

SOUTHEAST CARSON CITY

AREA DRAINAGE MASTER PLAN



FEMA

SUPPORTED BY:

Carson City Public Works

Carson Water Subconservancy District

FEMA





Southeast Carson City

Area Drainage Master Plan

Study Area Map

Project Purpose

- More accurately define flood hazards, including nuisance flooding, in the area
- Build on hydrologic and hydraulic studies
- Reduce flood hazards and increase community resiliency in the future

Project Goals

- Identify mitigation solutions for areas impacted by flood flows and erosion
- Formulate a plan to mitigate flooding with cost-effective infrastructure
- Reduce flood hazards for residents

Comprehensive Hydrology & Hydraulic Model

- **Grids**

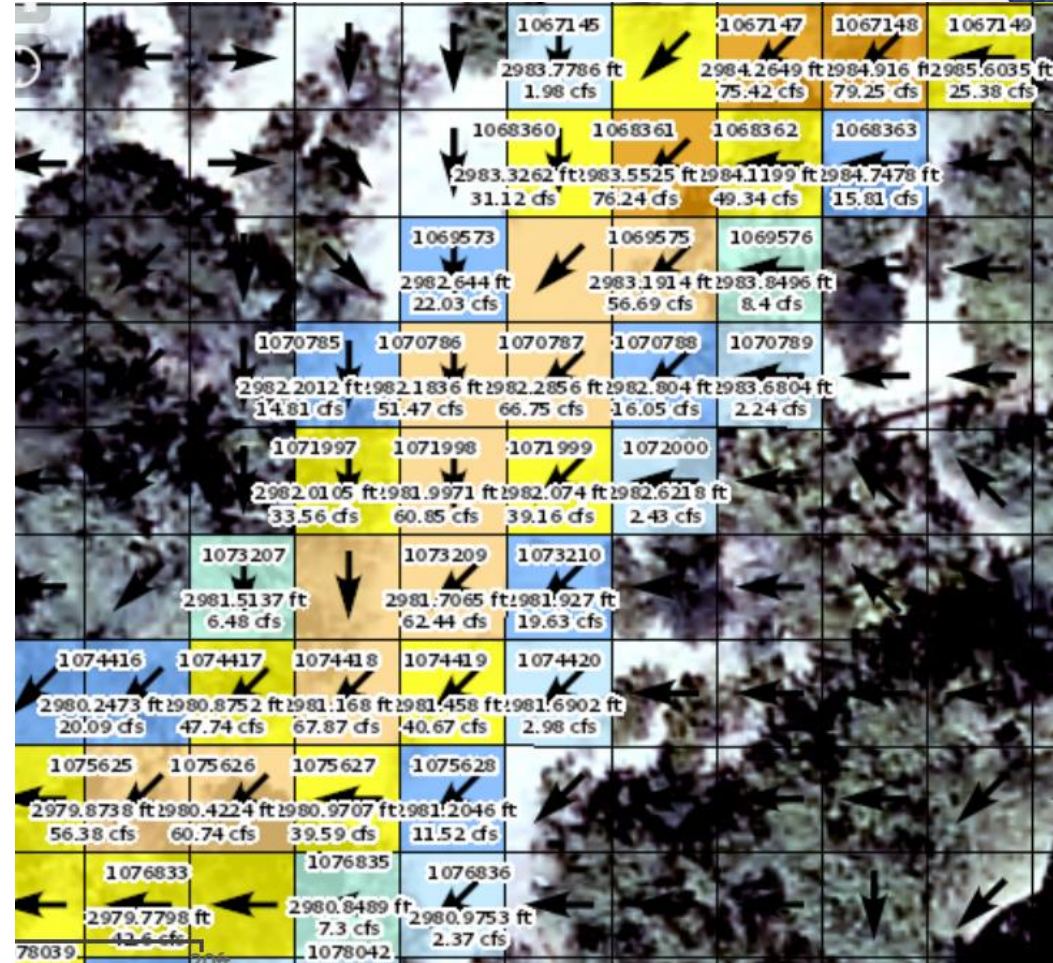
- Study area is divided into 15' x 15' grids
- Water depths
- Velocities
- Flows & flow direction

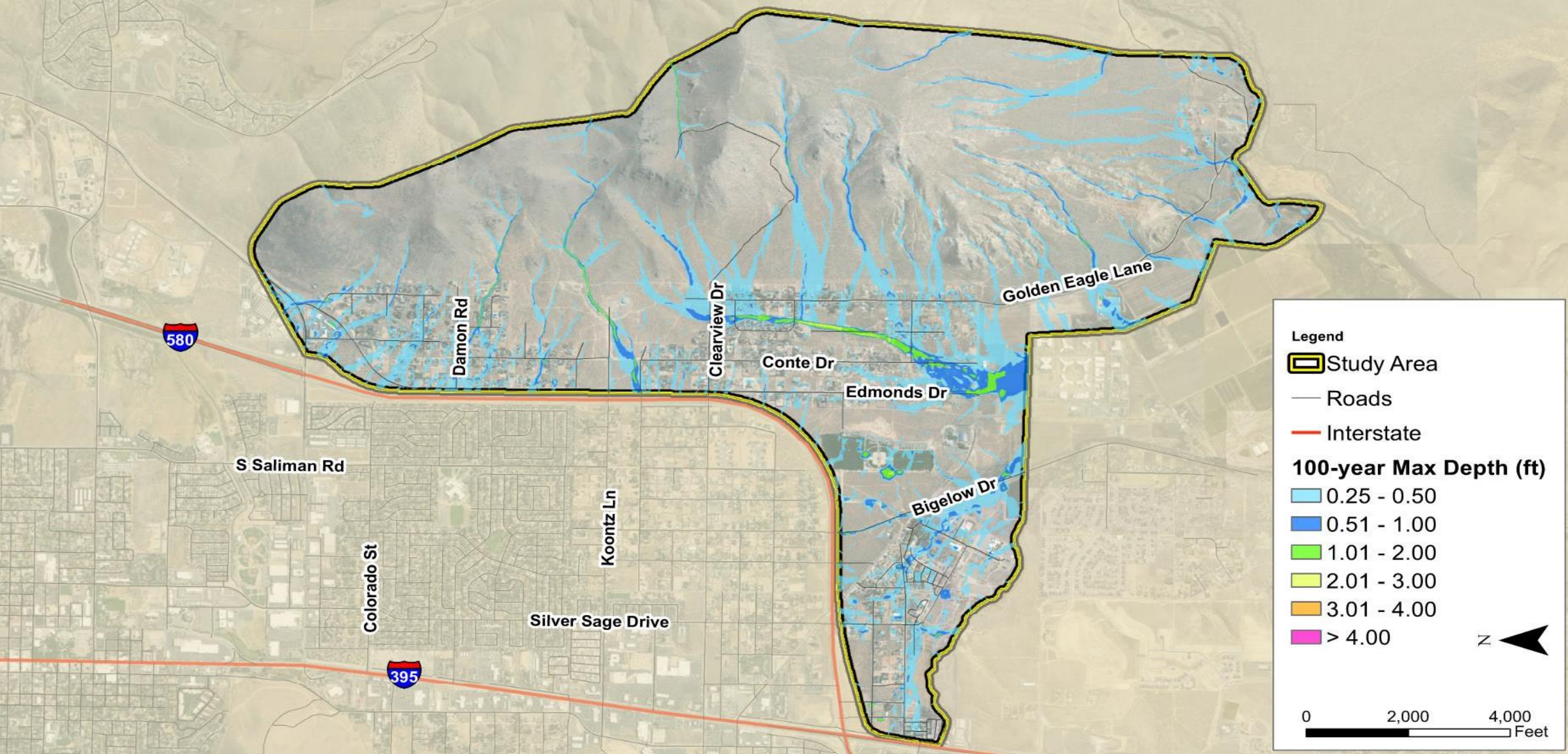
- **Models**

- Can be revised & updated
- Use for Design & Planning new development and infrastructure

- **End Users**

- City
- Engineers
- Homeowners





Southeast Carson City

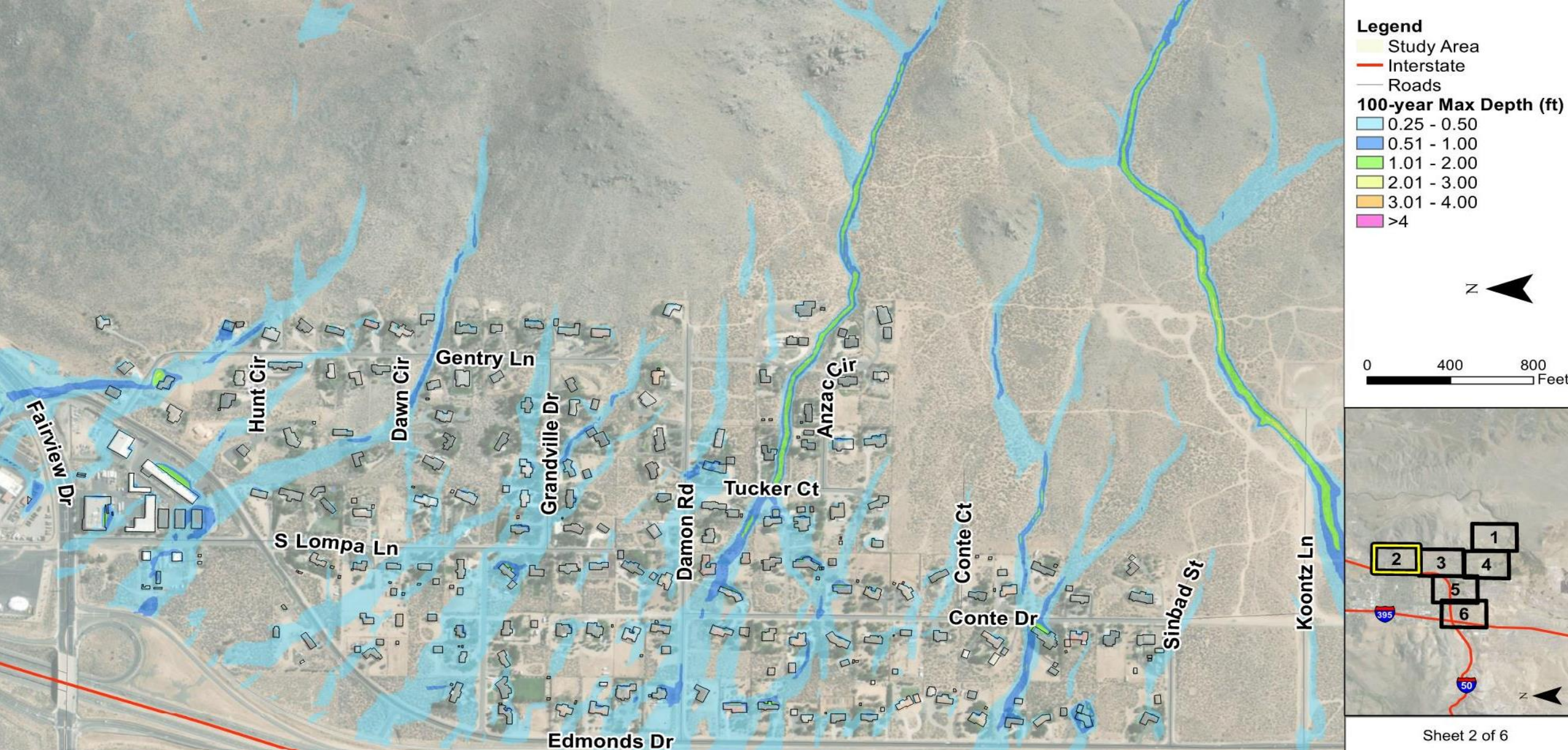
Area Drainage Master Plan

Flood Hazards Overview



Southeast Carson City
Area Drainage Master Plan

Flood Hazards Overview
(1 of 6)



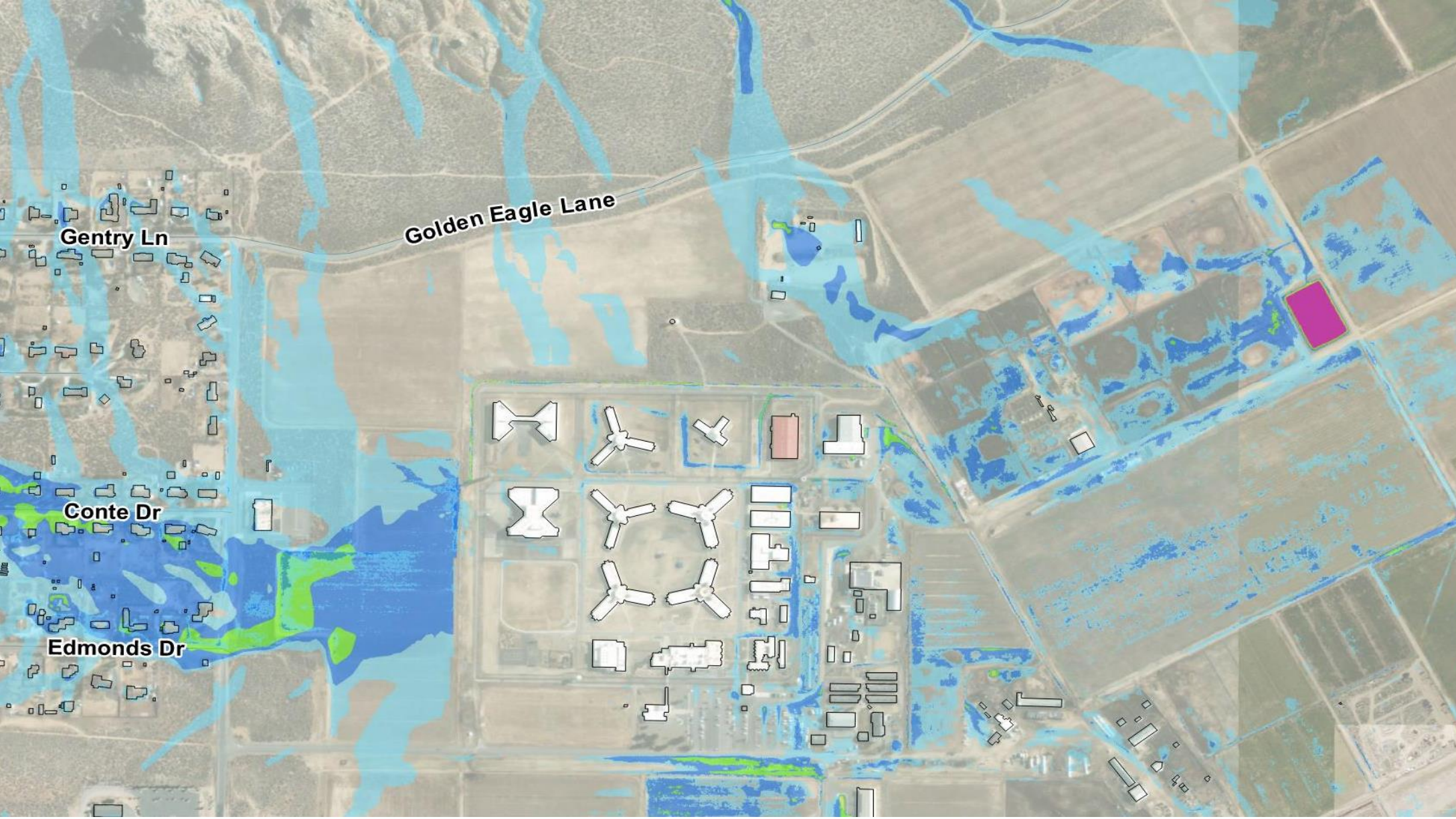
Southeast Carson City
Area Drainage Master Plan

Flood Hazards Overview
(2 of 6)

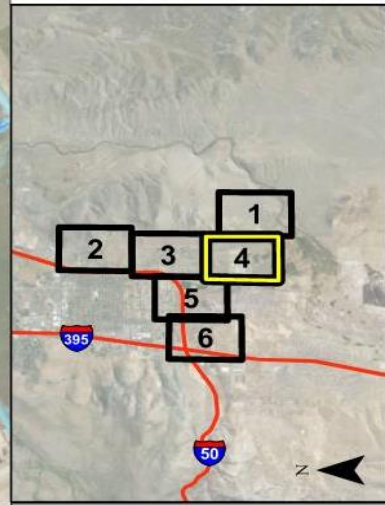
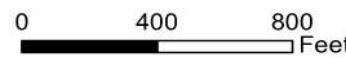


Southeast Carson City
Area Drainage Master Plan

Flood Hazards Overview
(3 of 6)



- Legend**
- Study Area
 - Interstate
 - Roads
- 100-year Max Depth (ft)**
- 0.25 - 0.50
 - 0.51 - 1.00
 - 1.01 - 2.00
 - 2.01 - 3.00
 - 3.01 - 4.00
 - >4



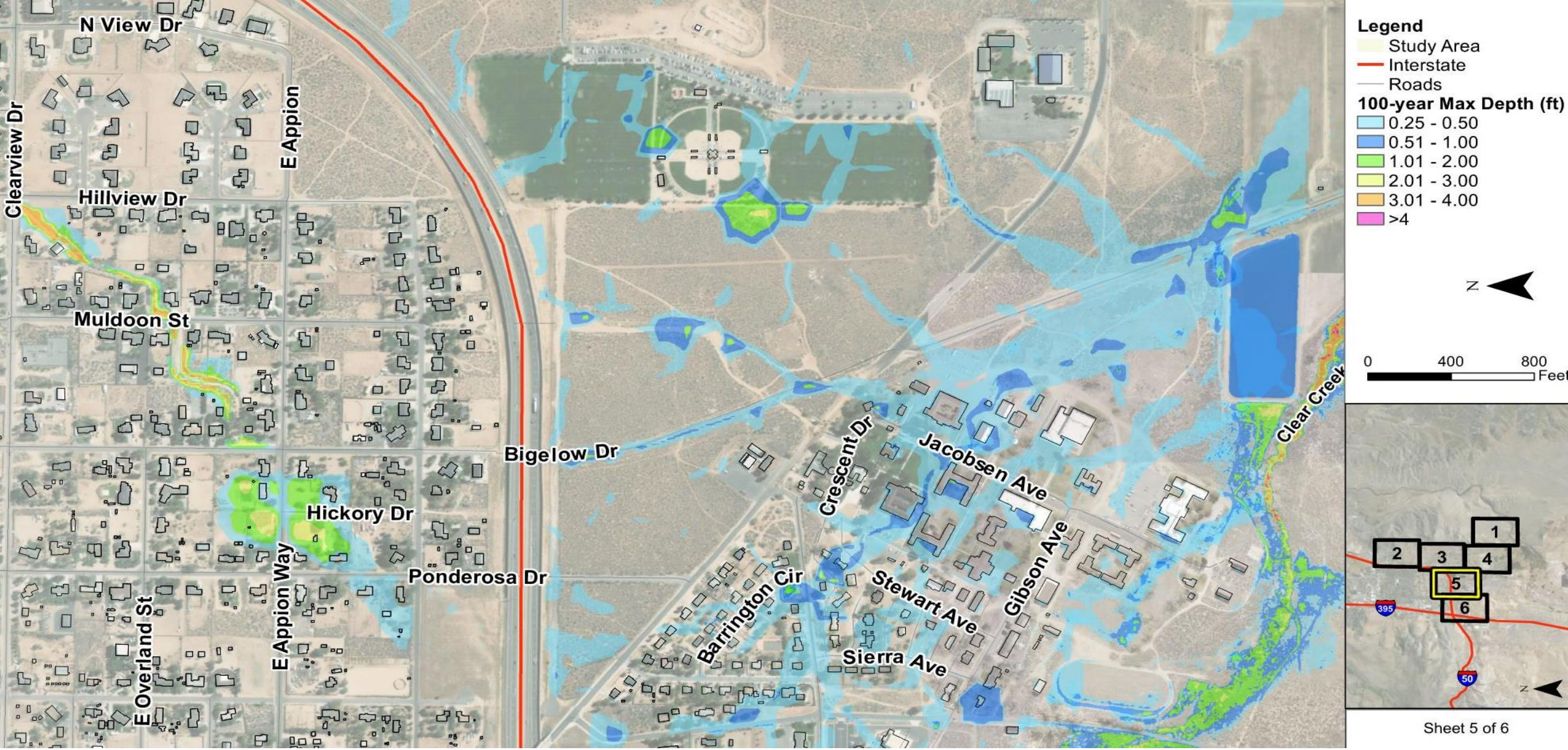
Sheet 4 of 6

Southeast Carson City

Area Drainage Master Plan

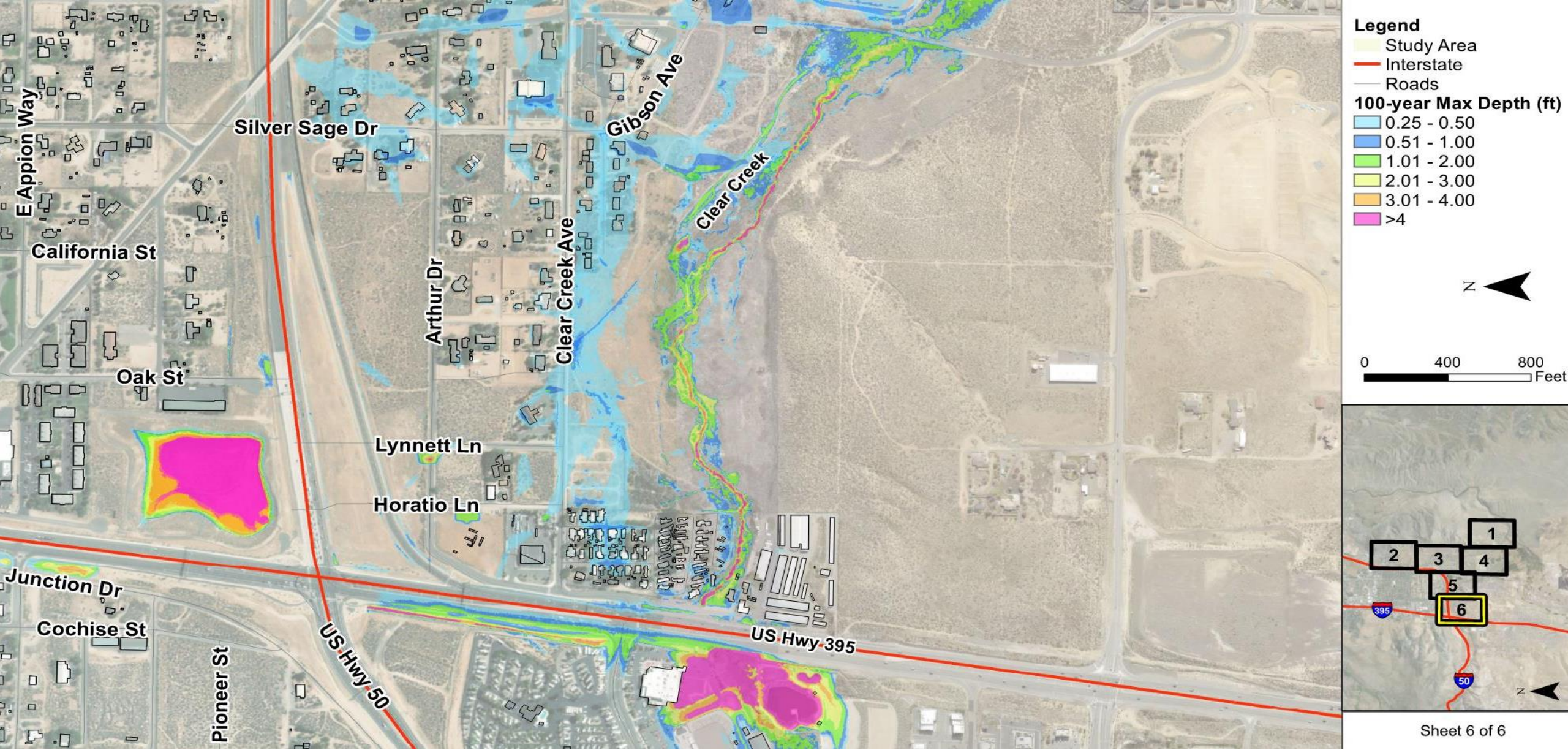
Flood Hazards Overview

(4 of 6)



Southeast Carson City
Area Drainage Master Plan

Flood Hazards Overview
(5 of 6)



Southeast Carson City

Area Drainage Master Plan

Flood Hazards Overview

(6 of 6)

Public Meeting #1

COMMUNITY INFORMATION MEETING

SOUTHEAST CARSON CITY AREA DRAINAGE MASTER PLAN

Residents and property owners are invited to learn about the **Southeast Carson City Area Drainage Master Plan** and share your input and comments on future drainage infrastructure with drainage experts at our **virtual** or **in-person** information meeting!



VIRTUAL MEETING

TIME: Tuesday, August 30, 2022 | 12:00-1:00 pm
LOCATION: <https://tinyurl.com/SEccdrainageplan>
or scan the QR code with your phone to join

IN-PERSON MEETING

TIME: Tuesday, August 30, 2022 | 5:00-6:30 pm*
LOCATION: Carson City Sheriff's Office Ormsby Room
ADDRESS: 911 East Musser Street, Carson City

*Open house beginning at 5:00 pm with a short presentation at 6:00 pm

- August 30, 2022
- Existing conditions and initial results
- Collect public input
- 11 Virtual Attendees
- 16 In-Person Attendees

Southeast Carson City Area Drainage Master Plan

Public Meeting #1 – Public Input

- **Marked-up maps with problem areas**
- **Answered public questions**
- **Provided email and website to submit data and comments**
- **Information received housed in project report**

Solutions & Recommendations

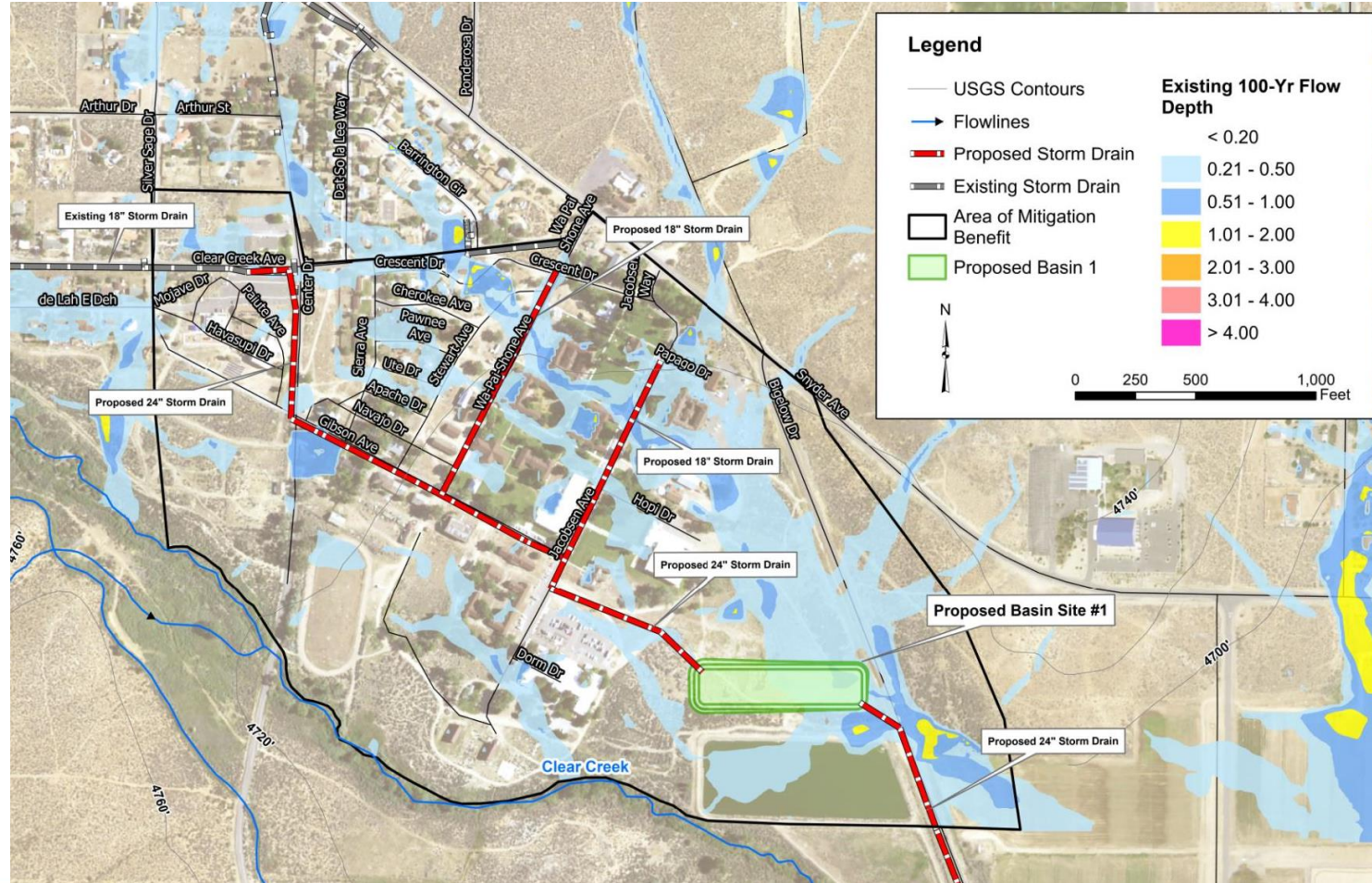
- **Seven areas of mitigation interest (AOMI) with six resulting projects**
 - **One project not considered because of environmental and technical constraints**
- **Formulated from staff knowledge and public input**
- **Combination of regional (2) and maintenance(4) projects**
- **Regional projects may qualify for grant funding**

Design Goals

- 100-year protection where feasible
- Utilize available open space, City property, existing features
- Match downstream storm drain capacity

Solutions & Recommendations

AOMI #1

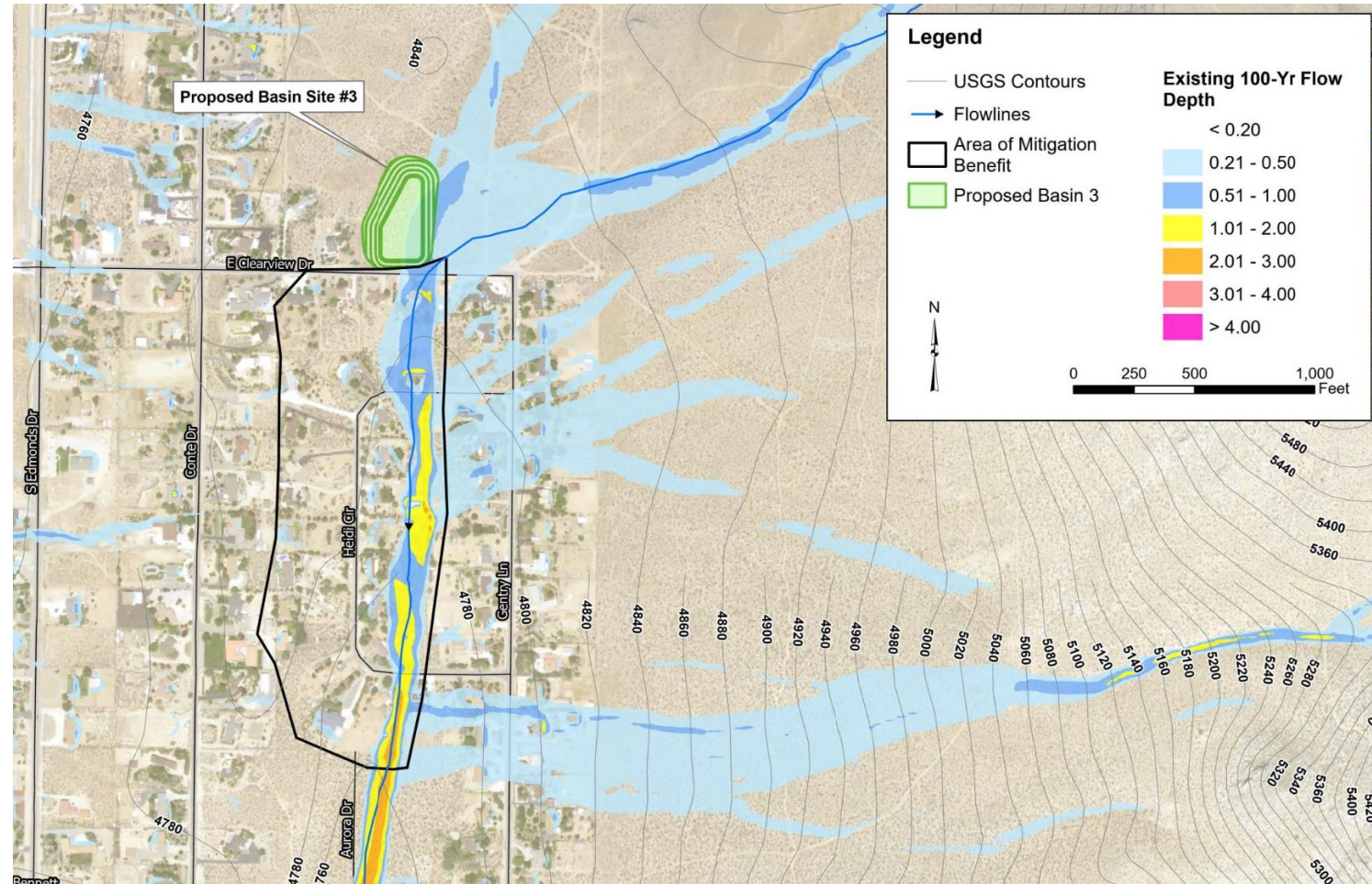


Southeast Carson City

Area Drainage Master Plan

Solutions & Recommendations

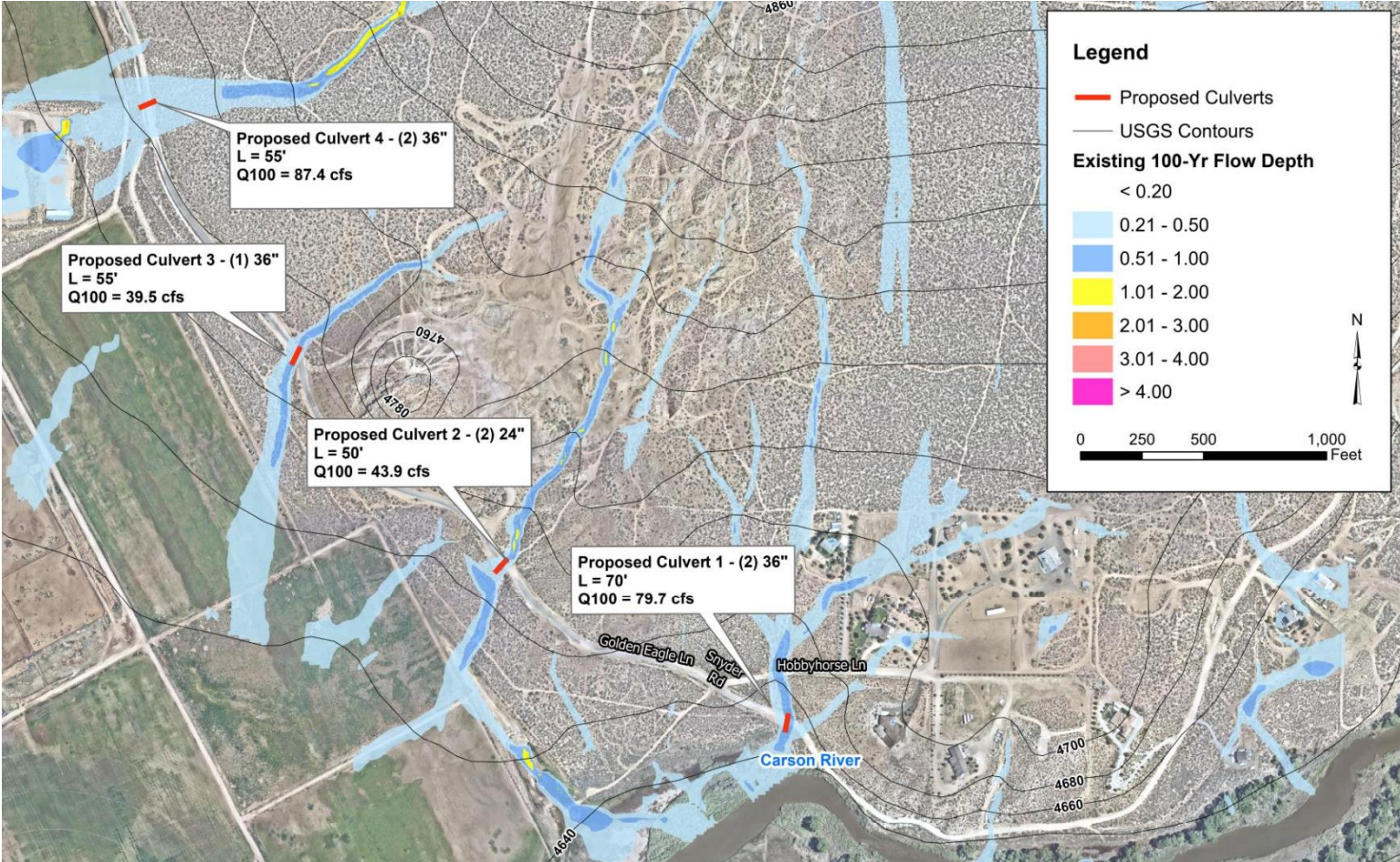
AOMI #3



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Area Drainage Master Plan

Solutions & Recommendations

AOMI #4

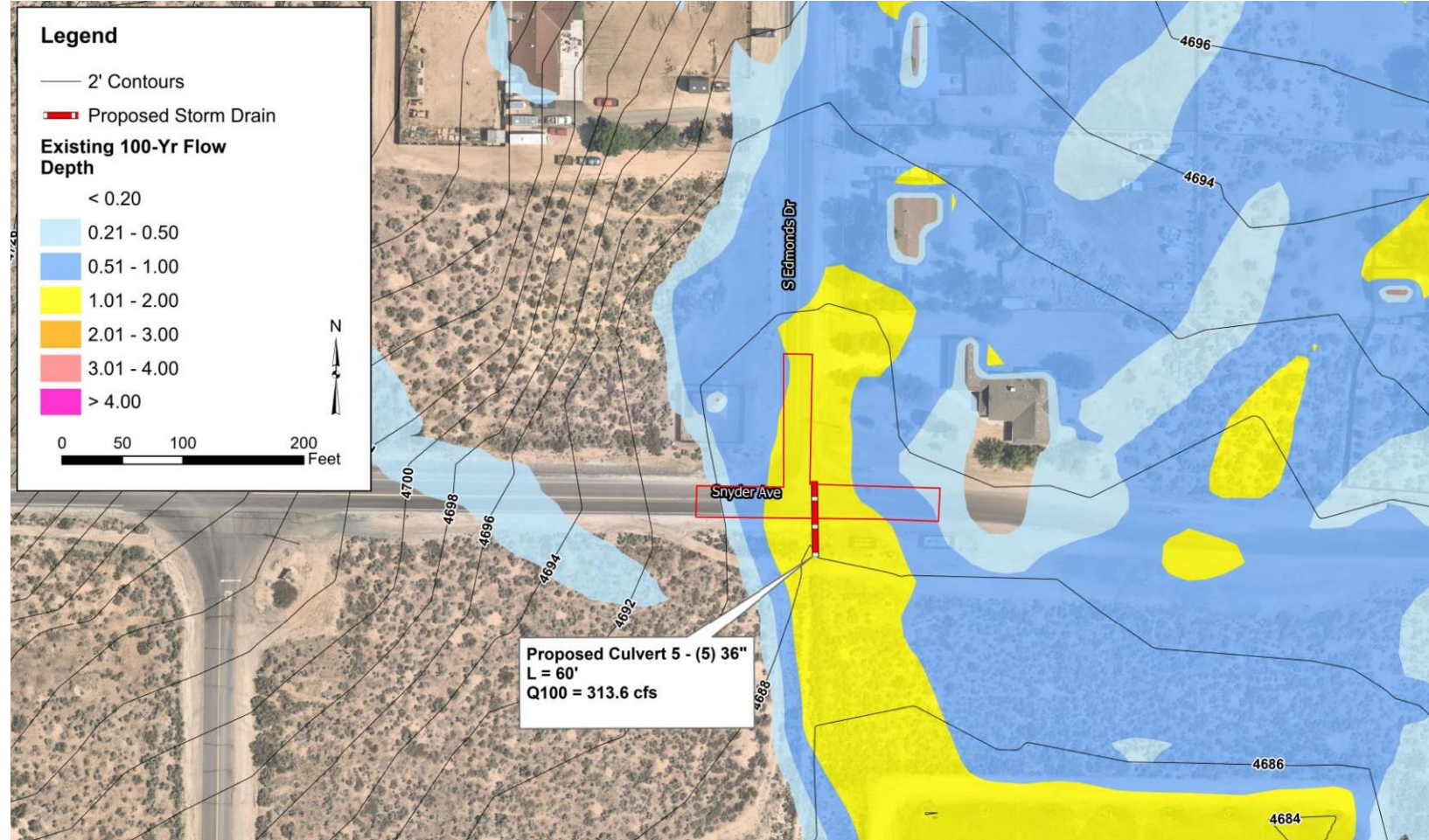


Southeast Carson City

Area Drainage Master Plan

Solutions & Recommendations

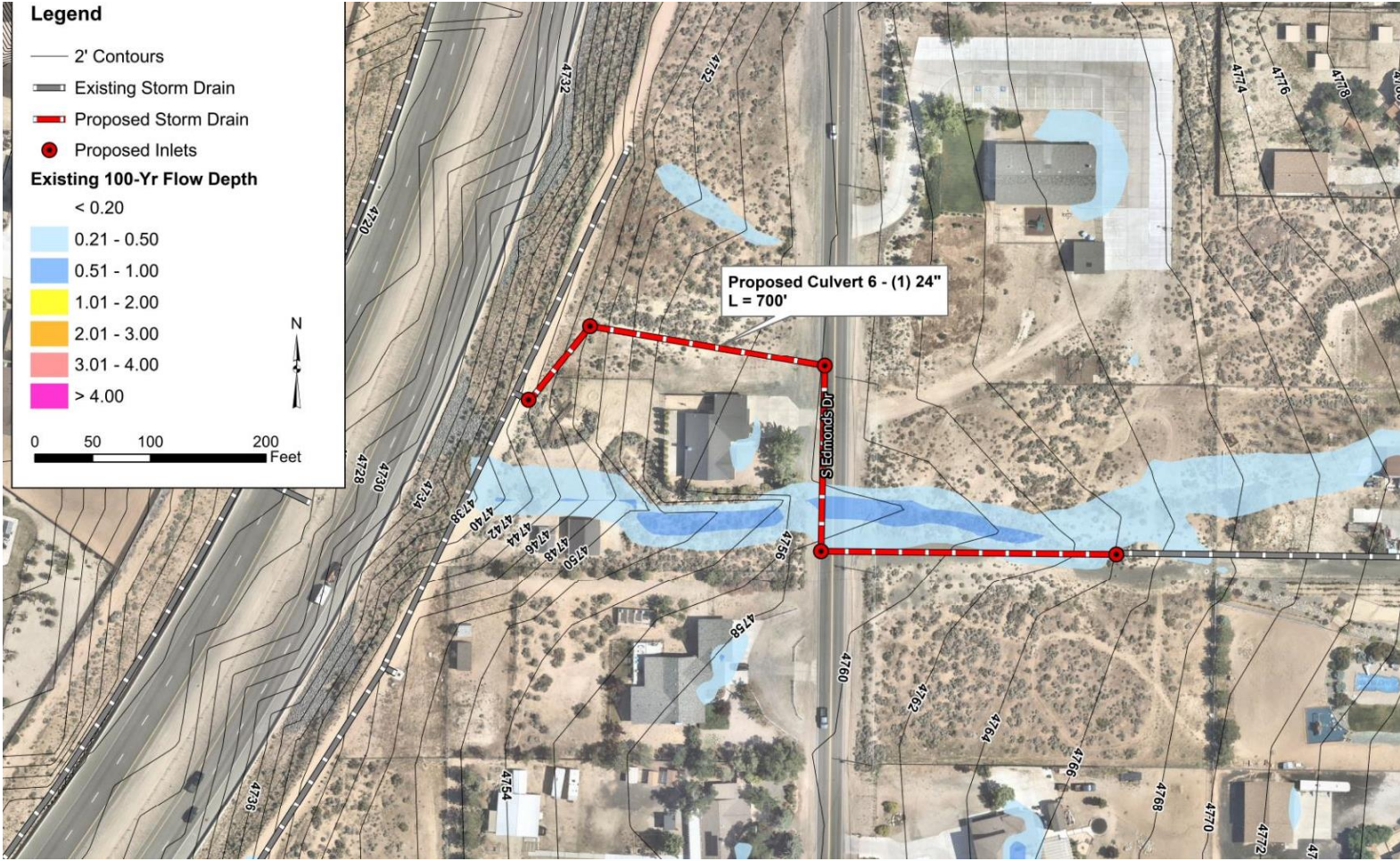
AOMI #5



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Area Drainage Master Plan

Solutions & Recommendations

AOMI #6

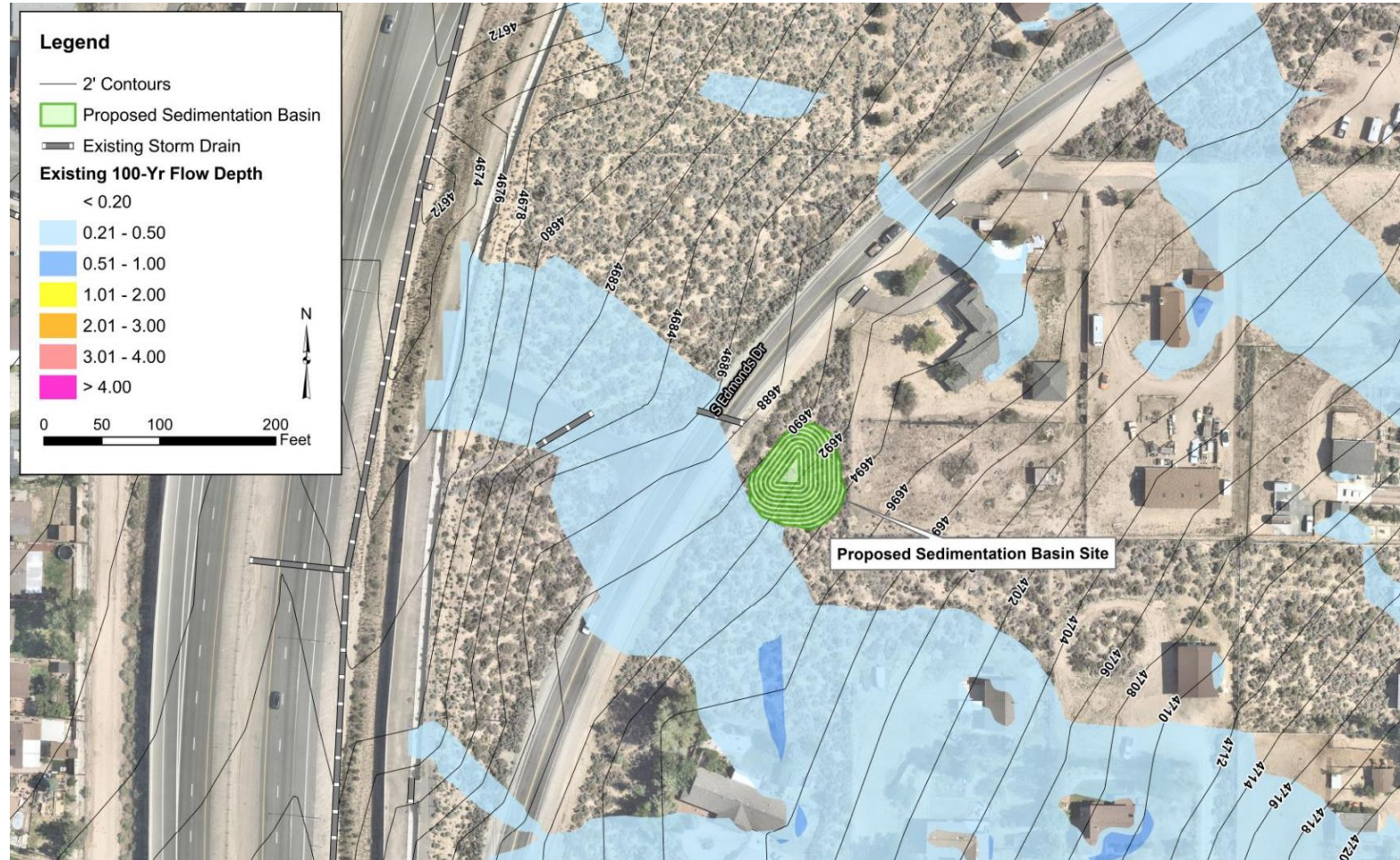


Southeast Carson City

Area Drainage Master Plan

Solutions & Recommendations

AOMI #7



Southeast Carson City

Area Drainage Master Plan

Summary of Conceptual Designs

Table 7: Preliminary Cost Estimate

Item	AOMI #1	AOMI #3	AOMI #4	AOMI #5	AOMI #6	AOMI #7
Design and Permitting	\$ 594,000	\$246,000	\$168,000	\$120,000	\$132,000	\$120,000
Construction	\$ 3.2 M	\$ 1.4 M	\$230,000	\$374,000	\$314,000	\$125,000
Land (Ownership)	TBD State Lands	Carson City	TBD State of Nevada/ Carson City	Carson City	TBD NDOT/ BLM	TBD BLM
Total	\$ 3.8 M	\$ 1.6 M	\$398,000	\$494,000	\$446,000	\$245,000



Table 8 : Benefit Cost Ratio

AOMI	1	3
Number of Properties Impacted	130	24
Approximate Population	299	55
Social Benefit	\$1.4 Million	\$256,669
Standard Mitigation Benefit	\$6.5 Million	\$3.1 Million
Total Mitigation Project Benefit	\$7.8 Million	\$3.4 Million
Construction Cost	\$3.8 Million	\$1.6 Million
Annual Maintenance Cost	\$4,000	\$2,000
Total Mitigation Project Cost	\$3.8 Million	\$1.6 Million
Benefit Cost Ratio	2.03	2.08

Public Meeting #2

If you are unavailable at the date and time for your area, but still want to meet with City staff, please contact us by the email or phone number listed below.

Please meet us there or share your input and comments via email, phone, or website:

-  **EMAIL:**
info@SEccdrainageplan.com
-  **PHONE:**
775-887-2305
-  **WEBSITE:**
www.seccdrainageplan.com



FEMA

SOUTHEAST CARSON CITY AREA DRAINAGE MASTER PLAN

AUGUST 29, 2023 RESIDENT OUTREACH FOR ALTERNATIVE SOLUTIONS

Carson Water Subconservancy District (CWSD) & Carson City Public Works hired Kimley-Horn to complete the Southeast Carson City Area Drainage Master Plan. The team has identified the potential for flooding in your neighborhood as the result of runoff from Prison Hill and surrounding areas. We would like to present alternative solutions to mitigating flooding and hear your concerns.

Representatives from Carson City Public Works, CWSD, and Kimley-Horn will be in your neighborhood on **Tuesday, August 29th**, at the times and locations shown inside this brochure.

AUGUST 29, 2023 OUTREACH LOCATIONS



Location: Clear Creek Ave & Silver Sage Area
Timeframe: 3:00 - 4:00 PM



Location: North Gentry/S Lompa/Conte area between Fairview and Sinbad
Timeframe: 4:00 - 5:00 PM



Location: South Gentry/Conte area from Valley View to Snyder
Timeframe: 5:00 - 6:00 PM



Location: Snyder Ave & Golden Eagle Ln
Timeframe: 6:00 - 7:00 PM

Southeast Carson City Area Drainage Master Plan

Public Meeting #2

- August 29, 2023
- Presented potential projects in the field
- Collected additional public input
- 33 attendees between all four stops

Public Meeting #2 – Public Input

- **Marked-up maps with additional problem areas**
- **Answered public questions**
- **Input was focused on damage and observations from Winter 22/23 storms (different than Public Meeting #1 input)**
- **Lots of sediment issues**
- **Provided email and website to submit data and comments**
- **Information received housed in project report**

Next Steps

- **Possible Board Action:**
 - Discussion
 - Proposed acceptance and direction to staff concerning the exploration of funding opportunities
- **Phase 2 to address neighborhood flooding and sediment**