



## Public Works

**Andy Silao**

*Engineering Manager, Contracts Division Chief*

**Moe Yousif**

*Senior Project Manager, Special Districts*

**Marc Rodabaugh**

*Engineering Manager, Solid Waste Management Division*



**Construction Network Presentation - 2022**

[www.SBCounty.gov](http://www.SBCounty.gov)



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San Bernardino is the largest  
County in the Country.

County has 3 geographic areas:

- Valley
- Mountain
- Desert

San Bernardino has 24 Cities/Towns



# PUBLIC WORKS EMERGENCY RESPONSE

## Why Me?

“...all public employees are hereby declared to be disaster service workers subject to such disaster service activities as may be assigned to them by their Superiors or by law...”

*-California Government Code Section 3100*



# PUBLIC WORKS WEBPAGE RESOURCES



SAN BERNARDINO COUNTY Department of Public Works

Home Environmental & Construction Flood Control Operations Solid Waste Management Surveyor Transportation

## Vision

Lead the way to a thriving community through innovation in public works, fiscal responsibility, and environmental stewardship.

## Mission

To enhance the quality of life for our communities by developing and maintaining public infrastructure, and providing a variety of municipal services that complements our natural resources and environment.

## Values

The embodiment of our core values will allow us to have a positive **IMPACT** on the citizens of our community:

- Integrity
- Mutual Respect
- Public Safety
- Accountability
- Customer Service



Public Notices	Requests for Proposals	Videos
Institution Road Reconstruction		
High Desert Low Impact Development Workshop July 26, 2016		
West Fontana Channel Flood Control Improvement Project		
Mountain Chip Seal Road List - Spring 2016		
San Bernardino County Route 66 Bridge Replacement Project		
West State Street Storm Drain		

- National Trails Highway - Route 66
- Interactive Maps
- Fees
- Waste Disposal Sites
- Emergency Preparation Report Flood/Road Problems
- Road Closures
- Snow Removal
- How to Obtain a Permit
- Yard Contacts
- Survey Records Research
- Rainfall Data Report
- Advertised Projects
- Public Notices



County of San Bernardino Department of Public Works

Public Works

- County Maintained Road System (CMRS)
- Capital Improvement Projects (CIP)
- County Snow Removal Roads
- County Closed Roads

County of San Bernardino Department of Public Works  
825 East Third Street San Bernardino, CA 92415  
Information Services GIS Website  
Interactive Maps Disclaimer

Esri.com | Help | Terms of Use | Privacy | Contact Esri | Contact Us | Report Abuse

<https://cms.sbcounty.gov/dpw/Home.aspx> (sbcounty.gov)

## PUBLIC WORKS DEPARTMENT



### TRANSPORTATION

- Planning
- Traffic
- Design
- Environmental
- Construction
- Operations
- Permits



### FLOOD CONTROL

- Planning
- Water Resources
- Design
- Operations
- Permits
- Environmental



### SURVEYOR

- Mapping
- Field Survey
- GIS
- Front Counter



### SOLID WASTE

- Engineering
- Recycling Programs
- Operations



### SPECIAL DISTRICTS

- County Service Areas
- Community Facility Districts
- Street Light Districts
- Road Improvement Zones
- Water and Sanitation Districts
- Parks and Recreation
- Project Management

The County Surveyor's position was one of the first County positions created in 1853.

- Reviews subdivision maps as prescribed by state law
- Prepare legal descriptions and maps for other county departments
- Assist the public in matters relating to land boundaries
- The Surveyor ensures these maps and plans conform to conditions of approval, local ordinances, standards for development, and state laws.
- The Surveyor's also provides construction staking for new roads and flood control channels. The Surveyor also maintains the county GIS Parcel Basemap for integrity and accuracy.



# SOLID WASTE MANAGEMENT



- The Solid Waste Management Division (SWMD) is responsible for the operation and management of the County's solid waste disposal system, which consists of five regional public landfills, eight transfer stations, three low volume transfer operations, three community collection centers and thirty-three closed landfills or disposal sites.
- Sanitary landfills are disposal sites for Non-Hazardous solid waste.
- Curbside collection Program.



# SPECIAL DISTRICTS



- County Service Areas
- Community Service Districts

- Road Improvement Zones
- Water and Sanitation District

- Street Light Districts
- Park and Recreation



Transportation is responsible for the operation, maintenance, and improvement of the county's road system that currently includes approximately 2,552 miles of roadways.



The District was created in 1939 and has developed a very extensive system of regional flood control and water conservation facilities which including dams, conservation basins, debris basins, channels and storm drains.

# SAN BERNARDINO COUNTY OPERATIONS

Perform maintenance of the County/District facilities which includes:

- Roadway
- Reconstruction
- Overlay
- Surface Seals
- Storm Repair
- Preventative Improvements
- Dead animal pickup
- Grading
- Guardrail repair
- Bridge repair
- Snow Plow
- Levee repair

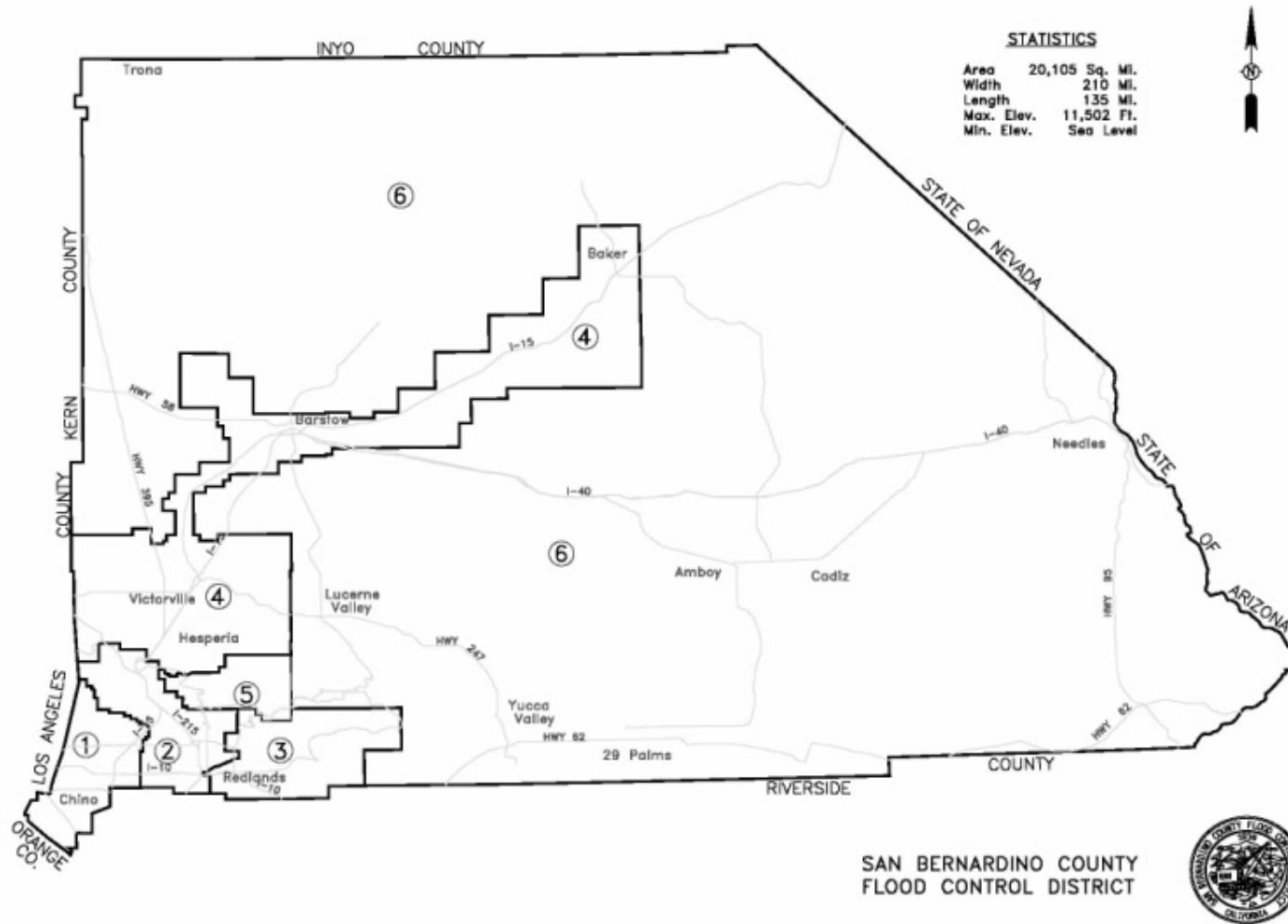


# FLOOD CONTROL DISTRICT OPERATIONS

- Flood protection from Major Streams
- Water Conservation
- Water Protection
- Protection of Stream and Watercourses
- Storm Drain Maintenance
- Hydrological Programs
- Debris Removal Programs
- Flood Hazard Investigations
- Flood Operations








# FLOOD ZONE ZONES






- Zone 1**      275 square miles  
The westerly portion of the San Bernardino Valley.
  - Zone 2**      318 square miles  
The central area of the San Bernardino Valley.
  - Zone 3**      366 square miles  
The easterly end of the San Bernardino Valley.
  - Zone 4**      1,783 square miles  
The Mojave River Valley to Silver Lakes.
  - Zone 5**      163 square miles  
The mountainous watershed of the Mojave River.
  - Zone 6**      17,200 square miles  
The remainder of the County not embraced by other zones.
- Total District Area:                      20,105 square miles**

Home ▾ County Maintained Road System (CMRS)

Modify Map  Sign In


 Details |  Basemap |  Share |  Print |  Measure |

 About |  Content |  Legend

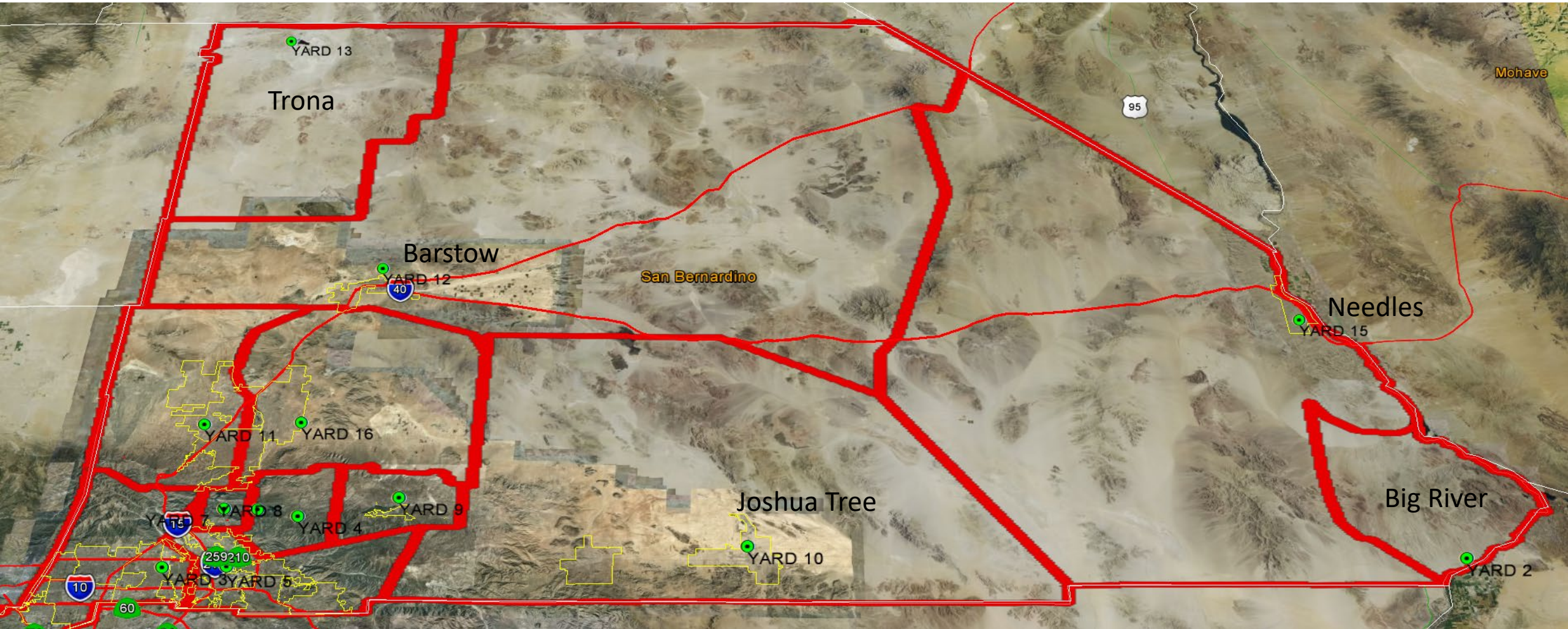
**Legend**

**CMRS**

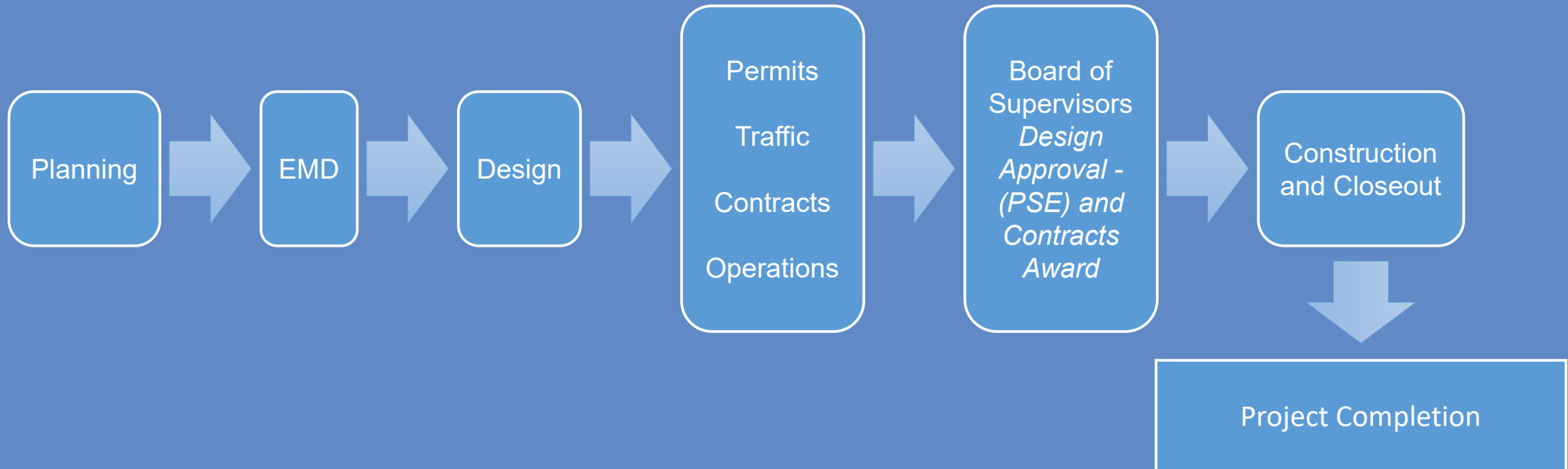
County Maintained Roads



# ROAD YARD LOCATIONS – 12 + 1 SEASONAL



# PROJECT PHASES

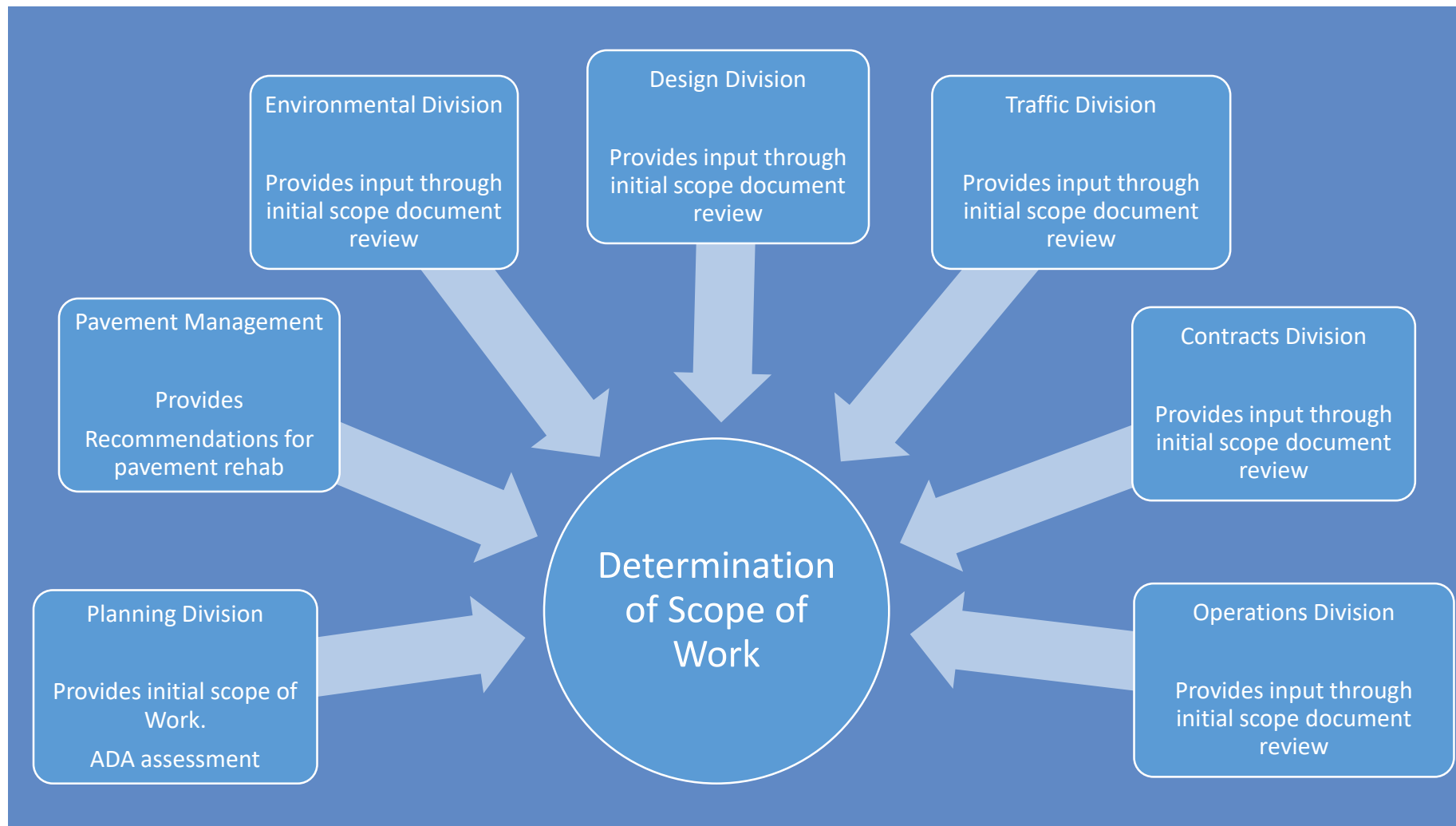




- Planning is responsible for defining the scope, size and funding of all the County's upcoming projects as well as programming each years CIP budget.
- Trans Planning manages the program that reviews, field verifies and update all ADA ramps within the County in compliance with the Federal ADA requirements.
- Verifies and allocate adequate funding for the design and construction upon the announcement of lowest bidder.
- Agreements and Reimbursements with other jurisdictions

# PROJECT PHASES – PLANNING SCOPE DETERMINATION MEETING

- Scope Determination
- Funding / Budgeting
- Planning
- Funding Types
  - Federal
  - Gas Tax
  - SB 1
  - Measure 1
  - Cal Recycle
  - Local Funds
  - ATP
  - SBCTA
  - CDBG
  - HPB



- Environmental Management Division (EMD) is responsible for reviewing the project scope and determines the path of compliances with the Environmental Agencies (State and Federal) for construction activities.
  - CEQA, NEPA, MND
- EMD role is critical as it shapes how projects are constructed by informing the various divisions which areas are protected, which species are protected and how to minimize and mitigate the upcoming construction and developed activities and impacts.
- Ensures compliance with the Construction General Permit (CGP) as well as the County's Municipal Separate Storm Sewer System (MS4) Program
  - Phase 1 - Santa Ana Region
  - Phase 2 – Mojave Desert
  - Colorado Region

- Transportation and Flood Design is responsible for designing the Project and incorporates the various comments and requirements from all the divisions.
- Design is responsible for the Plans, Special Provisions, Estimate and produces a design that will fit within the scope from Planning.
- Gains approval from the Board of Supervisors for the project advertisement (Contracts).

## Transportation / Flood Control Design

### Review

- Field Review
- Data Collection
  - Surveying
  - Geotech
  - Utilities
  - Traffic
  - Hydrology
  - Right-of-way
  - Structural

### Design

- Preliminary Design
- Environmental
- Regulatory Permits
- Special Provisions
- Quantity Calculations
- Final Design – Signed Plans and Specs

### Construction Support

- RFI
- Change Order - Review and Support

- Transportation and Flood Permits Division issues permits for construction within the Flood Control District jurisdiction and County's CMRS.
- Ensures the work performed within the County/District jurisdiction meets the standards and specifications for construction, traffic control and safety.

- Traffic Division is responsible for the Signing and Striping Plans.
- Inspects, verifies and approves the Cat-Track prior to striping the project. (Construction)
- Traffic Division ensures compliance with CA-MUTCD



Contracts Division constructs the projects from both SBCFCD, DPW Transportation as well as other Departments within the County.

Contracts Division ensures compliance with:

- Construction Materials (Lab Testing/QAP)
- Contract Compliance with various State and Federal Departments (Labor, Davis-Bacon, Caltrans, etc.)
- Environmental Coordination (DFW, CEQA/NEPA, MND, etc.)
- Board Approve Plans, Specs and Construction Contract.



## Contracts Division - Construction

### Bid

- Funding Verification
- Advertisement of BOS approved Plans & Specs
- Pre-Bid, Q&A, Bid opening
- Bid verification
- BOS awards contract

### Prepare

- Contractor Submittals
- Departments / agencies coordination
- Pre-Construction Meeting

### Construct

- Construction
- Inspections
- Material testing (QA)
- Payments
- Acceptance
- Project close-out

- Pavement projects
  - Reconstruction
  - Overlay
  - Surface Seals
- Widening, New Construction
- Grading
- Emergency Projects



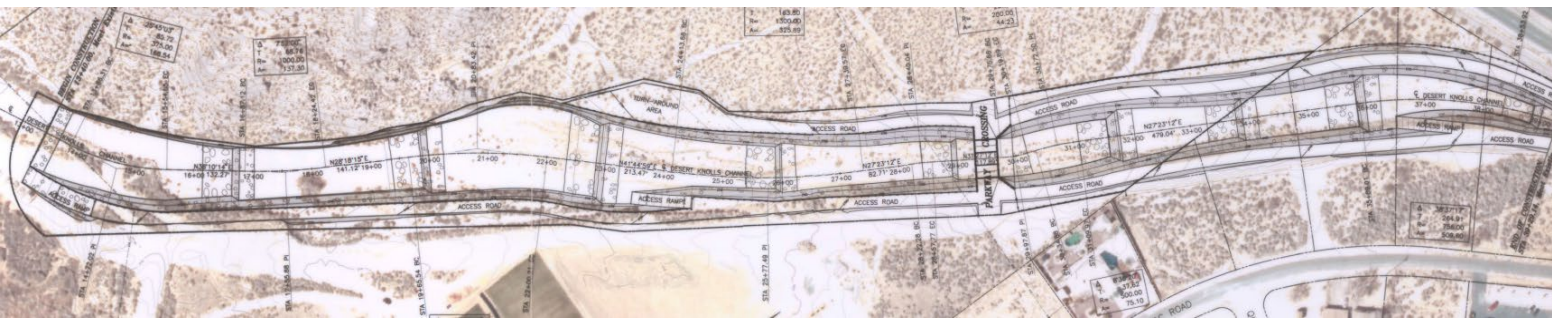
# OPERATIONS DIVISION - SNOW REMOVAL/STORM CLEAN UP



# UPCOMING PROJECT HIGHLIGHTS

The **Desert Knolls (Apple Valley) Wash Improvement Project** is

- Earthen Channel
- 2,700 LF of Channel Constructed
- Construction – Summer 2022 - Summer 2023
- Features
  - Plunge Pool Design
  - Earthen Bottom Promotes Percolation
  - Drop Structures
  - Widened and Improved Channel

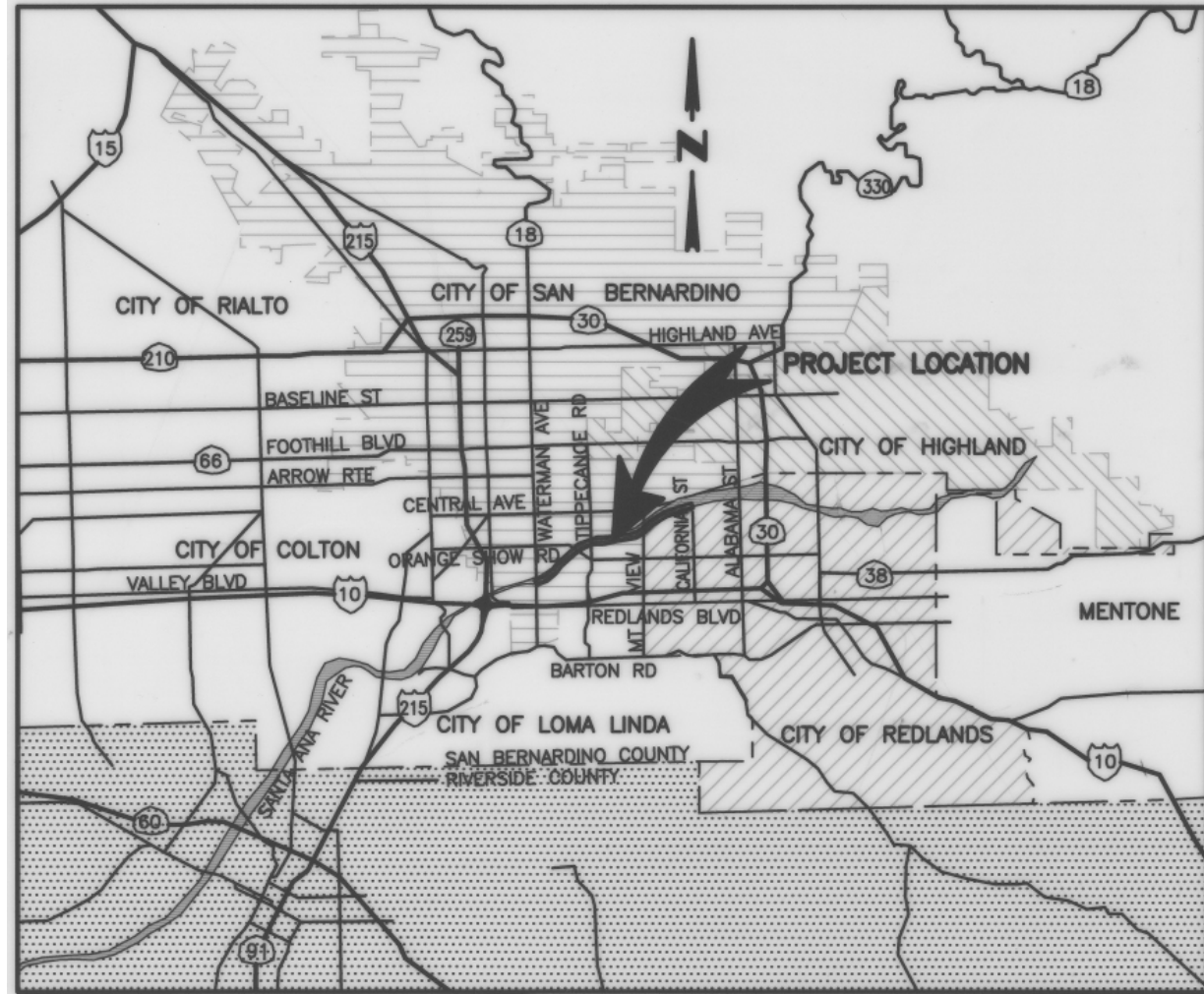


# UPCOMING PROJECT HIGHLIGHTS

## Santa Ana River Trail –San Bernardino/Redlands

The **Santa Ana River** is the largest river in southern California

- Project Length – 3.5 Miles
- Construction – Spring 2022 – Winter 2023
- Class 1 Bike Lane
- Dual Use
  - Improved Flood Control Levee
  - Class 1 Bike Trail



## Flood Control District

- Hawker Crawford Channel (Rancho Cucamonga/Fontana) - 2023
- Carbon Canyon Channel (Chino Hills) – 2023
- Bandicoot Basin (Hesperia) – 2022
- Elder Creek Channel (Mentone) – 2022
- Rim Forest Storm Drain (Rim of the World) – 2022
- West State Street Channel (Montclair/Ontario) – 2023
- Grove Basin Outlet Storm Drain (Chino) – 2023
- 29 Palms Channel (29 Palms) – 2022
- Lenwood Spillway (Barstow) - 2022

## Transportation

- Trona Bridge (Trona) - 2022
- Pipeline Ave Imp. (Chino Hills) – 2023
- Barstow Skyline ADA Ramp (Barstow) – 2022
- Baldy Mesa Guardrail (Pheland) – 2022
- Needles Highway Segment 1B Imp. (Needles) – 2022
- Napa Street Imp. (Fontana) – 2022
- 40<sup>th</sup> Street Imp. (San Bernardino) – 2022
- 4 Bridges in Yermo (Yermo) – 2023
- Baker Road and Bridge Imp. (Baker) – 2023
- City Creek Guardrail Replacement (Crestline) – 2022
- Bloomington Avenue Road and SD Imp. (Bloomington) - 2022

## Electronic Procurement System - <https://epro.sbcounty.gov/bsol/>

- Project Advertisements (Flood and Trans)
  - Select correct commodity codes:
  - National Institute of Government Purchasing (NIGP) Class 913 and Class 27
- Creates Plan holders List
- Prebid Information
- Submits Questions for Bidders
- Plans and Specifications available for download
- Disperses addendum(s)
- Bid Submission
  - Bid Bonds submitted must be original and wet signed
- Posts Bid Opening Results
- BOS Contracts Award





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*Senior Project Manager, Special Districts*



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# SPECIAL DISTRICTS OVERVIEW

- The Special Districts Division provides oversight to approximately 100 dependent special districts, under governance by the San Bernardino County Board of Supervisors.
- Services include road construction and maintenance, water and sanitation districts, television, streetlight, dam, detention basin, and park districts.



# SPECIAL DISTRICTS FORMATION

- Special Districts staff work with the property owners to create the special districts. Property owners fund and vote for these districts to be formed. Special Districts staff work with property owners to sell public tax-exempt bonds to finance some of these Special Districts' projects.



# SPECIAL DISTRICTS TEAM STRUCTURE

## Special Districts Teams

- Water and Sanitation
- Project Management
- Operations (Roads & Parks)
- MIS Services
- HR Business Support
- Finance

## Project Management Team

### Project Managers

- Projects Planning & Design (Hire Consultants)
- Contracts Administration
- Monitoring & Control

### Construction Inspectors

- Inspections
- Support design & specs reviews
- Respond to residents' requests

### Staff Analyst II

- RFPs
- Support Management with letters and responses to PRAs

### Engineering Tech III

- Provide development services

## Major Recently Completed Projects:

- Big Bear Zoo
- Lake Gregory Dam

## Major Ongoing Projects:

- Snowdrop Road
- Calico Wastewater Treatment Plant
- Fawnskin Vacuum Sewer Line Improvements

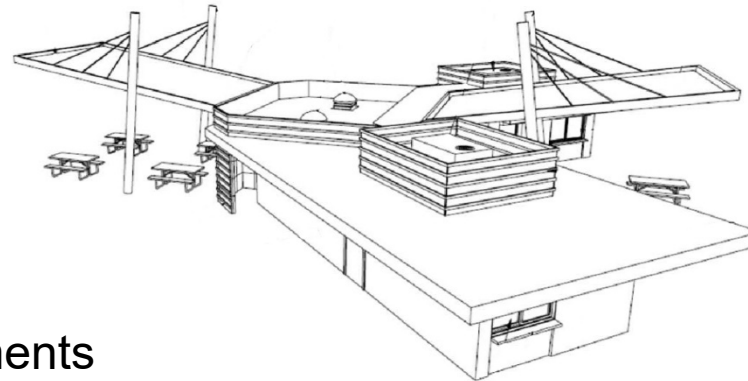


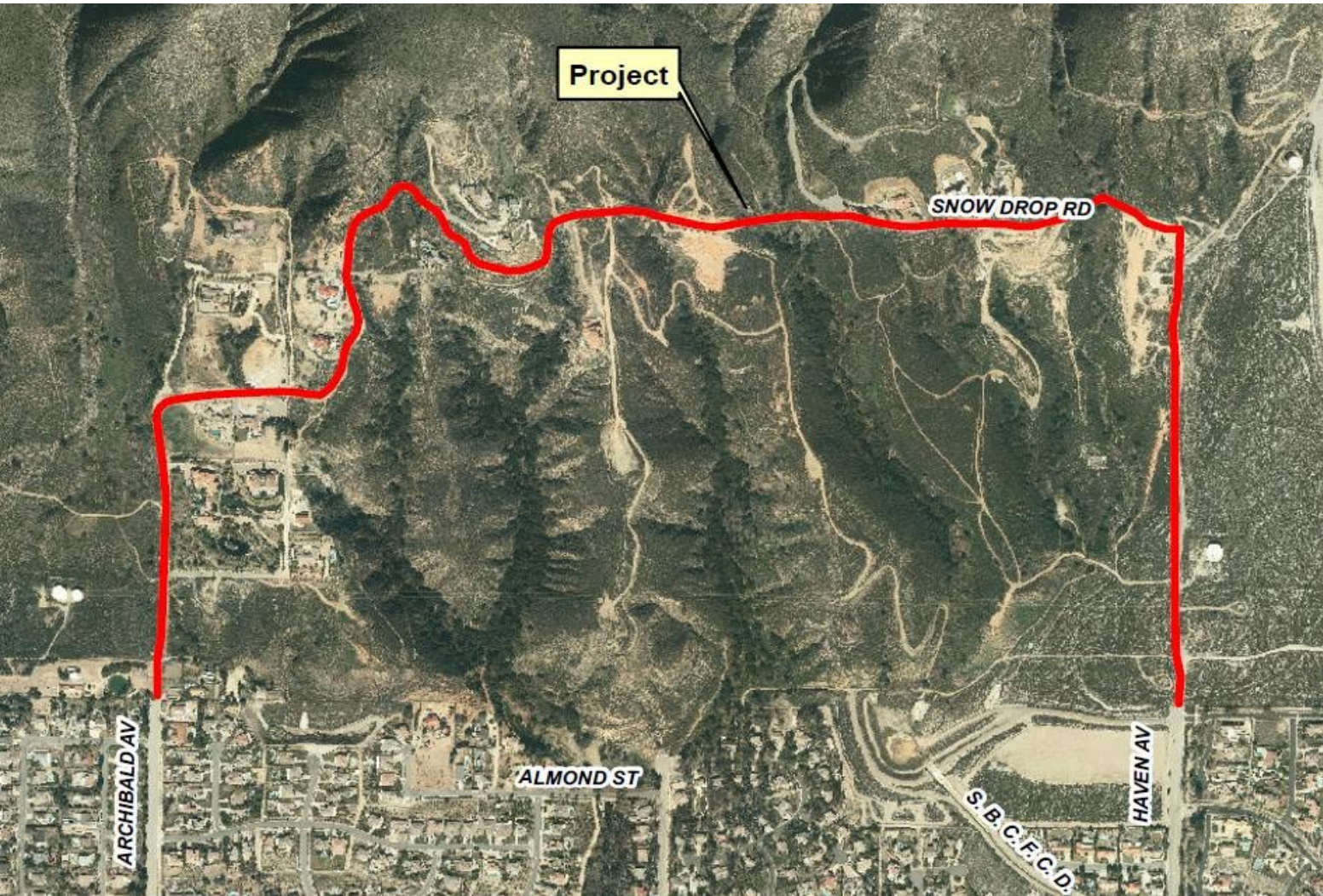
Snowdrop Road Ground-Breaking May 2021

# SPECIAL DISTRICTS PROJECTS

## Upcoming Projects:

1. Chino Airport Water Remediation Project
2. Mackay Park Improvements
3. Lake Gregory Sitewide Sediment Management
4. Prado Park Bladder Tank
5. Glen Helen Park Bridge Repairs
6. Recoating Water Tanks
7. Kessler Park Restroom Improvements
8. CSA 69 (Kings Court, Lake Arrowhead)  
Road Rehab





- 20+ years of history
- Residents attempt DIY project
  - Multiple false starts
  - Design challenges
- San Bernardino County
  - 2<sup>nd</sup> District Supervisor Involvement
- Special Districts Involvement
  - Assessment District 2018-1



- Environmental
- IS/MND
- Species & mitigation
- Easements
  - 43 total easements
- Design
  - Design around easements
  - Value engineering
  - “Christmas Canyon”
- Bidding
  - 3 total solicitations
  - Trinity Construction-May 2021



12" WATER MAIN HIT

## Activities

- Drainage structures
- Slope cut/fill

## Challenges

- Bewick's Wren nest 1st week
- Christmas Canyon (COR)
- Water main hit
- Christmas Canyon Earthwork

## Future

- Retaining Walls
- Road construction





**Public Works**  
Solid Waste Management Division

**Marc Rodabaugh**  
*Engineering Manager, Solid Waste Management Division*



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# SAN BERNARDINO COUNTY WASTE SYSTEM

## Five Large Volume Transfer Facilities

- Mountains
- High Desert
- East Desert

## Six Active Landfills

- Barstow
- Landers
- Redlands (San Timoteo)
- Rialto (Mid Valley)
- Victorville

~6,750 tons of waste per day

~10,250 cy airspace consumed per day



- Public Works projects are publicly funded
  - Local Taxes, Property Taxes, Gasoline Taxes, State and Federal Funds and Grant Programs
- Landfill Projects
  - Gate Fees – Enterprise Fund





- Landfill receives permits for entire landfill project from RWQCB and CalRecycle
- CEQA for the entire landfill life (30+ years)
  - Studies performed (traffic, air quality, noise, aesthetics, bio, paleo, etc.)
- Liners constructed in phases to provide airspace for 5-7 years
  - May require additional permits from CDFW, ACOE, F&W, etc.

## Landfill Projects

- Landfill and Liner design standards are performance based (groundwater protection)
- CCR Title 27, local Water Board criteria
- Site and Design are unique, but incorporate standards where possible
- Combination of multiple disciplines (earthwork, drainage, roadways, HDPE liner, piping, gravel, preparation of select soils)
- Design and CQA Plan subject to approval by local Water Board
- Liner components are heavily scrutinized and subject to a wide variety of physical and chemical testing.





## Public Contract Code

- Formal and Informal processes
- Exemptions for some landfill work (Section 20121.1)

Minimum qualifications / experience requirements



## Landfill Cell (Waste Disposal)

- Liner Placement
  - HDPE membrane, and intervening geosynthetics placed in multiple layers, anchor trenches on benches, seam welding, strict CQA
  - Hand Crews only. No equipment allowed on the liner materials
- Leachate Collection and Recovery System
  - Extensive HDPE pipe collection system
  - Gravel Layer (Low Ground Pressure Equipment Only)
  - Associated Leachate Pumping and Holding Tank including pumps, dual containment holding facility, automated operation control and alarm system, loadout facilities



- Landfill Cell (Waste Disposal)
  - Operations Layer Placement
    - Low Ground Pressure equipment only
  - Appurtenances
    - Drainage channels (run-on and runoff)
    - Roadways
  - Survey
    - Performed with each and every activity and layer placement





## Landfill Closure Final Cover

- Monolithic Soil Layer Placement
  - Typical 4-6' compacted soil cover
  - On-site Soil Processing or Import of Select Soils
- HDPE Membrane
  - Soil foundation layer
  - HDPE Membrane placement
    - Mostly Handcrew placement
    - Membrane seaming
    - Installation of anchors into foundation layer and/or spreading of ballast materials (granular sands)
  - On-membrane Drainage facilities

- Scalehouse
  - Structure / Architecture
  - Scales
  - Utilities
- Drainage Systems
  - Roadway curb and gutter
  - Channels
  - Stormdrains and stormdrain connections
  - Sedimentation Basins (NPDES BMPs)
- Environmental
  - Landfill Gas Collection and Treatment Facilities
  - Groundwater Monitoring and Treatment Facilities



**Fall 2022**

- Landers LF Liner Project

**Winter 2022**

- Mid Valley LF Scalehouse Replacement

**Summer 2022**

- Mid Valley LF West Channel

**Summer/Fall 2022**

- Heaps Peak Transfer Station Floor Replacement
- Colton LF Final Cover

**Spring/Summer 2023**

- Mid Valley LF LFG Flaring Facility

**Summer/Fall 2023**

- San Timoteo LF Liner Project
- San Timoteo LF Partial Final Cover





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