City of Tracy
Local Hazard Mitigation Plan

Stakeholder Workshop

Tracy Transit Center
50 East 6th Street, Tracy CA 95376

Wednesday, November 14, 2018

woodplc.com

Agenda

1. Introductions
2. Mitigation Planning and the Disaster Mitigation Act
3. Role of the Hazard Mitigation Planning Committee (HMPC)
4. Hazard Mitigation Plan
5. Review of Identified Hazards
6. Initial Results of Hazard Identification and Risk Assessment
7. Community Outreach Strategy
8. Data Collection Guide
9. Schedule and Next Steps
10. Questions and Answers

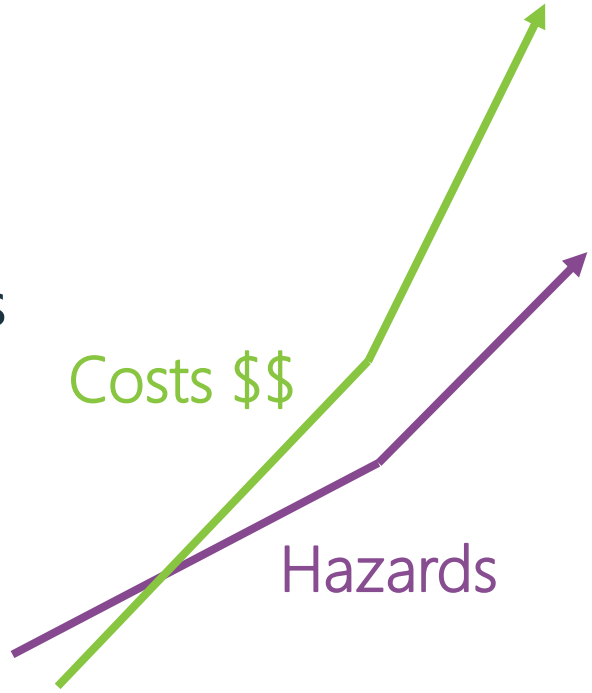
Introductions

- City of Tracy
  - Karin Schnaider (Finance Director/HMPC Coordinator)

- Wood Environment & Infrastructure Solutions, Inc.
  - Juliana Prosperi, AICP (Project Manager)

Trends Resulting in Increased Costs for Disaster Response & Recovery

- Population and community growth
  - More people living in hazardous areas
  - Greater exposure to risk
    - People, infrastructure, buildings
- More hazards
  - Technological, civil, terrorist hazards
- More disaster declarations
- Increase in disaster response and recovery costs



Mitigation Planning

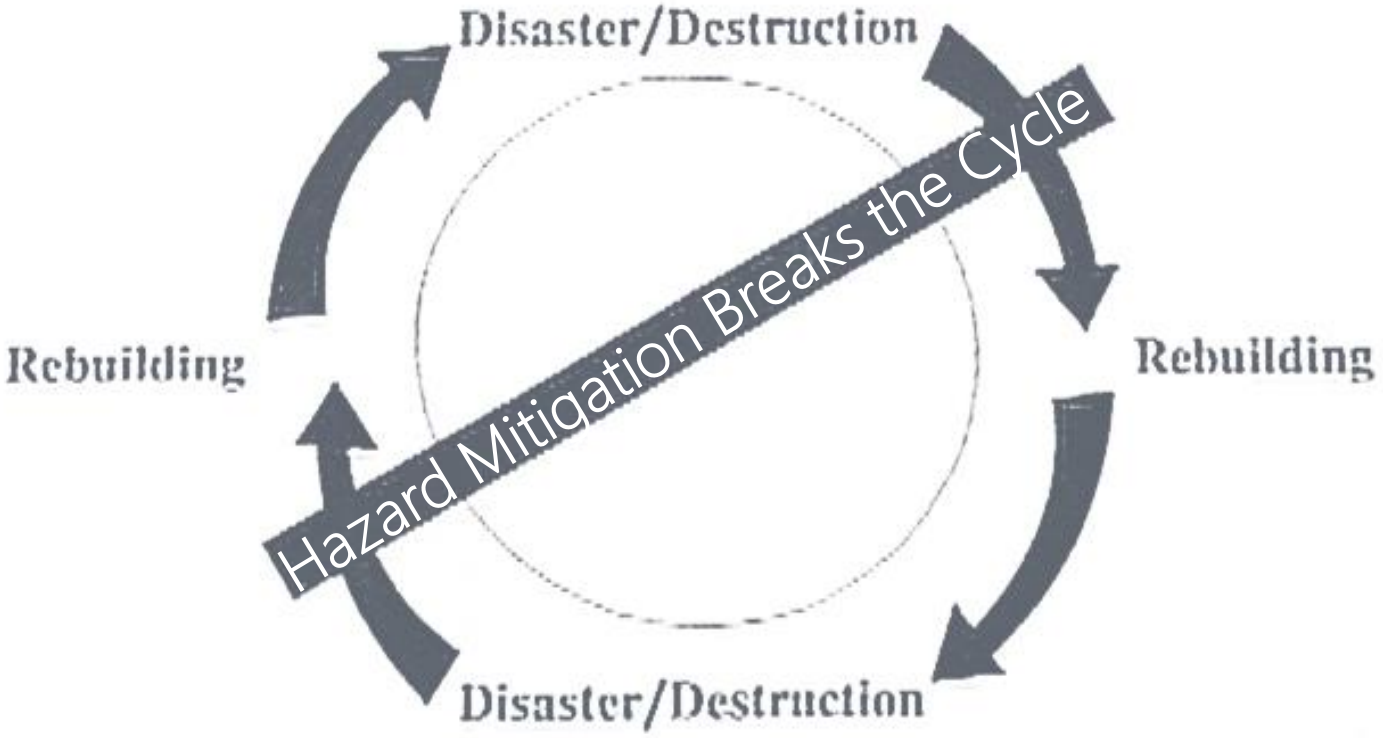
Why addressing these trends is a priority?

- Increasing costs of response and recovery
  - The cost of “doing nothing” is too much
- Many events are predictable and repetitive
- Loss reduction activities can be undertaken
  - They work well
  - Cost-effective and environmentally sound
  - Funds are available to help
- Legal and moral responsibilities

Mitigation Planning

How can we reverse these trends?

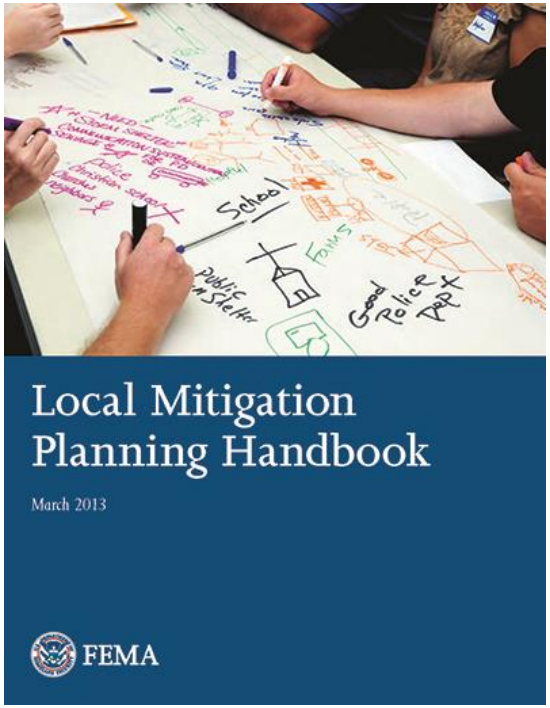
- **Mitigation:** Any *sustained* action taken to reduce or eliminate long-term risk to human life and property from hazards



Mitigation Planning –Why It's Important

Disaster Mitigation Act of 2000

- Requires local governments to have hazard mitigation plans for continued eligibility for mitigation funds, pre- and post- disaster (No Plan, No $)
- Guide mitigation activities in a coordinated & economic manner
- Incorporate into other existing planning mechanisms
- Future Development: plan and build wisely
- Reduce losses
- Make community more disaster resistant (Resilience!)



Mitigation Planning

National Flood Insurance Program Community Rating System

- Created in 1990 as a voluntary incentive program
- Recognizes communities that manage their floodplains beyond the minimum standards by providing discounted flood insurance rates
- Floodplain Management Planning earns credits in CRS
- San Joaquin County is a CRS participant

Mitigation Planning

CRS 10-Step Process within the 4-Phase Guidance

Phase I: Organize Resources

1. Get organized
2. Plan for public involvement
3. Coordinate with other departments and agencies

Phase II: Risk Assessment

4. Identify the hazard(s)
5. Assess the risks

Phase III: Develop a mitigation plan

6. Set planning goals
7. Review mitigation alternatives
8. Draft and action plan

Phase IV: Adoption and Implementation

9. Adopt the plan
10. Implement the plan, evaluate its worth, and revise as needed

Mitigation Planning

FEMA's 2013 Nine-Step Process

Step 1	Determine the Planning Area and Resources
Step 2	Build the Planning Team
Step 3	Create an Outreach Strategy
Step 4	Review Community Capabilities
Step 5	Conduct a Risk Assessment
Step 6	Develop a Mitigation Strategy
Step 7	Keep the Plan Current
Step 8	Review and Adopt the Plan
Step 9	Create a Safe and Resilient Community

Phase I: Organize Resources

1) Get organized

2) Plan for public involvement

3) Coordinate with other department and agencies

1) Get Organized – To Prepare the Plan

- Obtain community commitment to mitigation
- Determine and assign staff
- Establish your mitigation planning team

1) Get Organized – Establishing Your Hazard Mitigation Planning Committee (HMPC)

- **City Departments**
  - Public Works
  - Utilities
  - Human Resources
  - Finance Department
  - Fire Department
  - Development Services
    - Building Safety and Fire Prevention
    - Code Enforcement
    - Engineering
    - Economic Development
    - Planning Division
  - Parks and Recreation
  - Police Department
  - City Manager's Office, City Clerk's Office, City Attorney's Office
  - Information Technology/GIS

2) Plan for Public Involvement

- **Requirement**: Provide Two Opportunities
  - During Drafting Stage
  - Prior to approval

- Advantages:
  - Solutions fit local needs better
  - Strengthens local support for plan
  - Special interests are considered; avoids being “Blind-Sided”
  - It is a fair process
  - Generates new ideas

3) Coordinate with Other Stakeholder Departments & Agencies

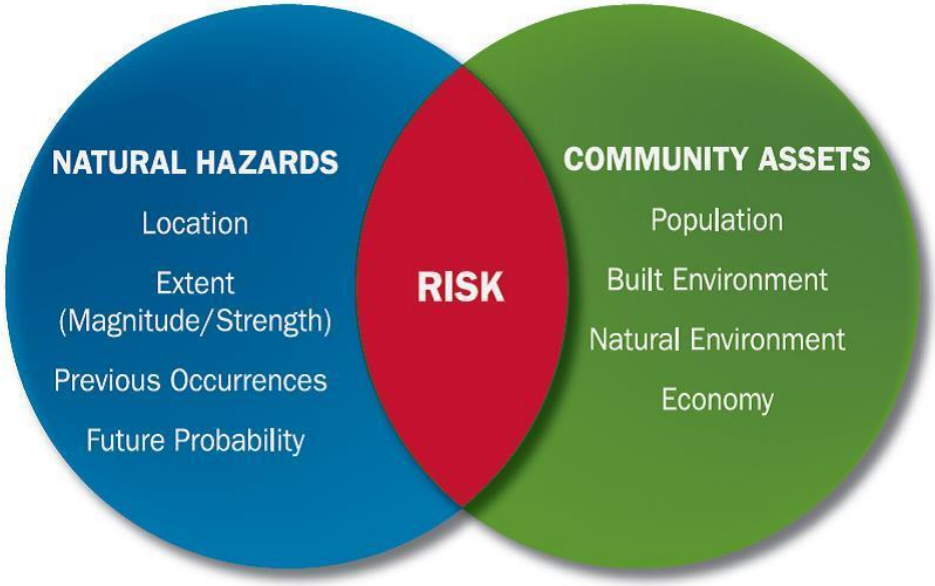
- San Joaquin County and San Joaquin Council of Governments
- County Regional Transit District and Bay Area Rapid Transit
- Pacific Gas & Electric
- Federal, Regional, Businesses, Academia
- Cal Fire
- CNRA
- Cal OES
- Neighboring Communities and Counties
- FEMA Region IX
- US Bureau of Reclamation
- US Forest Service
- NOAA/NWS
- Tracy Unified School District
- Hospitals (Sutter Tracy Community Hospital, Tracy Convalescent Hospital)

Phase II: Risk Assessment

Three Components

4) Hazard identification (what can happen here?)

5) Vulnerability Assessment (what will be affected?)
   - Includes a Mitigation Capability Assessment



4) Hazard Identification – *Has It Happened Here Before?*

- Identify all possible hazards affecting the planning area
- Profile the hazards
- Information sources:
  - Past disaster declarations
  - Planning team / community members
  - Existing plans and reports
  - GIS-based maps and data
  - Internet websites and databases
  - Newspaper / historical records
  - Local, state, and federal experts
  - Insurance data

4) Hazard Identification – *Profile the Hazards*

- Hazard / Problem description
  - Seasonal Patterns
  - Speed of Onset/Duration
- Geographic Extent
- Past occurrences
- Magnitude / Severity
- Significance
- Frequency / likelihood of future occurrences

5) Vulnerability Assessment – *What Will Be Affected?*

- Inventory residential and commercial structures
- Inventory critical facilities and infrastructure
- Determine value of structures
- Determine the number of people in hazard areas
- Identify vulnerable infrastructure
- Identify development trends / constraints
- Identify historic, cultural, and natural resource areas
- Estimate losses

Mitigation Capability Assessment

- Inventory of the community's existing and proposed policies, programs, and ordinances that may affect its vulnerability to hazards

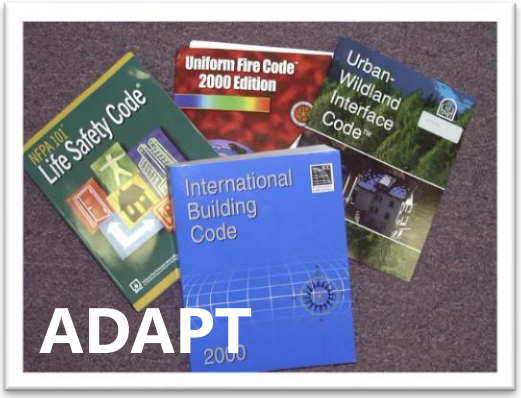
- Evaluate the effectiveness of each for mitigation purposes. Note gaps, shortfalls or conflicts associated with their design, enforcement of implementation. Identify any special opportunities

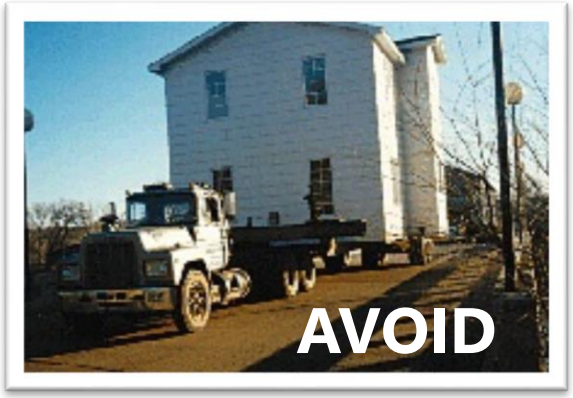
- Determine the City's technical and fiscal abilities to implement mitigation initiatives.

- Assess ability to attract and leverage funding

Phase III: Develop a Mitigation Plan

6) Set planning goals
7) Review mitigation alternatives
8) Draft an action plan





6) Set Planning Goals – *Using the Risk Assessment*

- Broad statements of what the plan is to achieve
- Based on risk
- Estimated losses
  - At-risk facilities and infrastructure (e.g. transportation utility lines?)
  - At-risk critical facilities
  - At-risk cultural and natural resources
- Goals from other existing plans
- Other opportunities
  - At-risk areas and facilities for future development
  - Repetitive losses
  - Public education
  - Increased insurance coverage

7) Review Mitigation Alternatives

- Prevention
- Property protection
- Natural resource protection
- Emergency services
- Structural projects
- Public information
- Multi-hazard measures and considerations
- No action

Review of Mitigation Alternatives – *Criteria for Selecting Mitigation Measures*

- Will it work?
- Is it cost-beneficial?
- Is it affordable?
- Is it legal?
- Is it fair?
- Do people want it?
- Are there administrative burdens?
- Is it politically acceptable to community leaders?
- Is it environmentally sound?
- Is funding available?

Example Hazard Mitigation Projects Eligible for FEMA funding:

<u>Wildfire</u>

- Defensible space
- Hazardous fuels reduction activities (e.g. vegetation removal)
- Implement ignition-resistant construction techniques

<u>Flood</u>

- Dry and wet flood proofing
- Flood reduction projects (e.g. detention ponds, channel stabilization)

<u>Other-General</u>

- Utility protection/infrastructure retrofit
- Adding generators

Phase IV: Adopt & Implement the Plan

9) Adopt the Plan
   - Official Adoption by Council
   - Public input before adoption

10) Implement the Plan
   - Assign an overall project manager
   - Integrate actions into staff work plans
   - Monitor changes in vulnerability
   - Report on progress, publicize successes
   - Revise the plan as necessary (every 5 years for DMA)

Role of the Hazard Mitigation Planning Committee

And The Benefits

- **Coordination and collaboration on mitigation strategies**
- Creating eligibility for funding for mitigation projects
- **Attend meetings and participate in the planning process**
- **Provide requested information**
- **Review drafts and provide comments**
- Identify mitigation projects specific to department; provide status
- Assist with and participate in the public input process
- Coordinate formal adoption

Hazard Mitigation Plan

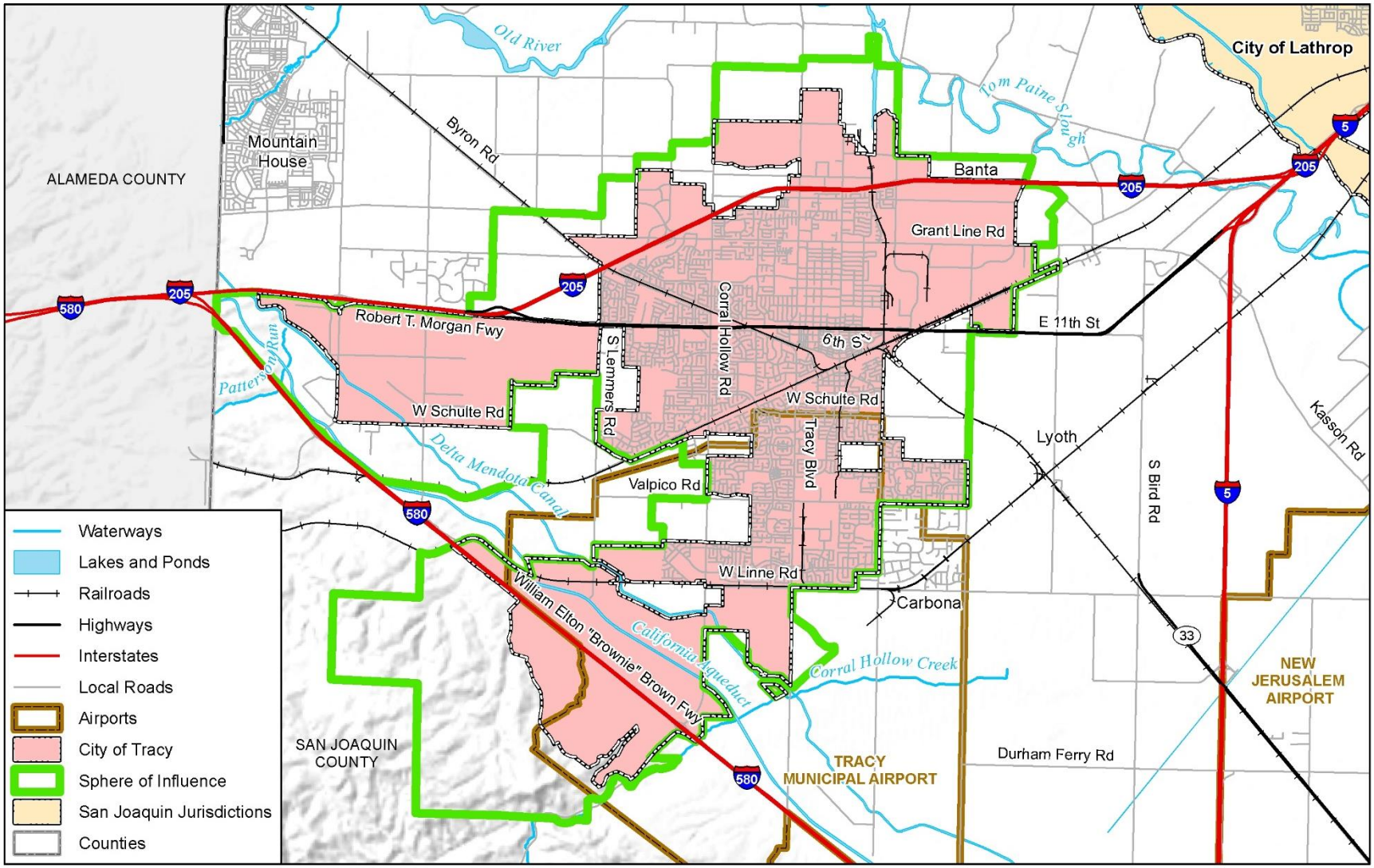
What goes into the plan?

- Section 1 – Introduction
- Section 2 – Community Profile
- Section 3 – Planning Process
- Section 4 – Risk Assessment, plus Capability Assessment
- Section 5 – Mitigation Strategy
- Section 6 – Plan Adoption
- Section 7 – Plan Implementation and Maintenance

- Appendices and Annexes

Initial Results of Hazard Assessment

Planning Area: Sphere of Influence



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Map compiled 9/2018;
intended for planning purposes only.
Data source: San Joaquin County,
US Census TIGER database, City of Tracy

Initial Results of Hazard Assessment

Hazards of Concern

- Flooding
- Dam and Levee Failure
- Seismic Hazards (e.g. earthquake)
- Wildland/Urban Fires
- Drought
- Extreme Heat
- Severe Weather (e.g. heavy rain/storms, wind/tornado)
- Human-Caused Hazards
- Hazardous Materials
- Transportation-Related Hazards
- Climate Change
- Others?

Initial Results of Hazard Assessment

Hazard Profiles

- **Hazard/Problem Description**
  - Area, Seasonal Patterns, Speed of Onset/Duration
- **Geographic Extent (or Spatial Extent)**
  - Limited: Less than 10% of Planning Area
  - Significant: 10-50% of Planning Area
  - Extensive: 50-100% of Planning Area
- **Past Occurrences**
  - Information on Historical Incidents, Known Impacts
- **Magnitude/Severity:**
  - Catastrophic: More than 50% of property severely damaged
  - Critical: 25-50% of property severely damaged
  - Limited: 10-25% of property severely damaged
  - Negligible: Less than 10% of property severely damaged
- **Significance**
  - Low: Minimal potential impact
  - Medium: Moderate potential impact
  - High: Widespread potential impact
- **Frequency/Likelihood of Future Occurrences**
  - Highly Likely: Near 100% chance of occurrence in next year
  - Likely: Between 10-100% chance of occurrence in next year
  - Occasional: Between 1-10% chance of occurrence in next year
  - Unlikely: Less than 1% chance of occurrence in next year

Review of Identified Hazards

Declared Disaster Declarations in San Joaquin County

Event/ Hazard	Year	Declaration Type	Remarks/Description
Heavy Rains and Flooding	1964	Presidential—Major Disaster Declaration	
Severe Storms and Flooding	1969	Presidential—Major Disaster Declaration	
Drought	1977	Presidential—Emergency Declaration	$4.8 million (2009 dollars) statewide
Torrential Rain, High Tide & Winds	1980	Presidential – Emergency Declaration	
Levee Break and Flooding	1980	Major Disaster Declaration	
Severe Storms, Flood, Mudslides & High Tide	1981	Major Disaster Declaration	
Levee Break	1982	Major Disaster Declaration	San Joaquin County
Coastal Storms, Floods, Mudslides, & Tornadoes	1983	Major Disaster Declaration	San Joaquin County
Severe Storms & Flooding	1986	Major Disaster Declaration	
Loma Prieta Earthquake	1989	Major Disaster Declaration	
Severe Freeze	1991	Major Disaster Declaration	
Severe Winter Storms, Flooding, Landslides, Mud flow	1995	Major Disaster Declaration	
Severe Storms, Flooding, Mud and Landslides	1996	Major Disaster Declaration	
Severe Winter Storms and Flooding	1998	Major Disaster Declaration	
Flooding as a result of levee break	2004	Major Disaster Declaration	
Hurricane Katrina Evacuation	2005	Emergency Declaration	
Severe Storms, Flooding, Mudslides, and Landslides	2005	Major Disaster Declaration	
Severe Storms, Flooding, Landslides, and Mudslides	2006	Major Disaster Declaration	
Severe Winter Storms, Flooding and Mudslides	2017	Major Disaster Declaration	

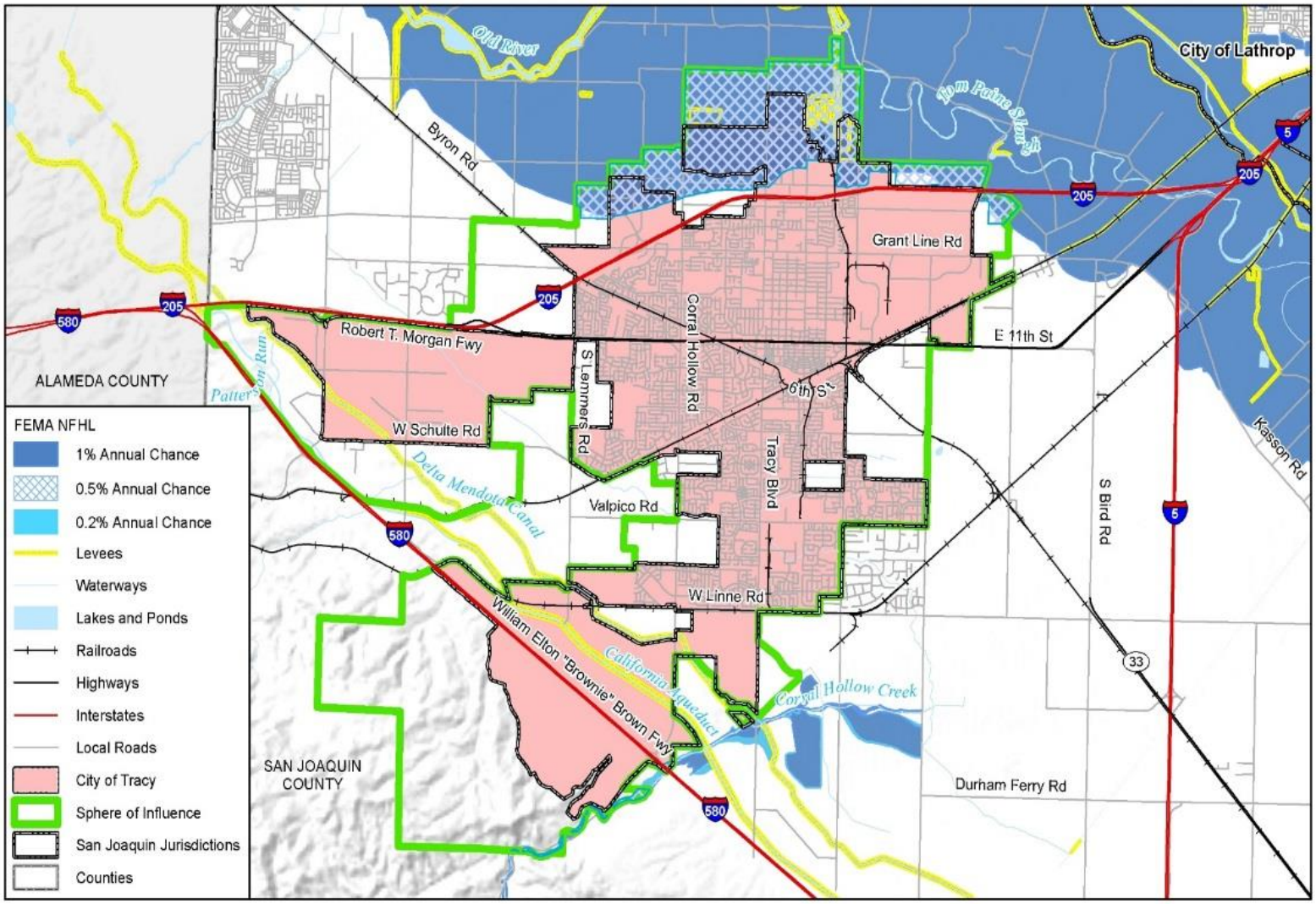
Initial Results of Hazard Assessment

Flood: 100-, 200-, and 500-Year Events

- **Hazard/Problem Description:** North of City, Southeast of City at Corral Hollow Creek area, several levees traverse SOI
- **Geographic Extent:** Limited
- **Past Occurrences:** 11 declared disasters in San Joaquin County
- **Magnitude/Severity:** Under Analysis/Need Property Data
- **Significance:** Under Analysis
- **Likelihood of Future Occurrences:** Occasional
- **Existing Capabilities:** City's General Plan, Other Planning Mechanisms under Analysis

Initial Results of Hazard Assessment

Flood: 100-, 200-, and 500-Year Events



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Data source: San Joaquin County,
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City of Tracy, FEMA NFHL

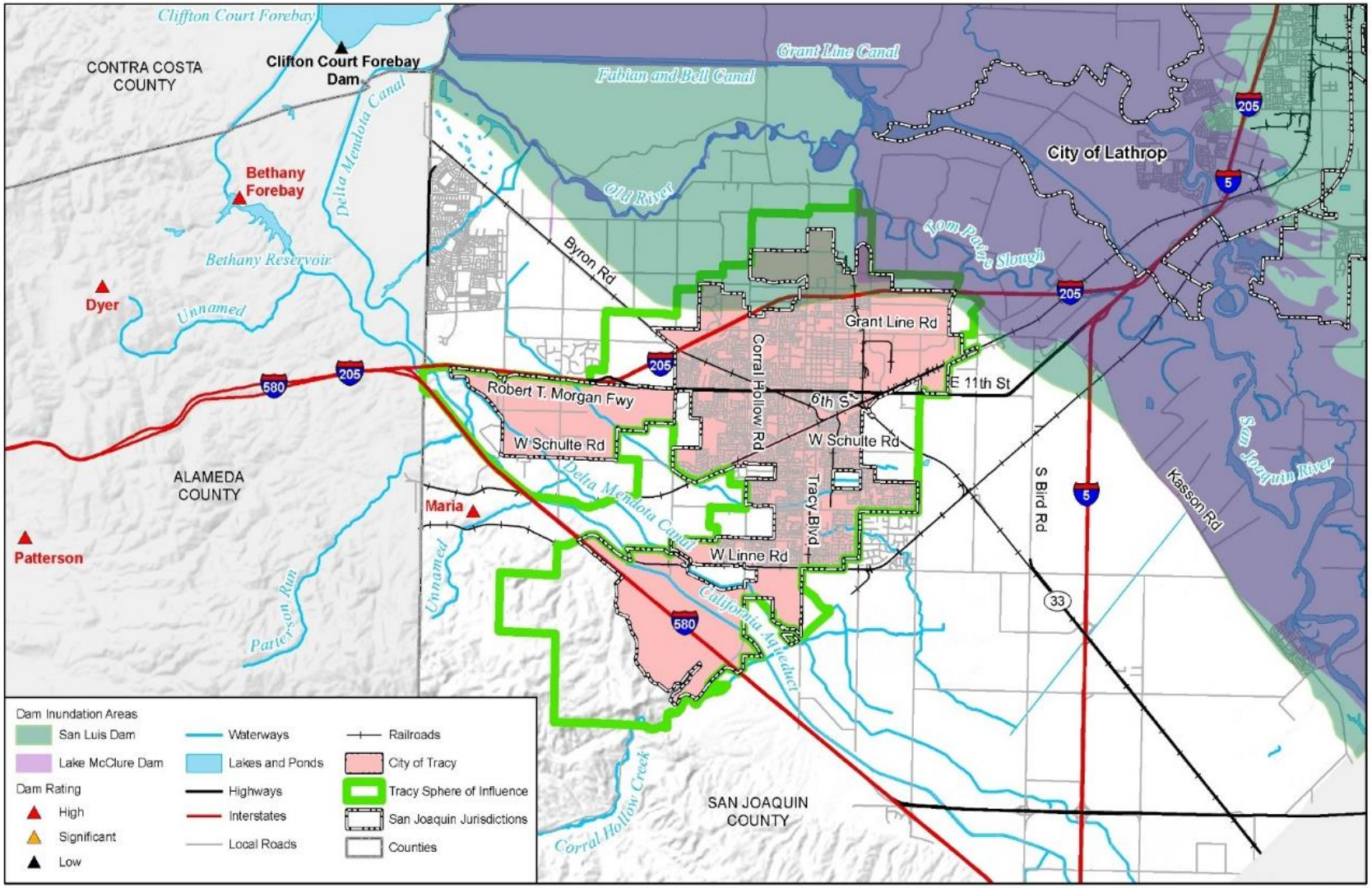
Initial Results of Hazard Assessment

Dam Failure

- **Hazard/Problem Description:**
  - 3 high hazard dams
  - 1 low significance dam
  - North of City of Tracy
- **Geographic Extent**: Limited
- **Past Occurrences:** Past Levee Breaks
- **Magnitude/Severity:** Limited
- **Significance:** Low
- **Future Likelihood of Occurrence:** Unlikely
- **Existing Capabilities:** EAP's, GIS mapping

Initial Results of Hazard Assessment

Dam Failure



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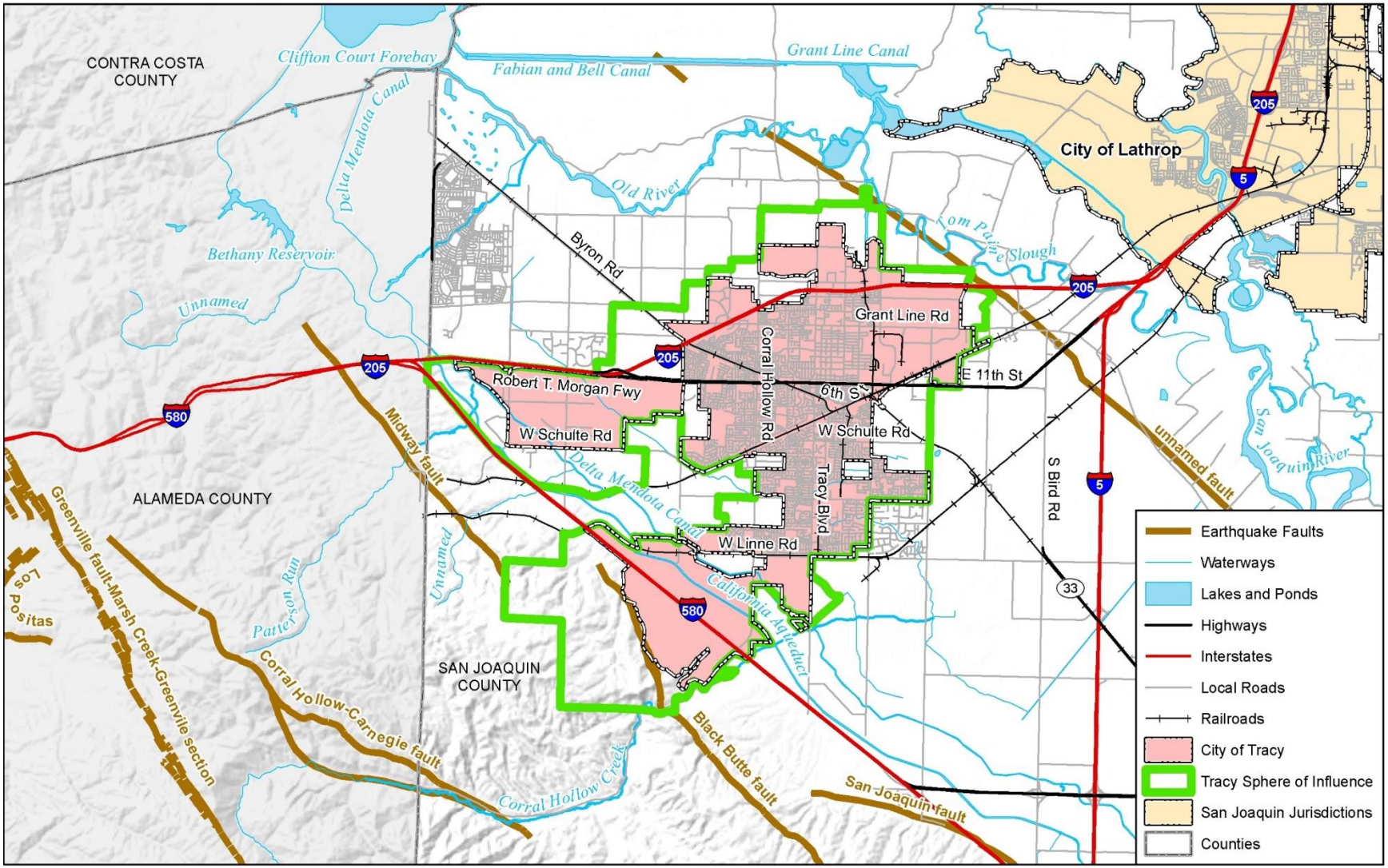
Initial Results of Hazard Assessment

Seismic Hazards

- **Hazards/Problem Description:**
  - City in Seismic Zone 3, Parts of Tracy Hills SP in Zone 4
  - Multiple Faults within/around planning area
    - Corral Hollow/Carnegie
    - Black Butte
    - Midway
  - Moderate Potential for Earthquake Hazards
    - Ground shaking
    - Liquefaction
- **Geographic Extent**: Significant
- **Past Occurrences:** Loma Prieta Earthquake
- **Magnitude/Severity:** Significant
- **Significance:** Medium/High
- **Future Likelihood of Occurrence:** Occasional
- **Existing Capabilities:** 2018 Great ShakeOut Participation, City's General Plan, Building Code

Initial Results of Hazard Assessment

Seismic Hazards



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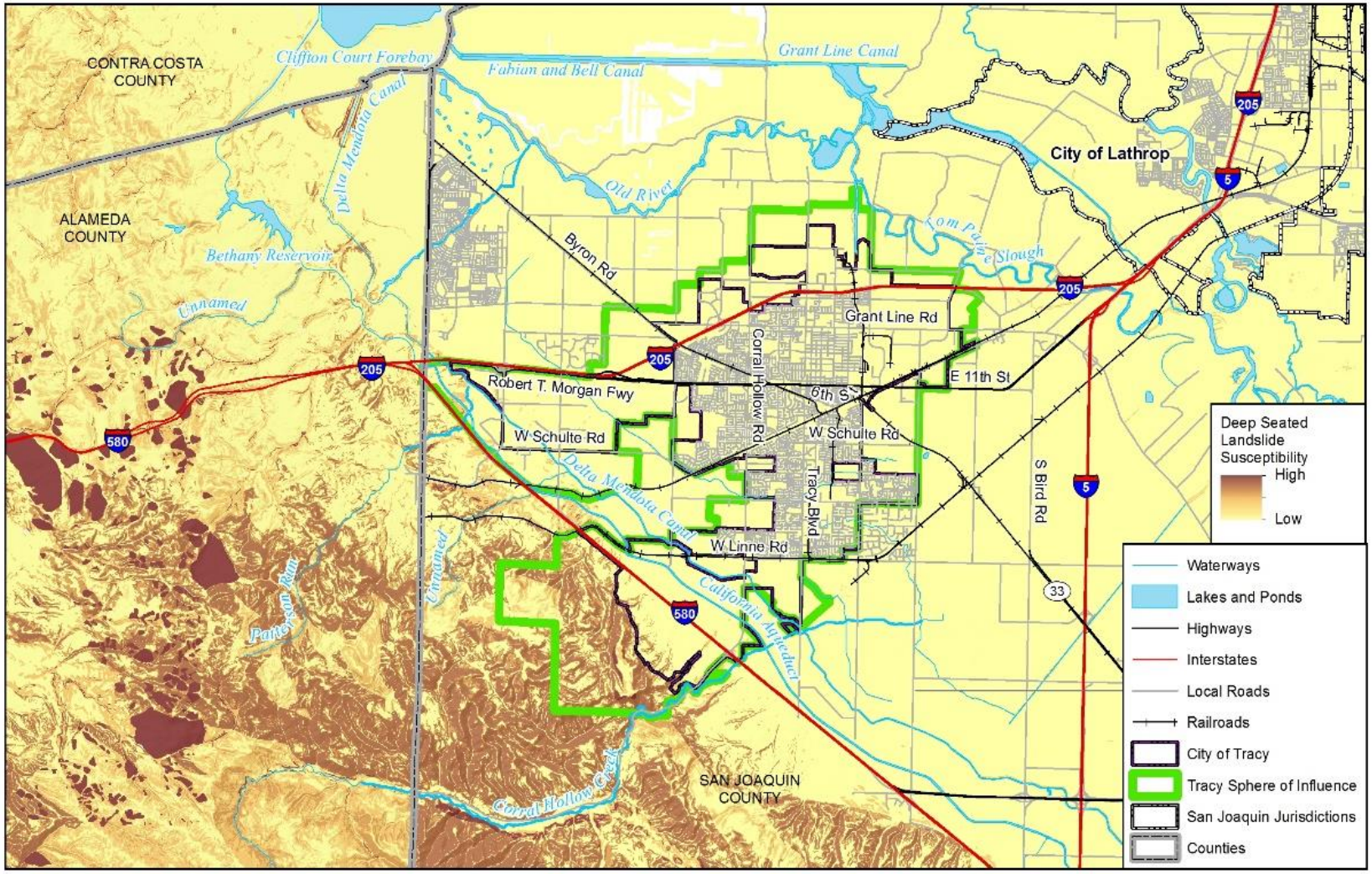
Initial Results of Hazard Assessment

Landslide

- **Hazard/Problem Description:** Limited deep-seated landslide susceptibility, southwest of the City
- **Geographic Extent:** Limited
- **Past Occurrence:** Lack of past occurrences
- **Magnitude/Severity:** Negligible
- **Significance:** Low, hazard will be acknowledged in LHMP, but not further analyzed/profiled
- **Future Likelihood of Occurrence:** Unlikely
- **Existing Capabilities:** Under Analysis

Initial Results of Hazard Assessment

Landslide



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California Dept. of Conservation - CGS

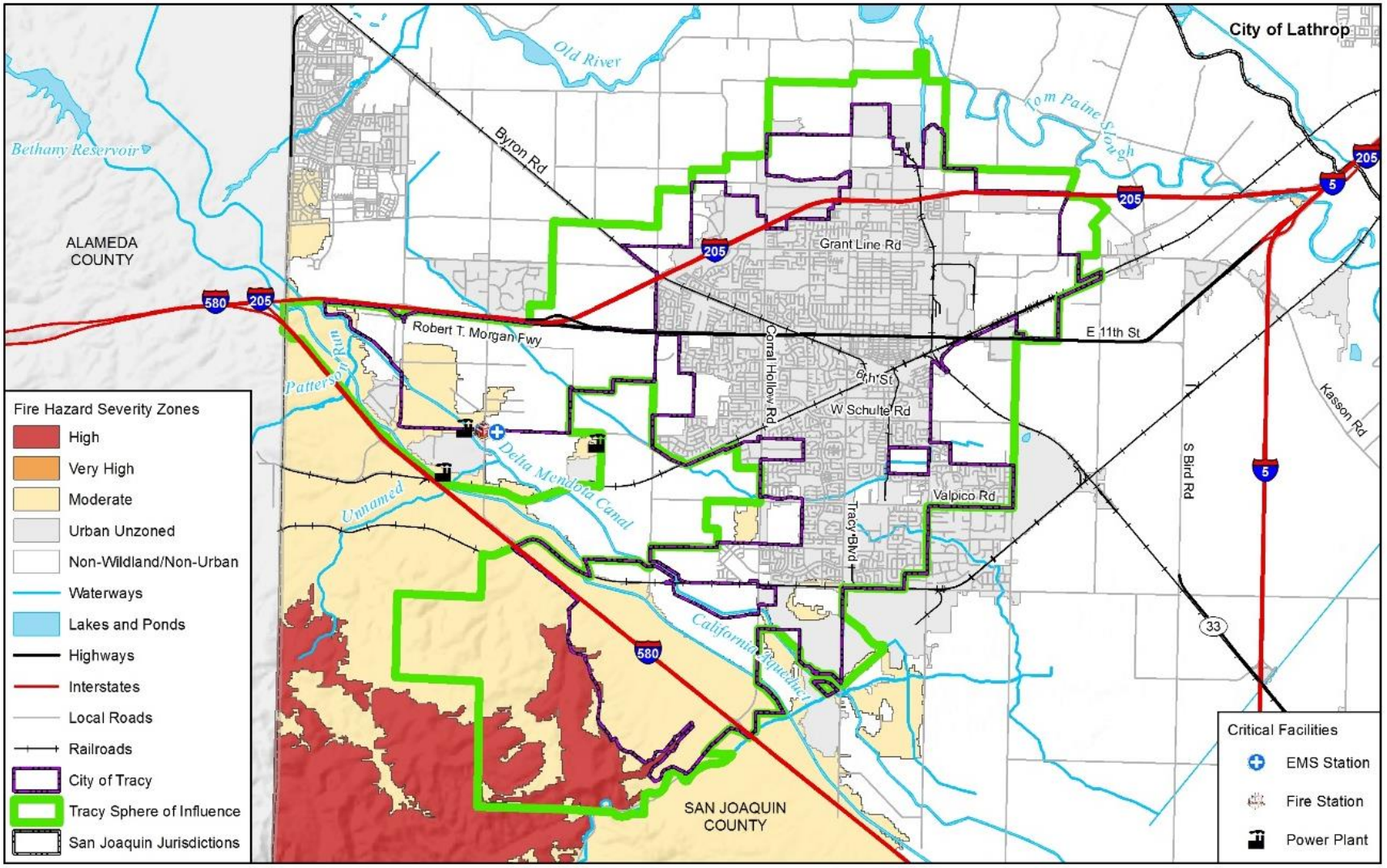
Initial Results of Hazard Assessment

Fire: Urban and Wildland

- **Hazard/Problem Description:** High severity fire zones southwest of the City
- **Geographic Extent:** Limited
- **Past Occurrences:** 6 fires in the last 8 years in or near Tracy
- **Magnitude/Severity:** Under Analysis
- **Significance:** Medium
- **Future Likelihood of Occurrence:** Likely
- **Existing Capabilities:** Under Analysis

Initial Results of Hazard Assessment

Fire: Urban and Wildland



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Data source: San Joaquin County, CalFish, US Census TIGER database, City of Tracy, HIFLD 2017, CalFire

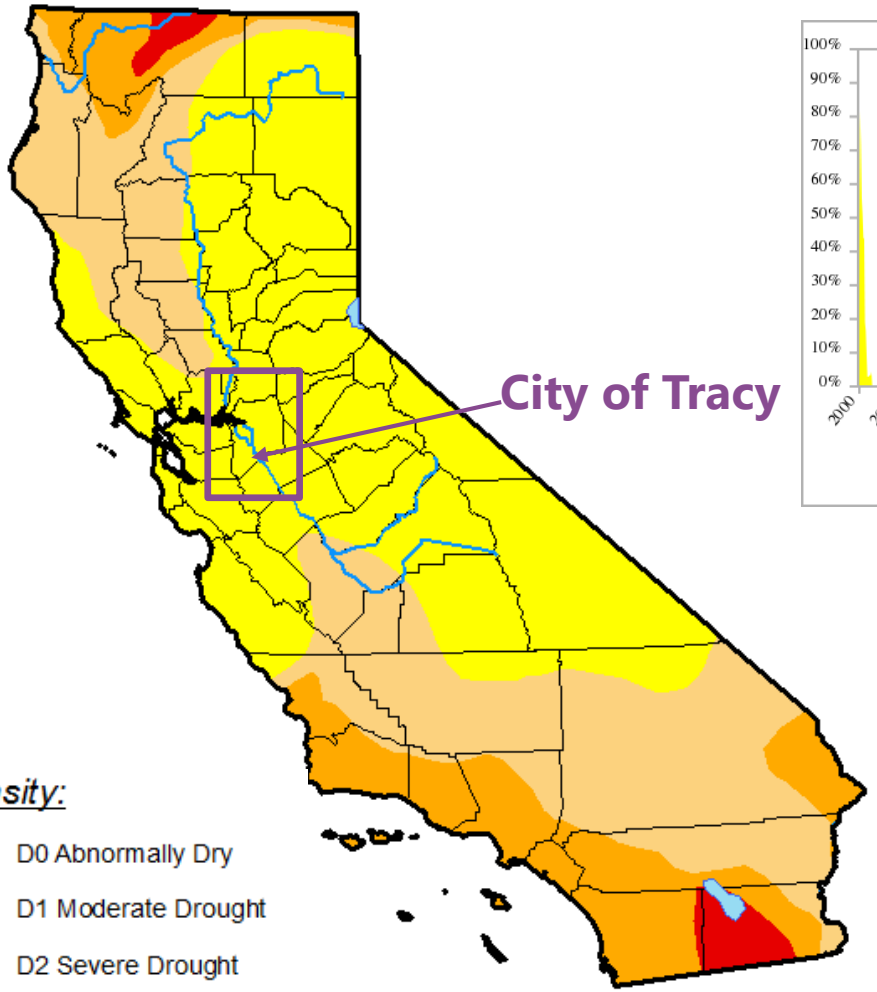
Initial Results of Hazard Assessment

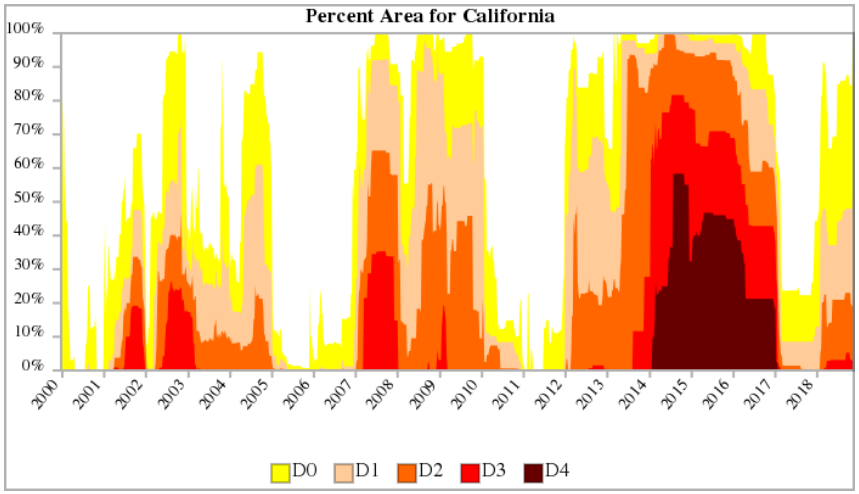
Drought

- **Hazard/Problem Description:**
  - 2014 State of Emergency for Drought
  - Drought conditions worsened through 2014 to 2015
- **Geographic Extent:** Extensive
- **Past Occurrences:**
  - 6 Multi-Year Droughts since 1950
  - Three since 2000
  - Most recent is going since 2012
- **Magnitude/Severity:** Likely
- **Significance:** High
- **Future Likelihood of Occurrence:** Ongoing
- **Existing Capabilities:** Drought plans, Water Management Plans

Initial Results of Hazard Assessment

Drought





Initial Results of Hazard Assessment

Extreme Heat

- **Hazard/Problem Description:**
  - Temperatures that hover 10 degrees or more above average high temperature for the region and last several weeks
- **Geographic Extent:** Limited
- **Past Occurrences:**
  - Heat waves have claimed more lives in state than all other declared disaster event combined
  - 42 heat and excessive heat events in past 28 years in San Joaquin County
  - Highest recorded daily extreme temperature was 112°F on June 16, 1961
- **Magnitude/Severity:** Limited
- **Significance:** Medium
- **Future Likelihood of Occurrences:** Highly Likely
- **Existing Capabilities:** Designated Cooling Zones, Free TRACER Rides, Urban Heat Island Effect Strategies

Initial Results of Hazard Assessment

Severe Weather

- **Hazard/Problem Description:** Heavy Rain, Thunderstorms, Hail, Lighting
- **Geographic Extent:** Extensive
- **Past Occurrences:**
  - 47 Hail, Heavy Rain, and Lighting Events in past 67 Years in San Joaquin County
  - Majority are heavy rain events (43 Events)
  - Average annual precipitation: 9.86 inches
  - Highest recorded annual precipitation: 21.14 inches (1983)
- **Magnitude/Severity:** Limited
- **Significance:** Low
- **Future Likelihood of Occurrence:** Highly Likely
- **Existing Capabilities:** Under Analysis

Initial Results of Hazard Assessment

Wind and Tornadoes

- **Hazard/Problem Description:** Wind and tornadoes cause potential property and critical facilities damage, loss of life
- **Geographic Extent:** Negligible
- **Past Occurrences:**
  - 2 tornado events in past 67 years (1950-2017)
    - March 29, 1998 ($1,000 in property damage)
    - December 26, 2005 ($20,000 in property damage)
- **Magnitude/Severity:** Limited
- **Significance:** Low
- **Future Likelihood of Occurrence:** Occasional
- **Existing Capabilities:** Under Analysis

Initial Results of Hazard Assessment

Hazardous Materials

- **Hazard/Problem Description:**
  - Hazardous Materials, Gas Pipelines, Powerlines, Chemical Facilities
  - 13 Risk Management Plan (RMP) facilities in the City
    - Store over five million pounds of toxic chemicals
      - 4.6 million pounds of chlorine
      - 375,000 pounds of anhydrous ammonia
      - 40,000 pounds of sulfur dioxide
- **Geographic Extent:** Under Analysis
- **Past Occurrences:** 85 reported hazardous materials incidents since 1999
  - Average of 4 incidents/year
  - 34% were transportation-related
    - 22% road/highway, 11% rail, 1% vessel/marine
  - 11% were pipeline releases
- **Magnitude/Severity:** Under Analysis, Need Property Data
- **Future Likelihood of Occurrence:** Under Analysis
- **Existing Capabilities:** Facility Management Plans, County Monitoring

Initial Results of Hazard Assessment

Transportation Accidents

- **Hazard/Problem Description:** Transportation-Related Hazards
- **Geographic Extent:** Under Analysis
- **Past Occurrences:** 381 traffic fatalities/injuries in 2015
- Up 59% since 2009
  - Alcohol-related increased 200% (from 10 to 30)
  - DUI arrests dropped 70% 2009-2015 (from 311 to 92)
- Tracy ranks 55th overall out of 103 similar CA cities
  - 63rd for alcohol-related fatalities/injuries
  - 80th for motorcycle fatalities/injuries
- **Magnitude/Severity:** Under Analysis, Need Property Data
- **Significance:** Medium
- **Future Likelihood of Occurrence:** Highly Likely

Community Outreach Strategy

Planning for Public Involvement

- Any opportunities for outreach at scheduled public meetings or events?
- Developed a Community Outreach Strategy
  - Education, information, and coordination on the LHMP process
    - Hazard Mitigation Plan Website
    - Regular Website Postings
    - Event Flyers and Advertisements
    - Newsletters
    - Online Public Survey
    - Public Workshops
    - Hazard Mapping
    - Farmer's Market Informational Booth
- Other ideas/recommendations?

Data Collection Guide

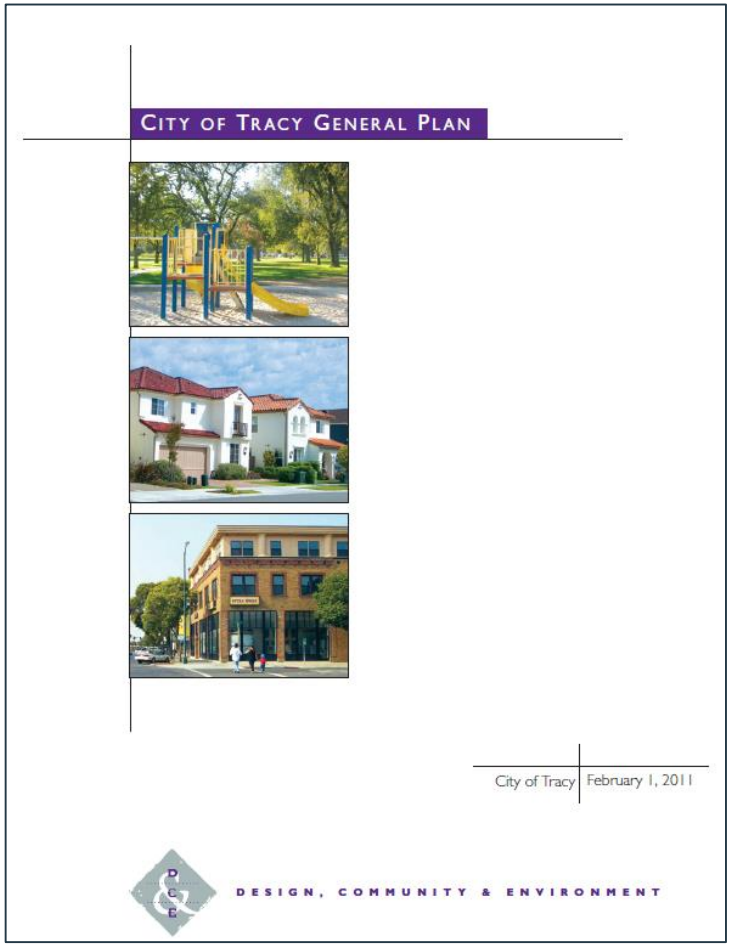
What's New in Mitigation Planning

- FEMA Local Hazard Mitigation Planning Guidance 2013
- Cal OES requires Capability Assessment in LHMPs
- Cal OES suggests incorporating climate change considerations
- Cal OES MyPlan and MyHazards Internet tools
- FEMA Plan Review Tool
  - Replaces old Plan Review Crosswalk
- New CRS guidance
- As a result of disasters, more FEMA $ has been available for communities with HMPs to leverage for projects!

Data Collection Guide

Hazard Information Resources

- What existing or recent plans, reports or studies exist?
  - Master plans
  - Floodplain map revisions
  - Safety Element updates to General Plans
  - Subsidence studies
  - Tree mortality inventories
  - Wildfire hazards



Schedule and Next Steps

When will we meet next?

Task or Key Milestone	Anticipated Date
Notice to Proceed	June 8, 2018
Project Kick-Off Meeting	August 9, 2018
Submit HMPC Invite List	September 11, 2018
HMPC Meeting #1	September 25, 2018
Submit Draft Community Engagement Study	October 5, 2018
City Review of Draft Community Engagement Study	October 12, 2018
Prepare Hazard Identification and Risk Assessment	TBD
Stakeholder Workshop	November 14, 2018
Develop GIS Geodatabase (pending City Assessor and Property Value Data)	November 30, 2018
HMPC Meeting #2	December 20, 2018
HMPC Meeting #3	February 12, 2019
Public Workshop	February 12, 2019
Finalize Goals and Objectives	February 15, 2019
Compile Mitigation Actions Worksheets	March 1, 2019
Submit 1st Administrative Draft HMP	March 15, 2019
City provides Consolidated Staff Comments on 1st Administrative Draft HMP	March 29, 2019
Submit 2nd Administrative Draft LHMP	April 12, 2019
Circulate Public Review Draft LHMP	April 19, 2019
Public Review Ends	May 18, 2019
Complete FEMA Region IX Review Tool	May 31, 2019
Submit LHMP to FEMA for Review	June 4, 2019
Submit to Cal OES for Review	July 18, 2019
City Council Hearing	August 6, 2019*

*City Council Meetings are held on the first and third Tuesdays of each month

Schedule and Next Steps

When will we meet next?

- **HMPC #2 – December 20, 2018**
- HMPC #3 – February 12, 2019 from 1:00 – 4:00 PM
- Public Workshop – February 12, 2019 @ 7:00 PM

- Fill out a Comment Card and Place it in the Comment Box!

Questions?

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