Impacts of Drought on Mariposa County

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County Health Officer
The County
Living off the grid

• Small, rural county nestled in the Sierra Nevada foothills
  • The county spans approximately 1,450 square miles and residences tend to be spread out
• 17,569 residents in 2017, down from 18,101 in 2010
  • 7,434 Households
  • Exodus of 20-30 year olds
• Nearly 21% of the population aged 5 and older has a disability (compared to < 13% for all of California)
• Higher unemployment, lower median household income, and a higher proportion of the population living below poverty as compared to the state overall
• The isolation of residents creates an environment ripe for depression, anxiety, and other mental and behavioral health disorders, and also provides a conducive environment for illegal activities and substance abuse
Public Health Division Snapshot

• Mission Statement: To protect and promote the health, safety, and environment of the community by preventing and controlling diseases, environmental hazards, injury and disability, and by educating and promoting healthier lifestyles
• 19 Full time staff, 3 part time, and 5 extra help
• FY 17-18
  • Revenue: $2,442,209
  • Expenditures: $2,700,102
  • Current Net County Cost: $257,893
Drought as part of Climate Change Milieu

- Drought is a slow-moving disaster
- Intersperse this with other events that are happening and ongoing in Mariposa County
- Pine Beetle Bark
  - Tree Mortality Task Force
- Fire
  - Harlow Fire – 1961
  - Telegraph Fire – 2008
  - Detwiler Fire – 2017
  - Ferguson Fire 2018
    - Air quality issues!
- Flooding – 1997, 2017, 2018
The Mercury News

Brown declares California drought emergency
Drought Declaration

• On September 19, 2014, Governor Brown issued Executive Order (EO) B-26-14, authorizing the California Governor’s Office of Emergency Services (Cal OES) to provide California Disaster Assistance Act (CDAA) funding, as deemed appropriate, for local government assistance to provide emergency water supplies to households without water for drinking and/or sanitation purposes.
County Actions

• December 2014 – The Mariposa County Board of Supervisors authorized the Health Dept. and local OES to apply for funding thru CDAA
• February 2015 – Mariposa County selected Self Help Enterprises (SHE) to administer the program
• Feb – Mar 2015 several meetings with SHE and local contractors to set up program
  • Direct mail information card sent to every mailbox in Mariposa County
• The week of April 13, 2015 water delivery began to homes in need
### Status as of 7/22/2015

<table>
<thead>
<tr>
<th>Applicants to Date</th>
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<tbody>
<tr>
<td>Approved/ Finaled</td>
<td>74</td>
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<tr>
<td>Pending Inspections</td>
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<tr>
<td>On Hold</td>
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<tr>
<td>Didn't Meet Standards</td>
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<tr>
<td>Cancelled</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>101</strong></td>
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<table>
<thead>
<tr>
<th>Needs Analysis</th>
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<tbody>
<tr>
<td>Total Gallons Per Week</td>
<td>98510</td>
</tr>
<tr>
<td>Avg. Gallons per Home</td>
<td>1331</td>
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<tr>
<td>Avg. # of Occupants</td>
<td>3</td>
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<tr>
<td># homes with Evap. Cooler *</td>
<td>22</td>
</tr>
<tr>
<td># Homes Requiring Tanks</td>
<td>41</td>
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</table>

<table>
<thead>
<tr>
<th>Locations</th>
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<tbody>
<tr>
<td>District 1</td>
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<td>District 3</td>
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<td>District 5</td>
<td>26</td>
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<tr>
<td><strong>Total:</strong></td>
<td><strong>101</strong></td>
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Final numbers by 2018

- 226 applications approved for assistance
  - 14 of these wells failed due to coliform concentrations
  - 18 of these wells failed due to elevated nitrate levels (<10mg/L)
  - Remainder due to water production
- $109,282.81 in staff costs from 4/1/2015 to 4/17/2018
Dry Well Assistance Example
Dry Well Assistance Example
Using CASPER to define the impacts of the drought

Effects of Drought

- Access to water
- Attitudes and practices
- Chronic disease exacerbations
- Behavioral health outcomes
- Finances and property
Post-CDAA

- Drought emergency declared over April 7, 2017
- Transition of tanks/pumps to property owner
  - Release of liability signed
- Grants/loans for non-functioning wells
- Continued funding for water shipments during transition year 2017-2018
  - At end of April 2018, three households still on water shipments
  - Funding extended through September 2019
- Detwiler Fire burned out many water tanks
  - Able to replace 62 of these
Lessons Learned

• Climate change-related disasters will continue through the rest of our lives
  • Have staffed trained in responding to ‘all-hazards’ incidents
    • Adopt a SEMS/NIMS mentality for even ‘slow’ disasters
  • Be prepared to work with ‘non-traditional’ partners in Public Health
  • Be adaptive to allow for a more rapid response

• Better data collection
  • Great to have partners from CDPH/CDC assisting in defining the problem
  • In preparing this, it would have been better to not have to hand jam data...