

PUBLIC SUBMISSION

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Comment on FR Doc # 2025-07332

Submitter Information

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General Comment

I am Sri, a proud resident of Santa Clara, driven by a deep sense of urgency and responsibility to address critical national challenges. My recommendations for the AI Action Plan 2025 focus on enhancing national security, public safety, emergency response, cybersecurity, and infrastructure resilience through cutting-edge AI technologies. These solutions aim to protect vulnerable populations, strengthen crisis management, and drive innovation without ideological bias. AI must serve the nation ethically, ensuring transparency and efficiency in governance. I welcome any questions or further discussions on these recommendations and appreciate the opportunity to contribute to shaping a safer future. Thank you.

Attachments

AI Action Plan 2025-SRI-NITRD- Part-1

AI Action Plan 2025-SRI-NITRD- Part-2

AI Action Plan 2025-SRI-NITRD- Part-3

AI Action Plan 2025-SRI-NITRD FULL



RFI

Development of a
2025 National Artificial
Intelligence (AI)
Research and
Development (R&D)
Strategic Plan



“AI Action Plan”



A PROUD RESIDENT OF
THE CITY OF SANTA CLARA

AI Action Plan 2025: Pioneering Safety and Sustainability

This action plan harnesses advanced AI, IoT, digital twins, edge computing, micro-computing, and quantum computing to deliver predictive, autonomous, and resilient solutions for America’s future. By deploying AI-driven threat detection, real-time analytics, and adaptive response systems, it tackles urgent national priorities: wildfire and structural fire prevention, traffic and public safety, homeland and border security, crowd and venue management, environmental sustainability, cybersecurity for vulnerable populations, and emerging challenges like mental health crises and disaster recovery. These recommendations, targeting scalability by 2035, strengthen communities, protect infrastructure, and ensure equitable, sustainable progress.

Recommendations

1. Wildfire & Structural Fire Prevention: Deploy autonomous AI drone swarms with neuromorphic processing for real-time fire detection and suppression, integrated with IoT sensors for early hazard alerts.

1. *R&D:* Swarm AI algorithms, energy-efficient edge AI, predictive fire modeling.
2. *Impact:* Reduces wildfire damages, saves lives, protects ecosystems.

2. Traffic & Public Safety: Implement neuromorphic AI for real-time collision avoidance in autonomous vehicles and quantum machine learning (QML) for police pursuit risk assessment, minimizing ~40,000 traffic and ~400 pursuit fatalities annually.

1. *R&D:* Event-driven processing, V2X integration, QML algorithms, ethical drone interventions.
2. *Impact:* Enhances road safety, reduces pursuit risks.

3. Homeland & Border Security: Use privacy-first synthetic data AI for border surveillance, paired with quantum-encrypted IoT vehicle tracking to ensure fair, secure monitoring.

R&D: Synthetic data generation, federated learning, quantum-secure communications.

Impact: Strengthens security, upholds civil rights.

4. Crowd & Venue Management: Develop AI-driven digital twins for real-time crowd monitoring at high-density events, with edge AI for adaptive safety responses.

R&D: Generative crowd modeling, secure data integration, real-time analytics.

Impact: Prevents incidents, ensures public safety.

5. Environmental & Green Initiatives: Leverage AI-powered digital twins for reforestation planning and air quality management, supported by IoT for sustainable ecosystem monitoring.

1. *R&D:* Predictive environmental analytics, decentralized IoT networks.
2. *Impact:* Promotes sustainability, mitigates climate impacts.

6. Cybersecurity & Abduction Prevention: Deploy AI anomaly detection with post-quantum cryptography to protect minors and seniors from cyber threats and enable real-time tracking for abduction prevention.

1. *R&D:* Privacy-first AI, quantum-resistant systems, emergency response algorithms.
2. *Impact:* Safeguards vulnerable groups, enhances trust.

7. Mental Health Crisis Response: Implement AI-driven behavioral analytics for early mental health screening and crisis intervention, reducing escalations linked to public safety risks.

1. *R&D:* Predictive health AI, privacy-preserving analytics.
2. *Impact:* Supports community safety, reduces crime.

8. Autonomous Disaster Recovery: Develop self-learning AI agents for rapid post-disaster infrastructure repair and resource allocation, enhancing resilience.

1. *R&D:* Autonomous AI systems, multi-modal data integration.
2. *Impact:* Accelerates recovery, strengthens domestic safety.

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BORDER SECURITY



AI Applications in Border Security

• AI-Powered Surveillance Systems

- Automated monitoring using computer vision for anomaly detection
- AI-enhanced drone patrols for real-time border surveillance
- Smart thermal imaging and facial recognition for identification

• Predictive Threat Detection & Risk Analysis

- AI-driven behavioral modeling to identify suspicious activity
- Automated risk assessment of border crossings based on data trends
- Predictive analytics to anticipate security threats

• AI-Enhanced Immigration Processing

- Intelligent document verification for fraud prevention
- AI-powered biometric identification for secure traveler authentication
- Automated workflow optimization for faster immigration clearance

• Cybersecurity & Intelligence Gathering

- AI-driven cyber defense for securing sensitive border control systems
- Quantum-enhanced encryption for secure cross-border intelligence sharing
- AI-powered network monitoring to detect cyber threats targeting border security

• Autonomous AI-Driven Patrol Systems

- Edge AI-powered robotic patrol units for autonomous monitoring
- AI-enhanced anomaly recognition in border environments
- Smart border fencing with AI-integrated motion detection

• AI-Powered Humanitarian & Crisis Response

- AI-driven emergency response coordination for displaced individuals
- Predictive analytics for humanitarian aid distribution at border areas
- AI-powered refugee status determination for fair and efficient processing

• AI-Driven Data Fusion for Border Security Decision-Making

- AI-integrated multi-agency threat intelligence systems
- Smart data fusion using IoT-connected border surveillance devices
- AI-enhanced decision support tools for border security officials



WILDFIRE MITIGATION



WILD-FIRE MITIGATION STRATEGIES PROPOSAL



AI Action Plan 2025: Intelligent Wildfire Mitigation & Response

Recommendations:

1. **AI-Powered Fire Detection & Prediction** – Deploy machine learning models to forecast fire risks and provide early warnings before ignition.
2. **IoT-Enabled Fire Monitoring Systems** – Use smart sensors to track temperature, air quality, and vegetation dryness for real-time risk assessment.
3. **Autonomous AI Vision for Wildfire Surveillance** – Implement AI-driven drones and satellites equipped with advanced computer vision to detect fire hotspots remotely.
4. **AI-Controlled Automated Fire Suppression** – Integrate smart sprinkler networks and aerial AI-assisted firefighting drones for targeted intervention.
5. **Cloud-Based Environmental Monitoring** – Utilize AI-driven cloud analytics to continuously track wildfire activity and ecosystem health.
6. **AI-Enabled Remote Operation for Fire Response** – Deploy unmanned firefighting robots and drones with real-time AI navigation to control wildfires in hazardous zones.
7. **Edge AI for Instant Alerts & Emergency Coordination** – Use decentralized AI-powered notification systems to warn residents, first responders, and critical facilities.
8. **IoT-Guided Wind Control Strategies** – Leverage AI-optimized wind barriers, mist sprayers, and terrain modifications to slow wildfire spread and enhance humidity retention.
9. **Quantum AI for Fire Behavior Analysis** – Use advanced AI simulations powered by quantum computing to predict wildfire progression with extreme precision.
10. **AI-Driven Smart Reforestation** – Deploy autonomous seed-planting drones to restore burned landscapes with fire-resistant vegetation.
11. These advanced AI and IoT-driven technologies will transform wildfire mitigation into an intelligent, automated, and predictive defense system, strengthening California’s resilience against future disasters.

AGENDA

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WILDFIRE MITIGATION STRATEGIES PROPOSAL

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- **WILDFIRE WORKFLOW**
- **WILDFIRE DASHBOARD AND ALERTS**
- **GREEN MOVEMENT OF CALIFORNIA**
- **GREEN MOVEMENT WORKFLOW (STRATEGIES)**
- **WILDFIRE DAMAGE REPORT**



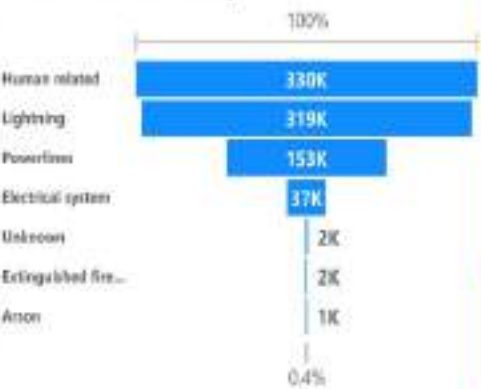




Count of Fire Cause by Fire Cause and County



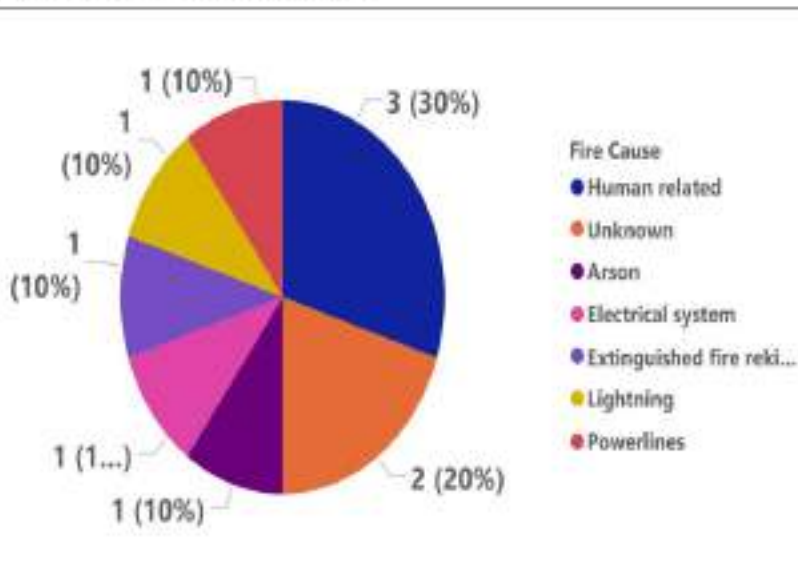
Sum of Acres Burned by Fire Cause



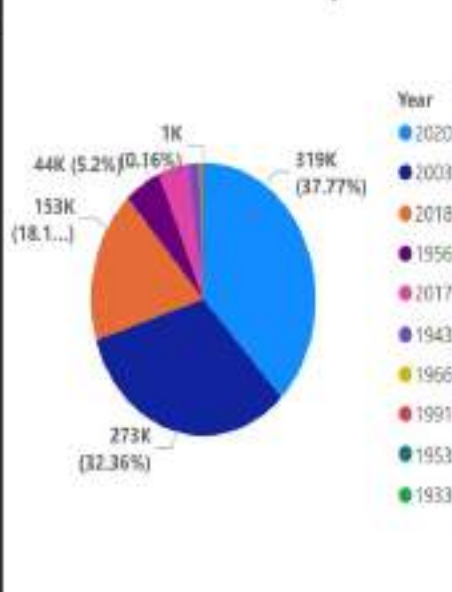
Sum of Deaths by Deaths and County



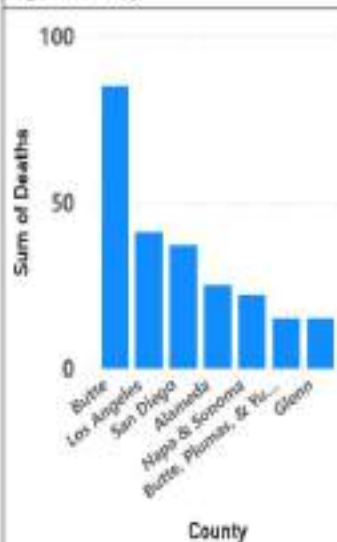
Count of Fire Cause



Sum of Acres Burned by Year



Sum of Deaths by County

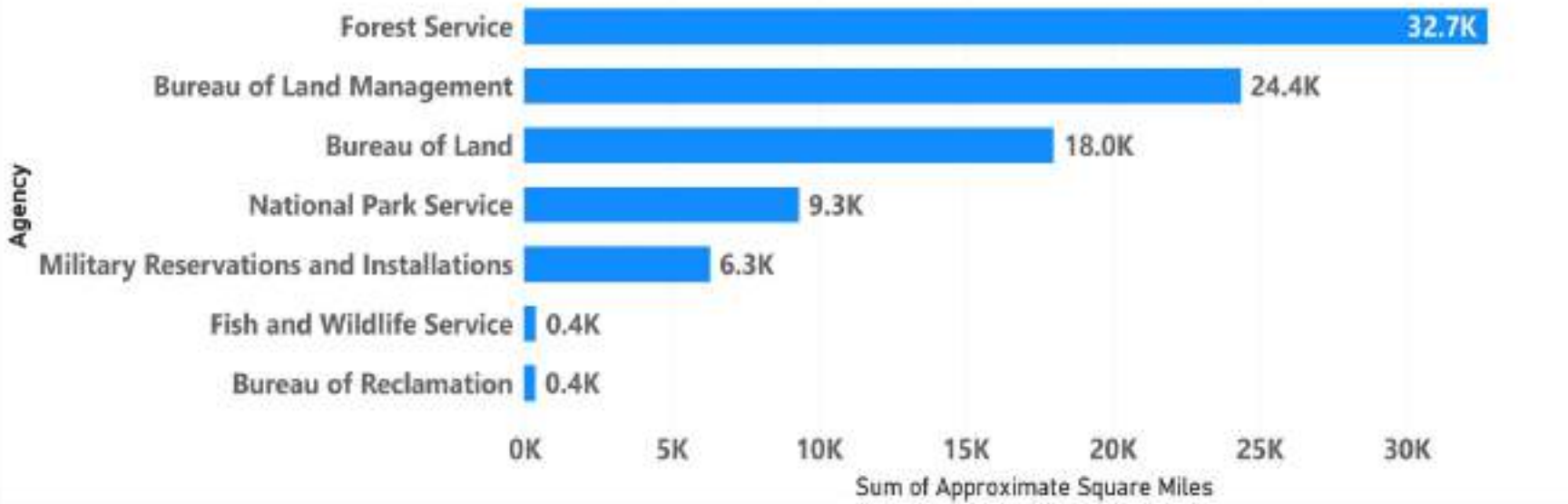


Sum of Approximate Square Miles by Department

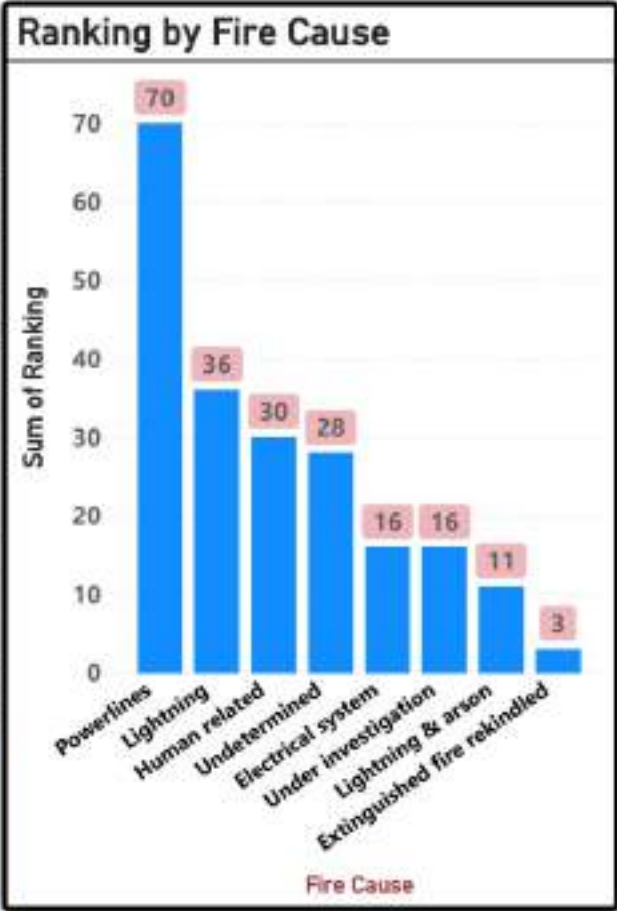


Sum of Approximate Square Miles

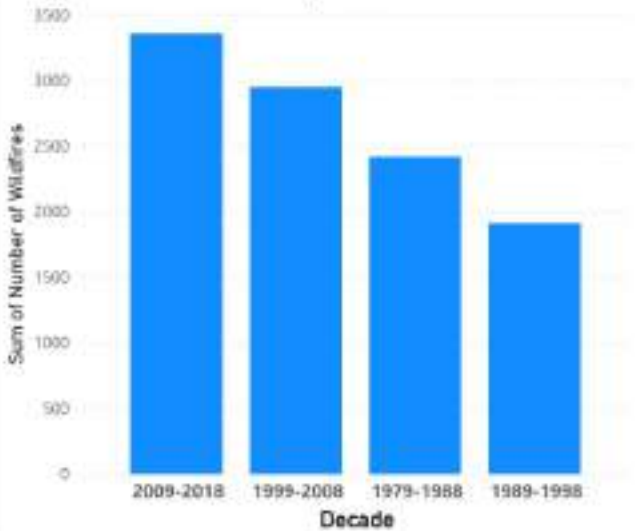
by Agency



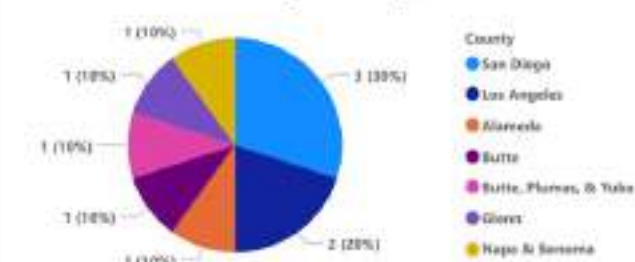
Sum of Deaths by County



Sum of Number of Wildfires by Decade



Number of Fires By County





| Agency | %GT Sum of Approximate Square Miles |
|---|-------------------------------------|
| Forest Service | 35.78% |
| Bureau of Land Management | 26.62% |
| Bureau of Land | 19.68% |
| National Park Service | 10.20% |
| Military Reservations and Installations | 6.89% |
| Fish and Wildlife Service | 0.43% |
| Bureau of Reclamation | 0.40% |
| Total | 100.00% |

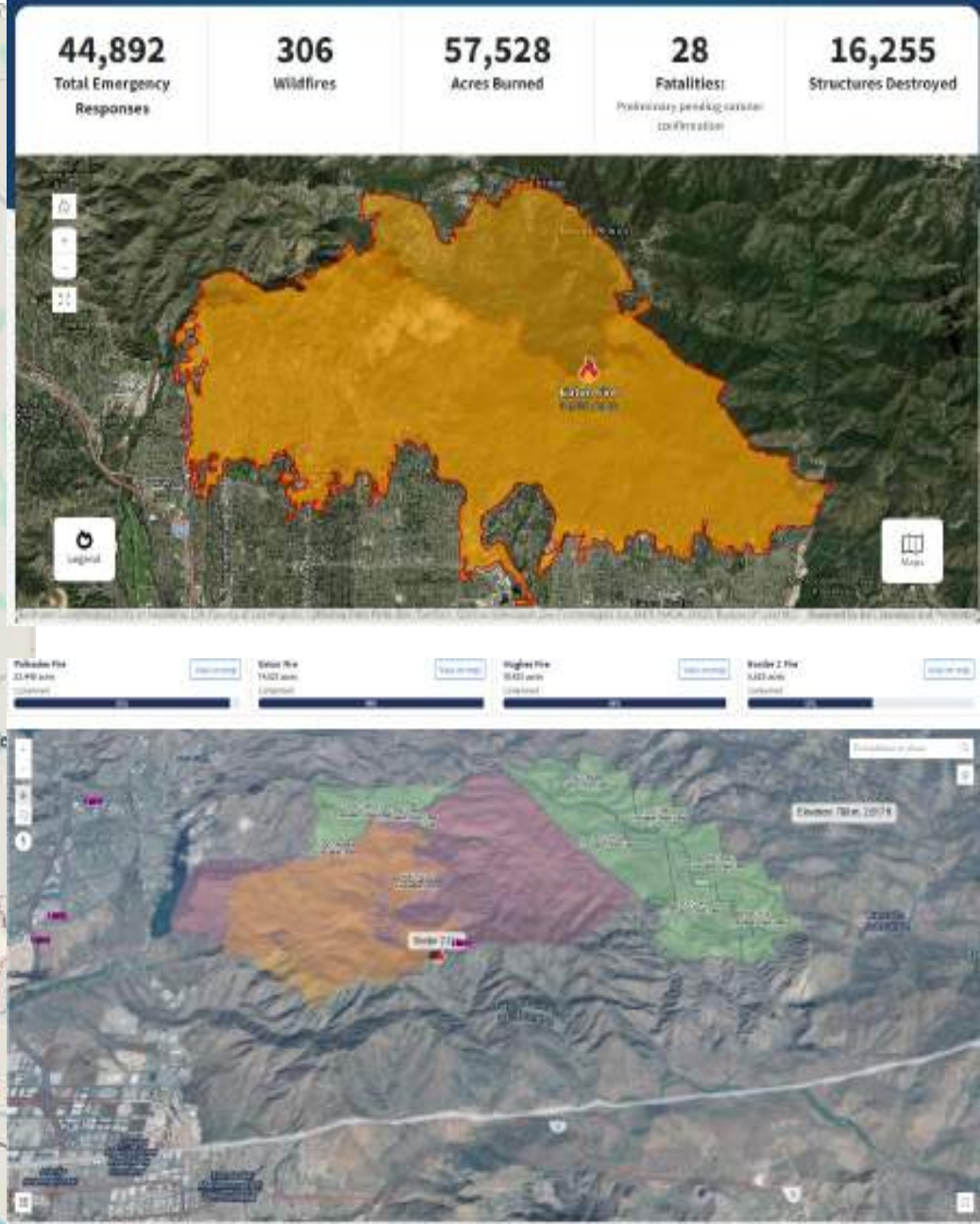
| Department | Sum of Approximate Square Miles | Agency |
|---------------------------|---------------------------------|---|
| Department of Agriculture | 32730 | Forest Service |
| Department of Defense | 6300 | Military Reservations and Installations |
| Department of Interior | 18000 | Bureau of Land |
| Department of Interior | 24350 | Bureau of Land Management |
| Department of Interior | 370 | Bureau of Reclamation |
| Department of Interior | 390 | Fish and Wildlife Service |
| Department of Interior | 9325 | National Park Service |
| Total | 91465 | |

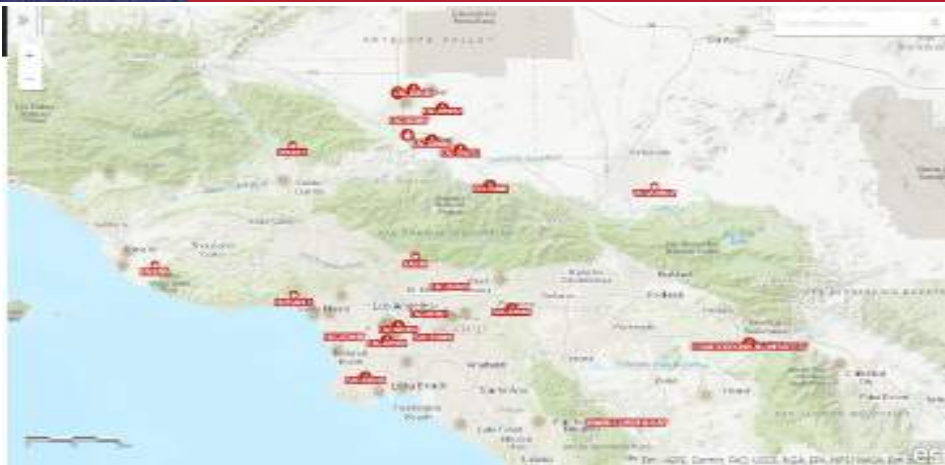
Designated Area as Labeled on Map





CURRENT STATE CALIFORNIA







| Row Labels | Sum of Approximate Square Miles |
|---------------------------|---------------------------------------|
| Department of Agriculture | 32730 |
| Department of Defense | 6300 |
| Department of Interior | 52435 |
| | |
| Grand Total | 91465 |

| Row Labels | Sum of Approximate Square Miles |
|--|---------------------------------------|
| Bureau of Land | 18000 |
| Bureau of Land Management | 24350 |
| Bureau of Reclamation | 370 |
| Fish and Wildlife Service | 390 |
| Forest Service | 32730 |
| Management | |
| Military Reservations and Installations | 6300 |
| National Park Service | 9325 |
| (blank) | |
| Grand Total | 91465 |

| Row Labels | Count of Designated Area as Labeled on Map (excluding parenthesis) |
|------------------------------|---|
| Department of Agriculture | 23 |
| Department of Defense | 1 |
| Department of Interior | 23 |
| | 1 |
| Grand Total | 48 |

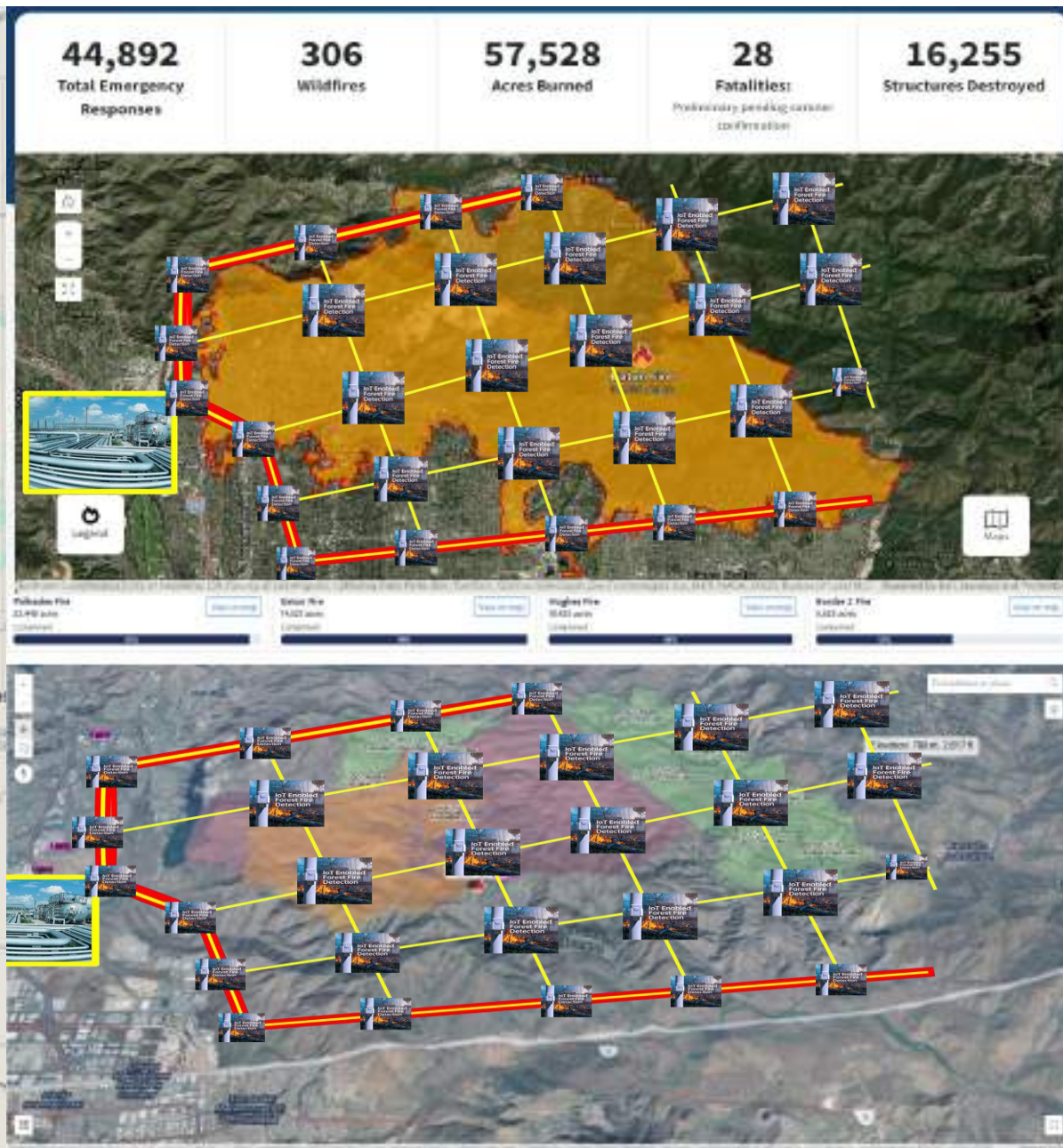
| Row Labels | Count of Designated Area as Labeled on Map (excluding parenthesis) |
|--|--|
| Bureau of Land | 1 |
| Bureau of Land Management | 3 |
| Bureau of Reclamation | 1 |
| Fish and Wildlife Service | 10 |
| Forest Service | 23 |
| Management | 1 |
| Military Reservations and Installations | 1 |
| National Park Service | 8 |
| | |
| Grand Total | 48 |



FUTURE STATE CALIFORNIA OPTION: 1









[HOME](#)

CALIFORNIA FIRE : EXTINGUISHING FOAMS / SUPPRESSING CHEMICALS







CALIFORNIA WILDFIRE : IoT REMOTE MONITORING / DASHBOARDS & ALERTS

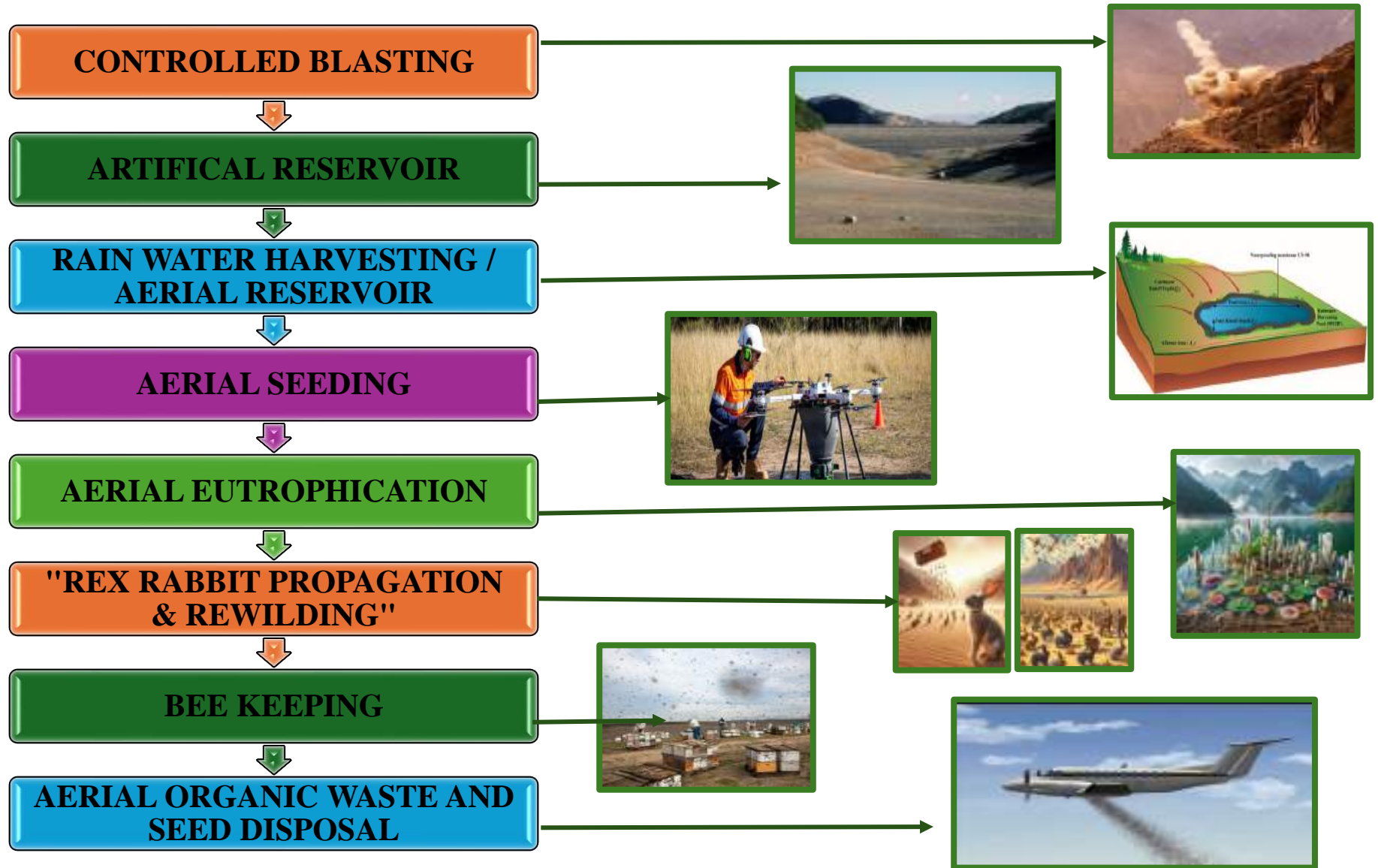
WILD FIRE : REMOTE MONITORING WORK FLOW





GREEN MOVEMENT CALIFORNIA

GREEN MOVEMENT FLOW: 2025 - 2035



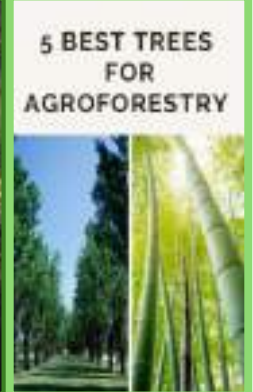
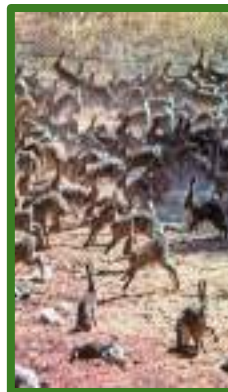
CURRENT CALIFORNIA

FUTURE GREENER CALIFORNIA



GMC: GREEN MOVEMENT OF CALIFORNIA

- Composting
- Mulching
- Drought-Tolerant Plants
- Biodiversity
- Rainwater Harvesting
- Efficient Irrigation Systems
- Reintroduce Native Species
- Habitat Creation
- Seed Bombing
- Tree Planting
- Agroforestry
- Controlled Grazing
- Volunteer Programs



GMC: GREEN MOVEMENT OF CALIFORNIA

AERIAL

SEEDING



BEE KEEPING



"REX RABBIT (FRANCE) PROPAGATION AND ECOSYSTEM REWILDING"



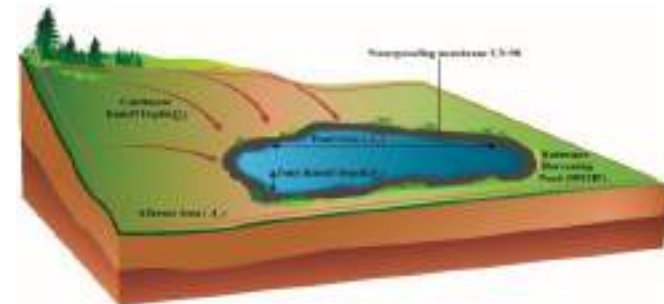
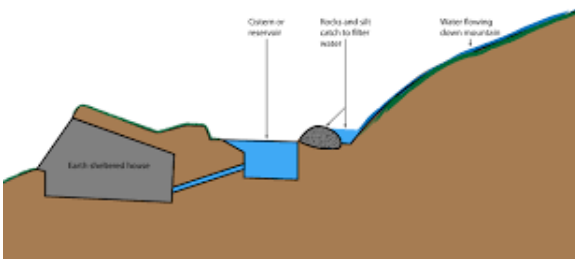
**BREED AND
RELEASE
MILLIONS OF REX
RABBITS IN THE
DESSERTED**

AREAS 41

GMC: GREEN MOVEMENT OF CALIFORNIA

OROGRAPHIC RAINWATER HARVESTING (ORH) SYSTEM (RAIN WATER HARVESTING IN DRY MOUNTAINS)

Catching hillside run-off water



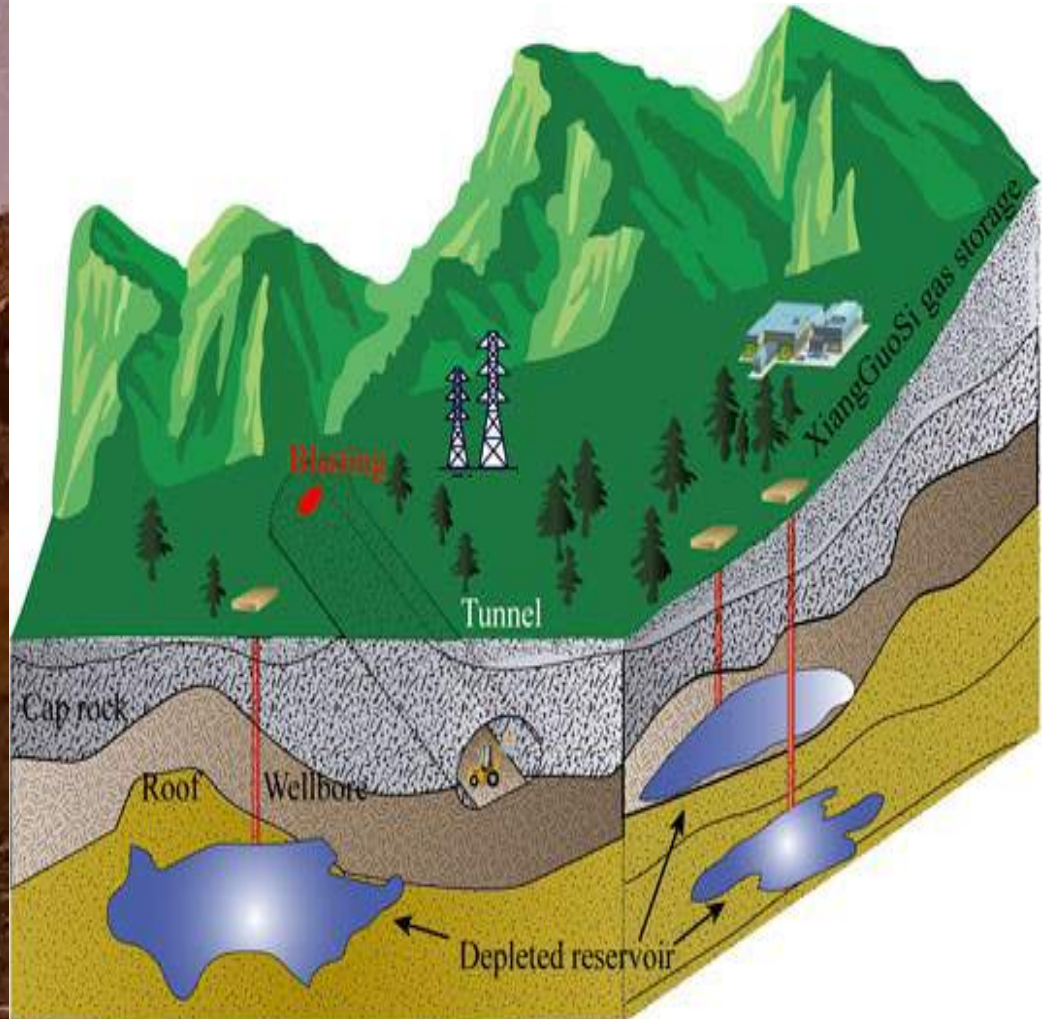
OROGRAPHIC RAINWATER HARVESTING (ORH) SYSTEM

(RAIN WATER HARVESTING IN DRY MOUNTAINS)



CONTROLLED BLASTING

Blasting is the technique used to create a shallow or reservoir in mountainous terrain.



EUTROPHICATION (ALGAE AND CYANOBACTERIA)

Eutrophication is the rapid growth of algae due to excess nutrients in water.



AERIAL SEEDING: FIRE-RESISTIVE PLANT



"Water-Retaining Plants for Fire Prevention"

Fire-Resistive Plants

- Groundcovers
- Creeping Phlox
- Kinnikinnick
- Sedum
- Snow-in-Summer
- Yellow Ice plant

Shrubs

- Carol Mackie Daphne
- Flowering Currant
- Lilac
- Oregon Boxwood
- Sumac
- Vine Maple
- Willow

Trees

- - Common Hackberry
- - Crabapple
- - Pin Oak or Red Oak
- - Ponderosa Pine
- - Rocky Mountain Maple
- - Western Catalpa

Drought-Tolerant Plants Fast-Growing, Slope-Stabilizing Plants

- California lilac
- White sage
- Pinks
- Purple coneflower
- Russian sage
- Sage
- Spurge
- Stonecrop
- Wormwood
- Yarrow

- Suckering Shrubs
- Prairie Natives with Taproots
- Vining Perennial Ground Covers
- Low Sumac

Trees

- Desert willow
- Valley oak
- Atlas cedar



EUTROPHICATION (ALGAE AND CYANOBACTERIA)

Eutrophication is the rapid growth of algae due to excess nutrients in water.

**Aerial Beetle
Deployment**



**Aerial Harvester
Ant Deployment**



Lichen or Moss?

A Simple Description of
Each for Nature Study





CONTROLLED BLASTING

Blasting is the technique used to create a shallow or reservoir in mountainous terrain.



| Category | Name/Technology | Description |
|------------------------------|-----------------------------------|---|
| Wildfire Extinguishing Foams | Temprotex FireFoam | Fire- and methanol-resistant foam, used in high-risk environments like auto racing. |
| | Zenova Foam Fire Extinguisher | Class AB fire extinguisher, effective on various types of fires, lightweight, and environmentally friendly. |
| | Frontline Wildfire Defense System | Automated system using water and biodegradable firefighting foam to create a non-burnable environment. |
| Fire Suppressing Chemicals | Phos-Chek | Long-term fire retardant, used in aerial firefighting to create firebreaks and protect structures. |
| | BlazeTamer380 | Water enhancement gel that increases the effectiveness of water in fire suppression. |
| | Firelce | A fire suppression gel that can be mixed with water and used in fire extinguishers, pumps, and hoses. |
| | Aqueous Film-Forming Foam (AFFF) | Foam concentrate that forms a film on the surface of flammable liquids to prevent ignition. |
| Advanced Fire Extinguishers | Aerosol Fire Extinguishers | Compact and portable extinguishers that release a fine aerosol mist to suppress fires. |
| | Halotron I | Clean agent fire extinguisher, effective on Class B and C fires, leaves no residue. |

| Type of Fire | Extinguishers | Suppressants |
|--------------|--------------------------|--|
| Class A | Water, Foam, Zenova Foam | Water, Foam, Temprotex FireFoam, Frontline Wildfire Defense System |
| Class B | CO2, Foam, AFFF | CO2, Foam, AFFF |
| Class C | CO2, Dry Powder | CO2, Dry Powder |
| Class D | Dry Powder | Dry Powder |
| Class K | Wet Chemical | Wet Chemical |

| Type of Fire | Extinguishers | Advanced Chemicals and Suppressants |
|--------------|--------------------------|--|
| Class A | Water, Foam, Zenova Foam | Temprotex FireFoam, Frontline Wildfire Defense System, Phos-Chek, BlazeTamer380, Firelce |
| Class B | CO2, Foam, AFFF | AFFF, Phos-Chek, BlazeTamer380, Firelce |
| Class C | CO2, Dry Powder | Phos-Chek, BlazeTamer380, Firelce |
| Class D | Dry Powder | Phos-Chek, BlazeTamer380, Firelce |
| Class K | Wet Chemical | Phos-Chek, BlazeTamer380, Firelce |



CALIFORNIA WILDFIRE: DAMANGE REPORT

| Sum of Approximate Square Miles | | | | |
|---|---------------------------|-----------------------|------------------------|-------------|
| Row Labels | Department of Agriculture | Department of Defense | Department of Interior | Grand Total |
| Bureau of Land | | | 18000 | 18000 |
| Bureau of Land Management | | | 24350 | 24350 |
| Bureau of Reclamation | | | 370 | 370 |
| Fish and Wildlife Service | | | 390 | 390 |
| Forest Service | 32730 | | | 32730 |
| Military Reservations and Installations | | 6300 | | 6300 |
| National Park Service | | | 9325 | 9325 |
| Grand Total | 32730 | 6300 | 52435 | 91465 |

| Sum of Approximate Square Miles | Department of Agriculture | Department of Defense | Department of Interior | Grand Total |
|---|---------------------------|-----------------------|------------------------|-------------|
| Bureau of Land | | | 18000 | 18000 |
| Bureau of Land Management | | | 24350 | 24350 |
| Bureau of Reclamation | | | 370 | 370 |
| Fish and Wildlife Service | | | 390 | 390 |
| Forest Service | 32730 | | | 32730 |
| Military Reservations and Installations | | 6300 | | 6300 |
| National Park Service | | | 9325 | 9325 |
| Grand Total | 32730 | 6300 | 52435 | 91465 |

| Wildfire Name | Deaths | Year |
|--------------------|--------|------|
| Camp Fire | 85 | 2018 |
| Griffith Park Fire | 29 | 1933 |
| Tunnel Fire | 25 | 1991 |
| Tubbs Fire | 22 | 2017 |
| North Complex Fire | 15 | 2020 |

| Wildfire Name | Acres Burned | Year |
|-----------------------|--------------|------|
| August Complex | 1,032,648 | 2020 |
| Dixie | 963,309 | 2021 |
| Mendocino Complex | 459,123 | 2018 |
| SCU Lightning Complex | 396,625 | 2020 |
| Creek | 379,895 | 2020 |

| Wildfire Name | Cause | Deaths | Acres Burned |
|--------------------|-----------------------------|--------|--------------|
| Camp Fire | Powerlines | 85 | 153,336 |
| Griffith Park Fire | Unknown | 29 | 47 |
| Tunnel Fire | Extinguished fire rekindled | 25 | 1,600 |
| Tubbs Fire | Electrical system | 22 | 36,807 |
| North Complex Fire | Lightning | 15 | 318,935 |

| Wildfire Name 2000-2025 | Cause | Acres Burned |
|-------------------------|---------------|--------------|
| August Complex | Lightning | 1,032,648 |
| Dixie | Powerlines | 963,309 |
| Mendocino Complex | Human-related | 459,123 |
| SCU Lightning Complex | Lightning | 396,625 |
| Creek | Undetermined | 379,895 |

Here are the top 10 reasons for wildfire causes in California from 1995 to 2025, based on data from CAL FIRE:

1. Powerlines
2. Human-related activities
3. Lightning
4. Arson
5. Equipment use
6. Campfires
7. Vehicle-related incidents
8. Debris burning
9. Railroads
10. Undetermined causes

| INTERVAL | WILDLAND FIRES | ACRES |
|---|----------------|--------|
| 2025 Combined YTD (CALFIRE & US Forest Service) | 301 | 57,403 |
| 2024 Combined YTD (CALFIRE & US Forest Service) | 93 | 4 |
| 5 Year Average (same interval) | 153 | 459 |

| Fire cause from 2000 - 2025 | |
|-----------------------------|--------------|
| Fire Cause | Acres Burned |
| Lightning | 1,032,648 |
| Powerlines | 963,309 |
| Human related | 459,123 |
| Lightning | 396,625 |
| Undetermined | 379,895 |

| Fire Cause | Year | Acres Burned |
|---------------|------|--------------|
| Lightning | 2020 | 1,032,648 |
| Powerlines | 2018 | 153,336 |
| Human related | 2018 | 459,123 |
| Lightning | 2020 | 396,625 |
| Undetermined | 2020 | 379,895 |

| Location | Hot Spots | Year | Estimated Financial Loss (USD) | Loss of Life | Severity | Source |
|---------------------|---|---------|--------------------------------|--------------|--------------------|-------------------------|
| Coastal Regions | Sonoma and Napa Valleys | 2017 | \$9 billion | 44 | Catastrophic | Moore Foundation Report |
| Northern California | August Complex Fire (Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, Colusa) | 2020 | \$2.4 billion | 1 | Catastrophic | CAL FIRE |
| Southern California | Santa Ana Winds, Los Angeles, Orange County, San Diego County | 2007 | \$1.3 billion | 14 | Extreme | CAL FIRE |
| Northern California | Dixie Fire (Butte, Plumas, Lassen, Shasta, Tehama) | 2021 | \$1.2 billion | 1 | Catastrophic | CAL FIRE |
| Central California | Carr Fire (Redding, Shasta County) | 2018 | \$1.6 billion | 8 | Major | CAL FIRE |
| Central California | Rim Fire (Yosemite National Park, Stanislaus National Forest) | 2013 | \$127 million | 0 | Major | CAL FIRE |
| Northern California | Klamath National Forest | Various | - | - | Moderate to Severe | CAL FIRE |



STRUCTURAL FIRE MITIGATION

AI Action Plan 2025: Structural Fire Mitigation & Structural Safety

Recommendations:

1. **AI-Driven Fire-Resistant Materials** – Use smart composites that adapt to extreme temperatures.
2. **Predictive AI for Structural Integrity** – Detect fire risks before ignition using continuous monitoring.
3. **Autonomous AI Suppression Systems** – Deploy AI-guided drones for targeted fire suppression.
4. **Edge AI for Smart Detection** – Enhance fire sensor networks with real-time hazard identification.
5. **AI-Optimized Evacuation & Navigation** – Provide adaptive emergency escape guidance.
6. **AI-Powered Digital Twins** – Simulate structural fire scenarios for optimized firefighting strategies.
7. **Quantum Computing for Heat Modeling** – Predict fire behavior in complex environments for precise suppression.
8. **AI-Enabled Roof Sensors & Sprinklers** – Automate fire detection and response.
9. **Smart Utility-Based Fire Defense** – IoT-connected sprinklers activate upon extreme heat detection.
10. **Alternative Water Sources & Artificial Reservoirs** – Establish emergency reserves for rapid suppression.
11. **High-Pressure Hydrant Systems** – Ensure immediate water access for firefighting.
12. **Cooling Stations for Vulnerable Communities** – Create heat mitigation zones near high-risk areas.
13. **AI-Powered Assistive Alerts** – Equip seniors and individuals with disabilities with predictive evacuation warnings.



Current State : Structures



HOME

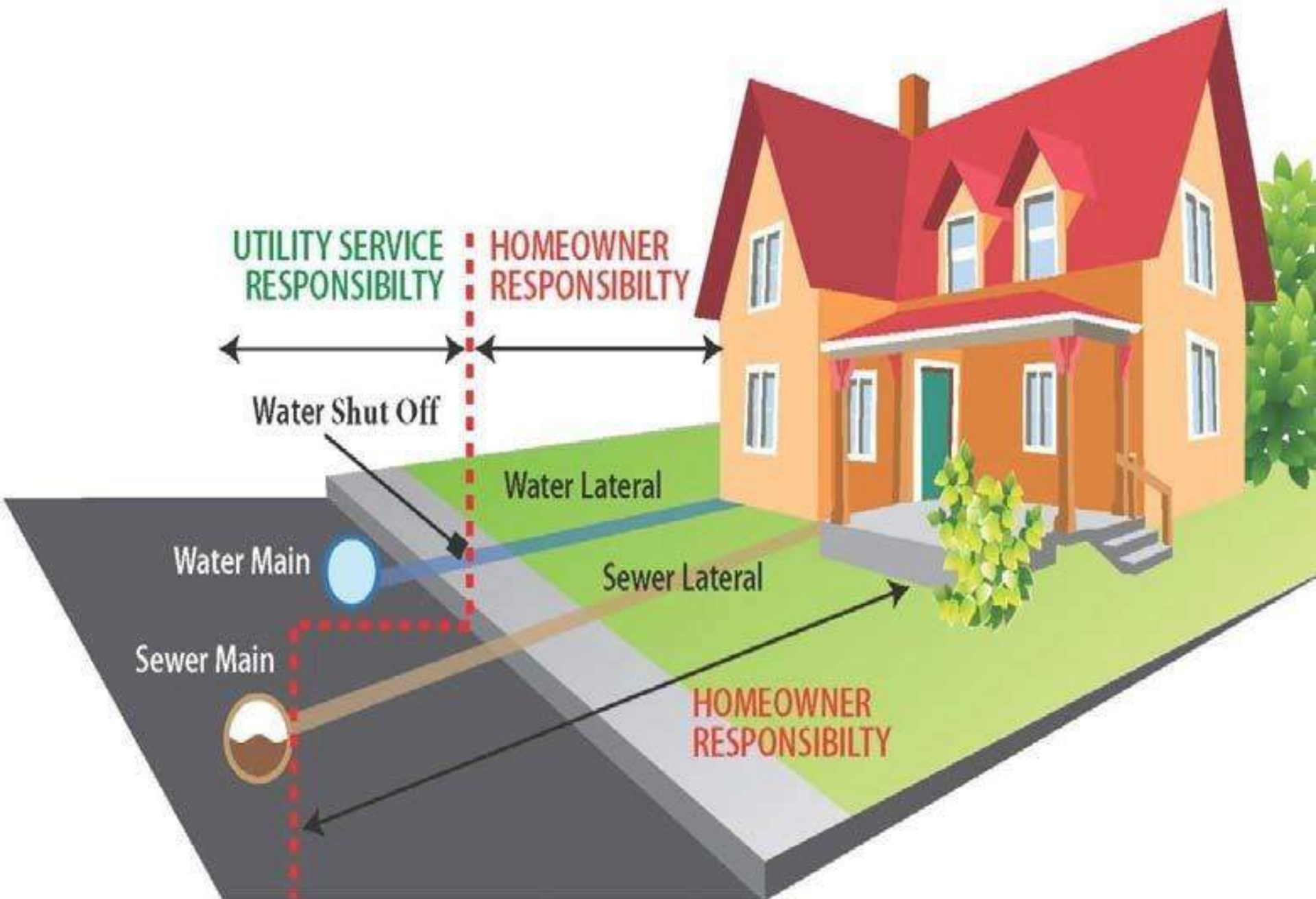




FUTURE STATE: LOS ANGELES, CALIFORNIA











Blueprint

| | |
|---|---------------------------------------|
|  | <u>EL.W.H.</u> BOLL 1.0KW |
|  | <u>D.H.&C.W.CAB</u> 90x60x12cm |

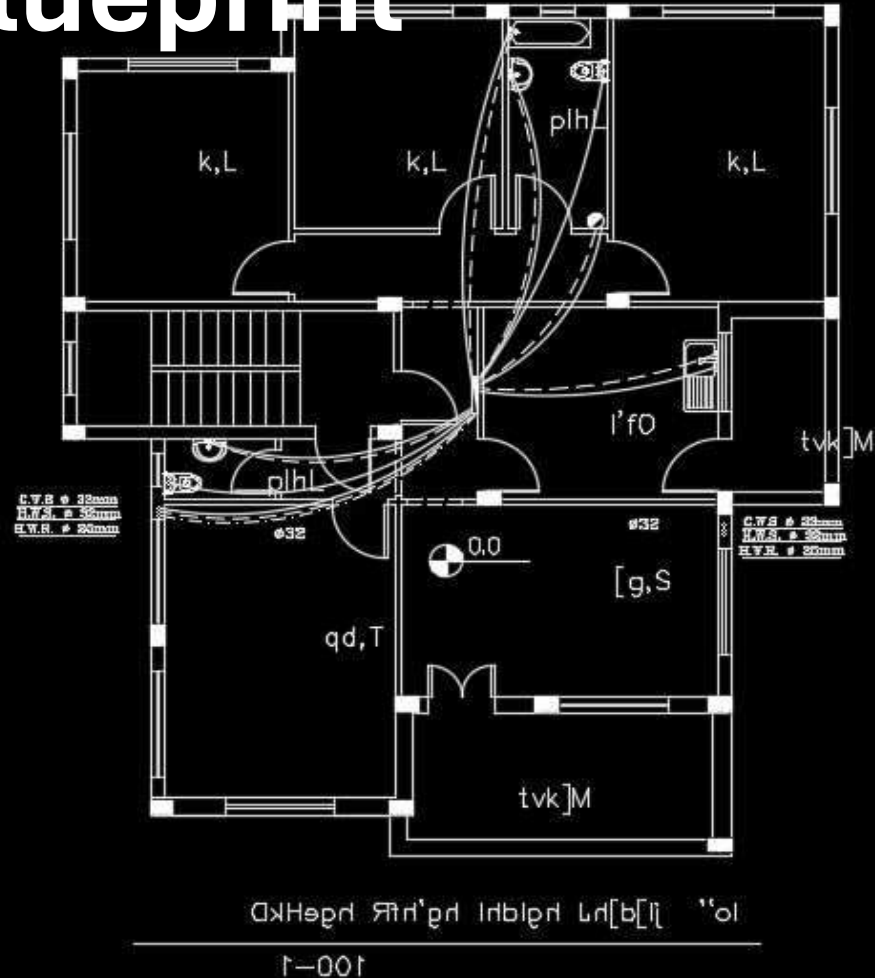
Cabinet C&HWS Diameters

| Cabinets | CWS | HWS | Pipe Material |
|----------|------|------|---------------|
| MAIN | 32mm | 32mm | CPVC |
| DCF | 32mm | 32mm | CPVC |

| | | |
|-------|-------|-------------------|
| C.W.S | ——— | COLD WATER SUPPLY |
| H.W.S | — — — | HOT WATER SUPPLY |
| H.W.R | — — — | HOT WATER RETURN |

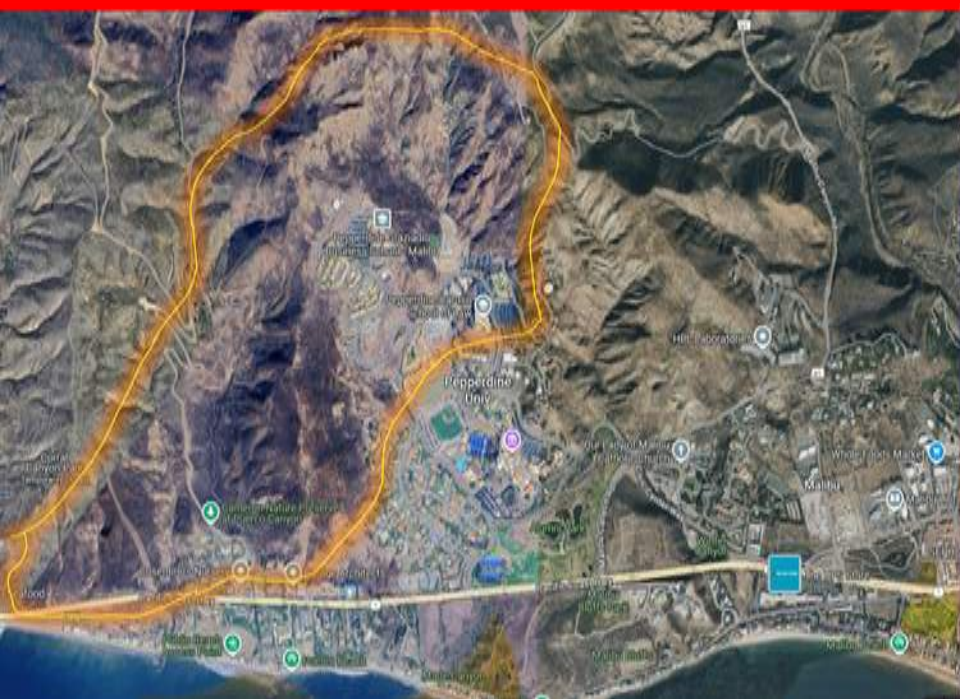
Branches Diameter

| Fixture | Diameter | Pipe Material |
|---------|----------|---------------|
| Bath | 20mm | Plastic Pex |
| W.C. | 16mm | Plastic Pex |
| Bidet | 16mm | Plastic Pex |
| Basin | 16mm | Plastic Pex |
| Sink | 20mm | Plastic Pex |
| El.W.H. | 20mm | Plastic Pex |





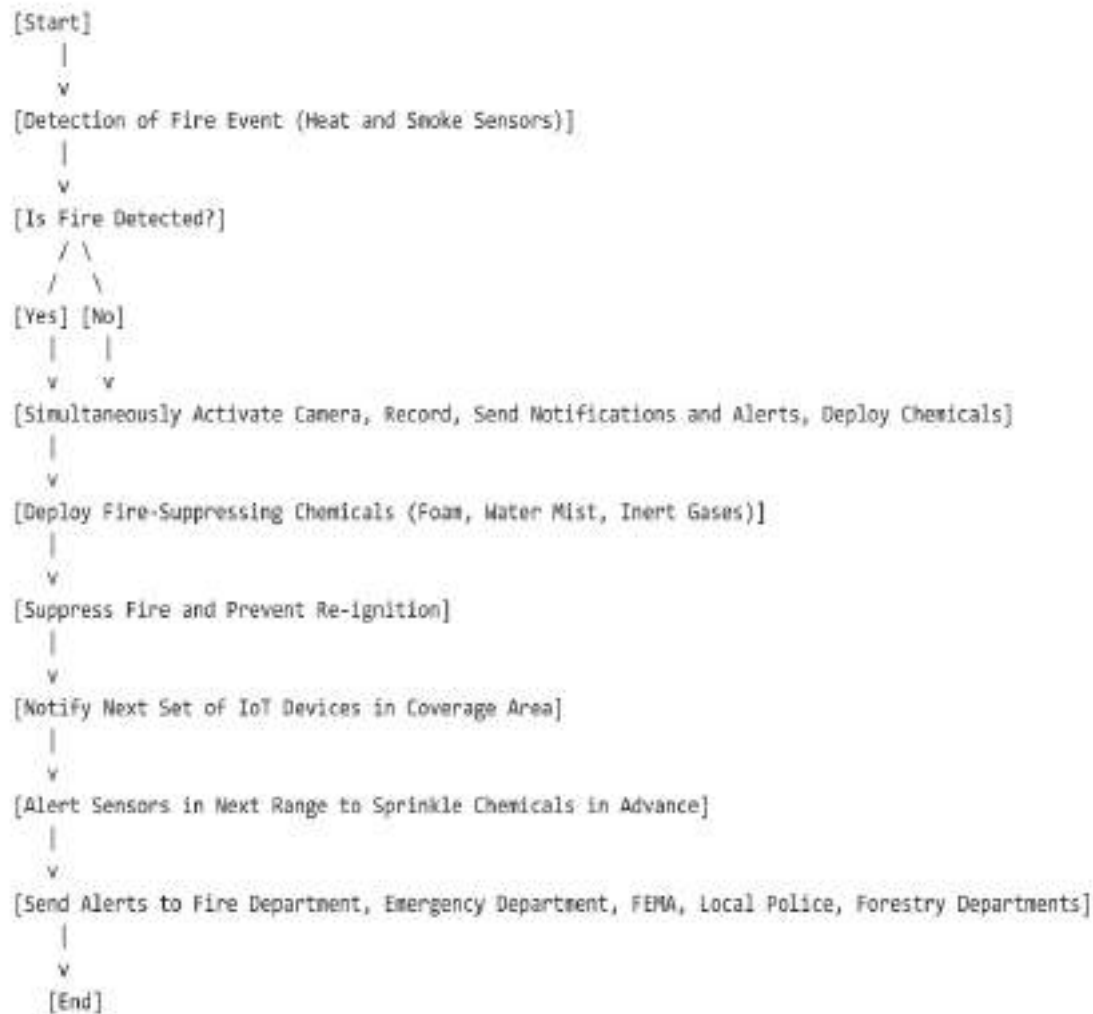
**Cooling Station
Must be built
near these
hotspots in LA**





CALIFORNIA WILDFIRE : IoT REMOTE MONITORING / DASHBOARDS & ALERTS

WILD FIRE : REMOTE MONITORING WORK FLOW





HOME

For Wild Fire

1/01/2025

SRI | (408) 666-1906 | sri@srinivasan-m.com

1/01/2025

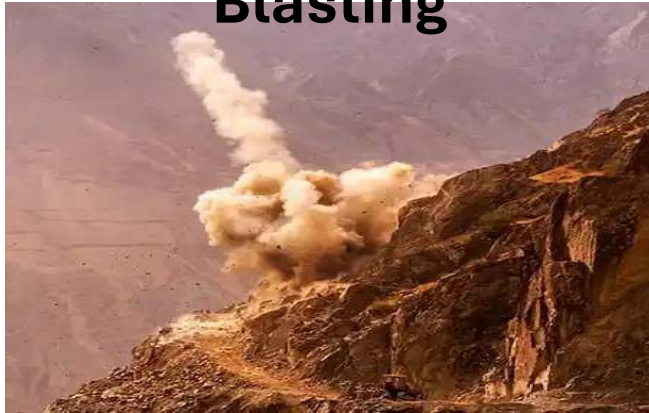


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ARTIFICIAL RESERVOIR AS A SOURCE TO EXTINGUISH FIRE

1. Controlled Blasting



2. Artificial Reservoirs with Rainwater



3. Create a Cooling Station from the Artificial Reservoirs



4. Pump from the Cooling Station / Reservoirs





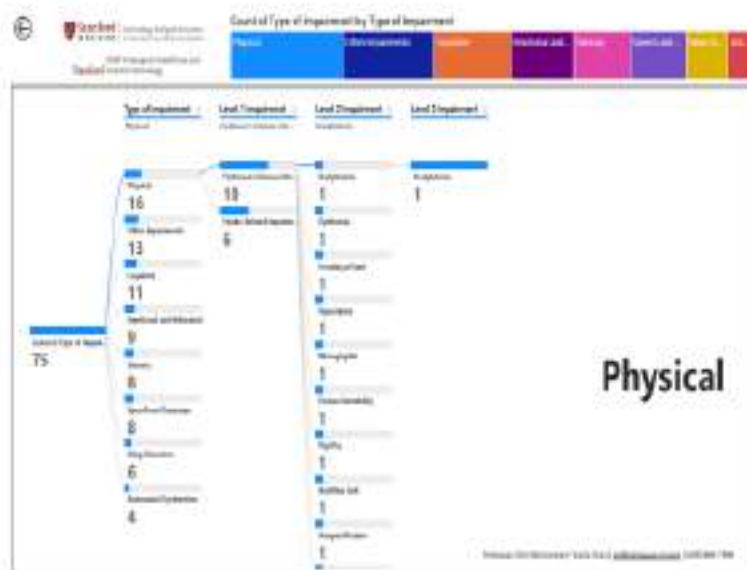
Assistive Technology with Emergency Alerts For Seniors and People with Impairments



- Drop Foot
- Muscle Atrophy
- Decrease Sensation

Severity / Levels

- Low (Personal Alert)
- Medium (Caregiver)
- High (EMS)



Saturday, March 15, 2025

Team 8

1





[HOME](#)

WIND CONTROL FOR WILDFIRE LANDSCAPES



HOME



Wind Control for Wildfire Landscapes

AI Action Plan 2025: Advanced Wind Control Strategies for Wildfire Mitigation

Recommendations:

1. **AI-Powered Wind Analysis** – Deploy machine learning models to predict and modify wind behavior, optimizing fire suppression strategies.
2. **Autonomous AI Wind Barriers** – Engineer adaptive, AI-controlled barriers that dynamically adjust to wind shifts to slow wildfire spread.
3. **AI-Driven Wind-Powered Sprinkler Systems** – Integrate intelligent misting and sprinkler networks that activate based on predictive fire risk modeling.
4. **Smart Terrain Regrading with AI** – Utilize AI simulations to design optimal landform adjustments for wind resistance and moisture retention.
5. **AI-Guided Vegetation Management** – Implement AI-driven recommendations for strategic planting of fire-resistant flora in wind corridors.
6. **Edge AI for Environmental Monitoring** – Deploy decentralized sensors that continuously track wind speeds, humidity levels, and fire risks for real-time decision-making.
7. **Quantum AI for Wildfire Spread Prediction** – Enhance forecasting models with quantum computing to analyze wind patterns and fire behavior under complex environmental conditions.
8. **Biodegradable AI-Controlled Wind Fences** – Use intelligent biodegradable barriers that dynamically reshape based on evolving fire threats and erosion patterns.
9. These AI-driven wind control strategies align with California’s Fire Hazard Severity Zone mapping and ongoing community hardening initiatives. Integrating advanced technology will transform wind into a key tool for fire prevention, ecosystem resilience, and sustainable land management.

Wind Speed Reduction Strategies to Slow Wildfire Spread

Before a Wildfire

Strategic Windbreaks

- Fire-resistant tree rows
- Shrub barriers
- Staggered planting
- Berms and earthen mounds

Artificial Wind Barriers

- Permeable fences
- Stone walls
- Fire-resistant mesh
- Gabion walls

Topographic Modifications

- Depressions to slow airflow
- Reinforced slopes for wind buffering
- Rock outcroppings

During a Wildfire

Temporary Wind Barriers

- Metal screens
- Water-soaked tarps
- Asset protection shields
- Fire-resistant blankets

Water or Foam Application

- Water sprays to reduce wind-driven flames
- Fire-retardant foam for suppression
- Gel barriers to slow fire spread
- Hydrated clay coatings

Backburning in Low-Wind Zones

- Controlled burns
- Firebreak creation
- Fuel reduction
- Pre-burned buffer zones

After a Wildfire

Erosion-Control Structures

- Contour wattles
- Silt fences
- Check dams
- Riprap barriers

Revegetation with Wind-Slowing Species

- Native shrubs
- Bunchgrasses
- Low-growing trees
- Fire-resistant perennials

Temporary Wind Fences

- Biodegradable netting
- Wooden slats
- Post-fire stabilization barriers
- Living windbreaks





1. Topographic Modifications: Vegetative Fuel Breaks & Fire Breaks

1. Topographic Modifications: Vegetative Fuel Breaks & Fire Breaks



[HOME](#)

**Current State:
Fuels Wild-fire**



**Controlled
Blasting**



**Future State: Rainwater
Harvesting | Artificial
Reservoir**





2.

**CALIFORNIA
RIVERS, PONDS,
RUNNING
WATER, LAKES,
STREAMS, AND
RIVERS**

Current Conditions for Selected Reservoirs

Map of California Lakes, Streams and Rivers



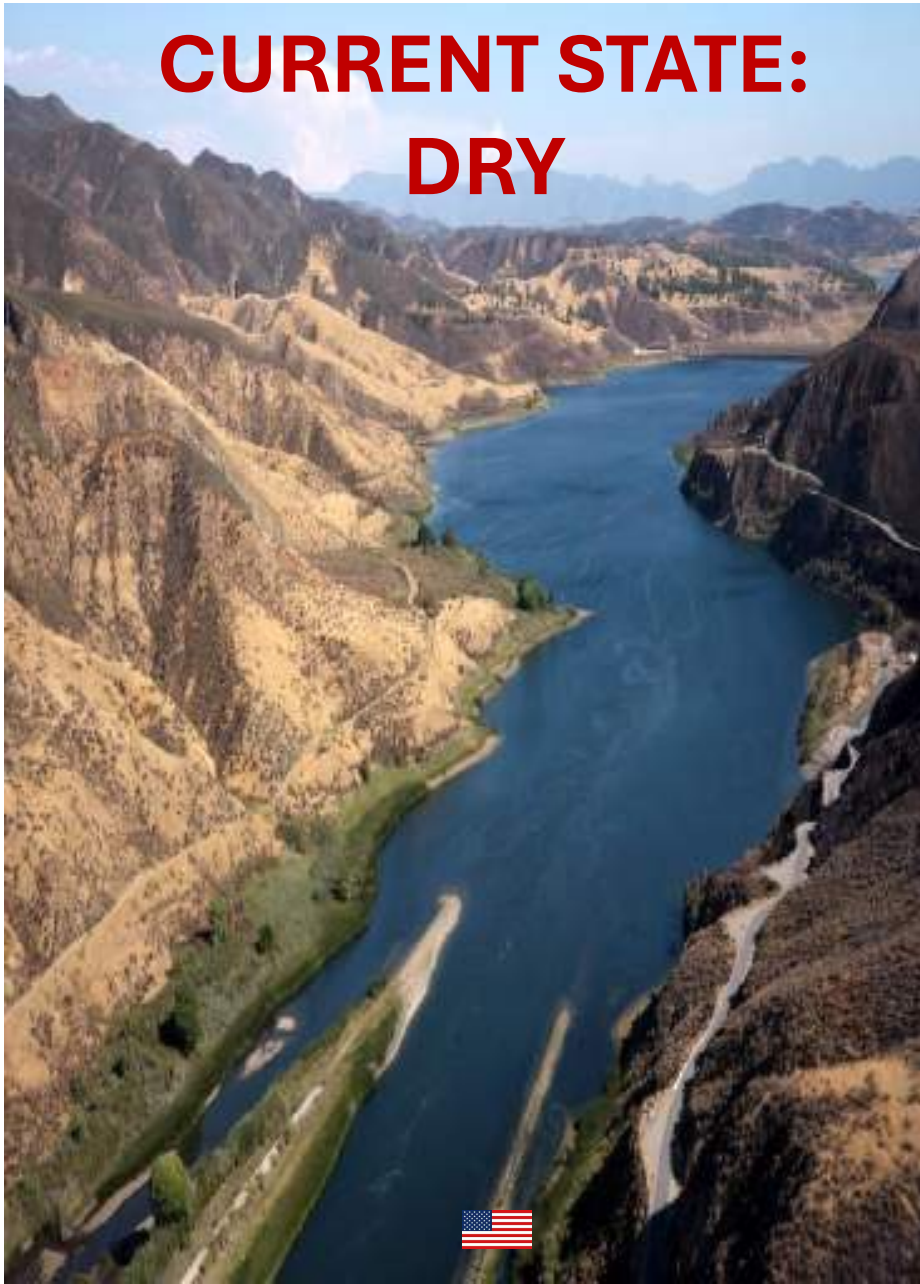


3. Windpump | Windmill pump (Mist & Sprinkle)



2. Windpump | Windmill pump (Mist & Sprinkle)

CURRENT STATE:
DRY



FUTURE STATE: MECHANICAL WIND
OPERATED MISTING AND SPRINKLING
SYSTEM



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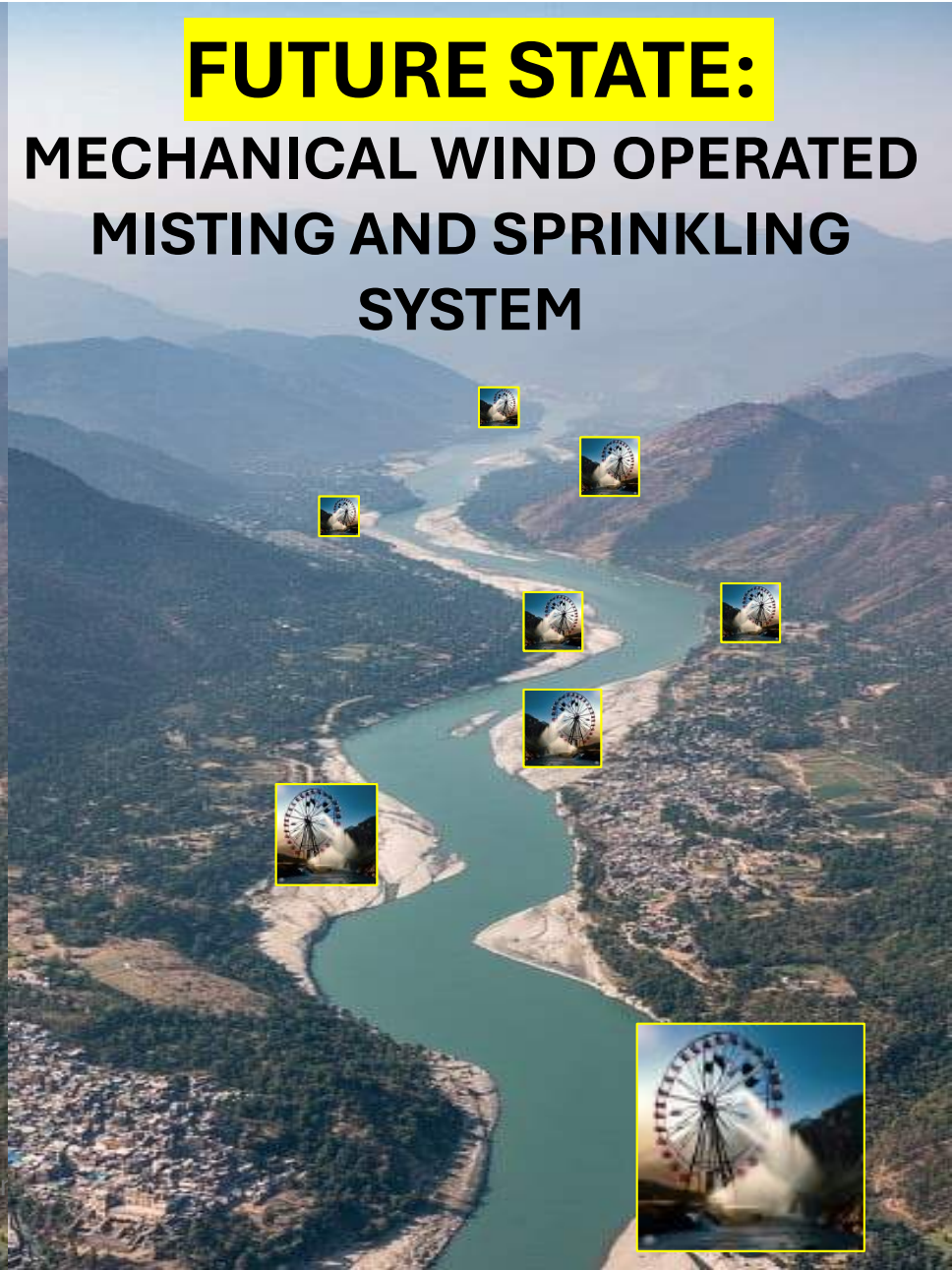
2. Windpump | Windmill pump (Mist & Sprinkle)

CURRENT STATE



FUTURE STATE:

**MECHANICAL WIND OPERATED
MISTING AND SPRINKLING
SYSTEM**





1/01/2025



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FUTURE STATE: MECHANICAL WIND OPERATED MISTING AND SPRINKLING SYSTEM



FUTURE STATE: MECHANICAL WIND OPERATED MISTING AND SPRINKLING SYSTEM





4. Strategic Windbreaks and Shelterbelts

Hardy, Fire-Resistant Trees and Shrubs

Fire-Resistant Trees

- Live Oak (*Quercus virginiana*)
- Honey Locust (*Gleditsia triacanthos*)
- Southern Magnolia (*Magnolia grandiflora*)
- Ginkgo (*Ginkgo biloba*)
- California Sycamore (*Platanus racemosa*)
- Cork Oak (*Quercus suber*)
- Western Redbud (*Cercis occidentalis*)
- Black Walnut (*Juglans nigra*)
- London Plane Tree (*Platanus × acerifolia*)
- Tulip Tree (*Liriodendron tulipifera*)

Fire-Resistant Shrubs

- Manzanita (*Arctostaphylos* spp.)
- Toyon (*Heteromeles arbutifolia*)
- Coffeeberry (*Frangula californica*)
- Lilac (*Ceanothus* spp.)
- Redbud (*Cercis* spp.)
- Mountain Mahogany (*Cercocarpus* spp.)
- Oregon Grape (*Mahonia aquifolium*)
- Sumac (*Rhus* spp.)
- Silverberry (*Elaeagnus commutata*)
- Bush Honeysuckle (*Diervilla lonicera*)

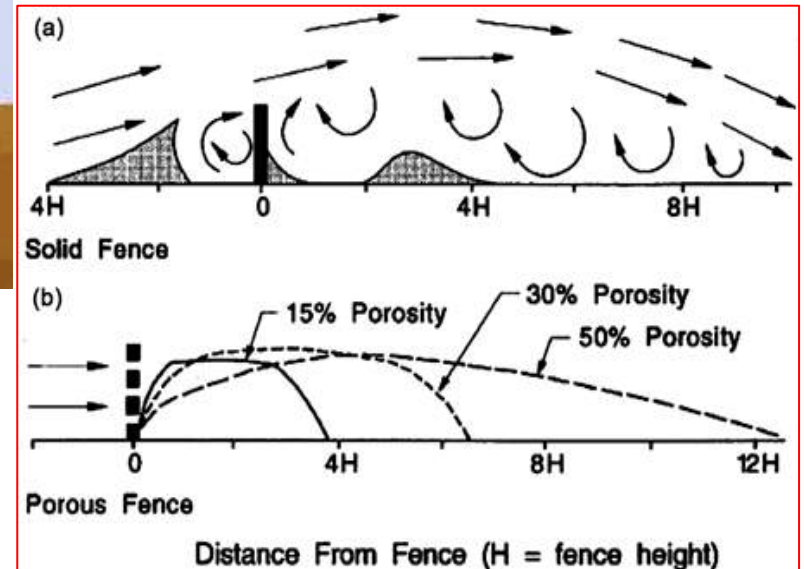
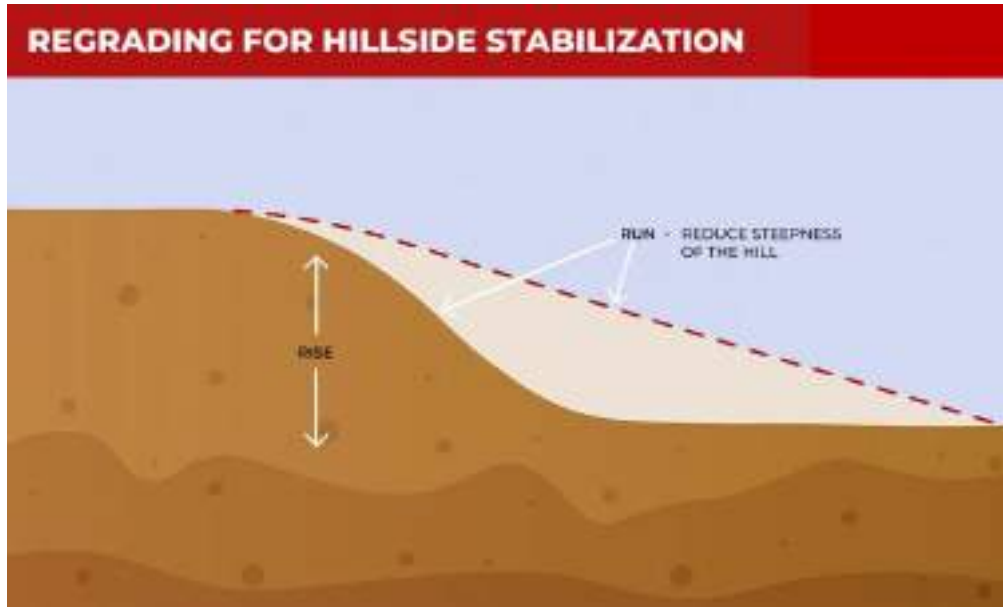



Strategic Windbreaks and Shelterbelts



[HOME](#)

REGRADING FOR HILLSIDE STABILIZATION





5. Fire-Resistant Trees | Fire- Resistant Shrubs

5. Fire-Resistant Trees | Fire-Resistant Shrubs





PUBLIC HEALTH

AI Action Plan 2025: Advanced Air Quality & Pollution Mitigation

Recommendations:

1. **AI-Powered Air Particle Suppression** – Implement autonomous mist sprayers equipped with AI-driven particle sensors to neutralize airborne pollutants from wildfire smoke and agricultural emissions.
2. **Predictive AI for Pollution Tracking** – Utilize advanced AI models to analyze air quality patterns and forecast pollution surges, enabling preemptive mitigation strategies.
3. **Edge AI for Real-Time Air Quality Monitoring** – Deploy decentralized IoT sensors that continuously track particulate matter and toxic compounds for immediate response actions.
4. **AI-Enabled Wind-Controlled Filtration** – Develop AI-optimized windpump sprinkler systems that dynamically adjust misting intensity based on real-time pollution density and wind conditions.
5. **Autonomous AI-Guided Soil Regeneration** – Use AI-directed misting to hydrate dry soil and enhance nutrient absorption, restoring polluted land into sustainable green zones.
6. **AI-Powered Biodegradable Barriers** – Engineer AI-responsive air filtration barriers that capture wildfire residues and chemically neutralize harmful compounds.
7. **Quantum AI for Pollution Source Mapping** – Integrate AI-driven quantum models to pinpoint pollution origins and optimize mitigation measures across high-impact regions.
8. **Smart AI-Based Environmental Recovery Programs** – Develop adaptive AI frameworks to monitor long-term ecological restoration and improve urban resilience.
9. These AI-driven strategies align with Santa Clara’s ongoing air quality improvement initiatives, offering nature-powered solutions that reinforce community sustainability and disaster preparedness.



AIR QUALITY MITIGATION

NEARLY
50%

of serious health issues in the U.S. related to air pollution occur in California

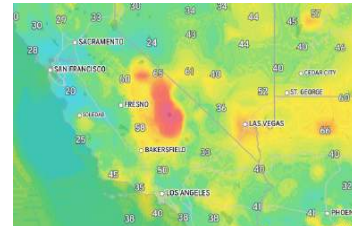
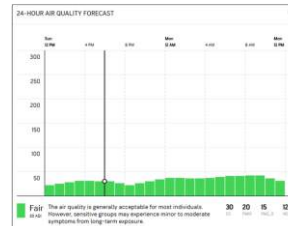


Created on 5th, September 2024 |
Last updated on May 18, 2025

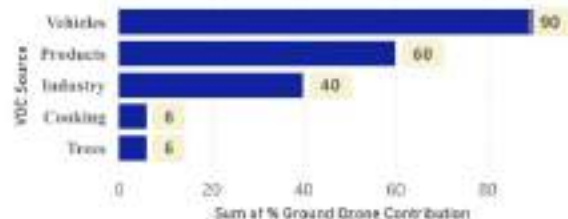
| (AQI) Values | Concern | |
|--------------------------------|--------------------------------|---------------------------------|
| When the AQI is in this range: | ...air quality conditions are: | ...as symbolized by this color: |
| 0 to 50 | Good | Green |
| 51 to 100 | Moderate | Yellow |
| 101 to 150 | Unhealthy for Sensitive Groups | Orange |
| 151 to 200 | Unhealthy | Red |
| 201 to 300 | Very Unhealthy | Purple |
| 301 to 500 | Hazardous | Maroon |



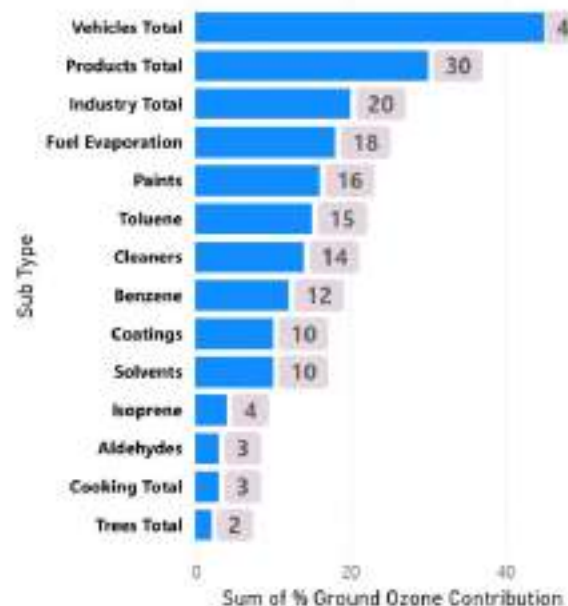
AIR QUALITY MITIGATION



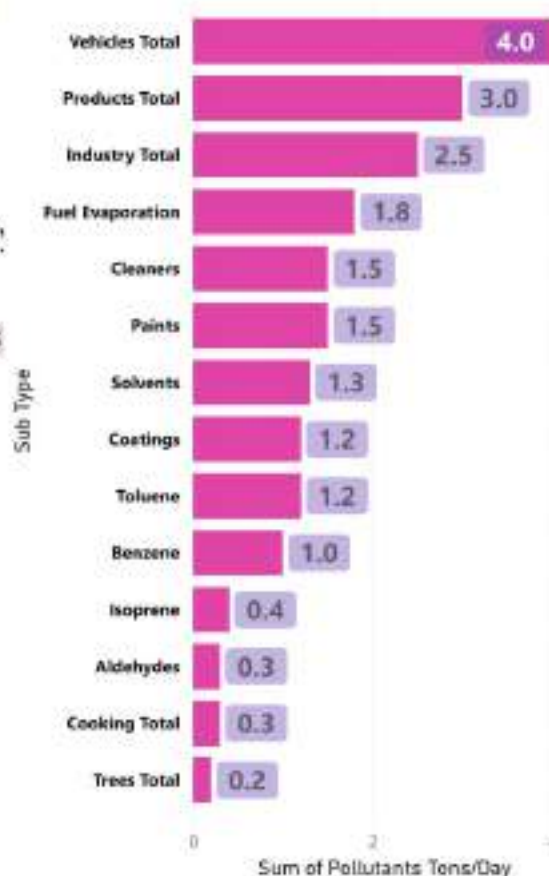
Sum of % Ground Ozone Contribution by VOC Source



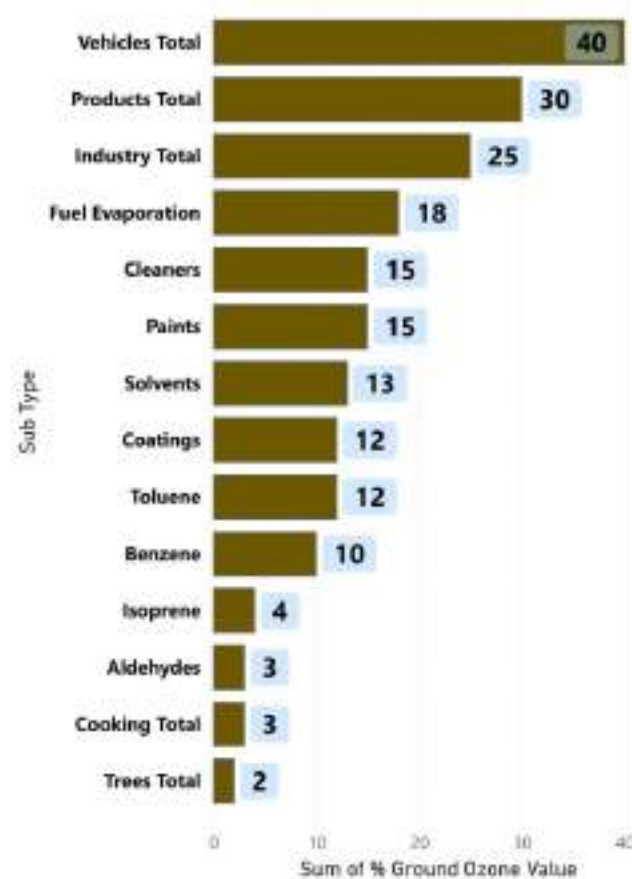
Sum of % Ground Ozone Contribution by Sub Type



Sum of Pollutants Tons/Day by Sub Type



Sum of % Ground Ozone Value by Sub Type



SRI | SRI@SRINIVASAN-M.COM | 12th APRIL 2025





Source: Lung.org

All Pollutants

23

PM2.5 (Particulate matter less than 2.5 microns)
Good
9.71 $\mu\text{g}/\text{m}^3$

2

CO (Carbon Monoxide)
Good
260 $\mu\text{g}/\text{m}^3$

4

NO2 (Nitrogen Dioxide)
Good
8.38 $\mu\text{g}/\text{m}^3$

12

O3 (Ozone)
Good
65.81 $\mu\text{g}/\text{m}^3$

6

PM10 (Particulate matter less than 10 microns)
Good
7.66 $\mu\text{g}/\text{m}^3$

1

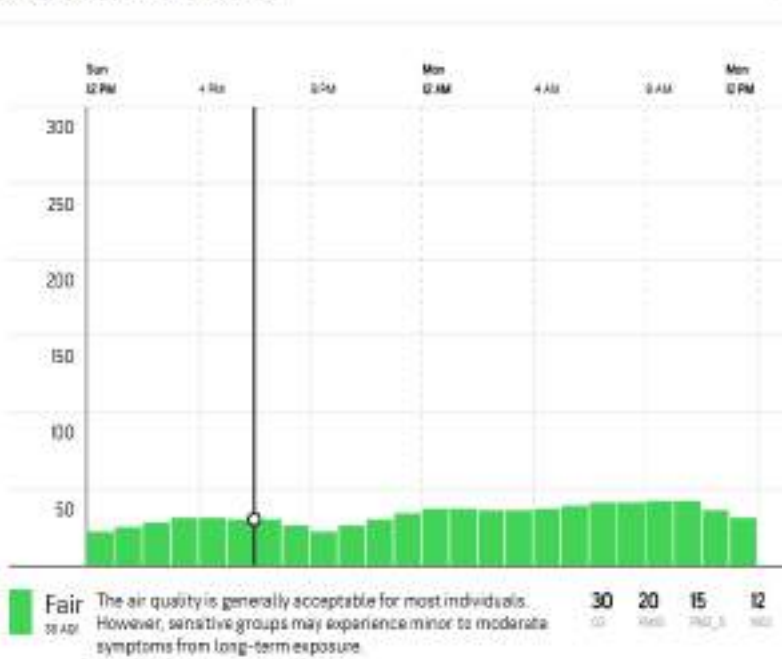
SO2 (Sulfur Dioxide)
Good
2.8 $\mu\text{g}/\text{m}^3$

① Air Quality Index

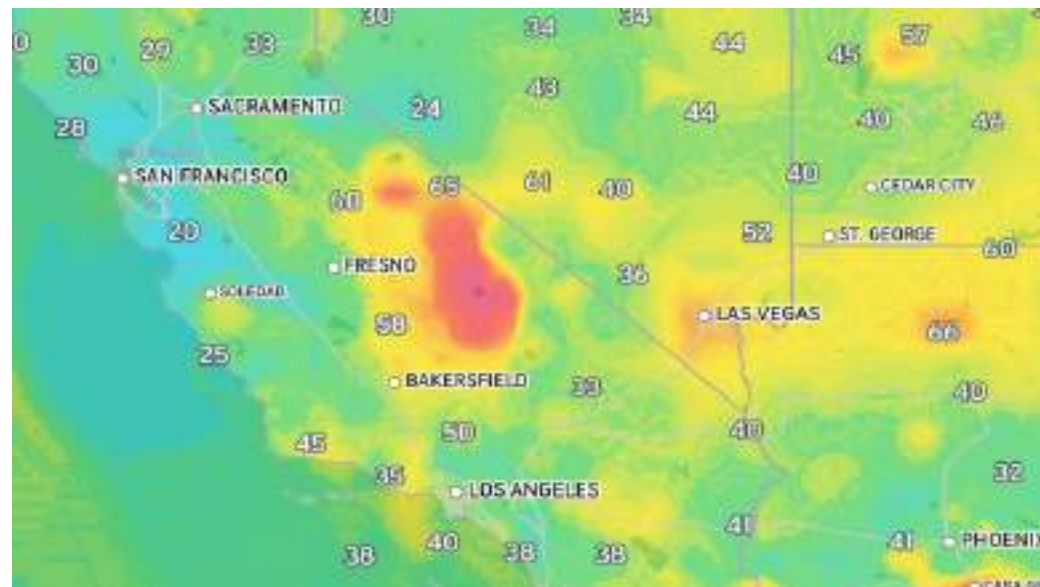
"A Primary Source of Air Pollution"

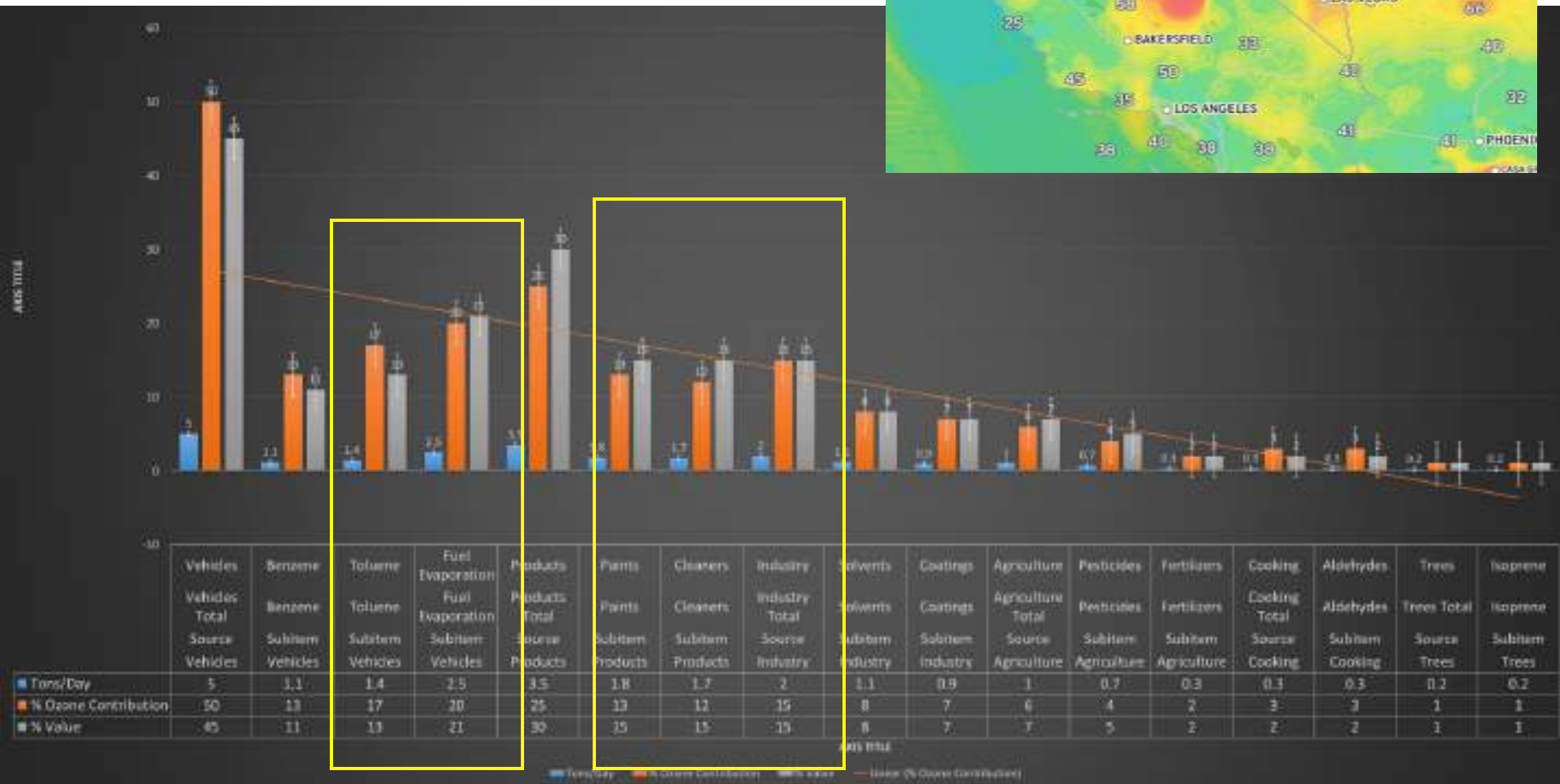
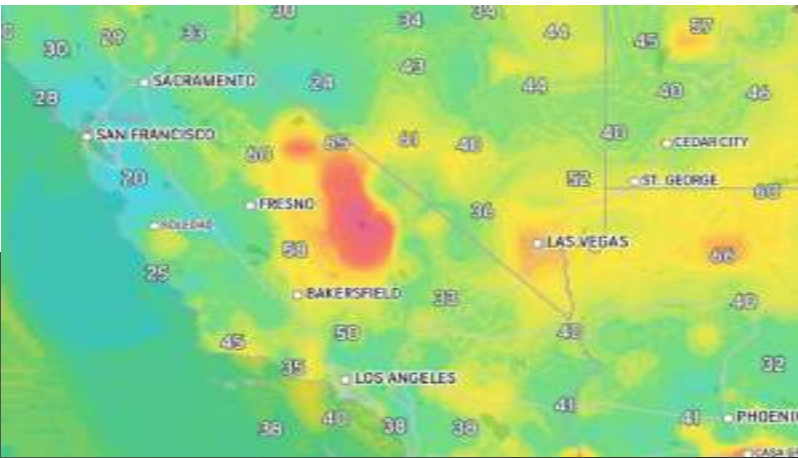


24-HOUR AIR QUALITY FORECAST



Excellent — Fair — Poor — Unhealthy —
Very Unhealthy — Dangerous —





| VOC Source | % VOC Emissions | Tons/Day | % Ozone Contribution |
|------------|-----------------|----------|----------------------|
| Vehicles | 40 | 4.0 | 45 |
| Products | 30 | 3.0 | 30 |
| Industry | 25 | 2.5 | 20 |
| Cooking | 3 | 0.3 | 3 |
| Trees | 2 | 0.2 | 2 |

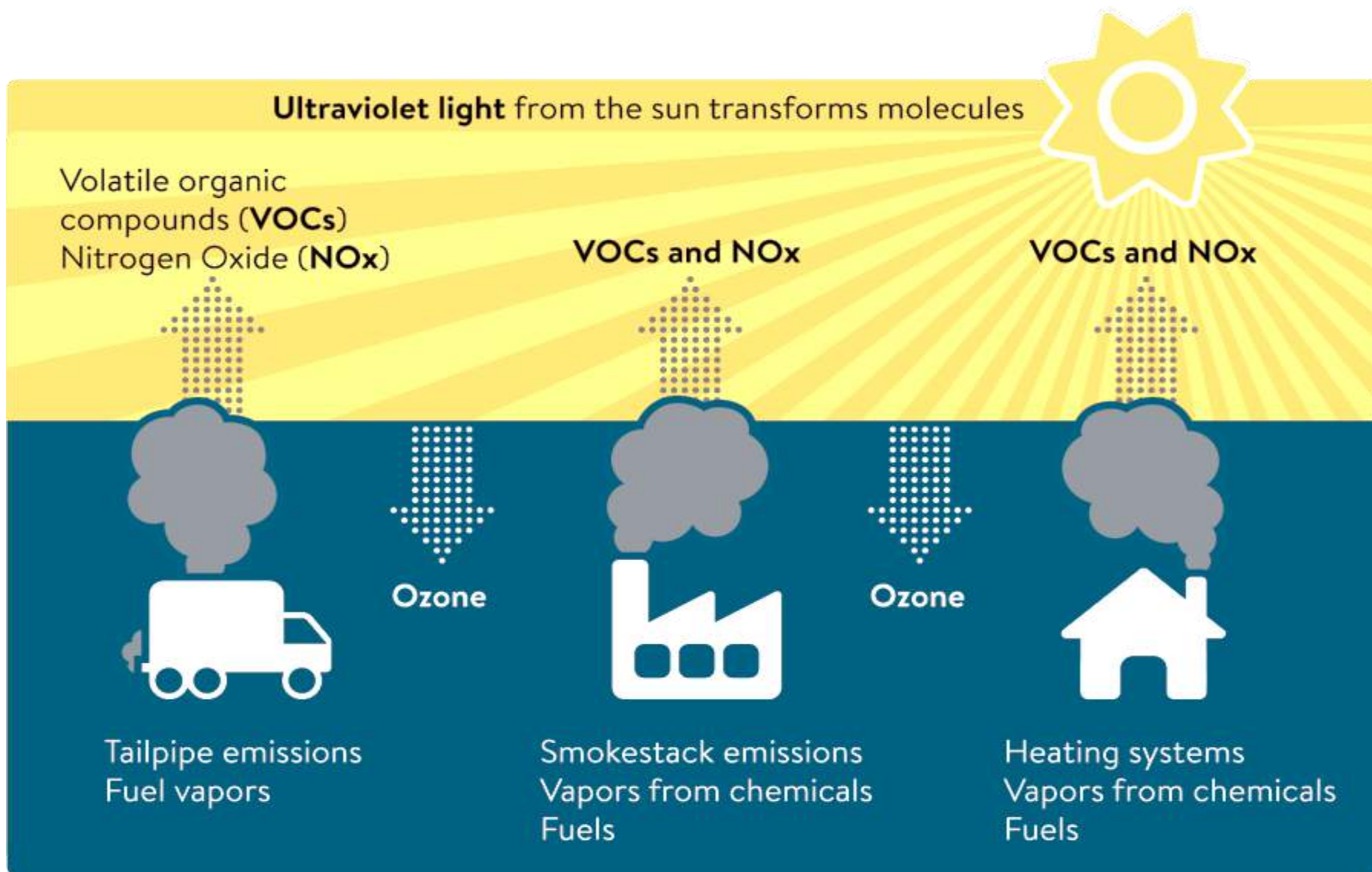
Top Contributors to VOCs and Ozone (O₃) in Santa Clara

Notes

- **Total VOC Emissions:** ~10 tons/day in Santa Clara.
- **Ozone Contribution:** VOCs account for ~50% of ozone formation.
- **Context:** Ozone averages 20–30 ppb, with peaks up to 80 ppb in summer.

Top Contributors to VOCs and Ozone (O₃) in Santa Clara

| VOC Source | Type | Sub Type | Value | Tons/Day | % Ozone Contribution | % Value |
|------------|-----------|------------------|------------------|----------|----------------------|---------|
| Vehicles | Source | | Vehicles | 4.0 | 45 | 40 |
| Vehicles | Component | Benzene | Benzene | 1.0 | 12 | 10 |
| Vehicles | Component | Toluene | Toluene | 1.2 | 15 | 12 |
| Vehicles | Component | Fuel Evaporation | Fuel Evaporation | 1.8 | 18 | 18 |
| Products | Source | | Products | 3.0 | 30 | 30 |
| Products | Component | Paints | Paints | 1.5 | 16 | 15 |
| Products | Component | Cleaners | Cleaners | 1.5 | 14 | 15 |
| Industry | Source | | Industry | 2.5 | 20 | 25 |
| Industry | Component | Solvents | Solvents | 1.3 | 10 | 13 |
| Industry | Component | Coatings | Coatings | 1.2 | 10 | 12 |
| Cooking | Source | | Cooking | 0.3 | 3 | 3 |
| Cooking | Component | Aldehydes | Aldehydes | 0.3 | 3 | 3 |
| Trees | Source | | Trees | 0.2 | 2 | 2 |
| Trees | Component | Isoprene | Isoprene | 0.2 | 2 | 2 |





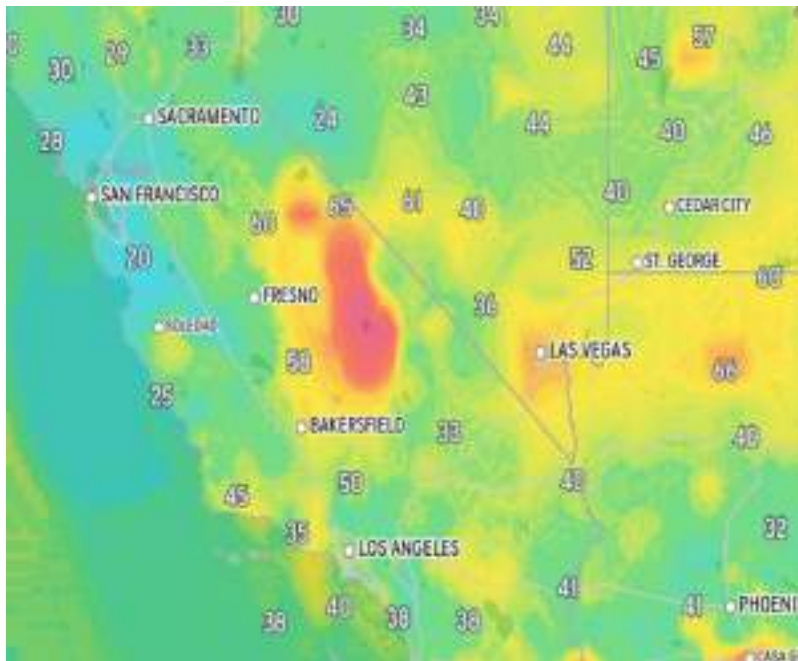
| VOC Source | Detail Type | Value | Estimated % of Total VOC Emissions | Metric (Tons/Day) | % Contribution to Ozone (O ₃) Formation | Notes |
|-----------------------------------|------------------------|--|------------------------------------|--------------------|---|---|
| Transportation Emissions | Description | Emissions from vehicle exhaust and fuel-related processes | 40% | 4.0 | 45% | Dominant due to high traffic on US-101 and I-280; highly reactive VOCs drive ozone formation. |
| | Benzene | Benzene emissions from gasoline exhaust | | ~1.0 | | Aromatic VOC, highly reactive in ozone formation, prevalent in rush-hour traffic. |
| | Toluene | Toluene emissions from gasoline exhaust | | ~1.2 | | Key VOC, significant ozone precursor, emitted during vehicle operation. |
| | Fuel Evaporation | Evaporative emissions from fuel handling and vehicle operation | | ~1.8 | | Includes emissions from refueling, hot-soak, and diurnal processes. |
| Volatile Chemical Products (VCPs) | Description | Emissions from consumer and commercial products used in households and offices | 30% | 3.0 | 30% | Significant in tech offices and homes; diverse compounds contribute to ozone. |
| | Alcohols | Ethanol and other alcohols from cleaning agents and personal care products | | ~1.0 | | Common in disinfectants and cosmetics, moderate reactivity with NOx. |
| | Esters | Ethyl acetate and other esters from paints and coatings | | ~0.8 | | Prevalent in architectural coatings, contributes to urban ozone. |
| | Aromatic Hydrocarbons | Xylene and other aromatics from adhesives and sealants | | ~1.2 | | Highly reactive, used in office and residential settings. |
| Industrial Activities | Description | Emissions from manufacturing, construction, and chemical processes | 25% | 2.5 | 20% | Tech manufacturing and construction drive emissions; less reactive than transportation VOCs. |
| | Alkanes | Hexane and other alkanes from solvent cleaning | | ~0.8 | | Used in semiconductor processes, moderate ozone contribution. |
| | Ketones | Acetone and other ketones from coatings and cleaners | | ~0.9 | | Common in construction and manufacturing, variable reactivity. |
| | Chlorinated Solvents | Trichloroethylene and other chlorinated compounds from industrial cleaning | | ~0.8 | | Lower ozone-forming potential but persistent in tech industries. |
| Cooking Emissions | Description | Emissions from commercial and residential cooking activities | 3% | 0.3 | 3% | Minor but concentrated in dining areas; contributes locally to ozone spikes. |
| | Aldehydes | Acetaldehyde and other aldehydes from high-heat cooking | | ~0.1 | | Released from frying and grilling, moderate ozone precursor. |
| | Alkenes | Ethylene and other alkenes from cooking oils | | ~0.1 | | Emitted during high-temperature cooking, reacts with NOx. |
| | Fatty Acid Derivatives | Fatty acid-based compounds from oil-based cooking | | ~0.1 | | Low but measurable contribution from commercial kitchens. |
| Biogenic Sources | Description | Natural emissions from urban vegetation | 2% | 0.2 | 2% | Low urban impact but reacts with NOx in summer; varies with temperature. |
| | Isoprene | Isoprene emissions from deciduous trees | | ~0.1 | | Highly reactive, emitted in warm conditions by urban trees. |
| | Terpenes | Alpha-pinene and other terpenes from eucalyptus and conifers | | ~0.08 | | Moderate ozone-forming potential, common in city parks. |
| | Sesquiterpenes | Sesquiterpene emissions from urban plants | | ~0.02 | | Minor emissions, low reactivity but present in Santa Clara's greenery. |



Air Particle Suppression | Soil Regeneration

THE MOST POLLUTED & THE LOWEST AIR QUALITY ZONES

Excellent — Fair — Poor — Unhealthy —
Very Unhealthy — Dangerous —





ADVANCED AI SIGNALS & ROADSIDE FATALITIES & INJURIES



Road Safety Recommendations

Srinivasan (SRI) Manivannan
Commissioner – Senior Advisory Commission
City of Santa Clara, California

Micromobility & Pedestrians Initiatives

Created on September 2023

Last Updated on Monday, January 22, 2024

Micromobility & Varied Impacts



List of common micromobility vehicles

- Electric-assist bicycles (e-bikes)
- Electric scooters (e-scooters)
- Skateboards
- Segways
- Golf carts
- Kick scooters
- Onewheel
- Personal transporters
- Roller skates
- Unicycles
- Mobility scooters
- Quadracycles
- Wheelchairs
- Mopeds
- Pods
- Motorcycles
- Dirt bikes
- Shared electric fleets
- NEVs (Neighborhood Electric Vehicles)
- Handcycles
- Recumbent Trikes

Immediate objective: 1

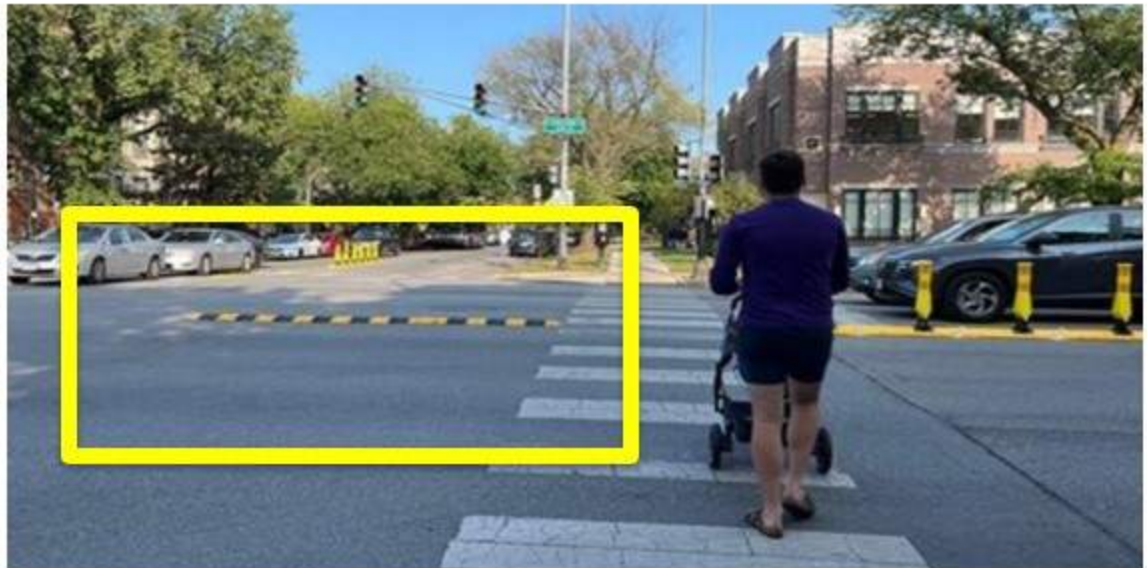
Enhancing Safety: Mitigating Incidents

Click on the images

Accident-prone Zones: The Side Streets & Main Streets



Effective Immediately



Srinivasan (SRI) Manivannan | Commissioner: Senior Advisory Commission | City of Santa Clara, California | Dec 2023

5

Immediate objective: 2

Enhancing Safety: Mitigating Incidents

Accident-prone Zones: Residential / Wider Streets : Rumble Strips & Speed Bumps

Click on the images



Srinivasan (SRI) Manivannan | Commissioner: Senior Advisory Commission | City of Santa Clara, California | Dec 2023

6

Immediate objectives: 1 & 2

Enhancing Safety: Mitigating Incidents

Specifications

- Speed bumps: At the Beginning and the end of the side streets
- Rumble Strip: At least 150 ft before approaching the intersection
- Pedestrians Sign (Caution): While passing the rumble strip
- Should alert both the drivers and the pedestrians (shared responsibility)

Strategic Vision for Future Innovations: 1

AI-Based Auto-Detection of Pedestrians

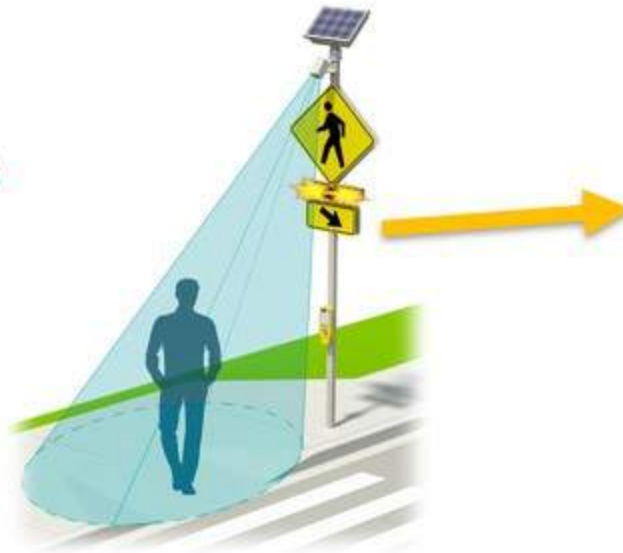
Future state: Left Turn & Pedestrians Detection

The AI camera at the signal auto-detects pedestrians and micromobility devices, triggering left, right, or straight signals accordingly.

Strategic Vision for Future Innovations: 1

"AI-Based Auto-Detection of Pedestrians"

Main
Streets



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ADVANCED AI LEFT TURN SIGNALS AND ROADSIDE FATALITIES AND INJURIES

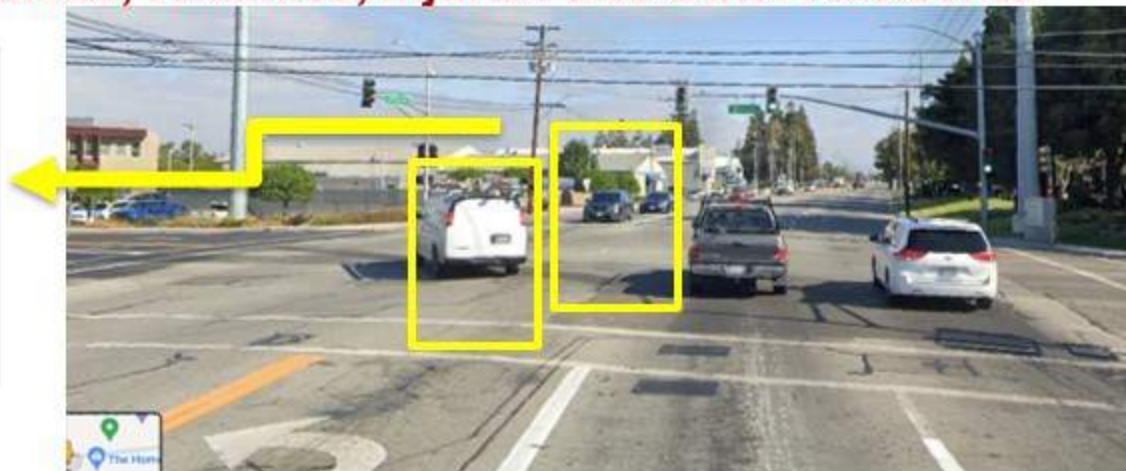
Strategic Vision for Future Innovations: 2

The Left Turn & The safest Distance

Future state: The Left Turn on The Main Streets

Left turn Collisions, Fatalities, Injuries and Other Accidents

Miscalculations /
Unsafe Distance /
Panic Mode



Strategic Vision for Future Innovations: 2

Left Turn & The safest Distance

"AI-Based Oncoming Vehicle Detection and Safe Distance Computation"

During the presentation of the green left turn arrow, the AI-powered camera must identify oncoming vehicles and determine the safest distance for executing a left turn. This calculation takes into account factors such as vehicle size, type, and the ability to come to a complete stop if required.

Strategic Vision for Future Innovations: 2

The Left Turn & The safest Distance

Future state: The Main Streets

Oncoming Traffic

More than 130 ft

100-120 ft

Less than 100 ft



Strategic Vision for Future Innovations: 3

"Autonomous Identification of Pedestrians and Micromobility in the Side Streets"

In the side streets or smaller residential roadways, the system will automatically identify pedestrians and micromobility vehicles, triggering a flash notification if detected within a 130-foot range.

Strategic Vision for Future Innovations: 3

"Autonomous Identification of Pedestrians and Micromobility in the Side Streets"



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Technical Considerations

- Evaluation of Microservices as an alternative to reprogramming the current signal system
- AI Vision tasked with calculating the safest distance and signaling accordingly
- Integration of Microservices with existing systems to ensure synchronous operation
- Determination of the optimal distance for AI vision programming, considering factors like vehicle size and weather conditions
- Engagement of the Senior Advisory Committee for guidance and contributions in initiating the project
- Further technical specifications and strategies will be presented in the subsequent stage of the project.

Awareness & Training Contents

- Create a new playlist for Awareness and Micromobility Training Contents targeting residents.
- Distribute and make the playlist accessible to all schools, colleges, and universities.
- Include content covering legal requirements, regulations, and guidelines for the use and maintenance of micromobility equipment and gears.

Wrap-up

- Swift implementation of speed bumps and rumble strips in identified accident-prone zones.
- Placement of cautionary signs alongside the rumble strips and speed bumps for enhanced safety.
- Immediate development and dissemination of awareness and training content to all educational institutions (schools, colleges, and universities).
- Utilization of the same content for targeted YouTube advertisements to Santa Clara residents, optimizing visibility and minimizing costs.

Advanced AI Left Turn Signal: Part -2

Left Turn Signal:

Current state:

Mental Miscalculations / Speeding up for the situation/Misjudgments.



Unclear signals: Providing equal signals to all the parties. Green for both.

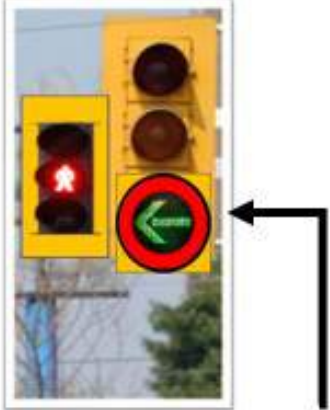
Top reasons for the collision in left turn:

- Miscalculating the safe distance to turn
- Missing the pedestrians while judging the oncoming traffic
- Panicking while at the intersection (major)
- Speeding up to avoid situation.

Future state: Mockup

Specifications: AI Vision Based

Able to scan oncoming traffic 100 ft to 150 ft and blink green arrow , Amber ring. And the red ring with green arrow based on the distance of the oncoming vehicles and the pedestrians on the left while on Green arrow.



| Oncoming Traffic | | |
|------------------|------------|------------------|
| More than 100 ft | 100-120 ft | Less than 100 ft |
| | | |



PUBLIC SAFETY

Empowering Seniors in the City Santa Clara

A hand in a green suit jacket holds a glowing white sphere against a dark blue background. The sphere contains the text "Cyber Security & Threats".

**Cyber Security
&
Threats**

5th December, 2023

AI Action Plan 2025: Safeguarding Vulnerable Populations from Cyber Threats

Recommendations:

1. **AI-Driven Cyber Threat Detection** – Deploy AI models to identify and neutralize online threats targeting seniors, children, and other vulnerable individuals.
2. **Edge AI for Real-Time Security Monitoring** – Utilize decentralized AI systems to detect phishing attempts, fraud, and digital exploitation in real time.
3. **AI-Powered Identity Protection** – Implement AI-driven authentication tools to prevent identity theft and unauthorized access to personal data.
4. **Smart AI-Based Digital Safety Networks** – Establish AI-controlled cybersecurity systems to block malicious content, scams, and online harassment.
5. **Quantum AI for Cyber Defense** – Apply quantum computing models to encrypt sensitive data and protect users from sophisticated cyberattacks.
6. **IoT-Enabled AI Safeguards** – Use AI-integrated IoT security measures to protect connected devices and online interactions from exploitation.
7. **AI-Assisted Parental Controls & Elder Safety Alerts** – Develop AI-driven monitoring tools to detect cyber threats and safeguard digital activities for children and seniors.
8. **AI Collaboration with Mobile & Internet Providers** – Work with telecom companies to filter harmful content, strengthen digital protections, and ensure secure communication networks.
9. **Cloud-Based AI Cybersecurity Solutions** – Utilize AI-driven cloud analytics to enhance cyber resilience and combat evolving digital risks.
10. **AI-Powered Fraud Prevention Systems** – Implement AI-guided risk assessment tools to detect and prevent financial scams and online manipulations.
11. These AI-driven cybersecurity initiatives will strengthen digital protections for vulnerable populations while ensuring safer online environments.

Empowering Seniors in the City Santa Clara

Cyber Threats: Types and Forms

- **Phishing Emails:** Deceptive emails for information theft.
- **Tech Support Scams:** Fraudulent tech support seeking access.
- **Malicious Websites:** Fake sites capturing login details or distributing malware.
- **Phone Scams: Fraudulent calls** extracting personal or financial data.
- **Fake Social Media Profiles:** False profiles for identity theft or manipulation.
- **Malware Downloads:** Inadvertent downloading of malicious files.
- **Identity Theft:** Stealing personal info for identity theft.
- **Wi-Fi Eavesdropping:** Exploiting unsecured Wi-Fi for data interception.
- **Online Shopping Scams:** Falling victim to fake stores or deceptive ads.
- **Social Engineering Attacks:** Manipulation into divulging confidential information.

5th December, 2023

Empowering Seniors in the City Santa Clara

Cyber Security: 5 Preventive Measures

1. **Secure Password Practices:**

- Create strong, unique passwords
- Use a combination of letters, numbers, and symbols
- Consider a password manager

2. **Stay Informed and Educated:**

- Stay updated on common cyber threats
- Attend workshops on online safety
- Be cautious with links and attachments

3. **Enable Multi-Factor Authentication (MFA):**

- Turn on MFA for online accounts
- Requires a second form of verification
- Adds an extra layer of security

4. **Regular Software Updates:**

- Keep devices and software up to date
- Apply operating system and application updates
- Enable automatic updates when possible

5. **Be Skeptical of Unsolicited Communications:**

- Exercise caution with unexpected emails or messages
- Avoid clicking on unknown links or downloading attachments
- Verify legitimacy through trusted contact information

5th December, 2023



POLICE PURSUITS | ABDUCTIONS

AI Action Plan 2025: Safer Pursuit Operations & Civilian Protection

Recommendations:

1. **AI-Powered Predictive Analytics** – Forecast high-risk pursuit scenarios to prevent unnecessary escalations.
2. **Autonomous AI-Driven Interception** – Deploy unmanned aerial vehicles and robotic roadblocks for controlled vehicle stops.
3. **Edge AI for Real-Time Monitoring** – Use decentralized AI systems to track pursuit dynamics and adjust tactics instantly.
4. **AI-Enhanced Vehicle Disabling Tech** – Implement remote-controlled vehicle immobilization tools to halt fleeing suspects safely.
5. **AI-Guided Smart Navigation** – Optimize pursuit routes with predictive algorithms to avoid civilian-dense areas.
6. **IoT-Based Emergency Alerts** – Automatically notify nearby drivers and pedestrians of pursuit activity.
7. **AI-Powered Risk Assessment Platforms** – Use deep learning models to analyze pursuit necessity and minimize engagement risks.
8. **Quantum AI for Rapid Data Processing** – Enhance real-time decision-making using quantum computing models for instant analysis of pursuit conditions.
9. **AI-Integrated Public Safety Coordination** – Automate communication between law enforcement, emergency responders, and local municipalities.
10. **AI-Driven De-escalation Systems** – Utilize voice-controlled AI negotiation tools and automated intervention strategies to reduce confrontation risks.
11. These AI-driven safety enhancements will significantly minimize civilian casualties and injuries from high-speed pursuits, fostering safer policing and public protection.

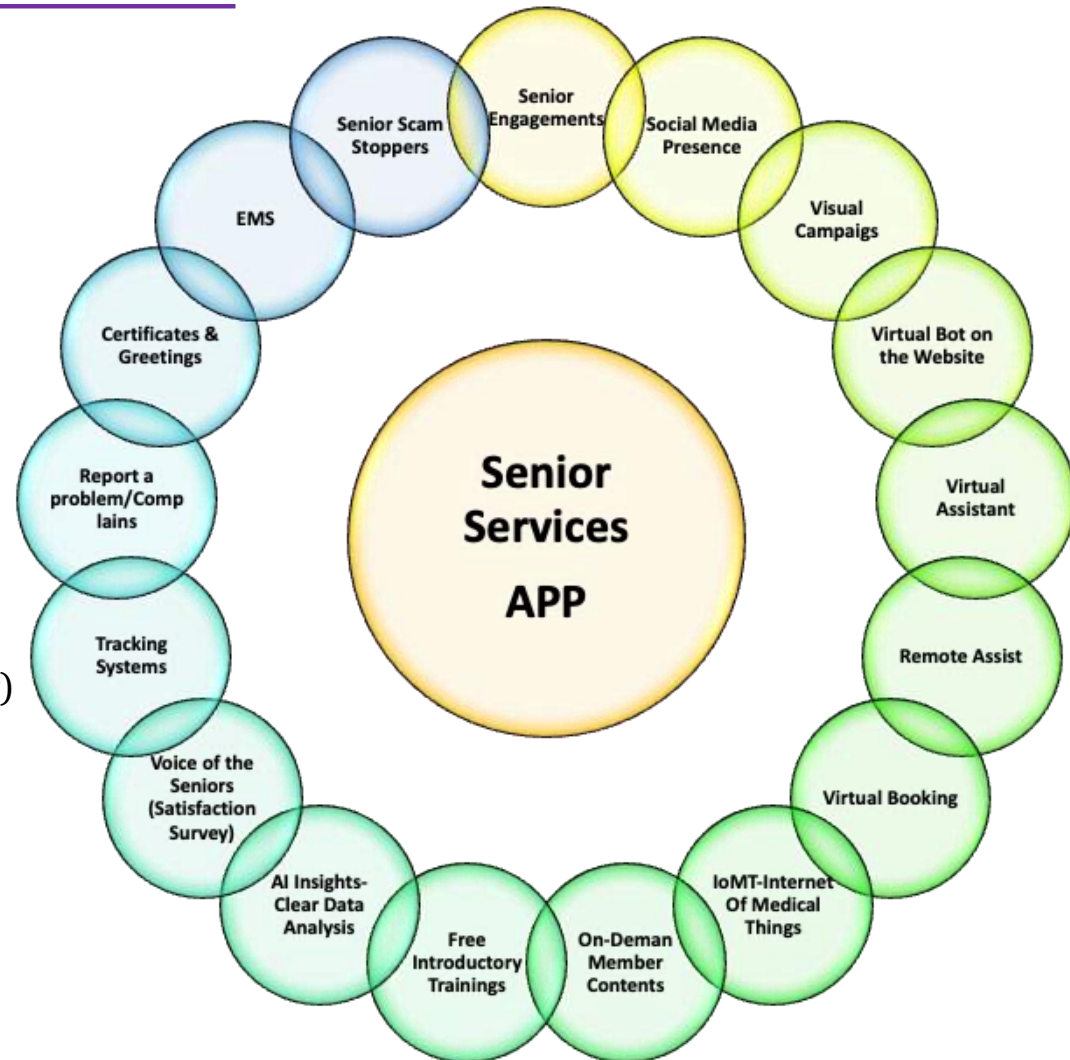


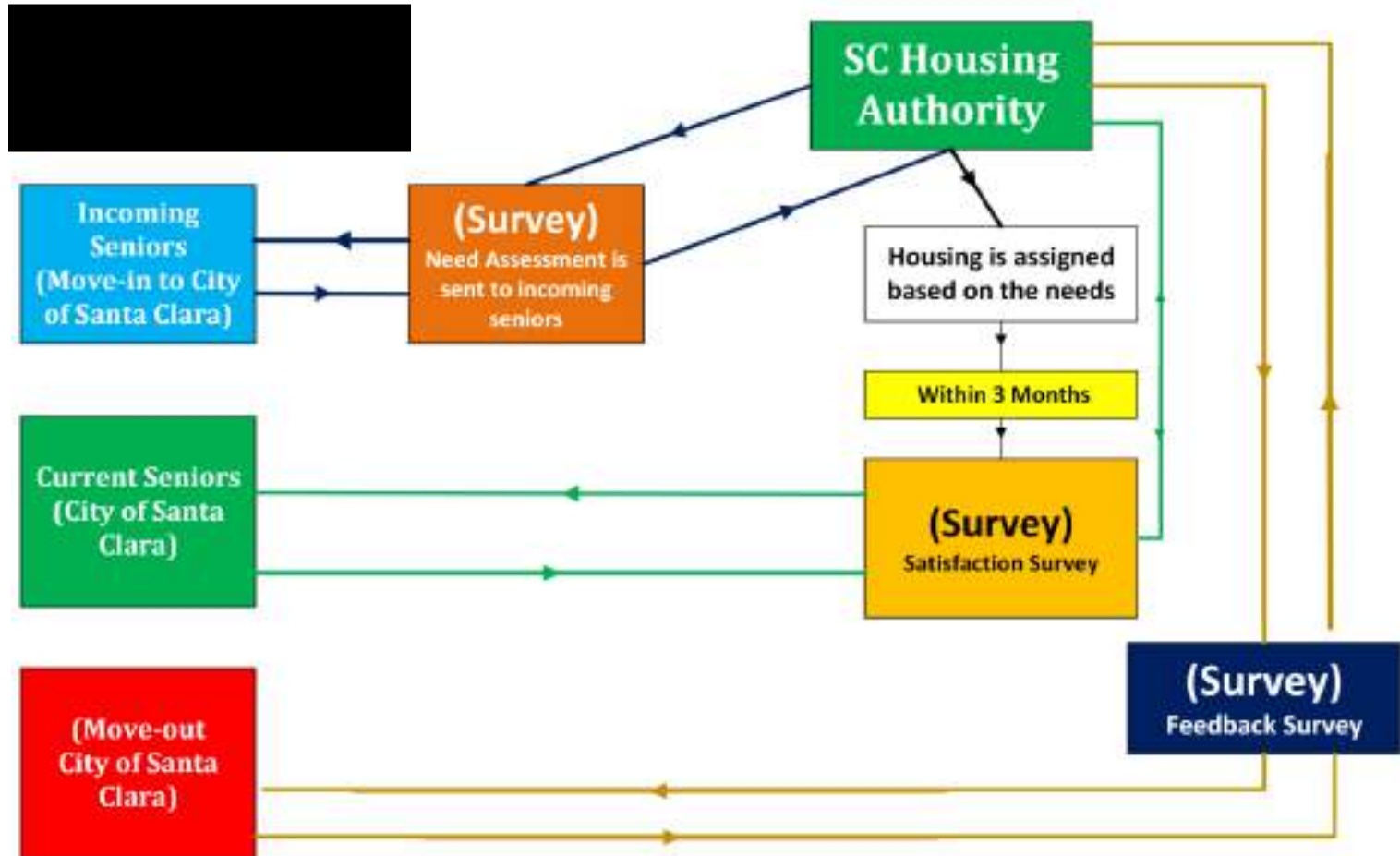


DIGITAL TRANSFORMATION IN GOVERNMENT

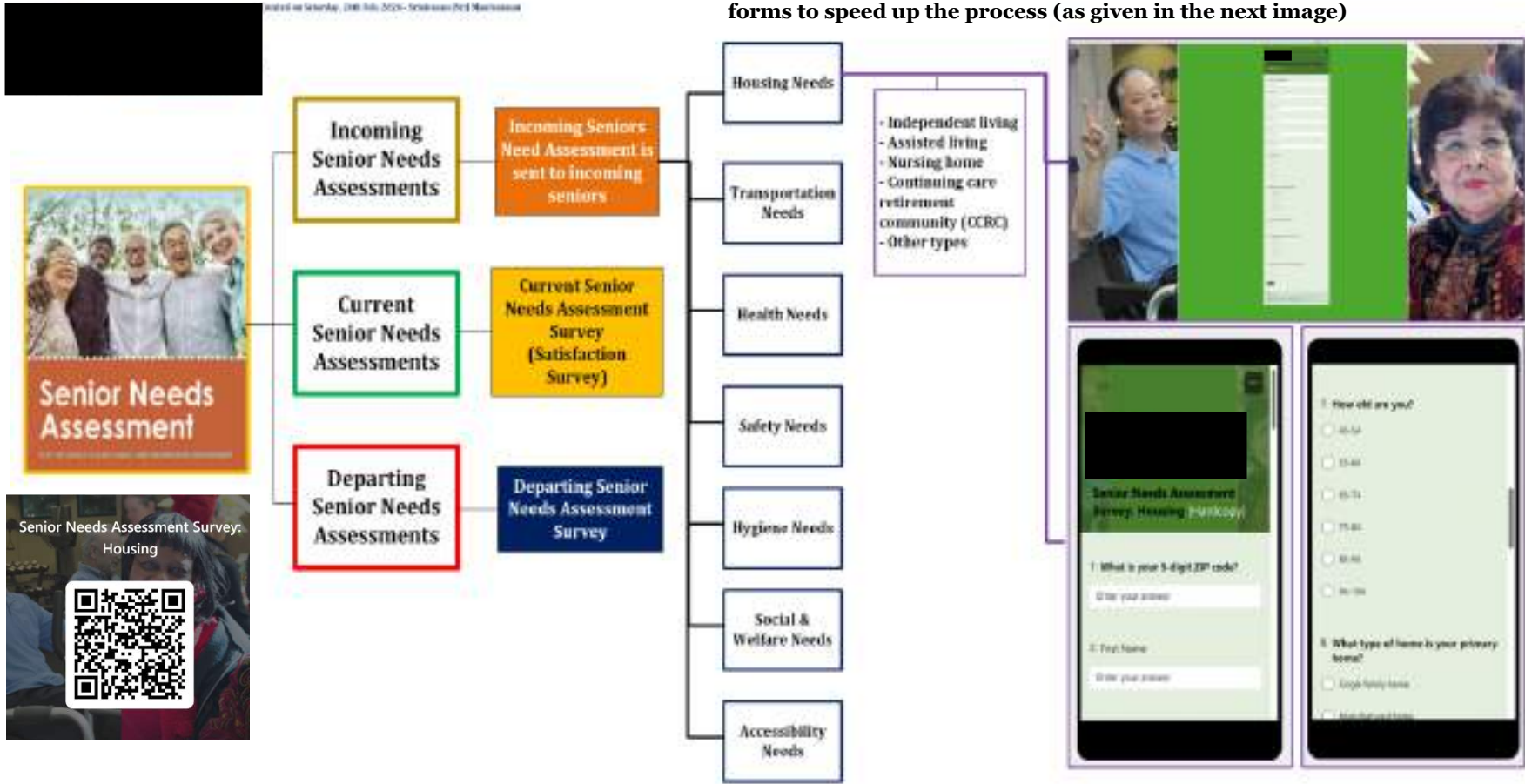
Digital Transformation

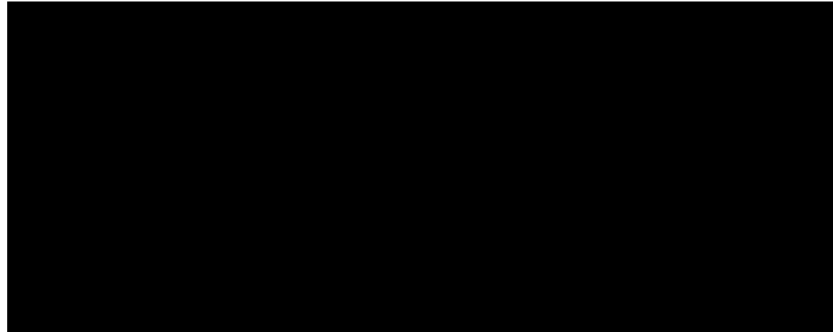
- **Senior Services APP**
- Senior Engagements
- Social Media Presence
- Visual Campaigns
- Virtual Bot on the Website
- Virtual Assistant
- Remote Assist
- Virtual Booking
- IoMT-Internet Of Medical Things
- On-Demand Member Contents
- Free Introductory Training
- AI Insights-Clear Data Analysis
- Voice of the Seniors (Satisfaction Survey)
- Tracking Systems
- Report a problem/Complaint.
- Certificates & Greetings
- EMS
- Senior Scam Stoppers





Recommended Surveys: Both one form with all the options embedded and Separate forms to speed up the process (as given in the next image)





Survey Form





[HOME](#)

ADA: ACCESSIBILITY, ASSISTIVE TECHNOLOGIES & WILDFIRE MITIGATION

AI Action Plan 2025: Integrating Assistive Technology with Wildfire and Emergency Preparedness

Objective: Develop AI-driven assistive technologies for seniors and individuals with impairments, leveraging advanced computing to enhance emergency preparedness.

Key Recommendations:

- AI-Powered Predictive Analytics** – Implement machine learning models to forecast wildfire threats and emergency scenarios, ensuring proactive response measures.
- Edge Computing & IoT Integration** – Deploy decentralized, real-time monitoring systems to provide instant alerts and adaptive safety responses.
- Autonomous Mobility & Navigation Support** – Enhance AI-assisted mobility devices with real-time hazard detection and evacuation guidance.
- Smart Health & Safety Monitoring** – Utilize AI-driven biosensors and environmental trackers to ensure continuous health monitoring during crises.
- Automated Communication Systems** – Develop multilingual AI chatbots and voice assistants for seamless emergency notifications and coordination.
- Dynamic Risk Assessment Platforms** – Integrate quantum computing models to analyze complex variables affecting wildfire spread and emergency impact.
- Augmented Reality (AR) Emergency Interfaces** – Design immersive AR systems for real-time situational awareness and decision-making support.
- AI-Enabled Microclimate Control** – Engineer atmospheric interventions using AI-driven wind and temperature modulation to slow fire progression.
- Strategic Alignment:** These technologies reinforce wildfire mitigation strategies presented to the Emergency Council of Santa Clara County and address recommendations from Stanford University's CHAT workshop. Early implementation ensures maximal protection for vulnerable populations.



Last updated on 25th October 2023

ADA Self-Evaluation and Transition Plan: Recommendations

The existing plan predominantly emphasizes strategies and initiatives centered on products, services, and facilities within the city, encapsulating a limited 180-degree perspective. To foster inclusivity and comprehensiveness, it is imperative to broaden our approach, encompassing a 360-degree evaluation and initiative strategy that addresses diverse aspects of public operations and community involvement.

- Food outlets,
- Hotels,
- Motels,
- Service apartments,
- Legal requirements for the Airbnb,
- Permissible service animals,
- Private commercial complexes
- Private commercial buildings
- Service providers of the city

Adherence and Requirements of Business Owners in Santa Clara for Accessibility Compliance

Awareness and Enforcement

- **Compliance Requirements:** Business owners are required to implement specific changes to maintain compliance with the city's accessibility standards.
- **Renewal Requirements:** Business owners must meet accessibility requirements as part of their renewal process.
- **Grace Period:** Information regarding the grace period for businesses operating within Santa Clara.
- **Available Resources:** Resources available for both business owners and the public to support accessibility initiatives.
- **Compliance Guidelines:** Information on how businesses can stay compliant with accessibility regulations.
- **Requesting Evaluation:** The procedure for requesting an accessibility evaluation.
- **Penalties for Non-Compliance:** Details regarding penalties for businesses that do not adhere to accessibility standards.
- **Reporting Discrimination:** Guidance on how to report instances of discrimination against community members with disabilities and service animals.

Actions and Resources

The plan encompasses a range of actions and links to the resources available to the public:

- **Support Services:** Services offered to assist individuals with disabilities in accessing businesses.
- **Complaint and Reporting Tools:** Tools for the public to report non-compliance or accessibility issues.
- **Emergency Support:** Resources and services available in emergency situations.
- **Feedback Forms:** Forms for providing feedback on accessibility experiences.

Last updated on 25th October 2023

- **Educational Resources:** Resources for businesses and the public to enhance awareness and understanding of accessibility.
- **Online/Paperless Services:** Information on accessing services and resources through digital platforms.
- **City Poster:** Display of a city poster featuring contact information for reporting non-compliance with accessibility standards.

The plan should clearly define the list of actions for the targeted business owners:

1. **Accessible Entrances:** Provide ramps, elevators, or level access at main entrances.
2. **Accessible Parking:** Designate accessible parking spaces close to entrances.
3. **Clear Pathways:** Maintain clear, wide pathways within the facility.
4. **Accessible Restrooms:** Install accessible restrooms with proper fixtures and space.
5. **Elevator Accessibility:** Ensure elevators are equipped with Braille buttons and auditory signals.
6. **Visual and Hearing Impairment Services:** Offer Braille signage and sign language interpreters.
7. **Tactile Warning Strips:** Install tactile warning strips for the visually impaired.
8. **Accessible Accommodations:** Provide accessible hotel rooms with roll-in showers.
9. **Accessible Seating:** Offer wheelchair-accessible seating in restaurants and common areas.
10. **Communication Devices:** Provide TTY devices for guests with hearing impairments.
11. **Accessible Menus:** Offer braille or large print menus in restaurants.
12. **Assistance Animals:** Allow service animals in all areas of the establishment.
13. **Emergency Evacuation Plans:** Develop and communicate accessible evacuation procedures.
14. **Accessible Amenities:** Ensure that fitness centers and swimming pools are accessible.
15. **Lifts and Hoists:** Install pool lifts and hoists for disabled guests.
16. **Visual Alarms:** Implement visual fire alarms for guests with hearing impairments.
17. **Counter Heights:** Maintain accessible counter heights for check-in and service desks.
18. **Customer Assistance:** Train staff to assist guests with disabilities.
19. **Accessible Technology:** Provide websites and mobile apps that are screen reader friendly.
20. **Closed Captioning:** Offer closed captioning on TVs in public areas.
21. **Handrails:** Install handrails in hallways and stairwells.
22. **Wide Aisles:** Ensure wide enough aisles in restaurants for wheelchair users.
23. **Accessible Lighting:** Adequate and adjustable lighting for different needs.
24. **Lowered Service Counters:** Install lowered counters for service.
25. **Customer Feedback:** Establish a system for feedback and addressing accessibility concerns.

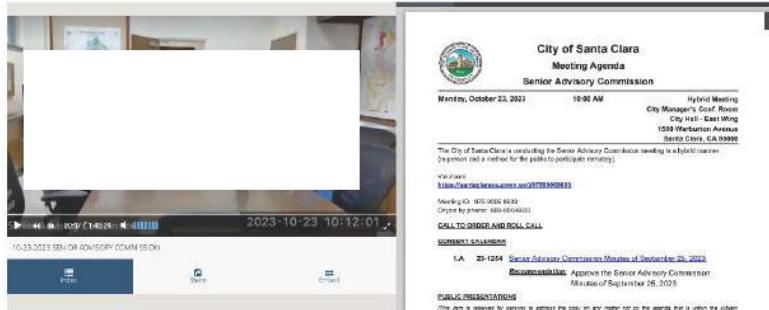
Note:

The extensive nature of the 150-page plan, characterized by its highly formal language, may prove overwhelming for the general public.

It would be more advantageous to emphasize our strategies for how the city plans to enforce Accessibility Requirements for Businesses in Santa Clara.

- Local Government Regulations
- Permit and Licensing Processes
- Regular Inspections
- Complaint-Based System
- Public Awareness
- Accessibility Certifications

Last updated on 25th October 2023



The player needs to be updated with:

- Multi-level speed: .75, 0.5, 1, 1.25, 1.5, 1.75, 2
- Closed captions,
- Transcripts, and
- Translation features if possible.

ASL version of the summary



Last updated on 25th October 2023

- Penalties and Fines
- Dispute Resolution and Mediation
- Education and Training
- Collaboration with Disability Advocates
- Accessibility Advisory Committees
- Updated Regulations
- Incentives for Compliance
- Digital Accessibility

Sample reports are enclosed:

- Bot
- Text to speech
- Translation services
- Other accessibility features

| | | |
|-----------------------|--|--|
| Digital Accessibility | Compliance with WCAG (Web Content Accessibility Guidelines). | - Audit the website for WCAG compliance. |
|-----------------------|--|--|

City of Santa Clara Website



The player: Accessibility Features:

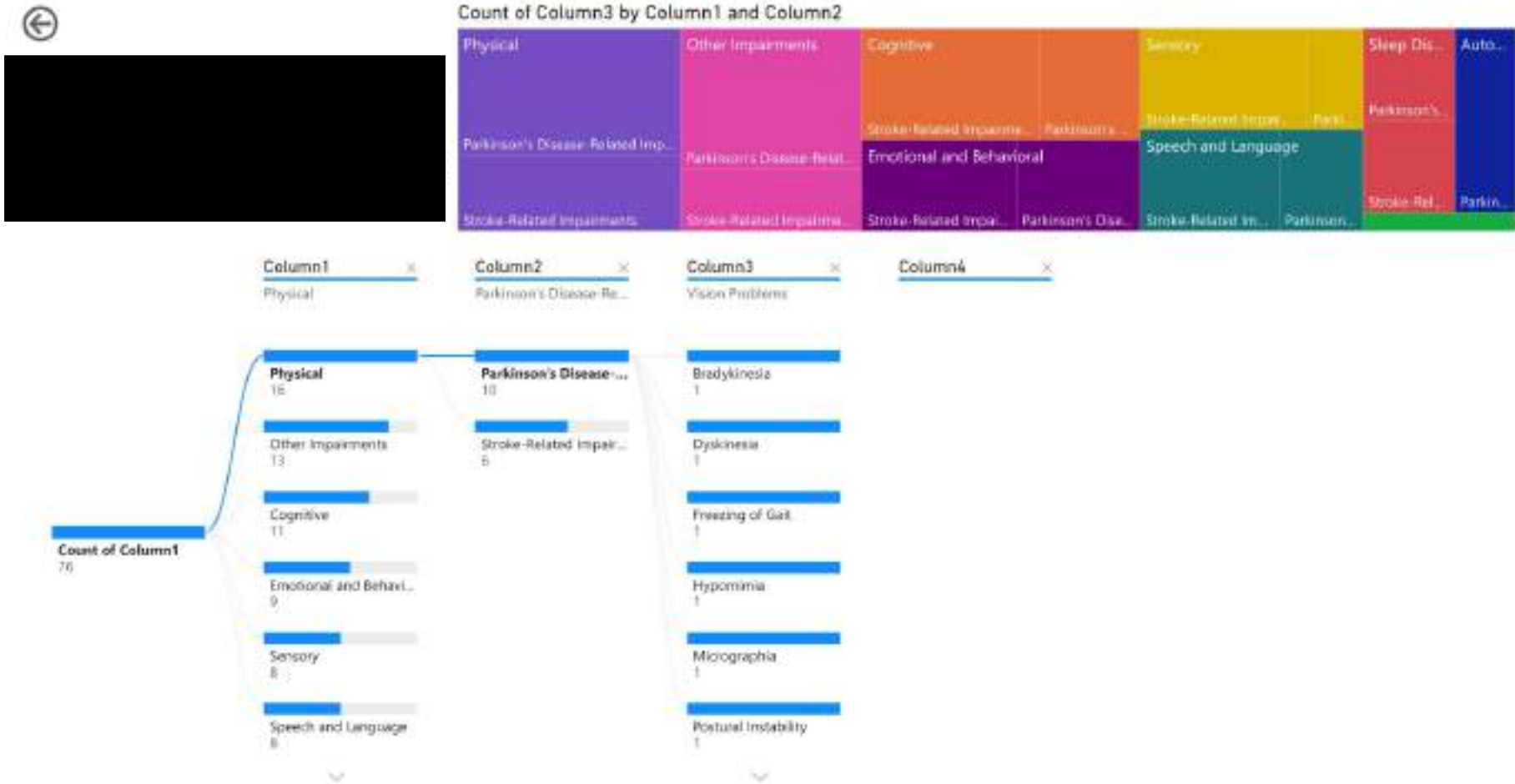
ASL version of the summary



39M

People
Physical Impairments

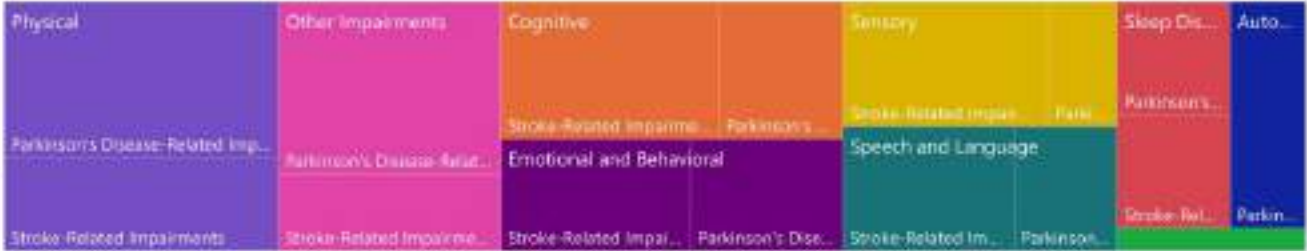








Count of Column3 by Column1 and Column2



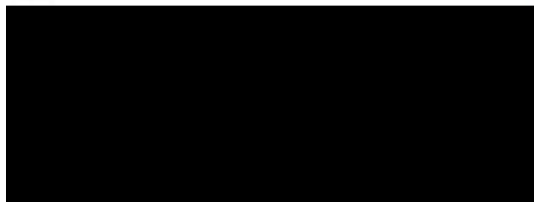
Column1
Cognitive

Column2
Stroke-Related Impair...

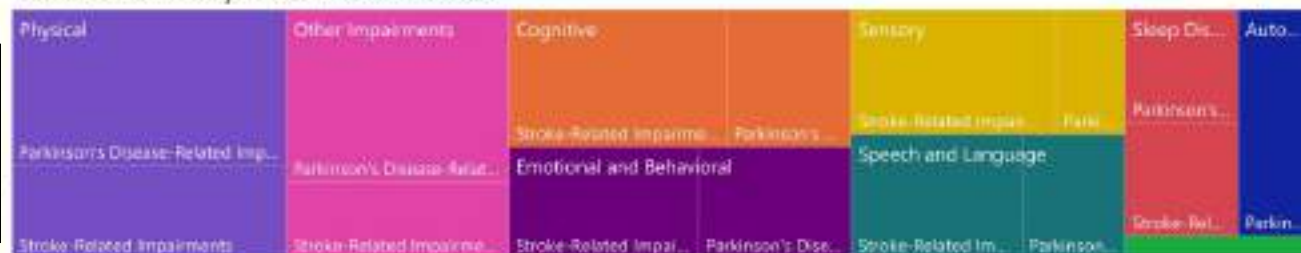
Column3
Cognitive Impairments

Column4





Count of Column3 by Column1 and Column2



Column1
Emotional and Behavi...

Column2
Parkinson's Disease-Re...

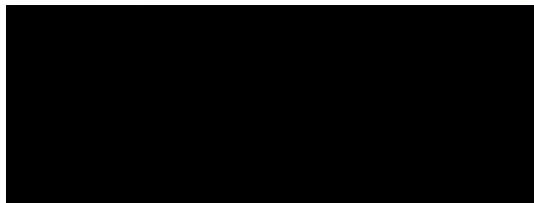
Column3
Mood Disorders

Column4



Mood Disorders
4





Count of Column3 by Column1 and Column2



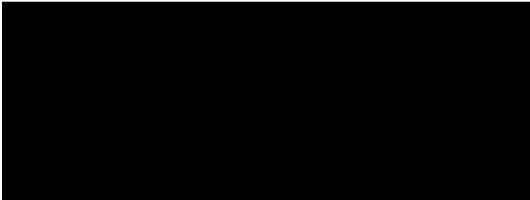
Column1
Sensory

Column2
Parkinson's Disease-Re...

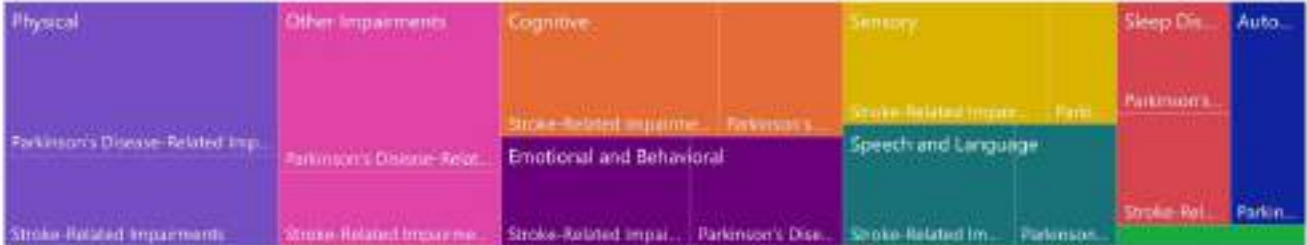
Column3
Mood Disorders

Column4





Count of Column3 by Column1 and Column2



Column1

Speech and Language

Column2

Parkinson's Disease-Re...

Column3

Mood Disorders

Column4

Count of Column1

76

Cognitive
11

Emotional and Behavi...
9

Sensory
8

Speech and Language
8

Sleep Disorders
8

Autonomic Dysfunction
8

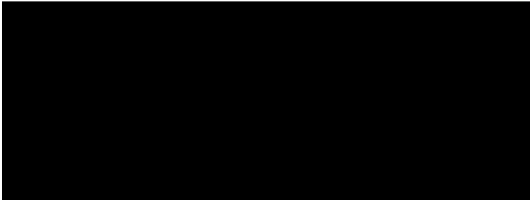
Stroke-Related Impairt...

Parkinson's Disease...

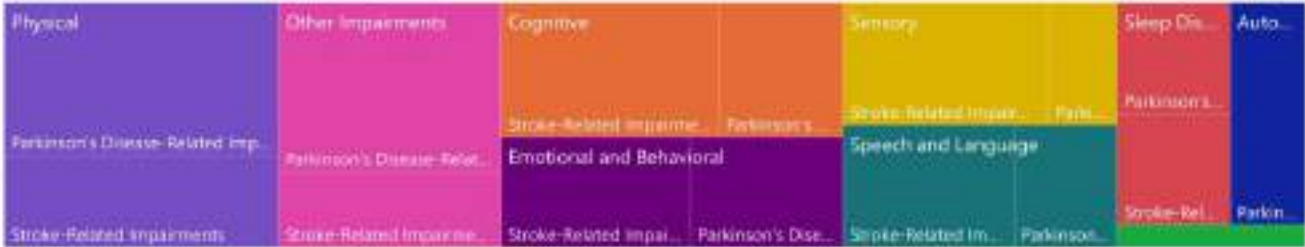
Dysarthria
1

Dysphagia
1

Hypophonia
1



Count of Column3 by Column1 and Column2



Column1
Sleep Disorders

Column2
Parkinson's Disease-Re...

Column3
Mood Disorders

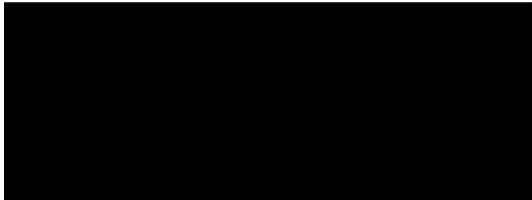
Column4

Count of Column1
76

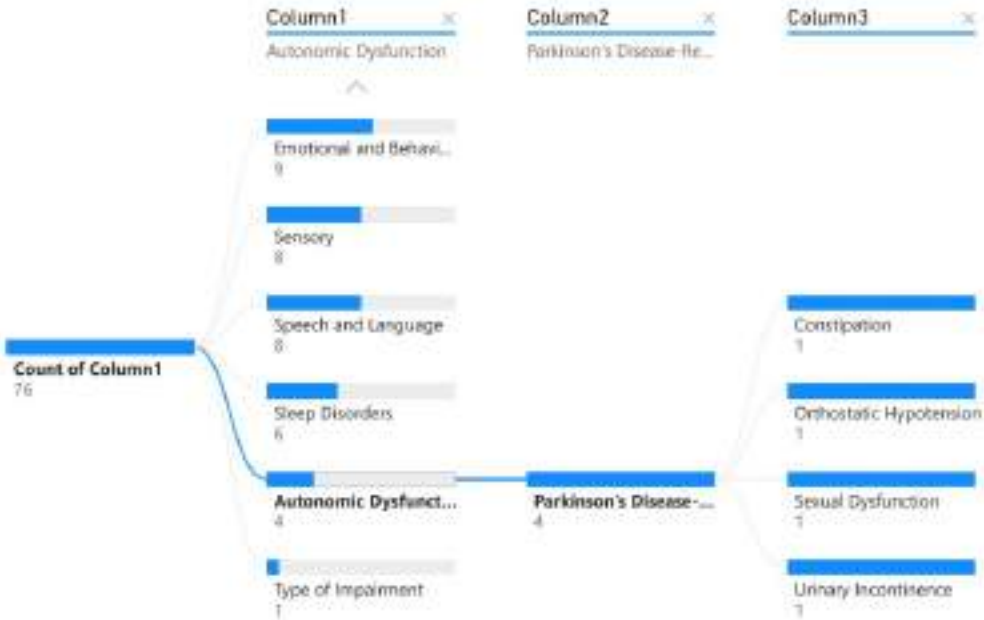
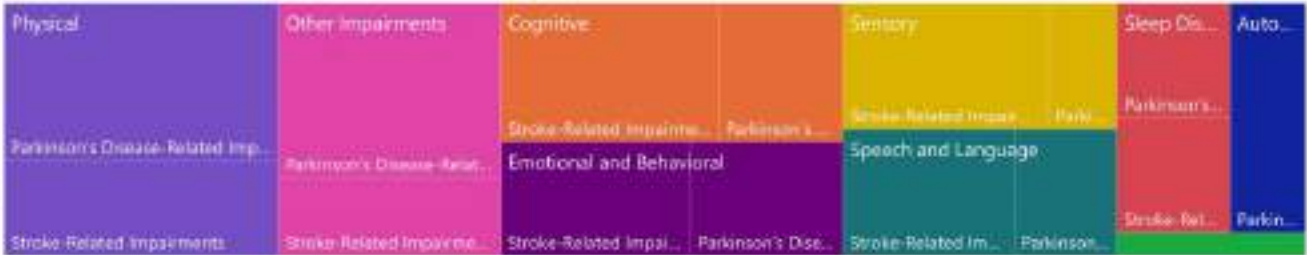


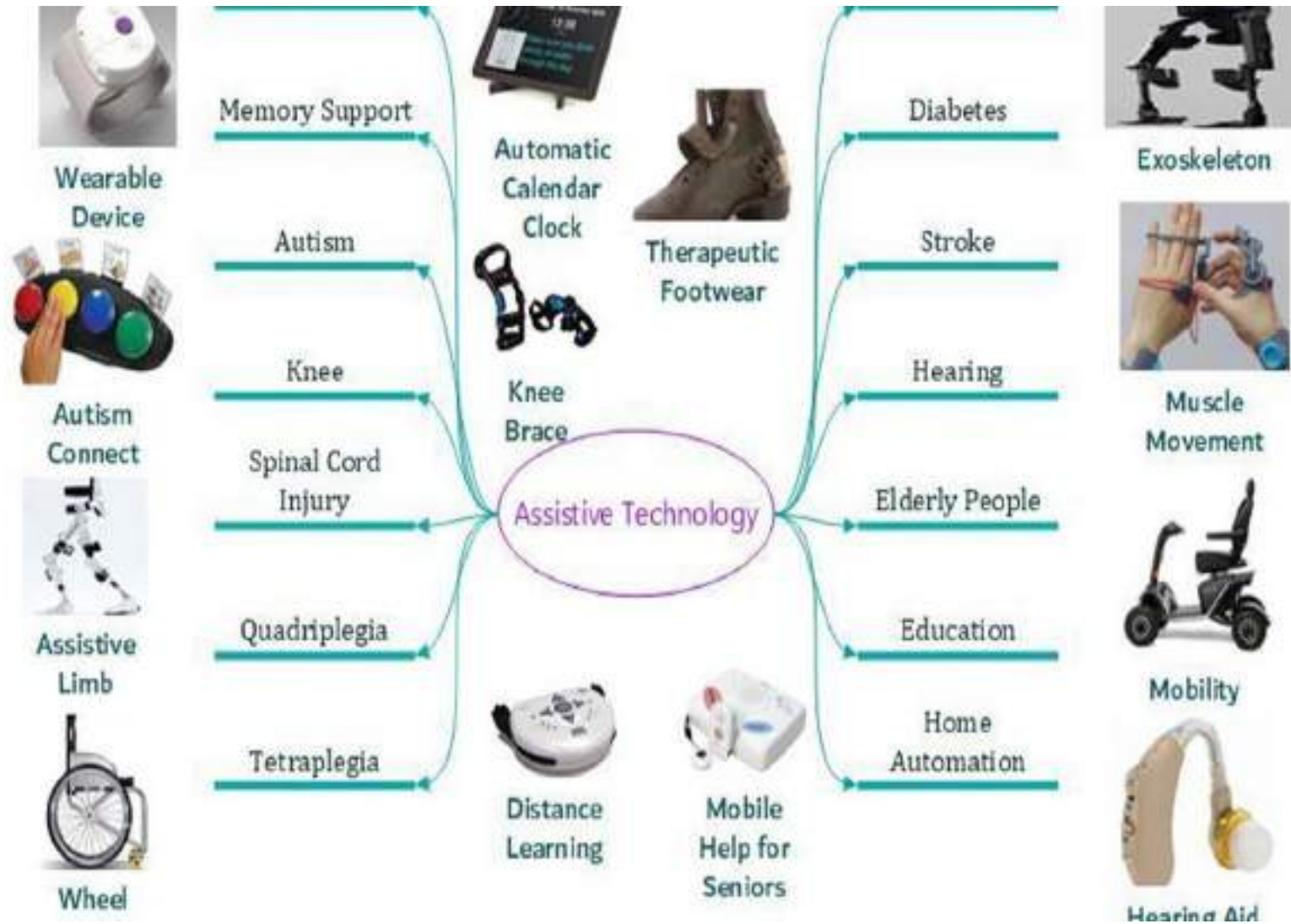
Parkinson's Disease-...





Count of Column3 by Column1 and Column2





39M

People
Physical
Impairments

Healthcare Database / Cloud



Medical Records

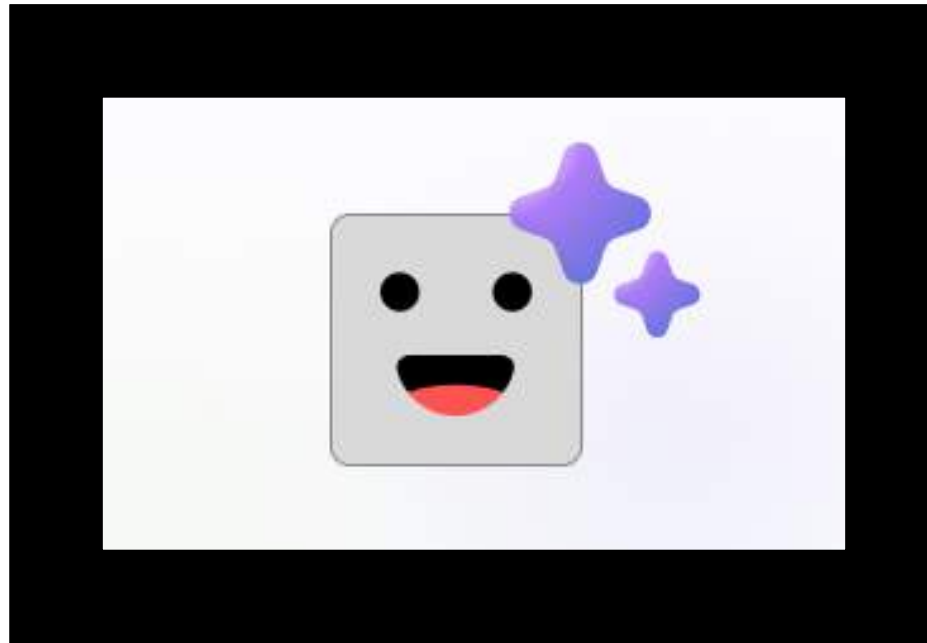


Personas: People involved in every touchpoints

| Condition | Touchpoints | Emotional Support Needs |
|--|--|---|
| Stroke | Hospitals, neurologists, rehabilitation centers, physiotherapists, occupational therapists, caregivers | Coping with sudden lifestyle changes, fear of recurrence, support groups for survivors and caregivers |
| Aphasia | Speech-language pathologists, AAC (Augmentative and Alternative Communication) providers, support groups | Frustration with communication barriers, need for patient and caregiver communication tools, peer support |
| Below-Knee Amputation (BKA) | Prosthetic clinics, physical therapy centers, pain management specialists, home modification services | Adjustment to limb loss, body image concerns, support from amputee communities or peer mentors |
| Facioscapulohumeral Muscular Dystrophy (FSHD) | Neurologists, genetic counselors, physical therapists, vocational rehabilitation centers | Managing progressive condition, emotional strain on families, connection with advocacy organizations |
| Spinal Muscular Atrophy (SMA) | Pediatric neurologists, genetic testing centers, assistive technology providers, multidisciplinary clinics | Handling progressive physical decline, early parental support for children, community and advocacy groups |



Interface



Agent (AI)



Healthcare Laws

1. Health Insurance Portability and Accountability Act (HIPAA)
2. Affordable Care Act (ACA)
3. Medicare Act
4. Medicaid Act
5. Emergency Medical Treatment and Labor Act (EMTALA)
6. Children's Health Insurance Program (CHIP)
7. Consolidated Omnibus Budget Reconciliation Act (COBRA)
8. Patient Safety and Quality Improvement Act (PSQIA)
9. Food, Drug, and Cosmetic Act (FDCA)
10. Controlled Substances Act (CSA)
11. Mental Health Parity and Addiction Equity Act (MHPAEA)
12. Family and Medical Leave Act (FMLA)
13. Genetic Information Nondiscrimination Act (GINA)
14. Public Health Service Act (PHSA)
15. Social Security Act (SSA)
16. Clinical Laboratory Improvement Amendments (CLIA)
17. Health Information Technology for Economic and Clinical Health Act (HITECH)
18. Stark Law
19. Anti-Kickback Statute (AKS)
20. False Claims Act (FCA)
21. Occupational Safety and Health Act (OSHA)
22. Affordable Medications Act
23. 21st Century Cures Act
24. No Surprises Act
25. Federal Food, Drug, and Cosmetic Act (FFDCA)



Orchestrator

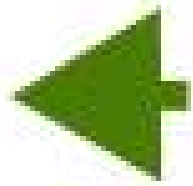
- Prompting
- Responsible AI (RAI)
- Workflow management
- Integration
- Resource management
- Error handling
- Monitoring and logging

Language model



Update Patience Health Record: Healthcare Database / Cloud





Prompt
engineering





SRINIVASAN
MANIVANNAN SRI

“AI Action Plan” 2025



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