Rebuilding Paradise

Kevin Phillips, Town Manager

Town of Paradise
TOWN OF PARADISE

- Incorporated in 1979
- Population of 27,500
- Located 85 miles north of Sacramento, CA
- 18.3 square miles of land
- Median age 50.2
- Median household income $41,982
Camp fire

- Started November 2018
- Butte County
- Burned 153,336 Acres
- 18,804 Structures Destroyed
- 85 Fatalities
- #1 Most Destructive CA Wildfire
- #1 Deadliest CA Wildfire
- Total Cost of Fire $16.65 Billion
Camp fire

The Camp Fire ripped through the communities of Concow, Pulga, Magalia, and the town of Paradise with such ferocity that first responders couldn’t even fight the fire for the first 24 hours, instead focusing solely on evacuating as many residents as possible.
Camp fire (6:45 am)
Camp fire (7:15 am)
Camp fire (7:15 am)
Camp fire (9:00 am)
Camp fire (9:00 am)
Camp fire (10:30 am)
Camp fire (10:30 AM)
Camp fire (11:00 am)
Camp fire (11:00 AM)
Camp fire (12:00 pm)
Camp fire (12:00 PM)
### Camp fire

#### Map Showing Affected Areas

- [Map Image]

#### Data Table

<table>
<thead>
<tr>
<th>PARADISE</th>
<th>Affected (1-9%)</th>
<th>Minor (10-25%)</th>
<th>Major (26-50%)</th>
<th>Destroyed (&gt;50%)</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Residence</td>
<td>307</td>
<td>32</td>
<td>2</td>
<td>10423</td>
<td>10764</td>
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<tr>
<td>Multiple Residence</td>
<td>21</td>
<td>2</td>
<td>1</td>
<td>273</td>
<td>297</td>
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<tr>
<td>Mixed Commercial/Residential</td>
<td>1</td>
<td>1</td>
<td></td>
<td>11</td>
<td>13</td>
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<tr>
<td>Non-residential Commercial Property</td>
<td>66</td>
<td>15</td>
<td>5</td>
<td>492</td>
<td>578</td>
</tr>
<tr>
<td>&quot;Other&quot; Minor Structures</td>
<td>54</td>
<td>19</td>
<td>10</td>
<td>3153</td>
<td>3236</td>
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<tr>
<td>Grand Total</td>
<td><strong>449</strong></td>
<td><strong>69</strong></td>
<td><strong>18</strong></td>
<td><strong>14352</strong></td>
<td><strong>14888</strong></td>
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</tbody>
</table>
Camp fire damage assessment

Field damage inspection is still ongoing and subject to change. The points shown in this map are being updated regularly. Data is subject to change as information is gathered and verified. The icons on the map indicate the current known status of the structure. If your structure is not identified by an icon, it has not yet been identified.

Addresses may be entered into search bar to find a specific location.

For additional information visit:
- CAL FIRE - [incident page](#)
- Butte County - [website](#)

Legend
- Damaged or Destroyed Structures
  - Destroyed (>50%)
  - Major (26-50%)
  - Minor (10-25%)
  - Affected (1-9%)
- No Visible Damage
- No Visible Damage

Camp Perimeter 11-19
Camp fire (Residential Neighborhood)
Camp fire (Business Buildings)
State Consolidated Debris Removal Program Stats

- Largest project of its type in California history
- 3,666,254 tons of debris removed
- 10,900 participating properties
- More than 305,000 loads hauled
- Debris crews traveled 28.2 million road miles - which is equal to 59 round trips to the moon

The tonnage removed is equivalent to -

4 Golden Gate Bridge(s)
Camp fire – Water system damage

1. **PRE-FIRE:**
Under normal conditions, the main and service lateral provide pressurized inflow to the structure.

   - Main running full
   - Pressurized Service Lateral

2. **DURING THE FIRE:**
Initially, pressure is maintained in the main and service lateral.

   - Main running full
   - Pressurized Service Lateral

   - The water main loses pressure, resulting in negative pressure in the service lateral. Smoke and debris are sucked into the pipe.

   - Mains empty due to open system and firefighting efforts

   - Depressurized Service Lateral
Camp fire – Water system damage

4. **DURING THE FIRE:**

Smoke and debris particles (containing Volatile Organic Compounds, VOCs) are sucked into the empty pipe by negative pressure, absorbing into the pipe wall material.

5. **AFTER THE FIRE:**

Mains are repressurized, filling empty pipelines and service laterals once again with water.

6. **AFTER THE FIRE:**

VOCs in the pipe walls desorbs, or reenters the water now in the pipe, creating contamination in the water.
Water Advisory Lifted
Where Did Everybody Go?

- Following the Camp Fire, the Town of Paradise’s population of 26,400 experienced an 82.6% loss.
- **Chico gained 18.9%** which is a decade of population growth in just a few weeks, Oroville gained 20.4%.
- Overall our County lost over 11,153 residents and estimates say it’ll take until 2024 to restore pre-fire County population number.
- Survivors can be found in 46 states across the US.
“The Camp Fire spread as fast as 80 football fields per minute.” – After Action Report

Camp Fire Losses
- 85 fatalities
- 18,800 structures
- 90% of Paradise’s housing stock
- Over 27% of the County’s mobile home units
- Housing for 10% of the construction workforce
- All 1,200 businesses closed, with approximately 200 re-opened to date

Fiscal Loss
- 58% of General Fund Revenue
- Infrastructure
- Business Economy
The Town was able to secure $219 million from the PG&E settlement fund.

<table>
<thead>
<tr>
<th>Backfill revenue for next 25 years of recovery</th>
</tr>
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<tbody>
<tr>
<td>Local share of recovery projects</td>
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<tr>
<td>Contingency</td>
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</table>
General fund revenues: Seven-year comparison

- 2014/15
- 2015/16
- 2016/17
- 2017/18
- 2018/19
- 2019/20
- 2020/21 Est. Actual
- 2021/22 Budget

- Revenues
- Measure "C" / "V"
- State Backfill
- Insurance
- PG&E Settlement Fund Transfer
Fiscal Sustainability Model Projections

Revenue, Expense & Net Annual (mil.)

- Revenue
- Expense
- Net Annual
- Revenue-no PG&E

07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45
Variables in Recovery & Town Revenue Restoration

Rebuilding & New Investment

Permit Activity

- Rebuilds
- Maybes
- Repopulation
In the 9 years prior to the Camp Fire, Paradise issued an average of 15 building permits annually for new single-family homes.

Now, there are 1,674 building permits issued and climbing since the Building Resiliency Center opened in mid-2019, in somewhat hazardous building conditions with the standing dead and dying trees.
“It is generally much faster to restore and rebuild what existed before the disaster (in 2 or more years) than it is to make changes in urban development patterns and reconstruct differently in the wake of disaster (in 10 or more years).”

– Qualitative Takes on Post-Disaster Recovery

Building Permit Data To Date (Aug 4, 2021):

- 1,834 Building Permit Applications Received
- 1,674 Building Permits Issued
- 964 Certificates of Occupancy Issued
- 347 Multi-Family Units Applied
- 317 Multi-Family Units Issued
- 168 Multi-Family Units Rebuilt
Who Rebuilds a Town?

- Residential & Commercial Owners
- FEMA & Federal Agencies
- CalOES & State Agencies
- Local & Regional Cooperators
- Town Staff & Consultants
Funding & Managing Recovery Projects

- **Town-Led Projects**
  - Hazard Tree Removal
  - Early Warning System
  - Weed Abatement
  - Sustainable Fiscal Model
  - General Plan / Housing Element
  - Sewer Service Area
  - Transportation Master Plan
  - Walkable Downtown
  - New Fire Station 82
  - Resident Fire Safe Education
  - New Civic Center
  - Opportunity Zone

- **Partner-Led Projects**
  - Underground Utilities
  - Broadband
  - Economic Development Strategy
Removing Dead & Dying Trees

The Camp Fire burn scar is full of dead and dying trees that threaten standing structures, lots under construction, those living in RVs, and the Right of Way. The removal of hazardous trees is funded by FEMA, administered by CalOES, contracted by CalRecycle, with programs administered by the County and Town of Paradise.

Total trees removed = 100,000
Early Warning System Study

- 96% Would like notifications on their phones in addition to the early warning system.
- 92% Are concerned power outages may interfere with community warnings.
- 89% Say an early warning system would make them feel safer living in Paradise.
- 82% Would support a siren near their home or business.
- 80% Say the early warning system should contain a siren and voice warning.
- The majority of people would like the early warning system to be tested monthly (61%).
Comprehensive Transportation Study

- The Town was recently awarded a **$1.8M** grant award from the Economic Development Administration (EDA) for the completion of a Transportation Study. This Study will review the Paradise transportation network and will outline critical gaps in infrastructure, conflicts, pinch points and other barriers to potential future evacuation events. Using this information, the study will identify priorities and a plan for town-wide safety and circulation improvements.
Undergrounding Utilities

- PG&E is undergrounding **200 miles** of conduit over the next 5 years along public and private roads in the Town of Paradise.
- 50 miles have been completed to date. Road repairs done after the trenching work is temporary.
- Roads will be reconstructed with **$77.3M** in federal grant funds after all road impacts from recovery are complete.
Broadband Feasibility Study

- Prepared for the Town of Paradise by Chico State Enterprises
- Funded in part by Butte Strong Fund
- The goal is to determine how best to provide broadband access to homes and businesses on the Ridge as critical infrastructure for increasing the quality of life and economic viability in Paradise.
Recovery experts, “urge communities to use the **recovery moment** as an opportunity to rebuild a more resilient region,” and to, “create opportunities to address existing social, economic, and environmental challenges.” – Qualitative Takes on Post-Disaster Recovery

- Repositioning Paradise for greater legislative influence through federal and state lobbyists, like advocating for fire prevention and preparation.
- Increasing emergency management collaboration between local and regional cooperators for streamlined notification, maps, and traffic flow plans.
- Building back with greater resiliency and sustainability through the implementation of hazard mitigation projects like the Early Warning System.
- Being a model of recovery for other disaster-impacted communities.
We are projecting $2,027,904,978 in construction projects over the next 10 years in Butte County.

<table>
<thead>
<tr>
<th>Type</th>
<th>Estimated Cost</th>
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<tr>
<td>Affordable Housing 2021 to 2030</td>
<td>$527,100,000</td>
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<tr>
<td>Housing, Private Development 2021 to 2030</td>
<td>$260,462,500</td>
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<tr>
<td>Facilities 2020 to 2025</td>
<td>$539,261,094</td>
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<td>Facilities 2025 to 2030</td>
<td>$377,917,000</td>
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<td>Infrastructure 2020 to 2025</td>
<td>$322,284,384</td>
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<tr>
<td>Other 2020 to 2025</td>
<td>$880,000</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$2,027,904,978</strong></td>
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</table>
Sewer Service Area EIR

- **Paradise Sewer Project:** Overall effort to provide a long-term solution for the collection, treatment and dispersal of wastewater from parcels identified in the Sewer Service Area (SSA).

- **Sewer Service Area:** With some exceptions, properties encompassed by Clark Road, Skyway and Pearson Road, mapped to the left.
History

- 1969 Butte County General Plan Water and Sewer Element
- 1972 Basin Sewer Service Area Plan
- 1975 Montgomery Engineering Report
- 1983 Phase I Wastewater Management Study
- 1984 Phase I Supplemental Study
- 1985 Phase II Wastewater Management Study
- 1989 Feasibility study
- 1990 Wastewater District Formed for Commercial only
- 1993 Council action abandoned sewer project
- 1994 Downtown Master Plan
- 2011 Wastewater Treatment & Collection Feasibility Study
- 2017 Paradise Sewer Project Feasibility Study
- **2020 Paradise Sewer Project Phase I**
Why Did Paradise Need a Sewer PRE-FIRE?

- For many properties, perpetual onsite treatment and dispersal was not sustainable due to high groundwater, limited land available, and poor soils.
- These constraints force the Town to self-govern and restrict Multi-family housing density and commercial operations which rely on water usage (e.g., restaurants).
Project Options

Paradise Sewer Project

- No Project
- Local Treatment Plant
- Regional Connection (City of Chico)
  - Surface Water Discharge
  - Land Application
  - Beneficial Reuse
Analysis of Project Components

(1) Collection
(2) Treatment
(3) Dispersal
(1) Collection System

• Sewer Service Area Flows
  • Startup >100,000 gallons per day
  • Buildout ≈ 500,000 gallons per day

• Collection System Type
  • Gravity in lieu of STEP
  • No individual tanks, no leach lines, no pumps for homeowners
  • Increased pump stations for the Town

• Collection System Cost
  • $117M
  • Equal cost for all treatment type alternatives
Treatment and Dispersal Alternative Analysis

1. Economic
2. Social
3. Environmental
4. Implementation
5. Operational
Land Application

• Viable Treatment Plant Locations
  • Green dots
    • (2) Clark Road corridor
    • (2) Neal Road corridor
    • 7 acres needed

Land Application Area
• Blue hatch
  • 150 acres needed for effluent storage
  • 310 acres needed for land application
Discharge

• Viable Treatment Plant Location
  • Kunkle Reservoir

Surface Water Discharge
• Miocene Canal
• NPDES Permit
• Issues with Down Stream Users
Regional Connection

- Existing Treatment Plant with permitted discharge to Sacramento River
- Requires a treatment connection fee to the City of Chico
- Requires an MOU which outlines growth, operations and maintenance of treatment/dispersal facilities
Regional Connection
**Alternative Analysis Findings**

<table>
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<tr>
<th>Alternative</th>
<th>Score</th>
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<tbody>
<tr>
<td>Local Alt. 1 – Land Application</td>
<td>514</td>
</tr>
<tr>
<td>Local Alt. 2 – Discharge</td>
<td>381</td>
</tr>
<tr>
<td>Regional – Chico</td>
<td>748</td>
</tr>
</tbody>
</table>

- **Regional Scoring**
- **Economic:** Lowest capital and net present value costs.
- **Social:** Lowest community impacts during and after construction.
- **Environmental:** Least probable environmental impacts.
- **Implementation:** Fewest permits needed. State Water Board, Central Valley Regional Board, and Cal EPA support.
- **Operational:** Least complicated to operate. Benefits from experienced Chico staff.
Regional PROJECTS are Preferred in California

• **SUCCESSFUL PROJECTS**
  - Mid Western Placer Regional Sewer Project (Lincoln/Auburn/Placer)
  - South County Regional Wastewater Authority (Gilroy/Morgan Hill)
  - South Placer Wastewater Authority (Roseville/Placer/South Placer MUD)

• **SUPPORTIVE POLICIES**
  - State Water Board policies encourage regionalization projects
  - City of Chico Municipal Code contains procedures for regionalization
Paradise Town Council Actions ON Dec. 8, 2020

• Selected Regional Alternative as the primary solution to be reviewed in the Phase II Environmental Impact Report.

• Directed staff to:
  1. Secure additional funding for the EIR, including a grant to be made available to the City of Chico.
  2. Work with the Regional Board to form a Brown Act-compliant Project Committee consisting of Town of Paradise and City of Chico elected officials.
1. Authorize the City Manager to execute an agreement with the Town of Paradise, approved by the City Attorney, to facilitate work and grant-funded payments relating to the City’s ability and needs to accept a connection from the Town of Paradise to the Water Pollution Control Plant pursuant to Chico Municipal Code Section 15.40.285, and;

2. Select representation to participate in Central Valley Regional Water Quality Control Board-led Project Committee.
Collaboration benefits for Chico

Wastewater systems present economies of scale. As more people are served, the cost per person for treatment goes down.

Revenue to the City from the regional agreement will provide financial resources for infrastructure projects in the City’s long-term Capital Improvement Plan.

Regionalization will increase the City’s footing to secure future financial assistance.

Regional recovery equates to a stronger economy for the Town, City and County.
Water Board DFA Funding FOR CHICO

- Water Board Division of Financial Assistance (DFA) grant has been awarded to the Town of Paradise for the second phase Environmental Impact Report.
- $300,000 has been made available to the City of Chico to perform work as a vendor to the Town of Paradise.
- OBJECTIVE: Ensure existing City of Chico ratepayers do not subsidize the City’s efforts to study the Paradise Sewer Project viability.
Chico SCOPE OF WORK

• Analyze current and future WPCP flows and loads
• Evaluate WPCP hydraulic capacity
• Create a process model for WPCP future facilities
• Evaluate regulatory requirements and capacity improvement alternatives
• Modify the WPCP Facility Planning Report
• Analyze the potential Paradise Sewer Project connection fee

• OBJECTIVE: Inform the City and Town of true impacts of project collaboration concurrent to the Environmental Impact Report.
Anticipated Project Committee / EIR Questions

What is the pipe alignment?
Where would the Town of Paradise connect?
What are capacity impacts to the City’s collection system?
What are capacity impacts to the City’s treatment plant?
Will a JPA be formed?
What are the terms of the agreement?
Components of public involvement

Sewer Regionalization Project Advisory Committee (SRPAC)
- Town of Paradise
- City of Chico
*Facilitated by Central Valley Regional Water Control Board
EIR Timeline

2021
- Project Scoping Public Comment Period

2022
- Draft EIR Public Comment Period
- Final EIR Certified

Ongoing Public Outreach
Paradise Sewer Project Path Forward

Environmental
• $2M Secured

Design/ROW
• $30M Needed

Construction
• $152M Needed
Paradise Sewer Project Path Forward

- **2017 Feasibility Report**
- **2020-2022 Efforts**
- **Est. 2022 - 2023**
  - Environmental Review
  - Design
  - Right of Way
- **Est. 2023-2026**
  - Construction
### Lessons Learned

<table>
<thead>
<tr>
<th>Category</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>Prepare</td>
<td>Prepare for the worst x10</td>
</tr>
<tr>
<td>Employees</td>
<td>Have a contingency to recover your Town and utilities without your regular employees</td>
</tr>
<tr>
<td></td>
<td>- Mutual Aid and professional services contracts</td>
</tr>
<tr>
<td>Financial</td>
<td>Stress test your insurance policy to see if you can survive a disaster</td>
</tr>
<tr>
<td>Communication</td>
<td>Set up a communication plan to get critical information and data to your citizens</td>
</tr>
<tr>
<td>Coordinate</td>
<td>Coordinate with local, state and federal partners</td>
</tr>
<tr>
<td></td>
<td>- Emergency operations plan</td>
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<tr>
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<td>- Mitigation</td>
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Our New Normal

<table>
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<tr>
<th></th>
<th>Camp</th>
<th>North Complex</th>
<th>Dixie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings Destroyed</td>
<td>18,804</td>
<td>2,455</td>
<td>45</td>
</tr>
<tr>
<td>Deaths</td>
<td>85</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
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<td>153,336</td>
<td>318,935</td>
<td>274,139</td>
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Our New Normal
Dixie Fire Update

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Questions?