



CLOVERDALE

City of
Cloverdale
General Plan

Policy Document
Chapter 8: Public Health and Safety



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Public Review Draft



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8.1 INTRODUCTION

California Government Code Section 65302(g) requires that the General Plan include a “safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction and other seismic hazards identified pursuant to Chapter 7.8 of the Public Resources Code, and other geologic hazards known to the local legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, peakload water supply requirements and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.” The law also includes additional specifications for content related to flood hazards, fire hazards, climate adaptation and resiliency, and emergency evacuation routes. With these additional requirements, the law has also established a linkage to the housing element cycle and the federally-mandated hazard mitigation planning cycle. That is, local governments must “review and, if necessary, revise the safety element upon each revision of the housing element or local hazard mitigation plan, but not less than once every eight years, to identify new information relating to flood and fire hazards and climate adaptation and resiliency strategies applicable to the city or county that was not available during the previous revision of the safety element.”

In addressing the requirements described above, the Public Health and Safety Element consists of the goals, policies, and implementation programs presented here (prescriptive content) and Chapter 10 of the General Plan Background Report (descriptive content). Consistent with the coordination requirements described in State law, this material was prepared in concert with the City’s Local Hazard Mitigation Plan (LHMP).

8.2 GOALS AND POLICIES

Goal PS 1. GENERAL COMMUNITY SAFETY AND EMERGENCY MANAGEMENT
Establish, Maintain, and Communicate Multiple Initiatives to Keep Cloverdale’s Residents, Businesses, and Visitors Aware of and Protected from Potential Hazards

Policy PS 1.1. Community Awareness. The City shall promote community awareness of possible natural and human-caused hazards and measures that can be taken to protect lives and property through mitigation, preparedness, response, and recovery. This will include development of web-based interactive data, mobile device apps, and social media to engage a wide spectrum of the public, including multiple generations of users and non-English speakers. It will also include City-sponsored forums for Cloverdale residents, businesses, and other stakeholders to participate directly in the community awareness process (e.g., Resilient Cloverdale).

Policy PS 1.2. Warning/Notification Systems. The City will continue to collaborate with Sonoma County to enhance emergency warning and notification systems that reflect the diversity of communication devices used by residents and visitors, remembering that not all persons affected by a disaster will have access to the latest technology. This shall include expansion of the City’s use of social media communications and continued deployment of SoCoAlert and Nixle.



- Policy PS 1.3. **Emergency Shelter/Evacuation Center.** The City shall continue to partner with the Citrus Fair and the Northern Sonoma County Community Emergency Response Team (CERT) in their efforts to provide ample space and or care for vulnerable populations at emergency shelters and evacuation centers, as well as to secure backup power, stockpile essential materials, and ensure reliable broadband communications access.
- Policy PS 1.4. **Emergency Training and Mutual Aid.** The City shall provide training for City staff in the event of an emergency and shall participate in County, State, and Federal mutual aid programs.
- Policy PS 1.5. **Preparedness and Response Plans.** The City shall maintain up-to-date emergency preparedness and response plans and conduct community-facing exercises to enhance disaster preparedness and build local capacity to better address and mitigate health and safety impacts resulting from hazard events.
- Policy PS 1.6. **Evacuation Zones/Routes.** In collaboration with Sonoma County, the City shall maintain a coordinated system of emergency evacuation zones and evacuation routes that ensures all areas of Cloverdale have at least two
- Policy PS 1.7. **Emergency Vehicle Access.** The City shall ensure that roadways are adequate in terms of width, radius, and grade to facilitate access by emergency vehicles. Policy PS 5-3
- Policy PS 1.8. **The Supply Chain Disruption.** City shall collaborate with public and private partners to protect against disaster-related disruptions in supply chains for critical food supplies and medical equipment and supplies.
- Policy PS 1.9. **Funding for Public Safety Facilities/Services.** The City shall require that project applicants participate in any assigned proportional costs for the expansion of public safety facilities, equipment, or services, including police, fire, and any other public safety services provided within the City. (Program PS.4)
- Policy PS 1.10. **Vulnerable Residents.** The City shall prioritize the needs of vulnerable and disadvantaged residents during emergency response and disaster recovery efforts.
- Policy PS 1.11. **Battery Backup.** The City shall require all critical telecommunication systems components to provide battery backup that will maintain systems for at least seven days in the absence of direct power. The City shall also encourage private property owners to acquire and install backup battery systems.
- Policy PS 1.12. **SCEIP.** The City shall continue to support and promote the Sonoma County Energy Independence Program (SCEIP), which offers Property Assessed Clean Energy (PACE) financing for permanent energy, water, wildfire safety, and seismic strengthening improvements through the property tax system. The program is available for residential, commercial, industrial, agricultural, multifamily, and certain non-profit projects.

Goal PS 2. CLIMATE ADAPTATION AND DROUGHT RESILIENCE
Enhance Cloverdale’s Resilience to the Effects of Climate Change and Drought

- Policy PS 2.1. **Climate Change Education.** The City shall include information concerning climate change its effects into community awareness and preparedness programs.
- Policy PS 2.2. **Water Supply Storage Diversification:** The City shall diversify water supply storage options (e.g., aquifer storage and recovery projects, emergency wells) to ensure community water reliability.



Policy PS 2.3. **Water Conservation:** The City shall conserve Cloverdale’s water supply for the greatest public benefit with particular regard to public health, fire protection, and domestic use, by reducing waste, and to the extent necessary upon declaration of a water shortage emergency condition, reducing water use fairly and equitably. (Muni Code Chap 13.05, Water Conservation)

Policy PS 2.4. **Drought-Tolerant Landscaping.** The City shall encourage property owners to install drought-tolerant landscaping to reduce reliance on water during periods of drought.

Goal PS 3. WILDLAND AND URBAN FIRE
Minimize Risks to Lives and Properties Due to Fire Hazards

Policy PS 3.1. **Development Best Practices.** The City shall require all new development in areas of potential fire hazards to provide for clearance around structures, use fire resistant ground cover materials, and install automatic fire sprinkler systems. (Policy PS 5-7)

Policy PS 3.2. **Residential Development.** The City shall coordinate with Sonoma County require that all new residential development in the Cloverdale area complies with the fuel modification requirements of Public Resources Code Section 4291, whether located in state responsibility or local responsibility areas. This includes planting native species that are fire-resistant or drought-tolerant and that minimize erosion and water consumption, while permitting trees for shade, aesthetics, and habitat. It also includes minimizing or eliminating nonvegetative sources of combustion such as woodpiles, propane tanks, decks, and outdoor lawn furniture. Finally, it includes creating an ember-resistant zone within five feet of structures and elimination of materials in the ember-resistant zone that would likely be ignited by embers.

Policy PS 3.3. **Fuel Modification.** The City shall collaborate with Sonoma County, the Cloverdale Fire Protection District, CAL FIRE, private landowners, and other responsible agencies to identify the best method(s) of fuel modification in the wildland-urban interface surrounding Cloverdale to reduce the severity of future wildfires, including prescribed fire, vegetation thinning, mechanical clearing, and hand clearing (piling, burning/chipping). In doing so, the City shall explore incentives for full compliance with such practices.

Policy PS 3.4. **Balanced Approach.** The City shall balance and integrate fuel modification with habitat and open space management, vegetative soil cover/erosion management, and urban greening, to reduce the potential for conflicts between safety and environmental goals.

Policy PS 3.5. **CFPD Application Review.** The City shall seek Cloverdale Fire Protection District review of new development applications to ensure adequacy of emergency access and sufficiency of fire suppression and firefighting infrastructure (e.g., hydrant locations, fire flow requirements).

Policy PS 3.6. **Public Open Space.** The City shall collaborate with Sonoma County to plan, design, and manage public open space facilities in the Cloverdale area to reduce wildfire hazards and associated risks. This includes maintaining open spaces and urban forests so that ground fuels do not promote the spread of wildfire and aerial fuels do not allow the spread of a fire through the tree canopy.

Policy PS 3.7. **Wildfire Refuge Areas.** The City shall identify and maintain access to low-risk fire safety areas, including locations that may serve as temporary shelter or refuge during wildfire events.



Policy PS 3.8. **Fireworks.** The City will monitor fire danger to public health and safety and/or life and property of Cloverdale residents, businesses, and visitors—including fire weather events, fuel moisture, drought, and limitations on available firefighting capacity—to determine if the sale and use of fireworks would exacerbate risk. If the City, in consultation with the Cloverdale Fire Protection District, determines that fire danger is excessive, it may prohibit the sale and discharge fireworks. (Muni Code Section 5608.3)

Goal PS 4. FLOODING AND DRAINAGE
Minimize Risks to Lives and Properties Due to Flood Hazards and Inadequate Drainage

Policy PS 4.1. **FEMA Floodplains.** Require that tentative and final subdivision maps and approved site plans show areas subject to flooding as shown on the FEMA maps. (Policy PS 2-11)

Policy PS 4.2. **Downtown Storm Drainage.** To provide protection for residents, businesses, and critical facilities, the City shall seek funding to upgrade the outdated drainage system serving Downtown Cloverdale that consists of open channels and aging, under-sized pipes, including a partially-piped “captured creek.”

Policy PS 4.3. **Levee Fortification.** To avoid erosion and reduce flood risk, the City shall enroll the levees adjacent to the Cloverdale Airport, the City Water Treatment Plant, and the City Wastewater Treatment Plant in the US Army Corps of Engineers Flood Control and Coastal Emergency Act program (PL-84-99) and seek funding to fortify these levees.

Policy PS 4.4. **Floodplain Risk/Project Review.** The City shall require consideration of the potential risk of damage from flooding in the design and review of all projects, including those which could facilitate floodplain development. (Policy PS 2-13)

Policy PS 4.5. **Floodplain Management.** The City shall prioritize floodplain management over flood control structures for preventing damage from flooding except where the intensity of development requires a high level of protection and justifies the costs of structural measures. (Policy PS 2-12)

Policy PS 4.6. **Natural Approaches:** The City shall encourage the use of natural and nature-based infrastructure approaches to flood protection, where appropriate, and use traditional engineered structural solutions to augment those approaches when necessary to protect life and property.

Policy PS 4.7. **Stream Setbacks.** That City shall avoid granting variances to building setbacks along streams and in 100-year flood plains. (Policy PS 2-15)

Policy PS 4.8. **Cost of Drainage Facilities.** The City shall require developers or others who benefit to pay for the costs of drainage facilities to handle the surface runoff from new development. (Policy PS 2-9)

Policy PS 4.9. **SCWA Review.** The City shall require that design and construction of drainage facilities be subject to the review and approval by the Sonoma County Water Agency (SCWA) where appropriate based on project size. (Policy PS 2-10)



Policy PS 4.10. **Flooding Impacts.** If a project when considered cumulatively with other projects or existing development is expected to contribute to downstream flooding, the City shall require the project applicant to either (a) prepare a focused environmental impact report on such effect or (b) agree to modify the project to construct improvements or participate in a funding mechanism necessary to mitigate any downstream flooding impacts. Failure to modify the project or to propose further environmental documentation shall be grounds for finding the project inconsistent with the General Plan. (Policy PS 2-5)

Policy PS 4.11. **Jurisdictional Cooperation/Collaboration.** The City shall coordinate flood hazard analysis and management activities with the US Army Corps of Engineers, Federal Emergency Management Agency (FEMA), and other responsible agencies. This includes requesting changes in FEMA maps where appropriate to reflect new data or analyses. (Policy PS 2-1)

Goal PS 5. GEOLOGICAL HAZARDS (EARTHQUAKES, LANDSLIDES, MUDSLIDES, LIQUEFACTION)
Minimize the Risk to Lives and Property Due to Geological Hazards

Policy PS 5.1. **Geotechnical Investigations.** The City shall require that all development applications for hillside sites shall submit a geotechnical investigation for areas with identified geologic hazards or areas where the City Engineer determines such hazards may exist, including such hazards as potential liquefaction-related failures, slope stability and erosion hazards, existing or potential soil instability, or expansive soils. The report shall include an assessment of geologic and seismic hazards.

Policy PS 5.2. **Building Permit Analysis.** The City shall require dynamic analysis of structural response to earthquake forces prior to approval of building permits for structures whose irregularity or other factors prevent reasonable load determination and distribution by static analysis. (Policy PS 1-6)

Policy PS 5.3. **Structural Seismic Analysis of City Facilities.** The City shall conduct structural seismic analysis of City facilities, particularly those critical for response to an earthquake, and, where needed, make structural changes so that the facility will remain functional after an earthquake.

Policy PS 5.4. **Infrastructure Strengthening/Resilience.** The City shall promote the strengthening of planned utilities, the retrofit and rehabilitation of existing weak structures and lifeline utilities, and the relocation or strengthening of critical facilities to increase public safety and minimize potential damage from earthquakes and other geologic hazards. This includes sewer and water pipelines, tanks, and reservoirs that are vulnerable to seismic shaking, earthquake-induced ground failure, and surface fault rupture.

Policy PS 5.5. **Unsafe Buildings.** The City shall ensure that seismically unsafe buildings and structures, including unreinforced masonry buildings (URMs), do not cause a serious threat to human safety and/or the ability of the law enforcement and fire protection personnel to deliver service. (Policy PS 5-10)



- Policy PS 5.6. **Soil Conservation/Land Alteration.** The City shall require new development projects to incorporate sound soil conservation practices and keep land alteration (grading) to a practical minimum by (a) minimizing cuts and fills; (b) limiting grading to the smallest practical area of land; (c) limiting the time land is exposed to accelerated erosion from grading; (d) applying best management practices for winterization; (e) replanting graded areas to ensure permanent plant cover; and (f) designing project-specific erosion control measures. (Program PS.9)
- Policy PS 5.7. **Hillside Development.** Where a hillside development site has land with slopes over 20 percent and slopes less than 20 percent, development should be placed on lands less than 20 percent if feasible. Development may be clustered to achieve general plan allowed densities on lands less than 20 percent slope. Remaining hillside areas (with slopes over 20 percent) shall be deemed undevelopable and made subject to easements or other legal guarantees that prohibit development of the hillsides and cannot be removed without City approval. (Hillside Protection Ordinance)

Goal PS 6. HAZARDOUS MATERIALS AND WASTES
Minimize the Risk to Lives and Property Due to the Use, Transport, Treatment, and Disposal of Hazardous Materials and Wastes

- Policy PS 6.1. **Transport of Hazardous Materials.** Where allowed by law, the City shall regulate the transportation of hazardous materials to minimize the potential for damage. In cases where City authority is limited, the City shall seek regulation by other agencies with such authority. (Policy PS 4-1)
- Policy PS 6.2. **Hazardous Waste Management Plan Compliance.** The City shall coordinate with Sonoma County to review new discretionary development projects that manufacture, use, or transport hazardous materials for compliance with the County's *Hazardous Waste Management Plan (CHWMP)*.
- Policy PS 6.3. **Hazardous Material Management Plan.** For any development project that involves the use any hazardous materials in its operations, the City shall require the applicant to provide a hazardous materials management plan that complies with all federal, state, and local requirements for management of such substances. This includes any substance regulated by federal, state, or local laws or regulations intended to protect human health or the environment from exposure to such substances.
- Policy PS 6.4. **Inventory of Hazardous Materials.** Utilizing State and County sources, the City shall maintain an inventory of sites in Cloverdale that store or use significant quantities of hazardous materials (Policy PS 6-3)

Goal PS 7. AIRPORT SAFETY
Provide Appropriate Regulations for Land Use and Airport Operations to Protect the Safety of Airport Operations and Personnel and the General Public and Adjacent Structures (Goal PS 7)

- Policy PS 7.1. **Airport Master Plan Consistency.** The City shall ensure that future development and use of the Cloverdale Municipal Airport property is consistent with the policies and programs of the Cloverdale Municipal Airport Master Plan. (Policy PS 7-1)
- Policy PS 7.2. **ALUC Referral.** The City shall refer any proposals for expansion and/or development of the airport to the Sonoma County Airport Land Use Commission. (Policy PS 7-1)



Policy PS 7.3. **Protection Against Erosion/Flooding.** The City shall protect the Cloverdale Municipal Airport property from erosion and flooding hazards. This will include monitoring erosion and fortifying the levee or installing rip-rap to avoid flooding or other damage to the property. (Policy PS 7-4, Program PS.20)

Policy PS 7.4. **Adjacent Use Compatibility.** The City shall discourage residential and other noise-sensitive uses, or significant expansions to such uses, within safety zones specified in the Sonoma County Airport Land Use Commission's "Cloverdale Municipal Airport Referral Area." As appropriate, the City shall ensure that developments are required to dedicate airport easements, establish deed restrictions, or file "buyer beware" notifications to ensure that prospective buyers are aware of the airport's influence. In adjacent unincorporated areas, the City will coordinate with the County to enforce this policy. (Policy PS 7-6)

Goal PS 8. DISEASE/EPIDEMIC/PANDEMIC:
Protect Cloverdale and its Residents from the Effects of Disease Outbreak and Health Epidemics or Pandemics

Policy PS 8.1. **Public Health Resource Capacity.** The City shall collaborate with Sonoma County to ensure that interdisciplinary teams of public health experts, physicians, community health workers, scientists, media, and communications professionals are in place to help build capacity to recognize and manage critical public health and safety issues, including disease/pandemic outbreaks, immediately following detection.

Policy PS 8.2. **Vector-Borne Disease.** The City shall coordinate with the Marin/Sonoma Mosquito and Vector Control District to manage mosquitoes and vector-borne diseases by utilizing cost-effective, environmentally responsible integrated vector management practices.

Policy PS 8.3. **Vulnerable Communities.** The City shall prioritize housing and economic security and equity to ensure that vulnerable populations do not bear the brunt of disease exposure and health risks.

Policy PS 8.4. **Shutdowns/Modified Operations.** The City shall ensure that plans are in place to adapt to shutdowns or modified operation of public services, including school closures and public transportation disruptions, and plan to ensure the safe use of public open space for the duration of such restrictions.

Policy PS 8.5. **Stockpiling.** The City shall collaborate with public and private partners to ensure appropriate stockpiles of vital equipment are in place (e.g., personal protective equipment) and have plans for materials to be allocated equitably.

Policy PS 8.6. **Support for Essential Personnel.** The City shall collaborate with public and private partners to ensure adequate personal protective equipment, housing, and daycare/schooling facilities are provided for essential personnel and their families.



8.3 IMPLEMENTATION PROGRAMS

The following implementation programs support the City’s policy commitments for public health and safety. They consist of City-initiated actions that will either directly carry out the policies or enable the City to apply the policies more effectively. Most of the programs correspond directly with mitigation actions presented in the City’s Local Hazard Mitigation Plan (LHMP), with the expectation that the City will track implementation of the LHMP in concert with the implementation of the General Plan Public Health and Safety Element, as envisioned in both State and Federal law. Each program indicates which City department is responsible for taking the lead in its implementation, as well as whether the program is intended be accomplished in the short-term (1 to 3 years), medium-term (3 to 5 years), or the long-term (5 to 10 years). Finally, each program indicates the potential funding resources that will support its implementation.

Program PS.1. Water Supply Storage Diversification: Diversify water supply storage options (e.g., aquifer storage and recovery projects, emergency wells) to ensure community water reliability.

Responsibility: Engineering
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.2. Seismic Evaluation: Conduct seismic evaluations of essential facilities, including the police station, that might be vulnerable to seismic shaking based on age or construction type.

Responsibility: Planning and Community Development
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.3. Seismic Upgrades: Upgrade and improve vulnerable essential facilities, including the police station and City Hall, to better withstand seismic shaking.

Responsibility: Engineering
Timeframe: Medium
Resources: FEMA Grants/General Fund

Program PS.4. Vulnerable Sewer and Water Facilities: Create GIS-based inventory of sewer and water pipelines, tanks, and reservoirs that are vulnerable to seismic shaking, earthquake-induced ground failure, and surface fault rupture. Determine a replacement schedule for these facilities that specifies importance, age, type of construction material, size, condition, and maintenance or repair history.

Responsibility: Engineering
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.5. Downtown Stormwater Flood Reduction: Construct a storm drain system to convey upstream runoff through the city safely. The new system of pipes will replace an outdated drainage system made up of open channels and aging, under-sized pipes, including a partially-piped “captured creek” that runs underneath both public and private properties in Downtown Cloverdale. The new system will connect the existing channels upstream of the city and the Caltrans channel downstream of the City at



Highway 101. Runoff will be conveyed to the Russian River at the same location as is current.

Responsibility: Engineering
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.6. Levee Fortification: To avoid erosion and reduce flood risk, fortify the levees adjacent to the Cloverdale Airport, the Water Treatment Plant, and the Wastewater Treatment Plant. Enroll these levees in the US Army Corps of Engineers Flood Control and Coastal Emergency Act program (PL-84-99).

Responsibility: Engineering
Timeframe: Medium
Resources: FEMA Grants/General Fund

Program PS.7. Detention Basin: Develop new intake structures to intercept stormwater runoff from the hills to the west of the city and convey to a new detention and infiltration basin adjacent to the 2nd Street City Park with the capacity to hold a 100-year flood.

Responsibility: Engineering
Timeframe: Long
Resources: FEMA Grants/General Fund

Program PS.8. Slope Stabilization: Based on the landslide vulnerability assessment and local knowledge of problem areas, identify priorities for earth/slope stabilization. Collaborate with property owners in these areas to design and implement stabilization projects.

Responsibility: Engineering
Timeframe: Medium
Resources: FEMA Grants/General Fund

Program PS.9. Backup Generators: Acquire, install, upgrade, or replace back-up generators at essential City facilities, including the Shahan Drive wastewater lift station and the Wastewater Treatment Plant. Obtain towable generators to support emergency operations throughout the city (e.g., Citrus Fair, Senior Center). Require pre-wiring of private construction projects to accommodate generators and encourage owners to retrofit existing buildings.

Responsibility: Engineering
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.10. Emergency Alert/ Warning System: Enhance City's emergency alert and warning system by expanding social media communications.

Responsibility: Administration
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.11. Emergency Shelter/ Evacuation Centers: Provide ample space and or care for vulnerable populations at emergency shelters and evacuation centers. This includes partnering with the Citrus Fair and the Northern Sonoma County Community Emergency



Response Team (CERT) in their efforts to secure backup power, stockpile essential materials, and ensure reliable broadband communications access.

Responsibility: Engineering
Timeframe: Short
Resources: FEMA Grants/General Fund

Program PS.12. EOP Update: Update the City's Emergency Operations Plan (EOP), with emphasis on continuity of operations.

Responsibility: Police
Timeframe: Medium
Resources: FEMA Grants/General Fund

Program PS.13. SCEIP Participation: Publicize availability of the Sonoma County Energy Independence Program (SCEIP) to provide financing for improvements to reduce vulnerability to wildfire and the effects of seismic shaking.

Responsibility: Administration
Timeframe: Ongoing
Resources: FEMA Grants/General Fund

Program PS.14. Hazard Information: Develop and distribute information on hazards and hazard mitigation for the public.

Responsibility: Administration
Timeframe: Ongoing
Resources: FEMA Grants/General Fund

Program PS.15. WUI Evaluation: Evaluate the WUI Zone in the city limits, including GIS mapping showing properties at risk, both publicly- and privately-owned.

Responsibility: Planning and Community Development
Timeframe: xxx
Resources: FEMA Grants/General Fund

Program PS.16. WUI Fuel Management and Defensible Space: Increase fuel management and fuel reduction in open space, creeks, around critical facilities, and wildland/urban interface areas. Encourage private property owners to create, improve, and maintain their own defensible space (potentially with funding support or financial incentives).

Responsibility: Planning and Community Development
Timeframe: Medium
Resources: FEMA Grants/General Fund

Program PS.17. Hazardous Materials Inventory: The City will periodically update its inventory of sites that store or use significant quantities of hazardous materials. (Implementation PS 6-3.a)

Responsibility: Planning and Community Development
Timeframe: Ongoing
Resources: General Fund