

# Storm Drain Workshop

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MARCH 26, 2024



# Workshop Overview

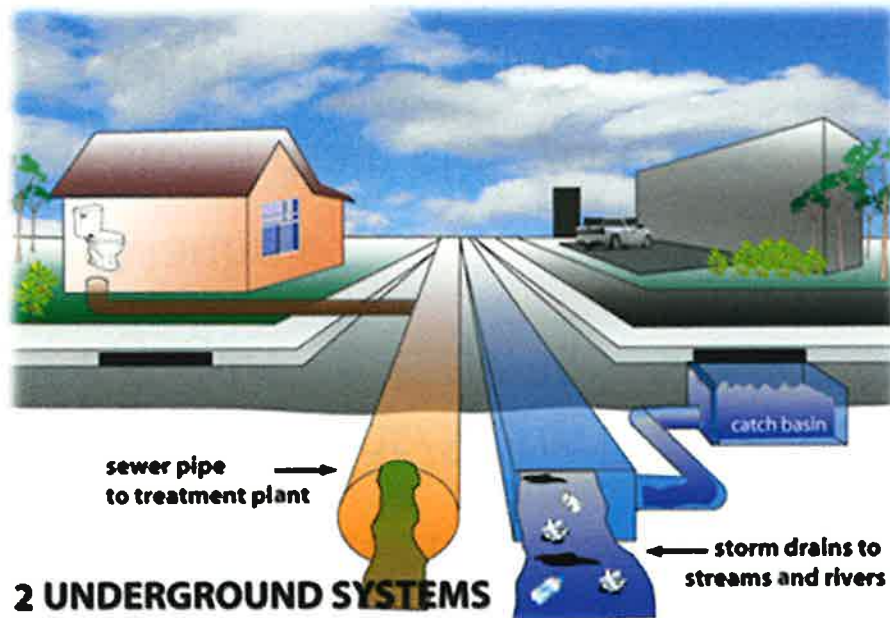
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- Welcome & Introductions
- Storm Drain System Overview
- Background on Drainage System in Lemon Grove
- Drainage Master Plan
- Public Drainage vs. Private Drainage Systems
- Storm Damage Assistance

**\*\* Staff will not be addressing specific claim/damage incidents as part of tonight's presentation**



# What is a Storm Drain?



- Stormwater is untreated
- Drains to rivers and ocean
- Carries litter and other pollutants
- General Fund – no revenue from rate payers

# Elements of a Storm Drain System

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- Catch Basins/Storm Drain Inlets
- Outlets
- Manholes
- Storm drain pipes/culverts
- Earthen Channel/Ditch
- Open Channels
- Corrugated Metal Pipe Segments



# Storm Drain System Inventory

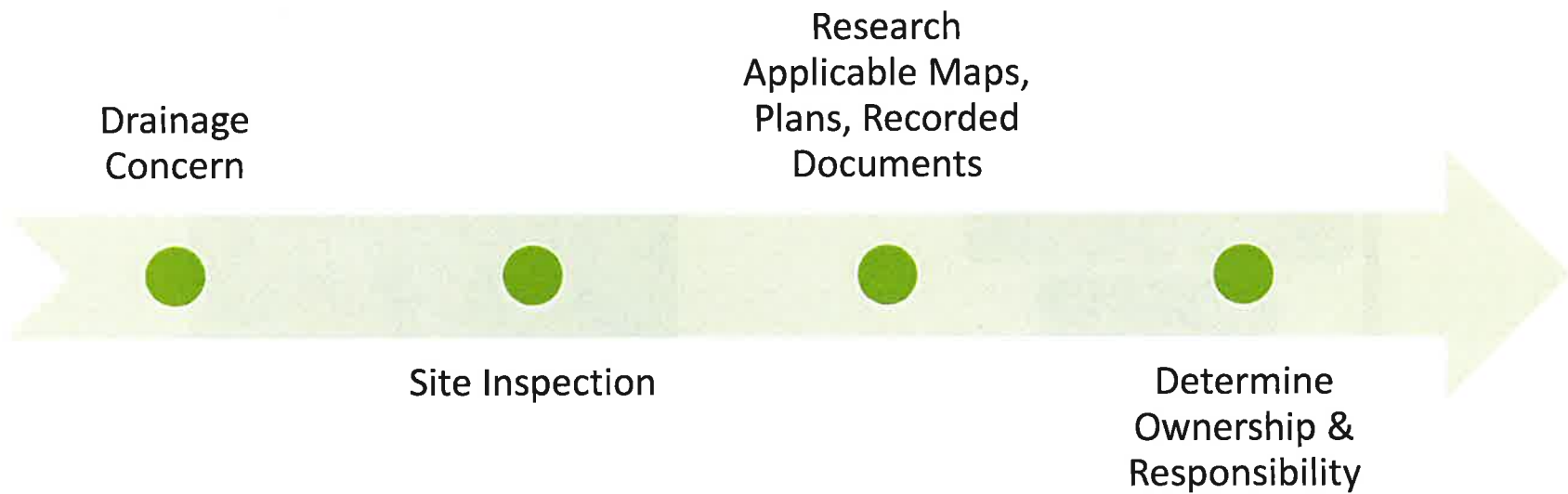
**Table 2-3: Summary of original and existing (revised) storm drain inventory**

Asset Type	Original Data Set Provided	Existing Condition Revised Data	Change in Features	Percent Change
<b>Structure</b>				
Fitting	7	0	-7	-100%
Inlet	703	782	79	11%
Manhole	85	103	18	21%
Clean out	14	44	30	214%
Discharge	173	18	-155	-90%
Channel confluence	0	77	77	100%
Conduit connection	0	90	90	100%
Downstream headwall	0	152	152	100%
Flowline connection	0	21	21	100%
Headwall	0	112	112	100%
Not present	0	1	1	100%
Outlet	0	21	21	100%
Outlet, D-25	0	57	57	100%
Spillway	0	31	31	100%
Unimproved	0	37	37	100%
<b>Total</b>	<b>982</b>	<b>1546</b>	<b>564</b>	<b>57%</b>
<b>Conveyance</b>				
Culvert	3	0	-3	-100%
Ditch	51	89	38	75%
Drainage facility	698	1058	360	52%
Earthen channel	46	57	11	24%
Earthen ditch	13	13	0	0%
Open channel	52	131	79	152%
Surface flow/flowline	0	193	193	100%
swGravity Main	860	0	-860	-100%
<b>Total</b>	<b>1723</b>	<b>1541</b>	<b>-182</b>	<b>-11%</b>



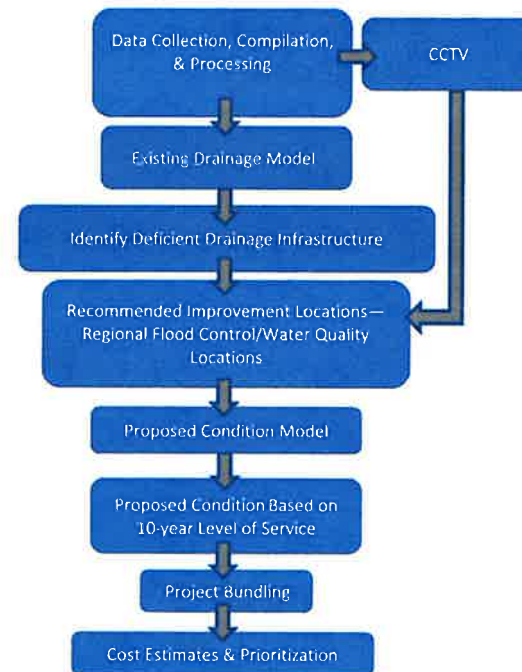
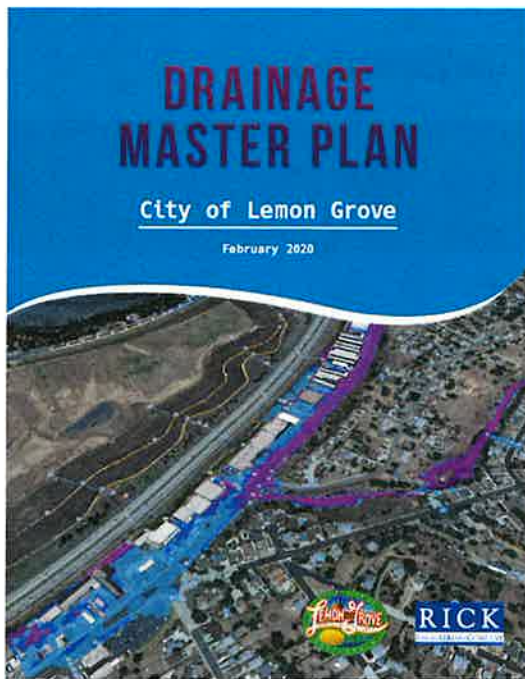
# City's Approach to Drainage Easements

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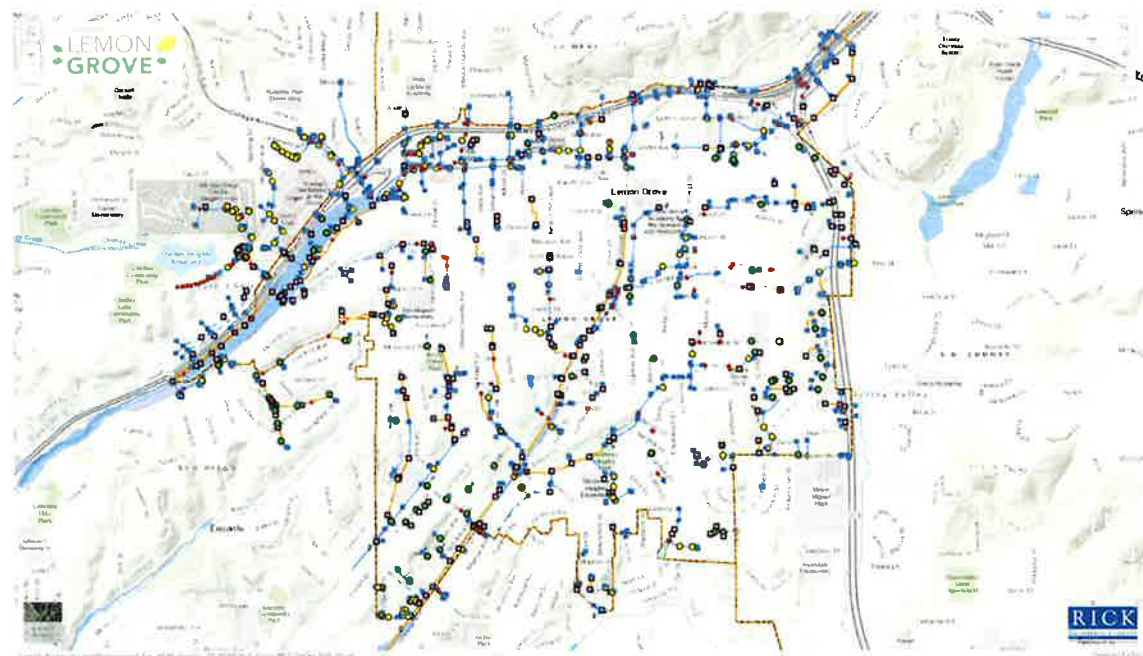
# Drainage Master Plan



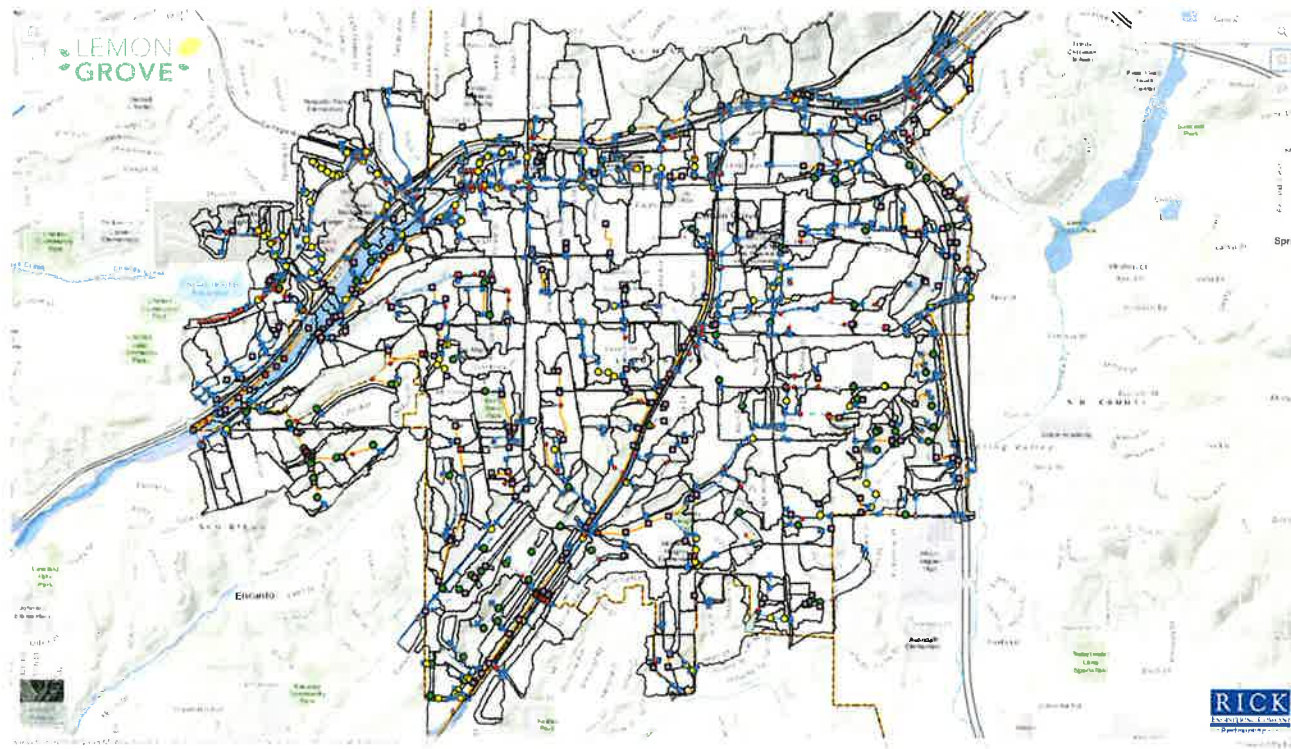


# Fully Connected Drainage Network

- Regulatory framework
- High resolution GIS data



# Drainage Assessment



# CCTV of Corrugated Metal Pipes

## CMP Condition: 1 – Minor



## CMP Condition: 5 – Most severe



**Table 4-1: Summary of Pipe Segment Rating and Quantity**

Grade/Rating	Quantity
5 – Most Severe	56
4 - Severe	14
3 - Moderate	56
2 – Minor to Moderate	5
0 – Minor or No Televising Available	17

**Table 4-2: Summary of Repair Technique, Quantity, and Length**

	Segment Quantity	Segment Length (ft)
1 - Cured in Place Pipe (CIPP) Lining	20	1,860
2 - Cured in Place Pipe Sectional Repairs	1	430
3 - Top Hat (TH) in Lateral/Main Connection Sealing	1	--
4 - Pressurized Hydrophilic Grout and Urethane Sealant	4	895
5 - Hydro-Scouring	47	4,915
6 - Pipe Removal and Replacement	28	1,043



# Existing Condition H & H Modeling



# Existing Results Summary

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<b>Storm Drains</b>	<b>2-Year Storm Pipe Length (feet)</b>	<b>2-Year Storm Percent of Total Length (%)</b>	<b>10-Year Storm Pipe Length (feet)</b>	<b>10-Year Storm Percent of Total Length (%)</b>	<b>100-Year Storm Pipe Length (feet)</b>	<b>100-Year Storm Percent of Total Length (%)</b>
<b>Adequate Capacity</b>	<b>111,960</b>	<b>85%</b>	<b>98,780</b>	<b>75%</b>	<b>80,580</b>	<b>61%</b>
<b>Deficient</b>	<b>19,296</b>	<b>15%</b>	<b>32,474</b>	<b>25%</b>	<b>50,675</b>	<b>39%</b>
<b>Total</b>	<b>131,255</b>		<b>131,255</b>		<b>131,255</b>	



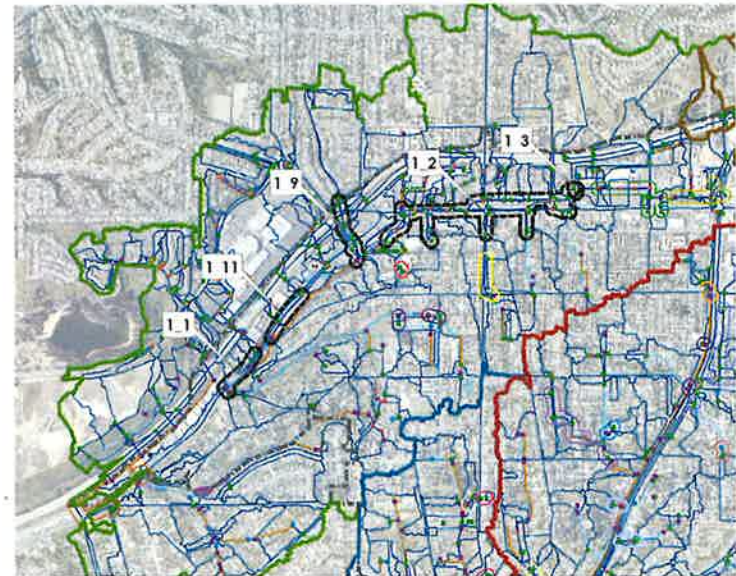


# Proposed Condition H&H Modeling Results

- Top 5 projects

1. 1\_1
2. 1\_3
3. 1\_11
4. 1\_2
5. 1\_9

- Top 5 projects

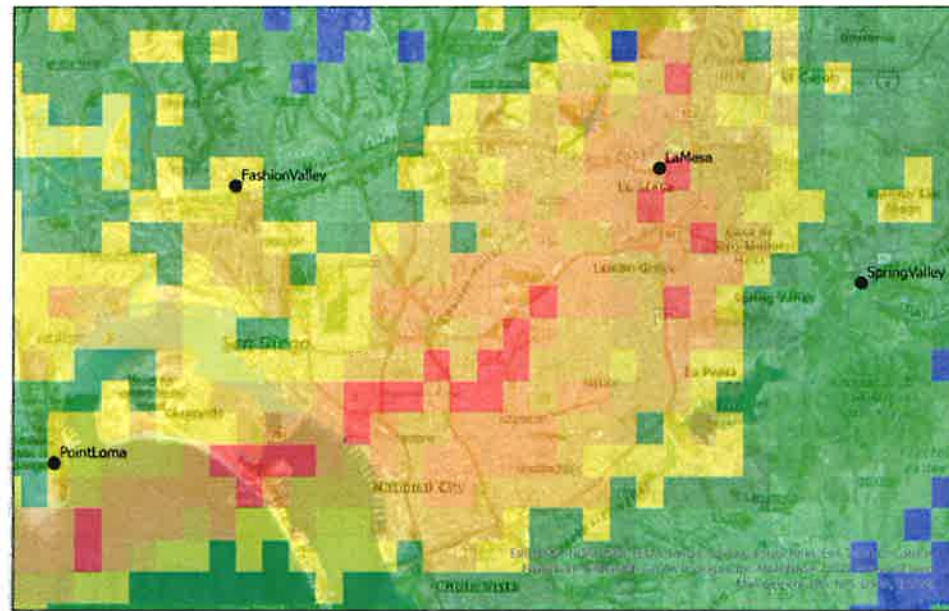


Project Bundle ID	Capital Cost	Soft Cost (32% P&D)	Total Project Cost
1_1	\$ 1,173,106.71	\$ 563,091.22	\$ 1,736,197.93
1_3	\$ 53,281.33	\$ 25,575.04	\$ 78,856.37
1_11	\$ 1,623,433.18	\$ 779,247.92	\$ 2,402,681.10
1_2	\$ 6,774,455.26	\$ 3,251,738.52	\$ 10,026,193.78
1_9	\$ 821,359.05	\$ 394,252.35	\$ 1,215,611.40
<b>SUM</b>	<b>\$10,445,635.52</b>	<b>\$5,013,905.05</b>	<b>\$15,459,540.58</b>

**Probable Construction Costs for All 42 Bundled Projects**  
**\$78,183,649.00**

# January 22, 2024 Storm

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Miles  
0 0.5 1 2 3 4 5

North

● RainGauges

# Challenges

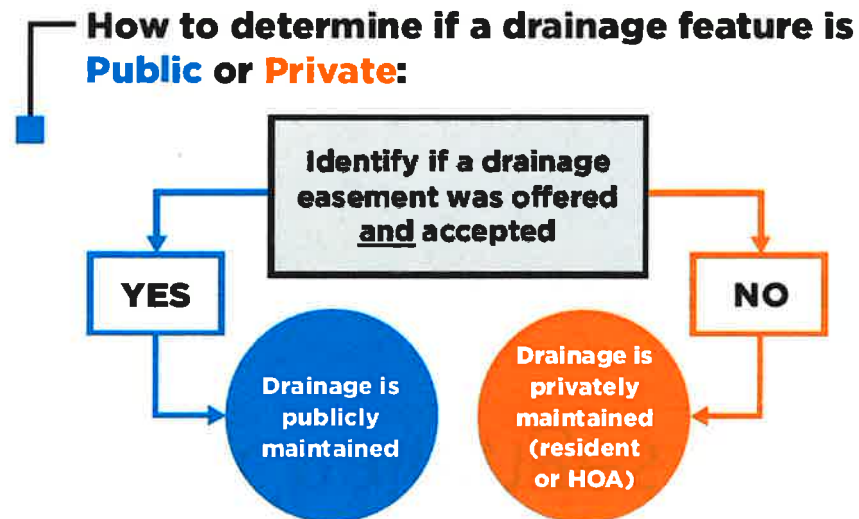
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- Aging Infrastructure
  - Identifying (public vs. private) and repairing aging/failing storm drain infrastructure
- Funding
  - Average maintenance/emergency funding annually - \$200,000
- Staffing
- Regulatory Requirements – Channel Maintenance
  - U.S. Army Corps of Engineers
  - Regional Water Quality Control Board
  - California Dept. of Fish and Game



# Public Drainage vs. Private Systems

Depending on their location, drainage systems may be either publicly maintained or maintained by a private property owner such as a resident or a Homeowner Association (HOA).



# Determining Ownership/Responsibility

Check the Title page of the Map or Plan to verify that the easement has been accepted by the County.

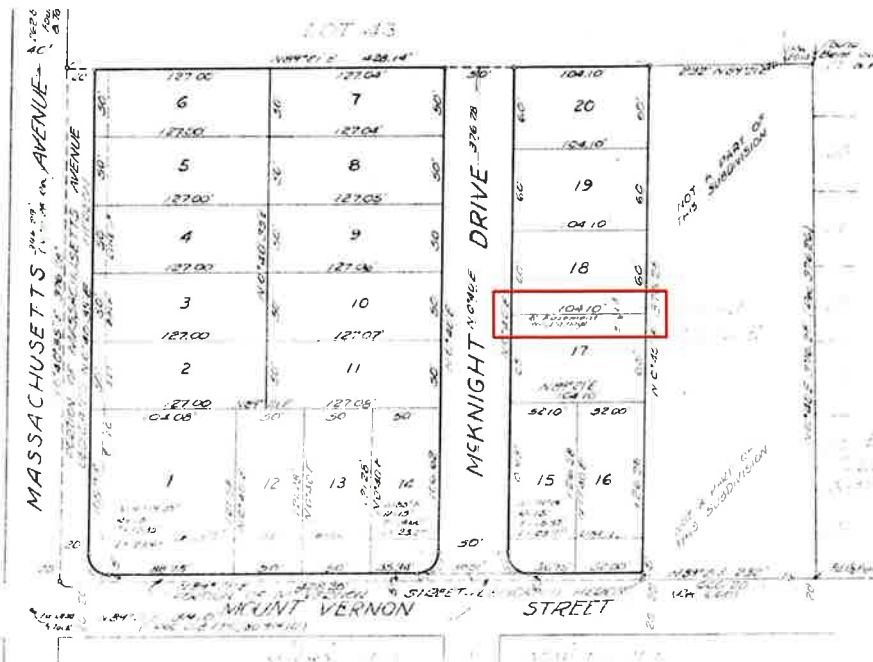
Typical <b>acceptance</b> language:	Typical <b>rejection</b> language:
<p>I, _____, CLERK OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SAN DIEGO, CERTIFY THAT SAID BOARD OF SUPERVISORS HAS APPROVED THIS MAP, HAS ACCEPTED ON BEHALF OF THE PUBLIC, _____ FOR USE AS STREETS, TOGETHER WITH THE RIGHT TO EXTEND AND MAINTAIN DRAINAGE FACILITIES, EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF SAID RIGHT-OF-WAY, ALL AS DEDICATED ON SAID MAP AND ACCEPTANCE INTO THE MAINTAINED SYSTEM IS SUBJECT TO IMPROVEMENT, AND HAS <b>ACCEPTED</b> ON BEHALF OF THE COUNTY, THE DRAINAGE EASEMENTS AND THE EASEMENTS FOR PEDESTRIAN AND EQUESTRIAN TRAIL PURPOSES, ALL AS DEDICATED ON SAID MAP, AND HAS ACCEPTED ON BEHALF OF THE COUNTY, THE CLEAR SPACE EASEMENT, ALL AS GRANTED ON SAID MAP.</p>	<p>I, _____, Clerk of the Board of Supervisors of the County of San Diego, hereby certify that said Board of Supervisors has approved this map, has accepted on behalf of the public _____ and the sewer easements, as dedicated on said map, and has <b>rejected</b> on behalf of the public the drainage easements offered for dedication on said map. (NOTE: Section 11616 of the Business and Professions Code of the State of California provides that a rejected offer of dedication shall remain open and subject to future acceptance by the County.)            Dated <u>April 26</u> / 20<u>20</u>, _____, Clerk of the Board of Supervisors            By _____ Deputy</p>







# Accepted Drainage Easement (Public)



I, J.B. McLees, Clerk of the Board of Supervisors of San Diego County, certify that said Board of Supervisors has approved this map; has accepted on behalf of the public, McKnight Drive, portion of Massachusetts Avenue and Mount Vernon Street and drainage easement as dedicated on this map.

J.B. McLEES, Clerk of the Board of Supervisors

By '11 Macleod, Deputy

# Public Drainage Improvements


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# Conversion of Private Drainage to Public

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## Requirements:

- Recorded easement
  - Erecting of public improvements prohibited (masonry walls, fence, trees, grading, etc.)
  - Unobstructed 24/7 City access (ingress/egress)
  - Drainage structures on easement/property
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# Recorded Easement

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## GRANT-DEED STORM DRAINAGE EASEMENT

Hereby grants to the CITY OF LEMON GROVE, a municipal corporation, in the County of San Diego, State of California, on behalf of the public, a non-exclusive storm drain easement to construct, re-construct, maintain, operate, inspect, and repair drainage facilities, including any and all appurtenances thereto, together with the right of ingress thereto and egress therefrom by a practical route and/or routes in, upon, over, under, along and across those portions of the drainage easements offered for dedication on Map No. 4607 on Lot 18 of Rex Estates of said map recorded with the San Diego County Recorder's Office on August 10, 1960, which is attached hereto as Exhibit A and made a part hereof.

Reserving unto the Grantor herein, heirs, and assigns the continued use of the above described parcel of land within the easement area, subject to the following conditions:

As of the date of recordation of this document, any further erecting of buildings, masonry walls, masonry fences and other structures; the planting or growing of trees; and the lowering of the surface grade, that by their nature may possibly interfere with the drainage easement or ease of access thereto, shall be prohibited except by written permission from the City of Lemon Grove.

# Legal Considerations


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Can the City fix private drainage facilities?



# Opportunities

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- Grants
  - Loans
  - Infrastructure Bond Measure (2/3 Requirement)
  - Assessment District/Community Facility District
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# Storm Damage Assistance

Online:

[www.FEMA.GOV/DISASTER/4758](http://www.FEMA.GOV/DISASTER/4758)

Phone: (800) 621-3362

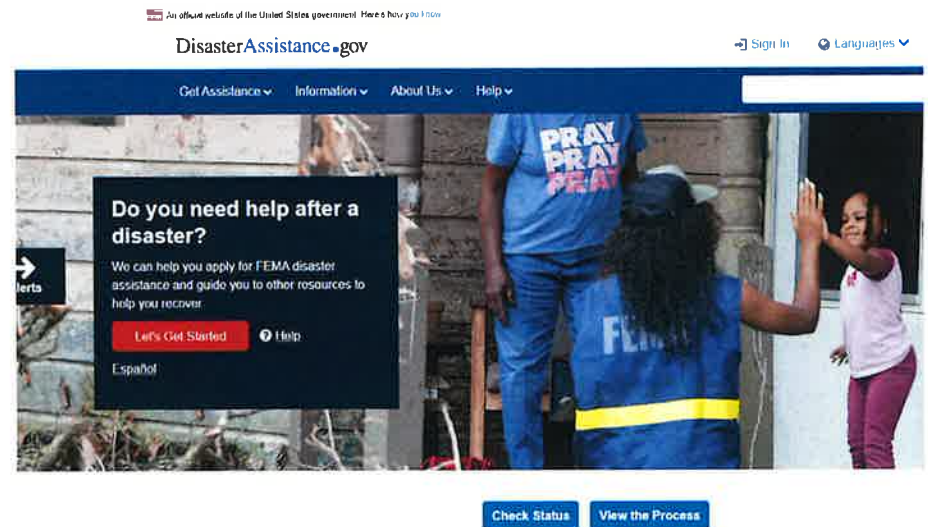
[www.FEMA.GOV/MOBILE-APP](http://www.FEMA.GOV/MOBILE-APP)

**Disaster Recovery Center**

Spring Valley Library

836 Kempton St., Spring Valley, CA 91977

**[April 19, 2024 is the Deadline to file a FEMA damage claim](#)**



# Public Comment

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## Reminders:

- Staff will not be addressing specific damage incidents/claims
- Keep questions general in nature

Thank You for Attending!

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