



August 27, 2021

The Honorable Samuel K. Feng
Presiding Judge, Superior Court of California, County of San Francisco
400 McAllister Street, Room 008
San Francisco, CA 94102-4512

Dear Judge Feng,

In accordance with Penal Code 933 and 933.05, the following is in response to the 2020-2021 Civil Grand Jury Report, *A Fluid Concern: San Francisco Must Improve Fuel Resilience*. We would like to thank the members of the 2020-2021 Civil Grand Jury for their interest in disaster preparedness and in improving the resiliency of our fuel infrastructure.

San Francisco takes its disaster planning and emergency response plans very seriously. Our City departments are committed to ensuring San Francisco is prepared for disasters, which includes fuel resiliency. We continue to improve our City's resiliency each day through our ongoing investments in public infrastructure and equipment. Our Office of Resilience and Capital Planning coordinates much of these investments by conducting strategic long-term planning across major programs and projects. The Department of Emergency Management is regularly planning for emergencies and disaster response, and develops plans that factor in fuel resilience as one of the myriad considerations necessary to continue life-critical services and protect all communities in San Francisco.

The City Administrator's Office, the Department of Emergency Management, and other City departments have met regularly regarding fuel resilience in San Francisco since 2017. With our citywide mobilization to respond to the unprecedented COVID-19 pandemic, other aspects of emergency planning were temporarily suspended as emergency managers who were generally engaged in fuel resilience planning were engaged in pandemic response. That said, even with the COVID-19 pandemic, San Francisco remained prepared to quickly activate and implement its emergency response plans in the event of an earthquake or other natural disaster. We are also pleased to share that we are on track to resume the Fuel Work Group and implement many of the other recommendations from the Civil Grand Jury.

We appreciate the opportunity to comment on the Civil Grand Jury report findings and recommendations. Moving forward, and as appropriate, the City plans to analyze several of the recommendations in coordination with other key stakeholders and as part of our next 10-Year Capital Plan.

A detailed response from the Mayor's Office, City Administrator's Office, Department of Emergency Management, and Public Utilities Commission is attached.

Each signatory prepared its own responses and is able to respond to questions related to its respective part of the report.

Sincerely,



London N. Breed
Mayor



Carmen Chu
City Administrator



Mary Ellen Carroll
Executive Director, Department of Emergency
Management



Michael Carlin
Acting General Manager, Public Utilities
Commission

Report Title [Publication Date]	F#	Finding	Respondent Assigned by CGJ [Response Due Date]	Finding Response (Agree/ Disagree)	Finding Response Text
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F1	In the aftermath of a major earthquake (magnitude 7.0 or greater), there will likely be severe citywide fuel and power shortages lasting more than 72 hours.	Mayor [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F2	If these shortages resulted in lack of power to lifeline infrastructure facilities and/or lack of fuel for critical lifeline vehicles, the resulting cascading failures of other lifelines could have life safety and quality-of-life impacts greater than the fuel and power shortages themselves.	Mayor [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F3	The City's lack of agency sponsorship and dedicated staffing and budgeting for fuel resilience efforts weakens its ability to ensure fuel resilience in an emergency.	Mayor [August 28, 2021]	Disagree partially	While we agree that we can always dedicate more resources to improve fuel resiliency, there is and continues to be agency sponsorship on fuel resilience. Over the last 16 months, other emergency planning efforts had to be paused to respond to the unprecedented COVID-19 pandemic. Although further emergency planning was paused, San Francisco's existing emergency response plans remained in place and the City was (and is) prepared to respond to an earthquake or other natural disaster.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F4	The cessation of fuel resilience progress during COVID indicates that the City is not prioritizing fuel resilience comparably to other aspects of lifeline resilience.	Mayor [August 28, 2021]	Disagree wholly	The COVID-19 pandemic was and continues to be the world's most significant emergency within the last century. San Francisco's response to COVID-19 prevented countless immediate deaths and sicknesses of residents and guests. Emergency managers who were generally engaged in fuel resilience planning were wholly engaged in the City's COVID-19 response. Even with the COVID-19 pandemic, San Francisco remained prepared to implement its emergency response plans in the event of an earthquake or other natural disaster. There is no correlation between the City's focus on COVID-19 response and its commitment to fuel resilience.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F5	In the aftermath of a major disaster, it will be difficult for emergency responders to catalog the citywide fuel needs of backup generators.	Mayor [August 28, 2021]	Disagree partially	The Department of Emergency Management (DEM) managed a citywide continuity of operations planning working group in 2018 and 2019 that asked City departments to consider resources required (such as fuel) to keep their essential services going during or after an emergency. DEM and the City Administrator's Office partnered together to compile a list of citywide backup generators and their fuel needs. This was set to be finalized in March of 2020 but was delayed.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F6	It is impossible to determine how much fuel storage is needed to meet emergency demands after a disaster because the City has not prepared proper estimates of fuel needs in a range of disaster scenarios.	Mayor [August 28, 2021]	Disagree partially	It is impossible to predict the exact amount of fuel that will be needed since emergencies are unpredictable and performance of Bay Area pipelines and refineries are not well understood. We know that all of the fuel needed immediately after a major event in San Francisco is stored in vehicles or local storage tanks, which is already captured in the 2020 Lifelines Restoration Performance Project Report. However, the amount of fuel needed is less important than whether the supply chain is stable. If the refineries and other fuel infrastructure remains functional, local storage is irrelevant.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F7	Compiling inventories of available fuel in a disaster will likely take at least half a day and will rely partly on manual assessment of sites by personnel who might themselves be unavailable under disaster conditions.	Mayor [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F15	If an emergency fuel delivery by water is needed, the City has not planned adequately for the risk that landing sites might be damaged, thereby compromising their ability to receive fuel delivery vessels or support tanker trucks for city transport.	Mayor [August 28, 2021]	Disagree wholly	As part of Fleet Week annual drills and exercises, in 2018 and 2019 San Francisco performed multiple tests of how to bring supplies, including fuel, to shore from military water vessels, and planned for the City's response in the event that landing sites might be damaged. These tests included arrival to Treasure Island, Ocean Beach, and port infrastructure. In 2021, many City departments joined the Port of San Francisco in a Disaster Response Exercise that reviewed emergency operations planning and assumptions for reopening of port infrastructure.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F16	The City has insufficient knowledge about whether restoration of routes on the Priority Routes map will allow effective refueling of critical backup generators and fleet vehicles in the event of a disaster.	Mayor [August 28, 2021]	Disagree wholly	The City's draft priority routes reopening plan was completed in order to allow for critical activities to occur quickly, including moving fuel from one place to another throughout the city.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F17	The lack of a published San Francisco Fuel Plan makes it harder to coordinate on consistent fuel resilience best practices citywide.	Mayor [August 28, 2021]	Disagree partially	The draft San Francisco fuel plan does not address resiliency practices, but provides a guide for how fuel will be managed, who will collect the current fuel levels (at the time of the incident) and other operational factors. The plan is meant to be a functional document versus a roadmap for fuel resilience.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F18	The lack of fuel resilience-related line items in the 2019 and 2021 Capital Plans indicates that the City is not prioritizing fuel resilience comparably to other aspects of lifelines resilience.	Mayor [August 28, 2021]	Disagree wholly	Unlike other lifelines like water and wastewater, the City does not own fuel infrastructure, such as refineries, pipelines, pumping stations and terminals. Given different infrastructure ownership structures, the Capital Plan should not be used to compare relative levels of priority for lifelines resilience. Priority City investments for fuel resilience may be for non-capital items and therefore not reflected in the Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F19	Progress on fuel resilience has been impeded by the lack of a dedicated, reliable funding source.	Mayor [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F20	The City will likely need to replace some critical backup generators with batteries by 2050 but has not initiated planning for this.	Mayor [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F21	The City will likely need to rely at least partially on electric vehicles for critical infrastructure functions by 2050 but has not initiated planning for how this can be done in a disaster-resilient manner.	Mayor [August 28, 2021]	Agree	

2020-21 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

Report Title [Publication Date]	R# [for F#]	Recommendation	Respondent Assigned by CGJ [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R1 [for F3]	The Mayor’s Office should determine an appropriate agency sponsor for the Fuel Working Group by December 2021.	Mayor [August 28, 2021]	Has been implemented	The City Administrator’s Office has been designated as the sponsor of, and lead agency for, the Fuel Working Group (“FWG”).
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R2 [for F3]	The Fuel Working Group should be reconvened by its agency sponsor by February 2022. The working group should meet at least quarterly thereafter.	Mayor [August 28, 2021]	Has not yet been implemented but will be implemented in the future	Pre-COVID-19, the FWG met monthly. Now that the FWG members are returning to their regular functions following the conclusion of their deployment as Disaster Service Workers to support COVID-19 response, the FWG will resume meeting on a regular basis (no less than quarterly) in the next 90 days.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R3 [for F4]	The agency sponsor of the Fuel Working Group should select members with strong experience in supply chain logistics and emergency management. The Department of Emergency Management, the Office of Contract Administration, the City Administrator’s Office, and other City departments who are significant users of fuel, including SFPUC, SFMTA, and DPW should dedicate staff time each month through December 2024, or until the subsequent recommendations in this report are implemented.	Mayor [August 28, 2021]	Has been implemented	Pre-COVID-19, the FWG met monthly. Members included the emergency managers from: DPW, SFMTA, SFPUC, CAO, DEM, SFFD and subject matter experts from SFO, Central Shops and Public Works. Port staff will be included once the group relaunches its regular meetings in the next 90 days.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R4 [for F5]	By December 2022, the Department of Emergency Management should compile an inventory of generators critical to life safety in the City and their locations, portability, fuel needs, tank storage capacities, and burn rates. This inventory should be updated at least annually thereafter. The inventory should include information including generator location, fuel type, connection type, and any access codes needed for emergency delivery.	Mayor [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R5 [for F6]	By June 2023, the Department of Emergency Management should perform a team exercise to estimate likely ranges of fuel usage for critical generators in the City's inventory in the aftermath of a plausible disaster in which those usage needs would have to be met from local sources. The exercise should give lower and upper bounds stemming from possible variations in which generators would have to run and for how long.	Mayor [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by June 2023.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R6 [for F7]	By December 2023, the Department of Emergency Management should develop and test a plan for the quick assessment of local fuel reserves available to City agencies in a disaster, including protocols that ensure incident commanders can assess emergency fuel supply and demand in real-time citywide.	Mayor [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2023 in coordination with the City Administrator's Office.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R9 [for F11]	In the 2023 Capital Plan, the City should commit to building an additional fueling station with five-ten thousand gallon storage capacity for both gasoline and diesel fuels in the space to be freed up at the Southeast Treatment Plant when the digester replacement work is done, or to identify an alternate site for an additional fueling station if the Southeast plant is not available.	Mayor [August 28, 2021]	Requires further analysis	The City Administrator's Office (ADM), Office of Resilience and Capital Planning (ORCP), Department of Emergency Management (DEM), and San Francisco Public Utilities Commission (SFPUC) will need to complete analysis of the City's fuel needs and identify potential fuel storage project scopes, costs, and target dates to understand if there are locations in San Francisco that are viable for such a storage project. This analysis should include looking at the fuel needs and potential fuel storage locations for City infrastructure located outside of San Francisco, such as the Hetch Hetchy Regional Water System. Regarding the potential use of the Southeast Treatment Plant (SEP) for fuel storage, the SFPUC is completing a SEP Campus Plan to determine how to best utilize the space at SEP. Any analysis of using SEP for fuel storage will need to be completed in the context of the SEP Campus Plan, and must include analysis around future SFPUC Wastewater and Recycled Water plans for SEP, the safety of storing large amounts of fuel in the same footprint as a wastewater treatment plant, and ensure consistency and compliance with the SFPUC's Racial Justice Resolution and Environmental Justice Policies regarding land use equity objectives. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R12 [for F14]	By December 2021, the Fuel Working Group should ask each City-contracted fuel supplier to send a qualified representative to the Group's planning meetings, field simulations, and other events where the technical advice and operational experience of fuel distributors are needed to help secure disaster readiness.	Mayor [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The City has continuously engaged with its fuel vendors in fuel resilience discussions, planning and exercises in numerous ways over the years. Our vendors have informally participated in fuel exercises, and provide ongoing guidance and technical advice and assistance in improving our fuel resilience and developing our fuel plans. However, we do not agree that it would be appropriate to include them formally in the City's exercises because there is often confidential information relayed on the City's critical infrastructure. In addition, there may be additional costs incurred on contracts as a result of this requirement. We agree, however, that we should explore additional ways to engage our vendors in assisting the City proactively plan for events and strengthen fuel resiliency. This will be formally included in a future FWG agenda for consideration and recommendation to DEM.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R13 [for F15]	By December 2023, as part of a Fleet Week live exercise, the Department of Emergency Management and the Office of Resilience and Capital Planning should test a scenario in which the City's normal supply line is damaged and delivery by water is necessary. This exercise should include a full demonstration of marine cargo delivery, readiness of the staging area, performance of the transfer-storage-filling equipment, and performance of the tanker trucks.	Mayor [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The San Francisco Fleet Week Exercise Program is developed jointly between San Francisco emergency managers, local first responder stakeholders, and state and federal military partners based on mutual need to test shared vulnerabilities. Fuel delivery and resilience was exercised in 2018 and 2019 and response to many other risks need to be examined, practiced and tested. Therefore, it is unlikely that fuel resilience will be tested again before December 2023.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R14 [for F15]	By December 2023, the Department of Emergency Management, the Office of Resilience and Capital Planning, and the Port should prepare a seismic vulnerability assessment of likely delivery sites for emergency fuel delivery by water, including Pier 96, Pier 80, Pier 50, and at least one alternative delivery site.	Mayor [August 28, 2021]	Has not yet been implemented but will be implemented in the future	The Port completed an earthquake and flood risk assessment of all northern waterfront facilities in November 2020 and commenced an earthquake assessment of Piers 50, 80, and 94/96 that is scheduled for completion in fall 2021. The new earthquake assessment information will inform a joint Port and DEM disaster response exercise focused on evaluating missions and capabilities including fuel supply. Results are expected by the end of 2021 and will help inform Port investments in earthquake resilience and disaster response.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R15 [for F16]	By December 2022, the Department of Emergency Management should publish an analysis of the priority routes determining whether they will allow sufficiently reliable refueling of critical backup generators and fleet vehicles.	Mayor [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R16 [for F1, F2, F17]	By June 2022, the City Administrator’s Office should publish a San Francisco Fuel Plan developed in collaboration with the Fuel Working Group. The Fuel Plan should cover key resilience measures such as: <ul style="list-style-type: none"> • Processes and timescales for identifying fuel on hand in City-accessible storage • Citywide policies for maintaining fuel reserves in available tanks (e.g., keeping fleet vehicles topped up at the end of each day, reserve requirements for generator tanks) • Keeping track of burn rates in normal and plausible emergency scenarios • Information centralization for key sources and users of fuel, (e.g., types of hose connections used by fuel tanks) • Scheduling drills around emergency fuel deliveries including surrounding counties • Functional evaluation of city assets needed for emergency fuel delivery (e.g., piers, roadways, and equipment) • Reviewing city contracts with fuel vendors 	Mayor [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The timeline presented in the recommendation is unrealistic. The San Francisco Emergency Fuel Plan and other corresponding documents that outline the key resilience measures will be published by December 2022.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R17 [for F18]	In the 2023 Capital Plan, the City should commit to funding capital projects that are identified in the Fuel Plan as a high priority to improve fuel resilience in the City over the subsequent ten years.	Mayor [August 28, 2021]	Requires further analysis	Fuel resilience is critical to City operations. When developing the City’s Capital Plan, the City should consider available alternative methods to building fuel resilience as well as other immediate/critical citywide capital needs. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R18 [for F19]	In the 2023 Capital Plan, the City should specify how it will provide at least \$10 million in dedicated funding for fuel resilience capital projects within the next ten years using general obligation bond revenue.	Mayor [August 28, 2021]	Requires further analysis	Fuel resilience is critical to City operations. When developing the City’s Capital Plan, the City should consider available alternative methods to building fuel resilience as well as other immediate/critical citywide capital needs. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.

Report Title [Publication Date]	F#	Finding	Respondent Assigned by CGJ [Response Due Date]	Finding Response (Agree/ Disagree)	Finding Response Text
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F3	The City's lack of agency sponsorship and dedicated staffing and budgeting for fuel resilience efforts weakens its ability to ensure fuel resilience in an emergency.	City Administrator [August 28, 2021]	Disagree partially	While we agree that we can always dedicate more resources to improve fuel resiliency, there is and continues to be agency sponsorship on fuel resilience. Over the last 16 months, other emergency planning efforts had to be paused to respond to the unprecedented COVID-19 pandemic. Although further emergency planning was paused, San Francisco's existing emergency response plans remained in place and the City was (and is) prepared to respond to an earthquake or other natural disaster.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F4	The cessation of fuel resilience progress during COVID indicates that the City is not prioritizing fuel resilience comparably to other aspects of lifeline resilience.	City Administrator [August 28, 2021]	Disagree wholly	The COVID-19 pandemic was and continues to be the world's most significant emergency within the last century. San Francisco's response to COVID-19 prevented countless immediate deaths and sicknesses of residents and guests. Emergency managers who were generally engaged in fuel resilience planning were wholly engaged in the City's COVID-19 response. Even with the COVID-19 pandemic, San Francisco remained prepared to implement its emergency response plans in the event of an earthquake or other natural disaster. There is no correlation between the City's focus on COVID-19 response and its commitment to fuel resilience.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F8	The City will have a severely limited and unreliable ability in a disaster to get fuel from available reserves to sites such as generator tanks that need fuel urgently.	City Administrator [August 28, 2021]	Disagree partially	The City has service stations where fuel can be siphoned from generators that are not in use. These "reserves" are limited but are consistent with the City's fuel planning and intentional decision to rely on supply chain infrastructure and mutual aid methods to bring needed fuel into the City as needed.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F9	The City has not invested in technological solutions to augment the ability to refuel critical vehicles and generators in a disaster.	City Administrator [August 28, 2021]	Disagree wholly	A key technological investment the City is prioritizing is fuel pumping, transport, and refueling equipment in the form of fuel trucks. These trucks are extremely costly and funding them is challenging. However, Central Shops, which is part of the City's General Services Agency and provides high quality, cost effective and sustainable fleet management and maintenance services to its customer departments and the City, is currently in the process of building one tanker truck to support refueling of critical vehicles and generators. This will supplement the existing SFFD fuel tanker truck and the one that is being purchased by San Francisco Public Works.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F10	The usability of privately-held local fuel reserves in a disaster is uncertain due to the lack of partnerships between the City and private gas station operators and incomplete data about which private stations could best augment critical supplies.	City Administrator [August 28, 2021]	Disagree partially	The usability of privately-held local fuel reserves in a disaster is uncertain, but this is mainly due to a limited ability for the City to access these reserves rather than due to lack of partnerships. After an emergency, there will likely be localized power outages, and many privately-held local fuel reserves are depending on power to get the fuel out of storage. Therefore, the City will need to use fuel in order to get more fuel, which is not the most efficient solution to the problem.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F11	Opportunities to expand fuel reserves within the City are very rare due to geographic constraints but very valuable for fuel resilience.	City Administrator [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F12	In the aftermath of a region-wide disaster such as a major earthquake, the ability of the City's two contracted suppliers to deliver fuel might be compromised temporarily because they would both be susceptible to the same infrastructure failures.	City Administrator [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F13	The City has not contracted with an emergency out-of-region backup vendor in case the two regular vendors cannot deliver fuel, as recommended by the California Energy Commission, despite the risk of region-wide disruptions compromising both.	City Administrator [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F14	Although the City's two fuel suppliers are contractually responsible for providing technical support on products and offering assistance required by City personnel, they do not participate actively in the planning, simulation exercises, or ongoing work of the Fuel Working Group.	City Administrator [August 28, 2021]	Disagree partially	The City's fuel vendors continuously engage in San Francisco's fuel resilience planning, including participating in specific fuel-related simulation exercises and providing guidance and technical advice. Vendors are not always invited to participate in all emergency exercises and planning efforts due to confidentiality of City infrastructure discussions and likely increases in costs to fuel contracts to account for participation.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F17	The lack of a published San Francisco Fuel Plan makes it harder to coordinate on consistent fuel resilience best practices citywide.	City Administrator [August 28, 2021]	Disagree partially	The draft San Francisco fuel plan does not address resiliency practices, but provides a guide for how fuel will be managed, who will collect the current fuel levels (at the time of the incident) and other operational factors. The plan is meant to be a functional document versus a roadmap for fuel resilience.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F18	The lack of fuel resilience-related line items in the 2019 and 2021 Capital Plans indicates that the City is not prioritizing fuel resilience comparably to other aspects of lifelines resilience.	City Administrator [August 28, 2021]	Disagree wholly	Unlike other lifelines like water and wastewater, the City does not own fuel infrastructure, such as refineries, pipelines, pumping stations and terminals. Given different infrastructure ownership structures, the Capital Plan should not be used to compare relative levels of priority for lifelines resilience. Priority City investments for fuel resilience may be for non-capital items and therefore not reflected in the Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F19	Progress on fuel resilience has been impeded by the lack of a dedicated, reliable funding source.	City Administrator [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F20	The City will likely need to replace some critical backup generators with batteries by 2050 but has not initiated planning for this.	City Administrator [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F21	The City will likely need to rely at least partially on electric vehicles for critical infrastructure functions by 2050 but has not initiated planning for how this can be done in a disaster-resilient manner.	City Administrator [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R1 [for F3]	The Mayor's Office should determine an appropriate agency sponsor for the Fuel Working Group by December 2021.	City Administrator [August 28, 2021]	Has been implemented	The City Administrator's Office has been designated as the sponsor of, and lead agency for, the Fuel Working Group ("FWG").
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R2 [for F3]	The Fuel Working Group should be reconvened by its agency sponsor by February 2022. The working group should meet at least quarterly thereafter.	City Administrator [August 28, 2021]	Has not yet been implemented but will be implemented in the future	Pre-COVID-19, the FWG met monthly. Now that the FWG members are returning to their regular functions following the conclusion of their deployment as Disaster Service Workers to support COVID-19 response, the FWG will resume meeting on a regular basis (no less than quarterly) in the next 90 days.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R3 [for F4]	The agency sponsor of the Fuel Working Group should select members with strong experience in supply chain logistics and emergency management. The Department of Emergency Management, the Office of Contract Administration, the City Administrator's Office, and other City departments who are significant users of fuel, including SFPUC, SFMTA, and DPW should dedicate staff time each month through December 2024, or until the subsequent recommendations in this report are implemented.	City Administrator [August 28, 2021]	Has been implemented	Pre-COVID-19, the FWG met monthly. Members included the emergency managers from: DPW, SFMTA, SFPUC, CAO, DEM, SFFD and subject matter experts from SFO, Central Shops and Public Works. Port staff will be included once the group relaunches its regular meetings in the next 90 days.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R7 [for F8, F9]	By December 2023, the City should build, retrofit, or purchase a minimum of two additional tanker trucks that can each extract up to 2,500 gallons of fuel from a tank, even in the absence of grid power, and transport it to where it is needed. These vehicles should have the ability to transport both gasoline and diesel fuel.	City Administrator [August 28, 2021]	Requires further analysis	Central Shops is currently in the process of building one tanker truck to support refueling of critical vehicles and generators. This will supplement the existing SFFD fuel tanker truck and the one that is being purchased by the Department of Public Works. Further analysis is needed to determine the number of tanker trucks needed, the availability of additional tanker trucks if mutual aid can be exercised, and available funding. The analysis will be completed by January 31, 2023.

Report Title [Publication Date]	R# [for F#]	Recommendation	Respondent Assigned by CGJ [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R8 [for F10]	By December 2022, the City should enter into Memoranda of Understanding or contracts with a minimum of two local private gas station operators to ensure that emergency vehicles can access fuel stored at their stations, including making that fuel technically accessible even in the event of a grid power outage. The operators chosen should be prioritized based on criteria relevant for usefulness in a disaster, such as: <ul style="list-style-type: none"> • Amount of fuel stored at the station • Availability of both gas and diesel • 24/7 staffed operation • Ability to dispense fuel without relying on grid power • Proximity to priority routes • Geographical distribution of stations (i.e., not all in the same place) 	City Administrator [August 28, 2021]	Requires further analysis	By March 2022, the City will provide an analysis addressing opportunities and constraints for utilizing private gas stations for emergency use. The scope of the analysis shall include, but not be limited to: <ul style="list-style-type: none"> -Identification of emergency vehicles currently with and without access to private gas stations, including both City and private emergency fleet (for example, two private ambulance companies currently do utilize private gas stations): <ul style="list-style-type: none"> --Type --Number --Fuel needs -Analysis of private stations to identify: <ul style="list-style-type: none"> --Amount of fuel stored at the station --Availability of both gas and diesel --Fuel suppliers and suppliers' locations --Staffing, and self-serve capabilities --Availability of generators on-site to power pumps without grid power --Proximity to priority routes --Geographical distribution of stations in relation to potential priority routes --Ability to siphon fuel -Determination of whether private fueling locations should be added to the City's fuel plan
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R9 [for F11]	In the 2023 Capital Plan, the City should commit to building an additional fueling station with five-ten thousand gallon storage capacity for both gasoline and diesel fuels in the space to be freed up at the Southeast Treatment Plant when the digester replacement work is done, or to identify an alternate site for an additional fueling station if the Southeast plant is not available.	City Administrator [August 28, 2021]	Requires further analysis	The City Administrator's Office (ADM), Office of Resilience and Capital Planning (ORCP), Department of Emergency Management (DEM), and San Francisco Public Utilities Commission (SFPUC) will need to complete analysis of the City's fuel needs and identify potential fuel storage project scopes, costs, and target dates to understand if there are locations in San Francisco that are viable for such a storage project. This analysis should include looking at the fuel needs and potential fuel storage locations for City infrastructure located outside of San Francisco, such as the Hetch Hetchy Regional Water System. Regarding the potential use of the Southeast Treatment Plant (SEP) for fuel storage, the SFPUC is completing a SEP Campus Plan to determine how to best utilize the space at SEP. Any analysis of using SEP for fuel storage will need to be completed in the context of the SEP Campus Plan, and must include analysis around future SFPUC Wastewater and Recycled Water plans for SEP, the safety of storing large amounts of fuel in the same footprint as a wastewater treatment plant, and ensure consistency and compliance with the SFPUC's Racial Justice Resolution and Environmental Justice Policies regarding land use equity objectives. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R10 [for F12]	By December 2022, the Office of Contract Administration should prepare a supply chain vulnerability assessment of the City's two contracted fuel suppliers.	City Administrator [August 28, 2021]	Has not yet been implemented but will be implemented in the future	The California Energy Commission may have already prepared such an assessment. The Office of Contract Administration (OCA) and the FWG will conduct outreach to determine if an assessment exists. If it does not, OCA, in coordination with the FWG, will provide a supply chain vulnerability assessment by June 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R11 [for F13]	If the two contracted fuel suppliers are found to have joint vulnerabilities that cannot be mitigated adequately, the Office of Contract Administration should enter into a Memorandum of Understanding by December 2023 for emergency backup delivery with a vendor whose facilities and equipment are based outside of the Bay Area.	City Administrator [August 28, 2021]	Requires further analysis	Within six months, the City will undertake an analysis to identify vulnerabilities of current fuel vendors (Western States Oil and Golden Gate Petroleum) and assessing potential alternative vendors outside of the Bay Area. The scope of the analysis shall include, but not be limited to: <ul style="list-style-type: none"> • Locations of fuel depots for each current vendor, and assessment of vulnerabilities at each location • Current vendors' fuel transport/delivery options should any of their fuel depots become inaccessible, including assessment of deliveries by road/highway and water (barge). • City's fuel transport options from within the Bay Area should vendors be unable to delivery, including ability for new City fuel truck(s) to transport from the fuel depots within region • Identification and assessment of fuel vendors outside the Bay Area, including locations/distance, transportation options, fuel types, and potential delivery volumes and turnaround time.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R12 [for F14]	By December 2021, the Fuel Working Group should ask each City-contracted fuel supplier to send a qualified representative to the Group's planning meetings, field simulations, and other events where the technical advice and operational experience of fuel distributors are needed to help secure disaster readiness.	City Administrator [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The City has continuously engaged with its fuel vendors in fuel resilience discussions, planning and exercises in numerous ways over the years. Our vendors have informally participated in fuel exercises, and provide ongoing guidance and technical advice and assistance in improving our fuel resilience and developing our fuel plans. However, we do not agree that it would be appropriate to include them formally in the City's exercises because there is often confidential information relayed on the City's critical infrastructure. In addition, there may be additional costs incurred on contracts as a result of this requirement. We agree, however, that we should explore additional ways to engage our vendors in assisting the City proactively plan for events and strengthen fuel resiliency. This will be formally included in a future FWG agenda for consideration and recommendation to DEM.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R13 [for F15]	By December 2023, as part of a Fleet Week live exercise, the Department of Emergency Management and the Office of Resilience and Capital Planning should test a scenario in which the City's normal supply line is damaged and delivery by water is necessary. This exercise should include a full demonstration of marine cargo delivery, readiness of the staging area, performance of the transfer-storage-filling equipment, and performance of the tanker trucks.	City Administrator [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The San Francisco Fleet Week Exercise Program is developed jointly between San Francisco emergency managers, local first responder stakeholders, and state and federal military partners based on mutual need to test shared vulnerabilities. Fuel delivery and resilience was exercised in 2018 and 2019 and response to many other risks need to be examined, practiced and tested. Therefore, it is unlikely that fuel resilience will be tested again before December 2023.

Report Title [Publication Date]	R# [for F#]	Recommendation	Respondent Assigned by CGJ [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R14 [for F15]	By December 2023, the Department of Emergency Management, the Office of Resilience and Capital Planning, and the Port should prepare a seismic vulnerability assessment of likely delivery sites for emergency fuel delivery by water, including Pier 96, Pier 80, Pier 50, and at least one alternative delivery site.	City Administrator [August 28, 2021]	Has not yet been implemented but will be implemented in the future	The Port completed an earthquake and flood risk assessment of all northern waterfront facilities in November 2020 and commenced an earthquake assessment of Piers 50, 80, and 94/96 that is scheduled for completion in fall 2021. The new earthquake assessment information will inform a joint Port and DEM disaster response exercise focused on evaluating missions and capabilities including fuel supply. Results are expected by the end of 2021 and will help inform Port investments in earthquake resilience and disaster response.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R16 [for F17]	By June 2022, the City Administrator’s Office should publish a San Francisco Fuel Plan developed in collaboration with the Fuel Working Group. The Fuel Plan should cover key resilience measures such as: <ul style="list-style-type: none"> • Processes and timescales for identifying fuel on hand in City-accessible storage • Citywide policies for maintaining fuel reserves in available tanks (e.g., keeping fleet vehicles topped up at the end of each day, reserve requirements for generator tanks) • Keeping track of burn rates in normal and plausible emergency scenarios • Information centralization for key sources and users of fuel, (e.g., types of hose connections used by fuel tanks) • Scheduling drills around emergency fuel deliveries including surrounding counties • Functional evaluation of city assets needed for emergency fuel delivery (e.g., piers, roadways, and equipment) • Reviewing city contracts with fuel vendors • Developing specifications for equipment that needs to be purchased The Fuel Plan should also incorporate logistical lessons learned from the COVID pandemic.	City Administrator [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The timeline presented in the recommendation is unrealistic. The San Francisco Emergency Fuel Plan and other corresponding documents that outline the key resilience measures will be published by December 2022.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R17 [for F18]	In the 2023 Capital Plan, the City should commit to funding capital projects that are identified in the Fuel Plan as a high priority to improve fuel resilience in the City over the subsequent ten years.	City Administrator [August 28, 2021]	Requires further analysis	Fuel resilience is critical to City operations. When developing the City’s Capital Plan, the City should consider available alternative methods to building fuel resilience as well as other immediate/critical citywide capital needs. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R18 [for F19]	In the 2023 Capital Plan, the City should specify how it will provide at least \$10 million in dedicated funding for fuel resilience capital projects within the next ten years using general obligation bond revenue.	City Administrator [August 28, 2021]	Requires further analysis	Fuel resilience is critical to City operations. When developing the City's Capital Plan, the City should consider available alternative methods to building fuel resilience as well as other immediate/critical citywide capital needs. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R19 [for F20]	By December 2024, the Office of Resilience and Capital Planning should publish a feasibility study on replacing current City backup generators with battery backup installations or other zero-emission technology by 2050. The study should examine costs, risks, and alternatives, including mobile and stationary battery sources, taking into account not only the present state of battery technology but likely future developments in upcoming decades.	City Administrator [August 28, 2021]	Requires further analysis	This recommendation requires further analysis with key City stakeholders to determine a clear scope and identify funding. This analysis will be completed by December 31, 2022.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R20 [for F21]	By December 2024, the Office of Resilience and Capital Planning should publish a plan for achieving disaster resilience with a zero-emissions City vehicle fleet. This plan should analyze the stationary backup power sources that might be needed to recharge critical response vehicles in the event of a disaster and how bidirectional charging technology might be used to enable the batteries in City fleet vehicles to serve as mobile backup power sources analogous to mobile backup generators but also likely future developments.	City Administrator [August 28, 2021]	Requires further analysis	This recommendation needs further analysis. Specifically, the analysis will inform the recommended plan. For instance, the analysis will identify bi-directional charging applications (case studies, technologies) and their barriers / how to overcome them. It will also identify the vehicle types / cohort of mixed vehicles ideal for vehicle-to-infrastructure (V2I), as well as location of those vehicles and general, preliminary estimates of any grid and City facility electrical upgrades necessary to support V2I. Additionally, it should address the various emergency infrastructure and automation required to enable V2I - as well as their costs. Finally, the analysis must include participation from the SFPUC because subject matter expertise in behind-the-meter electrical infrastructure and jurisdiction over City facility connections to the electric grid. This analysis will be completed by December 31, 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F1	In the aftermath of a major earthquake (magnitude 7.0 or greater), there will likely be severe citywide fuel and power shortages lasting more than 72 hours.	Department of Emergency Management [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F2	If these shortages resulted in lack of power to lifeline infrastructure facilities and/or lack of fuel for critical lifeline vehicles, the resulting cascading failures of other lifelines could have life safety and quality-of-life impacts greater than the fuel and power shortages themselves.	Department of Emergency Management [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F4	The cessation of fuel resilience progress during COVID indicates that the City is not prioritizing fuel resilience comparably to other aspects of lifeline resilience.	Department of Emergency Management [August 28, 2021]	Disagree wholly	The COVID-19 pandemic was and continues to be the world's most significant emergency within the last century. San Francisco's response to COVID-19 prevented countless immediate deaths and sicknesses of residents and guests. Emergency managers who were generally engaged in fuel resilience planning were wholly engaged in the City's COVID-19 response. Even with the COVID-19 pandemic, San Francisco remained prepared to implement its emergency response plans in the event of an earthquake or other natural disaster. There is no correlation between the City's focus on COVID-19 response and its commitment to fuel resilience.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F5	In the aftermath of a major disaster, it will be difficult for emergency responders to catalog the citywide fuel needs of backup generators.	Department of Emergency Management [August 28, 2021]	Disagree partially	The Department of Emergency Management (DEM) managed a citywide continuity of operations planning working group in 2018 and 2019 that asked City departments to consider resources required (such as fuel) to keep their essential services going during or after an emergency. DEM and the City Administrator's Office partnered together to compile a list of citywide backup generators and their fuel needs. This was set to be finalized in March of 2020 but was delayed.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F6	It is impossible to determine how much fuel storage is needed to meet emergency demands after a disaster because the City has not prepared proper estimates of fuel needs in a range of disaster scenarios.	Department of Emergency Management [August 28, 2021]	Disagree partially	It is impossible to predict the exact amount of fuel that will be needed since emergencies are unpredictable and performance of Bay Area pipelines and refineries are not well understood. We know that all of the fuel needed immediately after a major event in San Francisco is stored in vehicles or local storage tanks, which is already captured in the 2020 Lifelines Restoration Performance Project Report. However, the amount of fuel needed is less important than whether the supply chain is stable. If the refineries and other fuel infrastructure remains functional, local storage is irrelevant.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F7	Compiling inventories of available fuel in a disaster will likely take at least half a day and will rely partly on manual assessment of sites by personnel who might themselves be unavailable under disaster conditions.	Department of Emergency Management [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F8	The City will have a severely limited and unreliable ability in a disaster to get fuel from available reserves to sites such as generator tanks that need fuel urgently.	Department of Emergency Management [August 28, 2021]	Disagree partially	The City has service stations where fuel can be siphoned from generators that are not in use. These “reserves” are limited but are consistent with the City’s fuel planning and intentional decision to rely on supply chain infrastructure and mutual aid methods to bring needed fuel into the City as needed.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F9	The City has not invested in technological solutions to augment the ability to refuel critical vehicles and generators in a disaster.	Department of Emergency Management [August 28, 2021]	Disagree wholly	A key technological investment the City is prioritizing is fuel pumping, transport, and refueling equipment in the form of fuel trucks. These trucks are extremely costly and funding them is challenging. However, Central Shops, which is part of the City’s General Services Agency and provides high quality, cost effective and sustainable fleet management and maintenance services to its customer departments and the City, is currently in the process of building one tanker truck to support refueling of critical vehicles and generators. This will supplement the existing SFFD fuel tanker truck and the one that is being purchased by San Francisco Public Works.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F14	Although the City’s two fuel suppliers are contractually responsible for providing technical support on products and offering assistance required by City personnel, they do not participate actively in the planning, simulation exercises, or ongoing work of the Fuel Working Group.	Department of Emergency Management [August 28, 2021]	Disagree partially	The City’s fuel vendors continuously engage in San Francisco’s fuel resilience planning, including participating in specific fuel-related simulation exercises and providing guidance and technical advice. Vendors are not always invited to participate in all emergency exercises and planning efforts due to confidentiality of City infrastructure discussions and likely increases in costs to fuel contracts to account for participation.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F15	If an emergency fuel delivery by water is needed, the City has not planned adequately for the risk that landing sites might be damaged, thereby compromising their ability to receive fuel delivery vessels or support tanker trucks for city transport.	Department of Emergency Management [August 28, 2021]	Disagree wholly	As part of Fleet Week annual drills and exercises, in 2018 and 2019 San Francisco performed multiple tests of how to bring supplies, including fuel, to shore from military water vessels, and planned for the City’s response in the event that landing sites might be damaged. These tests included arrival to Treasure Island, Ocean Beach, and port infrastructure. In 2021, many City departments joined the Port of San Francisco in a Disaster Response Exercise that reviewed emergency operations planning and assumptions for reopening of port infrastructure.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F16	The City has insufficient knowledge about whether restoration of routes on the Priority Routes map will allow effective refueling of critical backup generators and fleet vehicles in the event of a disaster.	Department of Emergency Management [August 28, 2021]	Disagree wholly	The City’s draft priority routes reopening plan was completed in order to allow for critical activities to occur quickly, including moving fuel from one place to another throughout the city.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F17	The lack of a published San Francisco Fuel Plan makes it harder to coordinate on consistent fuel resilience best practices citywide.	Department of Emergency Management [August 28, 2021]	Disagree partially	The draft San Francisco fuel plan does not address resiliency practices, but provides a guide for how fuel will be managed, who will collect the current fuel levels (at the time of the incident) and other operational factors. The plan is meant to be a functional document versus a roadmap for fuel resilience.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F20	The City will likely need to replace some critical backup generators with batteries by 2050 but has not initiated planning for this.	Department of Emergency Management [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F21	The City will likely need to rely at least partially on electric vehicles for critical infrastructure functions by 2050 but has not initiated planning for how this can be done in a disaster-resilient manner.	Department of Emergency Management [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R4 [for F5]	By December 2022, the Department of Emergency Management should compile an inventory of generators critical to life safety in the City and their locations, portability, fuel needs, tank storage capacities, and burn rates. This inventory should be updated at least annually thereafter. The inventory should include information including generator location, fuel type, connection type, and any access codes needed for emergency delivery.	Department of Emergency Management [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2022.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R5 [for F6]	By June 2023, the Department of Emergency Management should perform a team exercise to estimate likely ranges of fuel usage for critical generators in the City's inventory in the aftermath of a plausible disaster in which those usage needs would have to be met from local sources. The exercise should give lower and upper bounds stemming from possible variations in which generators would have to run and for how long.	Department of Emergency Management [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2022.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R6 [for F7]	By December 2023, the Department of Emergency Management should develop and test a plan for the quick assessment of local fuel reserves available to City agencies in a disaster, including protocols that ensure incident commanders can assess emergency fuel supply and demand in real-time citywide.	Department of Emergency Management [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2023 in coordination with the City Administrator's Office.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R13 [for F15]	By December 2023, as part of a Fleet Week live exercise, the Department of Emergency Management and the Office of Resilience and Capital Planning should test a scenario in which the City's normal supply line is damaged and delivery by water is necessary. This exercise should include a full demonstration of marine cargo delivery, readiness of the staging area, performance of the transfer-storage-filling equipment, and performance of the tanker trucks.	Department of Emergency Management [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The San Francisco Fleet Week Exercise Program is developed jointly between San Francisco emergency managers, local first responder stakeholders, and state and federal military partners based on mutual need to test shared vulnerabilities. Fuel delivery and resilience was exercised in 2018 and 2019 and response to many other risks need to be examined, practiced and tested. Therefore, it is unlikely that fuel resilience will be tested again before December 2023.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R14 [for F15]	By December 2023, the Department of Emergency Management, the Office of Resilience and Capital Planning, and the Port should prepare a seismic vulnerability assessment of likely delivery sites for emergency fuel delivery by water, including Pier 96, Pier 80, Pier 50, and at least one alternative delivery	Department of Emergency Management [August 28, 2021]	Has not yet been implemented but will be implemented in the future	The Port completed an earthquake and flood risk assessment of all northern waterfront facilities in November 2020 and commenced an earthquake assessment of Piers 50, 80, and 94/96 that is scheduled for completion in fall 2021. The new earthquake assessment information will inform a joint Port and DEM disaster response exercise focused on evaluating missions and capabilities including fuel supply. Results are expected by the end of 2021 and will help inform Port investments in earthquake resilience and disaster response.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R15 [for F16]	By December 2022, the Department of Emergency Management should publish an analysis of the priority routes determining whether they will allow sufficiently reliable refueling of critical backup generators and fleet vehicles.	Department of Emergency Management [August 28, 2021]	Has not yet been implemented but will be implemented in the future	This recommendation will be implemented by December 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F10	The usability of privately-held local fuel reserves in a disaster is uncertain due to the lack of partnerships between the City and private gas station operators and incomplete data about which private stations could best augment critical supplies.	Office of Contract Administration [August 28, 2021]	Disagree partially	The usability of privately-held local fuel reserves in a disaster is uncertain, but this is mainly due to a limited ability for the City to access these reserves rather than due to lack of partnerships. After an emergency, there will likely be localized power outages, and many privately-held local fuel reserves are depending on power to get the fuel out of storage. Therefore, the City will need to use fuel in order to get more fuel, which is not the most efficient solution to the problem.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F12	In the aftermath of a region-wide disaster such as a major earthquake, the ability of the City's two contracted suppliers to deliver fuel might be compromised temporarily because they would both be susceptible to the same infrastructure failures.	Office of Contract Administration [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F13	The City has not contracted with an emergency out-of-region backup vendor in case the two regular vendors cannot deliver fuel, as recommended by the California Energy Commission, despite the risk of region-wide disruptions compromising both.	Office of Contract Administration [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F14	Although the City's two fuel suppliers are contractually responsible for providing technical support on products and offering assistance required by City personnel, they do not participate actively in the planning, simulation exercises, or ongoing work of the Fuel Working Group.	Office of Contract Administration [August 28, 2021]	Disagree partially	The City's fuel vendors continuously engage in San Francisco's fuel resilience planning, including participating in specific fuel-related simulation exercises and providing guidance and technical advice. Vendors are not always invited to participate in all emergency exercises and planning efforts due to confidentiality of City infrastructure discussions and likely increases in costs to fuel contracts to account for participation.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R7 [for F9]	By December 2023, the City should build, retrofit, or purchase a minimum of two additional tanker trucks that can each extract up to 2,500 gallons of fuel from a tank, even in the absence of grid power, and transport it to where it is needed. These vehicles should have the ability to transport both gasoline and diesel fuel.	Office of Contract Administration [August 28, 2021]	Requires further analysis	Central Shops is currently in the process of building one tanker truck to support refueling of critical vehicles and generators. This will supplement the existing SFFD fuel tanker truck and the one that is being purchased by the Department of Public Works. Further analysis is needed to determine the number of tanker trucks needed, the availability of additional tanker trucks if mutual aid can be exercised, and available funding. The analysis will be completed by January 31, 2023.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R8 [for F10]	By December 2022, the City should enter into Memoranda of Understanding or contracts with a minimum of two local private gas station operators to ensure that emergency vehicles can access fuel stored at their stations, including making that fuel technically accessible even in the event of a grid power outage. The operators chosen should be prioritized based on criteria relevant for usefulness in a disaster, such as: <ul style="list-style-type: none"> • Amount of fuel stored at the station • Availability of both gas and diesel • 24/7 staffed operation • Ability to dispense fuel without relying on grid power • Proximity to priority routes • Geographical distribution of stations (i.e., not all in the same place) 	Office of Contract Administration [August 28, 2021]	Requires further analysis	By March 2022, the City will provide an analysis addressing opportunities and constraints for utilizing private gas stations for emergency use. The scope of the analysis shall include, but not be limited to: <ul style="list-style-type: none"> -Identification of emergency vehicles currently with and without access to private gas stations, including both City and private emergency fleet (for example, two private ambulance companies currently do utilize private gas stations): <ul style="list-style-type: none"> --Type --Number --Fuel needs -Analysis of private stations to identify: <ul style="list-style-type: none"> --Amount of fuel stored at the station --Availability of both gas and diesel --Fuel suppliers and suppliers' locations --Staffing, and self-serve capabilities --Availability of generators on-site to power pumps without grid power --Proximity to priority routes --Geographical distribution of stations in relation to potential priority routes --Ability to siphon fuel -Determination of whether private fueling locations should be added to the City's fuel plan
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R10 [for F12]	By December 2022, the Office of Contract Administration should prepare a supply chain vulnerability assessment of the City's two contracted fuel suppliers.	Office of Contract Administration [August 28, 2021]	Has not yet been implemented but will be implemented in the future	The California Energy Commission may have already prepared such an assessment. The Office of Contract Administration (OCA) and the FWG will conduct outreach to determine if an assessment exists. If it does not, OCA, in coordination with the FWG, will provide a supply chain vulnerability assessment by June 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R11 [for F13]	If the two contracted fuel suppliers are found to have joint vulnerabilities that cannot be mitigated adequately, the Office of Contract Administration should enter into a Memorandum of Understanding by December 2023 for emergency backup delivery with a vendor whose facilities and equipment are based outside of the Bay Area.	Office of Contract Administration [August 28, 2021]	Requires further analysis	Within six months, the City will undertake an analysis to identify vulnerabilities of current fuel vendors (Western States Oil and Golden Gate Petroleum) and assessing potential alternative vendors outside of the Bay Area. The scope of the analysis shall include, but not be limited to: <ul style="list-style-type: none"> • Locations of fuel depots for each current vendor, and assessment of vulnerabilities at each location • Current vendors' fuel transport/delivery options should any of their fuel depots become inaccessible, including assessment of deliveries by road/highway and water (barge). • City's fuel transport options from within the Bay Area should vendors be unable to delivery, including ability for new City fuel truck(s) to transport from the fuel depots within region • Identification and assessment of fuel vendors outside the Bay Area, including locations/distance, transportation options, fuel types, and potential delivery volumes and turnaround time

Report Title [Publication Date]	F#	Finding	Respondent Assigned by CGJ [Response Due Date]	Finding Response (Agree/ Disagree)	Finding Response Text
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F8	The City will have a severely limited and unreliable ability in a disaster to get fuel from available reserves to sites such as generator tanks that need fuel urgently.	Office of Resilience and Capital Planning [August 28, 2021]	Disagree partially	The City has service stations where fuel can be siphoned from generators that are not in use. These “reserves” are limited but are consistent with the City’s fuel planning and intentional decision to rely on supply chain infrastructure and mutual aid methods to bring needed fuel into the City as needed.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F9	The City has not invested in technological solutions to augment the ability to refuel critical vehicles and generators in a disaster.	Office of Resilience and Capital Planning [August 28, 2021]	Disagree wholly	A key technological investment the City is prioritizing is fuel pumping, transport, and refueling equipment in the form of fuel trucks. These trucks are extremely costly and funding them is challenging. However, Central Shops, which is part of the City’s General Services Agency and provides high quality, cost effective and sustainable fleet management and maintenance services to its customer departments and the City, is currently in the process of building one tanker truck to support refueling of critical vehicles and generators. This will supplement the existing SFFD fuel tanker truck and the one that is being purchased by San Francisco Public Works.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F18	The lack of fuel resilience-related line items in the 2019 and 2021 Capital Plans indicates that the City is not prioritizing fuel resilience comparably to other aspects of lifelines resilience.	Office of Resilience and Capital Planning [August 28, 2021]	Disagree wholly	Unlike other lifelines like water and wastewater, the City does not own fuel infrastructure, such as refineries, pipelines, pumping stations and terminals. Given different infrastructure ownership structures, the Capital Plan should not be used to compare relative levels of priority for lifelines resilience. Priority City investments for fuel resilience may be for non-capital items and therefore not reflected in the Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F19	Progress on fuel resilience has been impeded by the lack of a dedicated, reliable funding source.	Office of Resilience and Capital Planning [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R9 [for F11]	In the 2023 Capital Plan, the City should commit to building an additional fueling station with five-ten thousand gallon storage capacity for both gasoline and diesel fuels in the space to be freed up at the Southeast Treatment Plant when the digester replacement work is done, or to identify an alternate site for an additional fueling station if the Southeast plant is not available.	Office of Resilience and Capital Planning [August 28, 2021]	Requires further analysis	The City Administrator’s Office (ADM), Office of Resilience and Capital Planning (ORCP), Department of Emergency Management (DEM), and San Francisco Public Utilities Commission (SFPUC) will need to complete analysis of the City’s fuel needs and identify potential fuel storage project scopes, costs, and target dates to understand if there are locations in San Francisco that are viable for such a storage project. This analysis should include looking at the fuel needs and potential fuel storage locations for City infrastructure located outside of San Francisco, such as the Hetch Hetchy Regional Water System. Regarding the potential use of the Southeast Treatment Plant (SEP) for fuel storage, the SFPUC is completing a SEP Campus Plan to determine how to best utilize the space at SEP. Any analysis of using SEP for fuel storage will need to be completed in the context of the SEP Campus Plan, and must include analysis around future SFPUC Wastewater and Recycled Water plans for SEP, the safety of storing large amounts of fuel in the same footprint as a wastewater treatment plant, and ensure consistency and compliance with the SFPUC’s Racial Justice Resolution and Environmental Justice Policies regarding land use equity objectives. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R13 [for F15]	By December 2023, as part of a Fleet Week live exercise, the Department of Emergency Management and the Office of Resilience and Capital Planning should test a scenario in which the City’s normal supply line is damaged and delivery by water is necessary. This exercise should include a full demonstration of marine cargo delivery, readiness of the staging area, performance of the transfer-storage-filling equipment, and performance of the tanker trucks.	Office of Resilience and Capital Planning [August 28, 2021]	Will not be implemented because it is not warranted or is not reasonable	The San Francisco Fleet Week Exercise Program is developed jointly between San Francisco emergency managers, local first responder stakeholders, and state and federal military partners based on mutual need to test shared vulnerabilities. Fuel delivery and resilience was exercised in 2018 and 2019 and response to many other risks need to be examined, practiced and tested. Therefore, it is unlikely that fuel resilience will be tested again before December 2023.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R14 [for F15]	By December 2023, the Department of Emergency Management, the Office of Resilience and Capital Planning, and the Port should prepare a seismic vulnerability assessment of likely delivery sites for emergency fuel delivery by water, including Pier 96, Pier 80, Pier 50, and at least one alternative delivery site.	Office of Resilience and Capital Planning [August 28, 2021]	Has not yet been implemented but will be implemented in the future	The Port completed an earthquake and flood risk assessment of all northern waterfront facilities in November 2020 and commenced an earthquake assessment of Piers 50, 80, and 94/96 that is scheduled for completion in fall 2021. The new earthquake assessment information will inform a joint Port and DEM disaster response exercise focused on evaluating missions and capabilities including fuel supply. Results are expected by the end of 2021 and will help inform Port investments in earthquake resilience and disaster response.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R17 [for F18]	In the 2023 Capital Plan, the City should commit to funding capital projects that are identified in the Fuel Plan as a high priority to improve fuel resilience in the City over the subsequent ten years.	Office of Resilience and Capital Planning [August 28, 2021]	Requires further analysis	Fuel resilience is critical to City operations. When developing the City's Capital Plan, the City should consider available alternative methods to building fuel resilience as well as other immediate/critical citywide capital needs. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R18 [for F19]	In the 2023 Capital Plan, the City should specify how it will provide at least \$10 million in dedicated funding for fuel resilience capital projects within the next ten years using general obligation bond revenue.	Office of Resilience and Capital Planning [August 28, 2021]	Requires further analysis	Fuel resilience is critical to City operations. When developing the City's Capital Plan, the City should consider available alternative methods to building fuel resilience as well as other immediate/critical citywide capital needs. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R19 [for F20]	By December 2024, the Office of Resilience and Capital Planning should publish a feasibility study on replacing current City backup generators with battery backup installations or other zero-emission technology by 2050. The study should examine costs, risks, and alternatives, including mobile and stationary battery sources, taking into account not only the present state of battery technology but likely future developments in upcoming decades.	Office of Resilience and Capital Planning [August 28, 2021]	Requires further analysis	This recommendation requires further analysis with key City stakeholders to determine a clear scope and identify funding. This analysis will be completed by December 31, 2022.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R20 [for F21]	By December 2024, the Office of Resilience and Capital Planning should publish a plan for achieving disaster resilience with a zero-emissions City vehicle fleet. This plan should analyze the stationary backup power sources that might be needed to recharge critical response vehicles in the event of a disaster and how bidirectional charging technology might be used to enable the batteries in City fleet vehicles to serve as mobile backup power sources analogous to mobile backup generators but also likely future developments.	Office of Resilience and Capital Planning [August 28, 2021]	Requires further analysis	This recommendation needs further analysis. Specifically, the analysis will inform the recommended plan. For instance, the analysis will identify bi-directional charging applications (case studies, technologies) and their barriers / how to overcome them. It will also identify the vehicle types / cohort of mixed vehicles ideal for vehicle-to-infrastructure (V2I), as well as location of those vehicles and general, preliminary estimates of any grid and City facility electrical upgrades necessary to support V2I. Additionally, it should address the various emergency infrastructure and automation required to enable V2I - as well as their costs. Finally, the analysis must include participation from the SFPUC because subject matter expertise in behind-the-meter electrical infrastructure and jurisdiction over City facility connections to the electric grid. This analysis will be completed by December 31, 2022.

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F11	Opportunities to expand fuel reserves within the City are very rare due to geographic constraints but very valuable for fuel resilience.	Public Utilities Commission [August 28, 2021]	Agree	
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	F20	The City will likely need to replace some critical backup generators with batteries by 2050 but has not initiated planning for this.	Public Utilities Commission [August 28, 2021]	Agree	

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A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R3 [for F4]	The agency sponsor of the Fuel Working Group should select members with strong experience in supply chain logistics and emergency management. The Department of Emergency Management, the Office of Contract Administration, the City Administrator’s Office, and other City departments who are significant users of fuel, including SFPUC, SFMTA, and DPW should dedicate staff time each month through December 2024, or until the subsequent recommendations in this report are implemented.	Public Utilities Commission [August 28, 2021]	Has been implemented	Pre-COVID-19, the FWG met monthly. Members included the emergency managers from: DPW, SFMTA, SFPUC, CAO, DEM, SFFD and subject matter experts from SFO, Central Shops and Public Works. Port staff will be included once the group relaunches its regular meetings in the next 90 days.
A Fluid Concern: San Francisco Must Improve Fuel Resilience [June 29, 2021]	R9 [for F11]	In the 2023 Capital Plan, the City should commit to building an additional fueling station with five-ten thousand gallon storage capacity for both gasoline and diesel fuels in the space to be freed up at the Southeast Treatment Plant when the digester replacement work is done, or to identify an alternate site for an additional fueling station if the Southeast plant is not available.	Public Utilities Commission [August 28, 2021]	Requires further analysis	The City Administrator’s Office (ADM), Office of Resilience and Capital Planning (ORCP), Department of Emergency Management (DEM), and San Francisco Public Utilities Commission (SFPUC) will need to complete analysis of the City’s fuel needs and identify potential fuel storage project scopes, costs, and target dates to understand if there are locations in San Francisco that are viable for such a storage project. This analysis should include looking at the fuel needs and potential fuel storage locations for City infrastructure located outside of San Francisco, such as the Hetch Hetchy Regional Water System. Regarding the potential use of the Southeast Treatment Plant (SEP) for fuel storage, the SFPUC is completing a SEP Campus Plan to determine how to best utilize the space at SEP. Any analysis of using SEP for fuel storage will need to be completed in the context of the SEP Campus Plan, and must include analysis around future SFPUC Wastewater and Recycled Water plans for SEP, the safety of storing large amounts of fuel in the same footprint as a wastewater treatment plant, and ensure consistency and compliance with the SFPUC’s Racial Justice Resolution and Environmental Justice Policies regarding land use equity objectives. The analysis will be completed by January 31, 2023 for consideration in the FY 2024-33 Capital Plan.