals to the actual outcomes.	Gus	Nice to Have	IT-FMS225-BR-005	This analysis should include assessments of recovered depreciation, cost savings, and the overall effect on fleet operations.
IT-AR225-SC-008	The solution must provide insights into how fleet disposal aligns with the fleet asset replacement strategy.	Gus	Nice to Have	IT-FMS225-BR-005	To optimize fleet size and composition.
IT-AR225-SC-009	The solution must store and manage all generated reports, ensuring they contain relevant documentation and the sources used for data analysis.	Gus	Must Have	IT-FMS225-BR-005	Ensuring they include relevant documentation and sources used for data analysis.
IT-AR225-SC-010	The solution must generate a history report of generated reports for reference and compliance purposes.	Gus	Nice to Have	IT-FMS225-BR-005	

IT-AR225-SC-011	The solution must enable the communication of analytical insights and recommendations to stakeholders while ensuring these communications are documented for tracking and future review.	Gus	Must Have	IT-FMS225-BR-005	
IT-AR225-SC-012	The solution must have tools for creating and customizing templates to develop reports, spreadsheets, etc.	Gus	Must Have	IT-FMS225-BR-005	

Training (TR)

A comprehensive approach to training will ensure that users are well-prepared to utilize the fleet management software effectively and efficiently, leading to improved adoption and operational success.

Key	Capability Description	Source	Priority	Links	Notes
IT-TR225-SC-001	The solution must have training for users that covers the basic capabilities of the software.	Gus	Must Have	IT-FMS225-BR-011	
IT-TR225-SC-002	The solution must offer step-by-step guidance on logging in, navigating the interface, and accessing key features relevant to their role.	Gus	Must Have	IT-FMS225-BR-011	
IT-TR225-SC-003	The solution must have tailored training sessions based on user roles, ensuring that each user group receives relevant information for their specific tasks.	Gus	Must Have	IT-FMS225-BR-011	(e.g., administrators, fleet managers, drivers, and maintenance personnel),
IT-TR225-SC-004	The solution must include scenario-based training that addresses the unique needs and responsibilities of each role.	Gus	Must Have	IT-FMS225-BR-011	

IT-TR225-SC-005	The solution must incorporate hands-on exercises and simulations, allowing users to practice key functions within the software in a controlled environment.	Gus	Nice to Have	IT-FMS225-BR-011	
IT-TR225-SC-006	The solution must provide access to development, test, and production environments, where users can familiarize themselves with the software without affecting live data.	Gus	Must Have	IT-FMS225-BR-011	
IT-TR225-SC-007	The solution must offer advanced training sessions for power users or administrators.	Gus	Must Have	IT-FMS225-BR-011	It should cover topics such as system configuration, reporting, analytics, and troubleshooting.
IT-TR225-SC-008	The solution must set up a support framework for users to access additional help as needed.	Gus	Must Have	IT-FMS225-BR-011	(e.g., helpdesk, chat support, or knowledge base)
IT-TR225-SC-009	The solution must offer periodic refresher courses to ensure users remain updated on new features or system updates.	Gus	Must Have	IT-FMS225-BR-011	
IT-TR225-SC-010	The solution must ensure all training materials are well-documented and easily accessible.	Gus	Must Have	IT-FMS225-BR-011	Examples: Step-by-step guides, quick reference cards, and troubleshooting checklists.
IT-TR225-SC-011	The solution must incorporate a feedback mechanism within the training module to gather insights on user experience and areas for improvement.	Gus	Must Have	IT-FMS225-BR-011	
IT-TR225-SC-012	The solution must have a system to track user progress through training modules and provide completion metrics.	Gus	Nice to Have	IT-FMS225-BR-011	

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Non-Functional Capabilities

Non-functional capabilities (NFCs) define the **quality attributes** and **constraints** of a system that aren't directly related to specific behaviors or features but are still essential for the system's overall performance, usability, and effectiveness. This section specifies the non-functional capabilities.

Key	Functional Capability Description	Source	Priority	Notes
IT-NFR225-NFR-001	**Response time**: The solution should respond to user actions (e.g., searching for vehicles, generating reports) within a specific time frame (e.g., less than 3 seconds for most actions).	Gus	Must have	
IT-NFR225-NFR-002	**Throughput**: The software should handle simultaneous users or requests without performance degradation.	Gus	Must have	
IT-NFR225-NFR-003	**Latency**: Minimal delay between user input and system processing, especially for critical operations like real-time tracking or reporting.	Gus	Must have	
IT-NFR225-NFR-004	**Horizontal scalability**: The solution should be able to scale out (add more servers or resources) to handle an increasing number of fleet assets, users, or transactions as the fleet grows.	Gus	Must have	
IT-NFR225-NFR-005	**Vertical scalability**: The software should also be able to scale up (add more processing power or memory) to accommodate growing data needs.	Gus	Must have	
IT-NFR225-NFR-006	**Uptime**: The solution should be available 99.9% or more of the time, ensuring minimal downtime, especially during critical business hours.	Gus	Must have	
IT-NFR225-NFR-007	**Fault tolerance**: The solution should be designed to continue functioning smoothly even if parts of it fail (e.g., backup systems or failover mechanisms).	Gus	Must have	
IT-NFR225-NFR-008	**Authentication and Authorization**: The solution must ensure that only authorized users (e.g., fleet managers, mechanics, or drivers) can access sensitive information and perform specific actions.	Gus	Must have	

IT-NFR225-NFR-009	**Data encryption**: All sensitive data (e.g., vehicle tracking and financial information) should be encrypted both at rest and in transit.	Gus	Must have	
IT-NFR225-NFR-010	**Audit logging**: The solution should maintain logs of all user actions, such as changes to vehicle data or maintenance records, for security and compliance purposes.	Gus	Must have	
IT-NFR225-NFR-011	**Data privacy**: The software must comply with relevant data protection regulations (e.g., GDPR, CCPA) when handling personal information.	Gus	Must have	
IT-NFR225-NFR-012	**Cross-platform compatibility**: The fleet management software should be able to run on multiple operating systems (e.g., Windows, macOS, Linux) and browsers (e.g., Chrome, Firefox, Edge).	Gus	Must have	
IT-NFR225-NFR-013	**Regulatory compliance**: The solution should comply with industry-specific regulations, such as transportation safety standards, environmental regulations (e.g., emissions tracking), and labor laws (e.g., driver hours of service).	Gus	Must have	
IT-NFR225-NFR-014	**Audit trails**: For compliance purposes, the solution must keep detailed logs of transactions, actions taken, and changes made to fleet-related data.	Gus	Must have	
IT-NFR225-NFR-015	**Data backup**: To avoid data loss, the solution should automatically back up critical data (e.g., vehicle logs, and maintenance records) regularly.	Gus	Must have	
IT-NFR225-NFR-016	**Disaster recovery**: The system should have a well-documented disaster recovery plan to restore operations in the event of a major failure, ensuring business continuity.	Gus	Must have	
IT-NFR225-NFR-017	**Data import/export**: The software should support importing and exporting data (e.g., in CSV, Excel, or other standard formats) for use in other systems or reports.	Gus	Must have	
IT-NFR225-NFR-018	**Total cost of ownership**: The long-term costs should include considerations for maintenance, updates, and scalability as the fleet grows.	Gus	Must have	
IT-NFR225-NFR-019	The vendor should provide scalable customer support and helpdesk features to ensure that any issues can be addressed quickly and effectively, even as the number of users and vehicles grows.	Gus	Must have	

IT-NFR225-NFR-020	The solution must fulfill all performance requirements set forth by SacSewer.	Gus	Must Have	

Business Rules

The business rules below represent a government regulation or law, or an internal business policy.

Federal/State/Local	Agency	Business Rules	Applies to Capability(s)	Source

Federal	Federal Regulations	**Environmental Protection Agency (EPA)** • **EPA Emission Standards**: The EPA sets federal **emissions standards** for both gasoline and diesel vehicles. These standards regulate the amount of pollutants that vehicles can emit, including **NOx (nitrogen oxides), SOx (sulfur oxides)**, **PM (particulate matter)**, and **CO2 (carbon dioxide)**. • **EPA Diesel Standards**: Diesel-powered vehicles are subject to increasingly stringent emissions requirements, with deadlines for compliance on newly manufactured engines and equipment. • **EPA Gasoline Standards**: Gasoline-powered vehicles must meet federal emissions standards, particularly regarding **carbon monoxide (CO)**, **nitrogen oxides (NOx)**, and **hydrocarbons**. • **EPA Fuel Standards**: The **EPA** also sets **fuel quality standards**, including the **Low-Sulfur Diesel Fuel Rule**, which limits the sulfur content of diesel fuel to 15 ppm (the same	IT-FMS225-BR-002	

		as California's standard). This regulation is applicable to all diesel fleets nationwide.		
Federal	FMCSA	**FMCSA Regulations**: Sewer fleet vehicles, especially those that are commercial motor vehicles (CMVs), must comply with **FMCSA regulations**. This includes: • **Hours of Service (HOS)**: FMCSA mandates hours of service regulations to prevent driver fatigue and ensure safety for vehicles operating long hours, including maintenance vehicles that may work overnight.	IT-FMS225-BR-002	
State	CARB	**California Air Resources Board (CARB)** -Advanced Clean Truck **(ACT)** - Transition medium & heavy-duty vehicles from Class 2b to Class 8 to zero-emission models **California Air Resources Board (CARB)**: CARB oversees the regulation of vehicle emissions and air quality standards in the state. CARB sets emissions limits and requires that diesel and gasoline vehicles meet specific exhaust emissions standards.	IT-FMS225-BR-002	OEMs of medium & heavy-duty vehicles to increase the percentage of annual ZEVs/NZEVs sold from 2024 to 2035

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State	CARB	California Air Resources Board **(CARB)** - **ACF**: Overall strategy to accelerate the transition of CA's medium & heavy-duty trucks to zero-emission vehicles where feasible by 2045	IT-FMS225-BR-002	CARB is setting increasingly stringent emission standards for vehicles to protect the public health & welfare of Californians Affects 8,500 lbs. of medium & heavy-duty on-road vehicles
State	CHP	The Basic Inspection of Terminals **(BIT)** Program	IT-FMS225-BR-002	The CHP has conducted terminal inspections since 1965 as a tool to determine whether motor carriers are complying with Motor Carrier Safety regulations, particularly the legal requirement to maintain commercial motor vehicles according to a preventive maintenance program. The CHP's role is to determine whether carriers' selected maintenance schedules are adequate to prevent collisions or mechanical breakdowns involving the vehicles and that all required maintenance and driver records are prepared and retained as required by law. The main components of this regulation are: •Driver Records •Pull Notice •Driver Proficiency Records •Regulated inspection and Maintenance records •Driver Vehicle Inspection Reports (DVIR)

State	CARB	**Diesel Emission Control:** All diesel-powered vehicles must comply with CARB's diesel particulate filter (DPF) requirements, which help reduce particulate matter emissions. **Diesel Fleet Rule:** The **In-Use Off-Road Diesel Vehicle Regulation** mandates that off-road vehicles, including sewer trucks and equipment, reduce emissions by using cleaner engines or retrofitting older vehicles to meet newer standards. These vehicles must meet specific compliance deadlines based on their engine model year and size. **Gasoline Fleet Regulations**: For regular gasoline-powered vehicles, CARB requires compliance with its **California Exhaust Emission Standards** and ongoing testing of vehicle emissions. Vehicles may need to undergo annual or biennial emissions tests and meet state-defined emissions limits.	IT-FMS225-BR-002	

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State	CARB	In-Use Off-Road Diesel-Fueled Fleet Regulations **(DOORS)**	IT-FMS225-BR-002	Merger: CSO (small fleet) + EWO (small fleet) = SacSewer (medium fleet) Credits: @ EWO still eligible to use until 01/01/26 Compliant: improvements in avg fleet emission rate replace older tier engines with/ newer/lower lower-emission options EWO fleet: (5) tier zero engines & (1) tier one engine should be considered for replacement high emitters high maintenance costs limited availability (due to breakdowns) Limited availability of parts
State	CARB	**Fuel Sulfur Content Regulations**: California mandates that all **diesel fuel** sold within the state contain a maximum sulfur content of **15 parts per million (ppm)**, as per **CARB's Diesel Fuel Standards**.	IT-FMS225-BR-002	

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State	CARB	Clean Truck Check **(HD I/M)**	IT-FMS225-BR-002	• Established to lower NOx and PM Affects non-gasoline vehicles with a GVWR of over 14,000 lbs • Emissions compliance testing effective 10/01/24, deadlines begin 01/01/25 ○ Testing starts twice annually and eventually moves to quarterly • All 97 SacSewer vehicles under this regulation have been loaded into the database • Annual compliance fee = $2910 • At quarterly testing, annual compliance fee = >$50K (all inspections pass) • Additional service = approximately $125-$175/vehicle • Some GPS & Telematics companies are working on automating this service

State	CARB	California Air Resources Board **(CARB)** SMOG	IT-FMS225-BR-002	1. **Applies to**: Vehicles in California that are model year 1976 and newer, including those in fleets. 2. **Requirements**: Commercial fleets may be required to participate in the state's Smog Check program, where vehicles are periodically tested for emissions. This ensures that fleet vehicles meet the state's emissions standards.
State	CHP	**California Highway Patrol (CHP)** • **Vehicle Weight Limits:** The CHP enforces **weight limits** for vehicles on California highways. Depending on their type and configuration, heavy sewer vehicles may need to comply with specific weight restrictions. • **Road Use:** Depending on the size and weight of the sewer fleet vehicle, the CHP may also oversee **permit requirements** for special routes or operations.	IT-FMS225-BR-002	
State	CARB	**Omnibus Regulations** - 90% NOx emissions reduction from heavy-duty on-road engines	IT-FMS225-BR-002	Set emission standards for engine years 2024 – 2031

State	DMV	**Safety and Maintenance Regulations (California Department of Motor Vehicles - DMV)** • **Vehicle Registration and Inspections**: All vehicles operating in California must be registered with the **California Department of Motor Vehicles (DMV)**. This includes inspections for safety, emissions, and operational standards. Vehicles may also be subject to **California's biennial smog check** program, depending on their model year and type.	IT-FMS225-BR-002	
State	CARB	**State Diesel Vehicle Emission Reduction:** The **Statewide Diesel Risk Reduction Plan** aims to reduce diesel emissions through both new regulations and incentives to replace older, high-emission vehicles with newer, cleaner ones.	IT-FMS225-BR-002	

State	CARB	**Zero-Emission Vehicle (ZEV) Regulations**: While ZEVs are not yet widely required for sewer fleet vehicles, California has mandates requiring public sector fleets to transition to ZEVs in certain scenarios (e.g., in the California Clean Vehicle Standard).	IT-FMS225-BR-002	

State	CARB	**Summary of Key Regulations for Sewer Fleet Vehicles (Gasoline & Diesel)** • **Emissions Compliance**: CARB and EPA regulations for air quality and vehicle emissions, including particulate matter and nitrogen oxide limits. • **Fuel Standards**: Low-sulfur diesel and gasoline specifications. • **Vehicle Safety**: California DMV, FMCSA, and OSHA safety standards for vehicle operation and worker protection. • **Registration and Inspections**: DMV registration, inspection requirements, and compliance with California smog laws. • **Commercial Vehicle Requirements**: FMCSA and CHP regulations for commercial vehicle operation, including driver qualifications, hours of service, and road use permits.	IT-FMS225-BR-002	

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Local	**SMAQMD**	**City of Sacramento Environmental & Sustainability Policies** Sacramento Metropolitan Air Quality Management District **(SMAQMD)** **Clean Air Standards for Fleet Vehicles**: Fleet operators may need to comply with certain emissions reduction targets or incentives for transitioning to cleaner vehicles, such as electric or alternative fuel options. For example, the city might encourage or mandate the use of low-emission vehicles for public sector or contracted fleets.	IT-FMS225-BR-002	**SMAQMD** regulates air quality and vehicle emissions in Sacramento County. The SMAQMD follows federal and state air quality standards but may have additional local requirements or incentives for fleets to reduce air pollution.

State	OSHA	**Occupational Safety and Health Administration (OSHA)** • **Worker Safety Regulations**: OSHA's **Occupational Safety and Health Standards** apply to vehicle operators, particularly those working in potentially hazardous environments like sewer maintenance. Key areas include: • **Personal Protective Equipment (PPE)**: Ensuring that drivers and maintenance personnel use appropriate PPE (e.g., gloves, helmets, and safety vests). • **Confined Space Entry**: Sewer fleet vehicles may be used for operations in confined spaces, which require compliance with OSHA's **Confined Space Entry** regulations to protect workers. • **Vehicle Safety Compliance**: OSHA may also require that vehicles used in hazardous environments meet specific **safety standards** (e.g., fire extinguishers and first-aid kits) for worker protection.	IT-FMS225-BR-002	

Questions

Below is a list of questions to be addressed as a result of this a

Question	Functional Capability	Source	Outcome

Comments