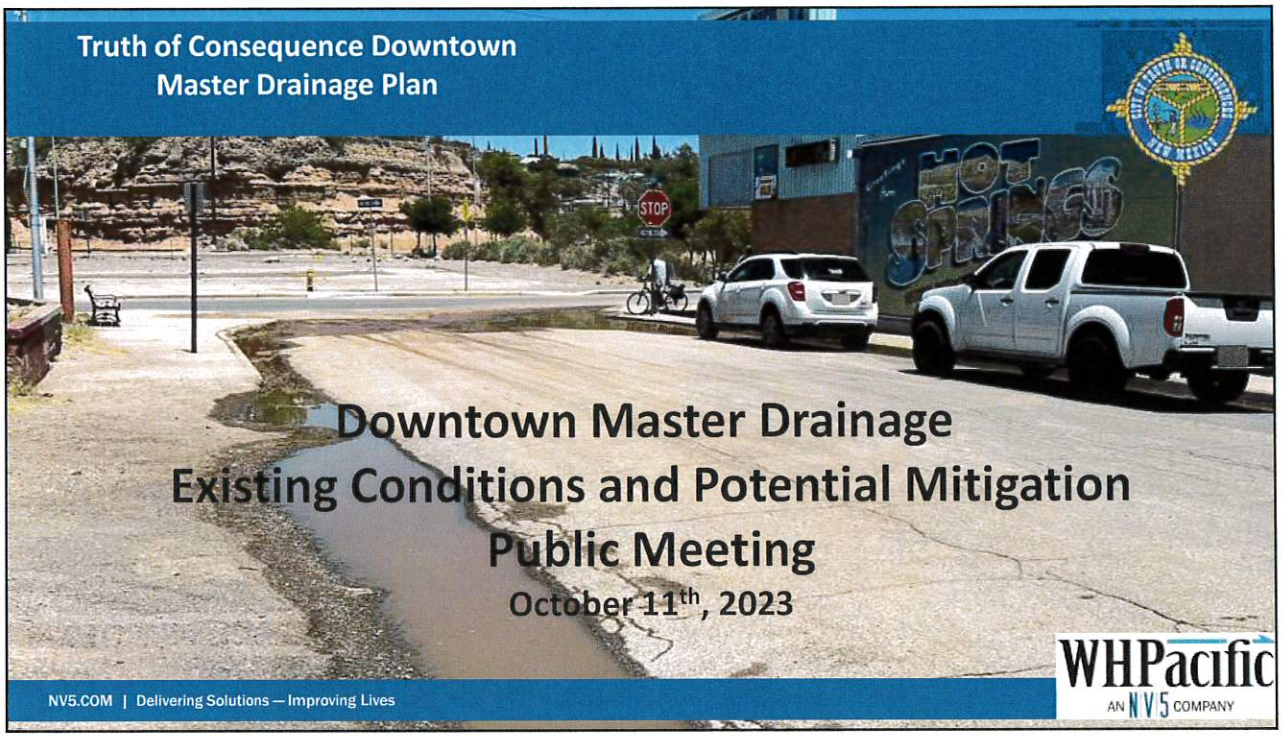


1

T OR C DOWNTOWN MASTER DRAINAGE PLAN PURPOSE AND SCOPE

PURPOSE AND SCOPE STATEMENT

The purpose of the Downtown Master Drainage Plan Project is to analyze the two arroyos draining to the downtown area, evaluate existing drainage patterns, and develop and prioritize potential projects to mitigate flooding concerns to improve safety, and improve drainage infrastructure. This may be accomplished by upgrading existing drainage facilities or constructing new facilities.

2

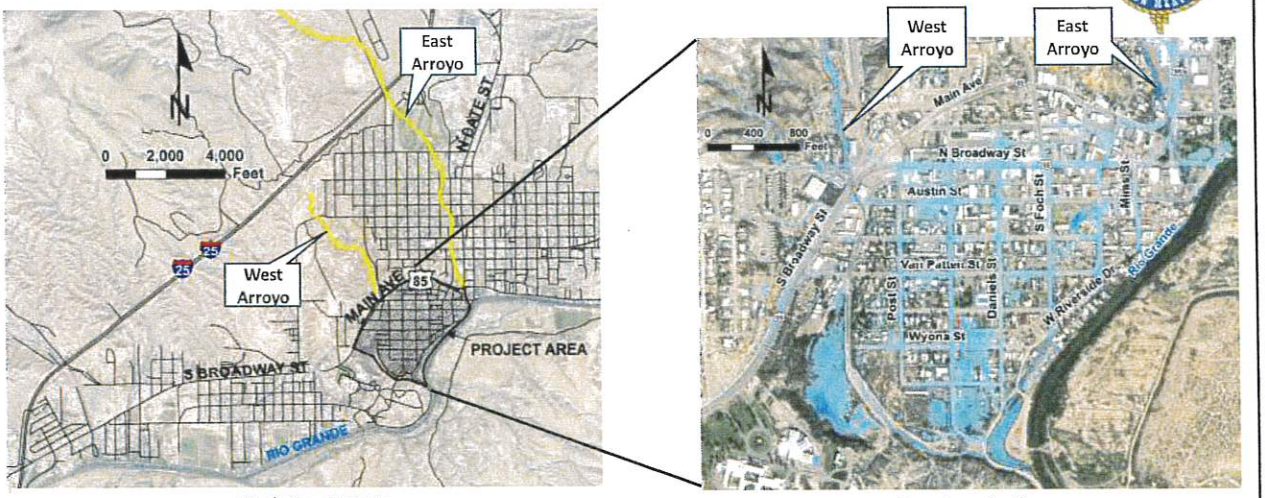
T OR C DOWNTOWN MASTER DRAINAGE PLAN

PRESENTATION OVERVIEW

- Project Study Area Extent
- Hydrological Analysis (Existing Conditions)
- Hydraulic Results (Existing Conditions)
  - West Arroyo
  - East Arroyo
  - Downtown Street Drainage
- Suggestions of Improvement
  - West Arroyo
  - East Arroyo
  - Downtown Street Drainage
- Estimated Project Costs
- Project Schedule
- Questions or Comments

3

T OR C DOWNTOWN MASTER DRAINAGE PLAN STUDY AREA



Study Area Extents

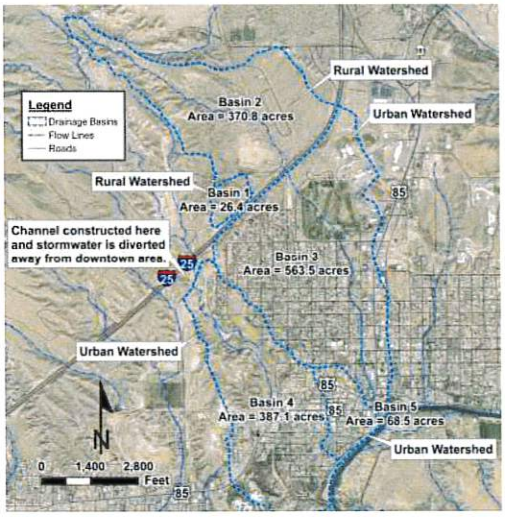
Downtown Section

4

T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

HYDROLOGY EXISTING CONDITIONS

- New Mexico Department of Transportation (NMDOT) criteria used to estimate a 1-percent storm event or 100-year storm event peak flows in the T or C area.
- Estimated stormwater flow were modeled to map out flow flood areas in the T or C area.
- The results includes 100-year water depths shown with blue shading and blue 1-ft contour lines for the water depths.



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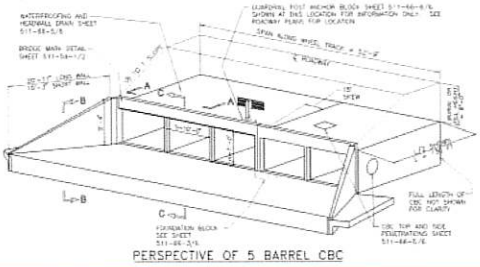
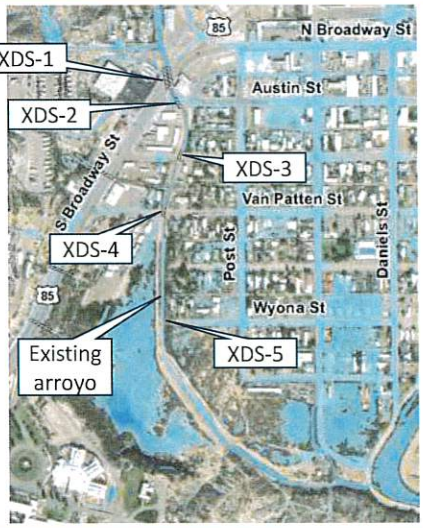
T OR C DOWNTOWN MASTER DRAINAGE PLAN WEST ARROYO EVALUATION

WEST ARROYO EXISTING CONDITIONS

- The model done for this area was pre-development of the new Wyona St crossing and development.
- Series of concrete box culvert (CBC) along the west arroyo identified as XDS-#.
- New roadway crossing at XDS-5 with a corrugated metal arch pipe (CMAP) which serves a recently constructed development.
- Culverts are being analyzed for capacity if stormwater overtops roadways in a 100-year storm event.



PERSPECTIVE OF 5 BARREL CBC



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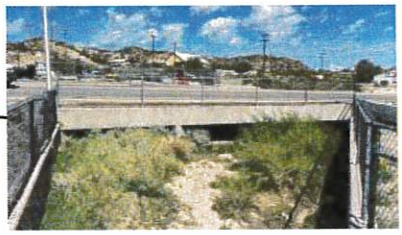
T OR C DOWNTOWN MASTER DRAINAGE PLAN
WEST ARROYO EVALUATION

XDS-1 WEST ARROYO
EXISTING CONDITIONS

- 3 – 132'L x 13'W x 2'H Concrete Box Culvert (CBC)
- Sediment Buildup
- 3-feet of water depth upstream of CBC
- 4-feet of water depth downstream of CBC
- Culvert under a State Road with no access for maintenance.



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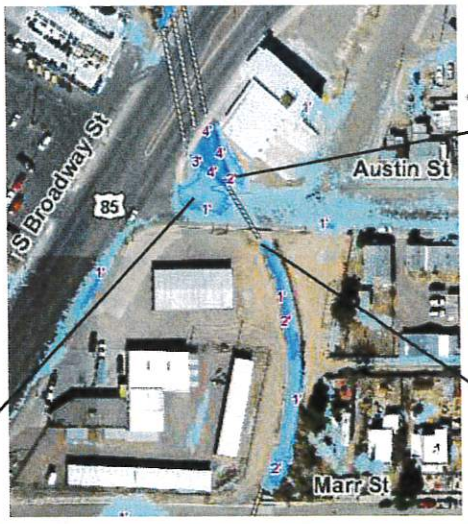
T OR C DOWNTOWN MASTER DRAINAGE PLAN
WEST ARROYO EVALUATION

XDS-2 WEST ARROYO
EXISTING CONDITIONS

- 1 – 73'L x 12'W x 2'H Concrete Box Culvert (CBC)
- 4-feet of water depth upstream of CBC
- 2-feet of water depth downstream of CBC



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T OR C DOWNTOWN MASTER DRAINAGE PLAN
WEST ARROYO EVALUATION

XDS-3 WEST ARROYO
EXISTING CONDITIONS

- 1 – 67'L x 12'W x 3'H Concrete Box Culvert (CBC)
- 1-feet of water depth upstream of CBC
- 1-feet of water depth downstream of CBC

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T OR C DOWNTOWN MASTER DRAINAGE PLAN
WEST ARROYO EVALUATION

XDS-4 WEST ARROYO
EXISTING CONDITIONS

- 1 – 63'L x 12'W x 3'H Concrete Box Culvert (CBC)
- 3-feet of water depth upstream of CBC
- 2-feet of water depth downstream of CBC

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T OR C DOWNTOWN MASTER DRAINAGE PLAN
WEST ARROYO EVALUATION

XDS-5 WEST ARROYO

EXISTING CONDITIONS

- The flood map model shows the predevelopment of this area.
- 1 – Corrugated Metal Arch Pipe, size and ground surface data unavailable because this was built after it was surveyed.
- Crossing pipe not modeled because pipe did not exist at the time of the existing analysis

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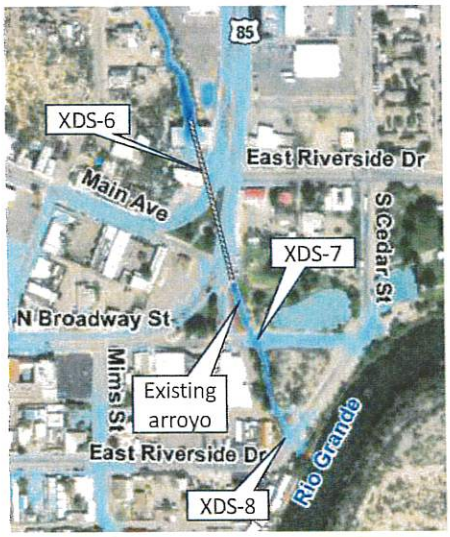
T OR C DOWNTOWN MASTER DRAINAGE PLAN
EAST ARROYO EVALUATION

EAST ARROYO

EXISTING CONDITIONS

- 1 concrete box culvert (CBC) along the east arroyo identified as XDS-#.
- 2 roads where stormwater flows over roadway before discharging into Rio Grande. Also identified these areas as XDS-#.



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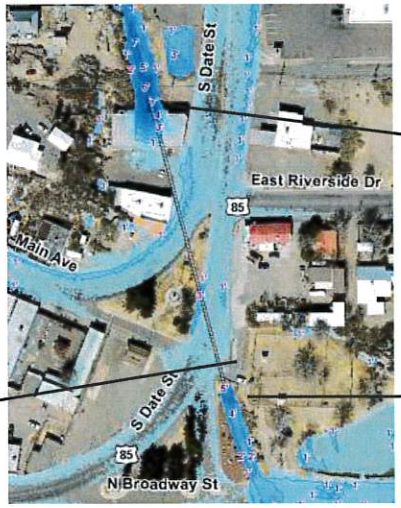
T OR C DOWNTOWN MASTER DRAINAGE PLAN
EAST ARROYO EVALUATION

XDS-6 EAST ARROYO
EXISTING CONDITIONS

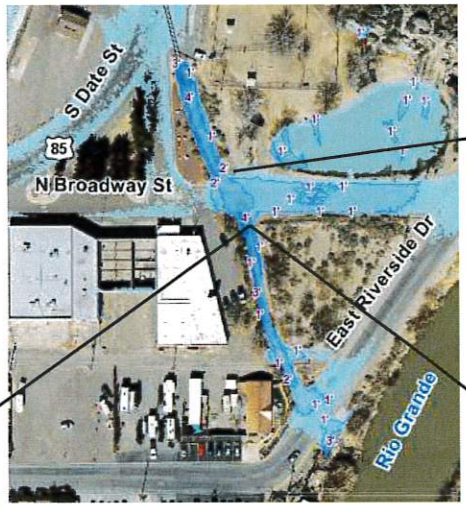
- 1 – 408'L x 13'W x 5'H Concrete Box Culvert (CBC)
- 7-feet of water depth upstream of CBC
- 4-feet of water depth downstream of CBC



T OR C DOWNTOWN MASTER DRAINAGE PLAN
EAST ARROYO EVALUATION

XDS-7 EAST ARROYO
EXISTING CONDITIONS

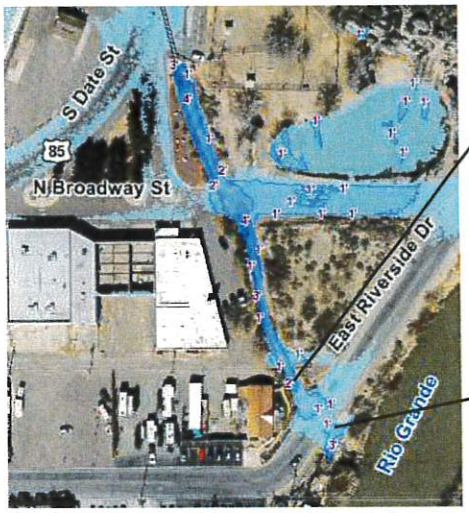
- 2-feet of water depth upstream of CBC
- 3-feet of water depth downstream of CBC



T OR C DOWNTOWN MASTER DRAINAGE PLAN
EAST ARROYO EVALUATION

XDS-8 EAST ARROYO
EXISTING CONDITIONS

- 2-feet of water depth upstream of CBC
- Discharges to Rio Grande



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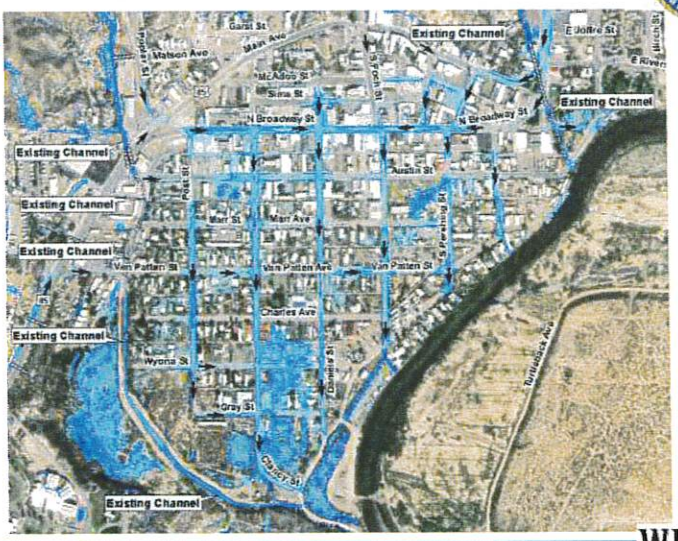
T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

DOWNTOWN STREET DRAINAGE
EXISTING CONDITIONS

- Rainfall collects along the downtown area and conveys south in the streets eventually discharging into the Rio Grande.
- The drainage from the east and west arroyos have little impact to downtown flood areas.
- Streets in downtown area have little drainage infrastructure to address flooding.



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T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

NORTH BROADWAY STREET DRAINAGE EXISTING CONDITIONS

- N Broadway Street gives access to many local businesses while most of the flooding occurs along this roadway.
- The N Broadway St and Post St intersection receives the most perceived flooding here affecting the nearby business reaching water depths up to 1-foot.

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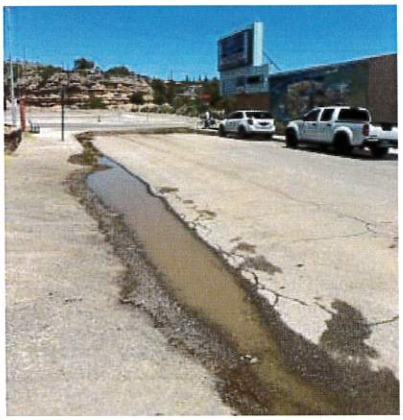
T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

N BROADWAY ST AND POST ST INTERSECTION EXISTING CONDITIONS

- This area is a low spot in the roadway. Stormwater drains east down N Broadway St.
- Pavement has been recently repaired and patched at this location. Photos shown are before maintenance.



Looking North To Intersection

Looking South Down Post St

18

T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

N BROADWAY ST AND EXISTING CONDITIONS

- New Mexico Department of Transportation to repave surface in 2024.
- Construction plans completed for S Foch St north of N Broadway St for roadway and drainage improvements.
- N Broadway has been cleaned and patched by the City.

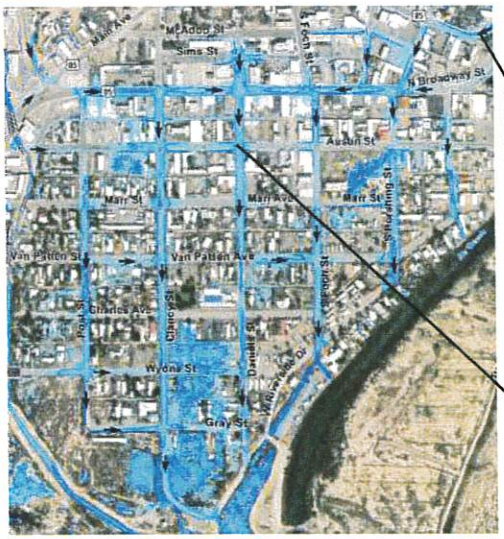
Looking East Down N Broadway St

Looking East Down N Broadway St

T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

DOWNTOWN EXISTING DRAINAGE INFRASTRUCTURE

- Existing grate inlets along Date St intercepts flow before it drains into Main Avenue.
- Existing grate inlet at intersection of Austin St and Daniels St. The pipe connected to grate inlet was shallow and ran south.



T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

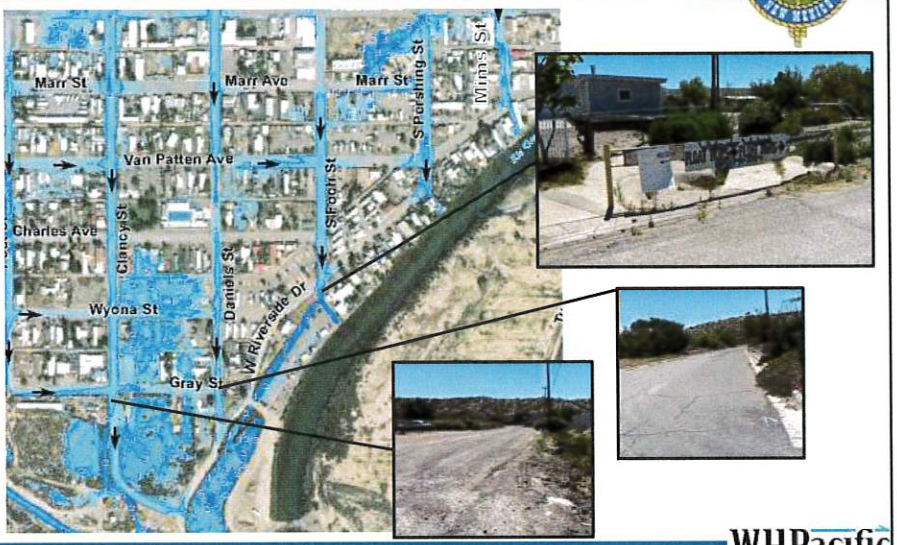
EXISTING DRAINAGE AT THE RIO GRANDE

- Stormwater is conveyed as surface runoff down S Pershing St and Mims St from N Broadway St.
- Mims St and S Pershing St surface runoff outfalls into Rio Grande through existing concrete channels.

T OR C DOWNTOWN MASTER DRAINAGE PLAN
ADDITIONAL EVALUATION OF ROADWAY DRAINAGE

EXISTING DRAINAGE AT THE RIO GRANDE

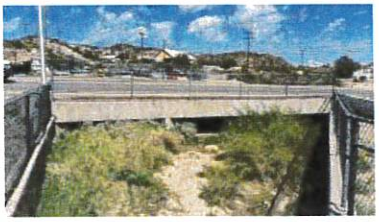
- Stormwater is conveyed as surface runoff down Post St, Clancy St, Daniels St, and S Foch St from N Broadway St.
- S Foch St surface runoff outfalls into an existing concrete channel that feeds into an existing wetland.
- Clancy St and Daniels St surface runoff outfalls into earthen ditches into Rio Grande.



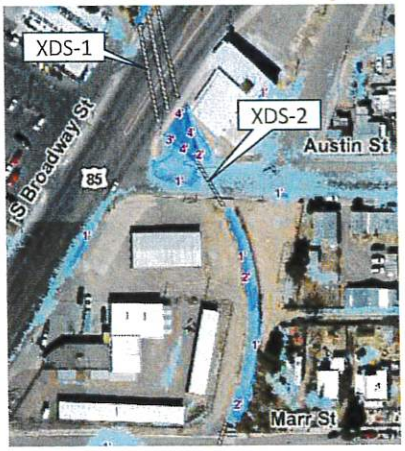
T OR C DOWNTOWN MASTER DRAINAGE PLAN
WEST ARROYO EVALUATION

WEST ARROYO SUGGESTIONS OF IMPROVEMENT

- Maintenance
  - Cleaning
- XDS-1 concrete box culvert under S Broadway St/US 85 will require maintenance to remove sediment buildup. NMDOT responsible party for maintenance.
- XDS-2 concrete box culvert has a capacity issue where water is overtopping into roadway. Culvert will also require maintenance due to sediment coming upstream from XDS-1. Clearing out the culvert will increase its capacity.



Downstream of XDS-1



XDS-2 Plan View

T OR C DOWNTOWN MASTER DRAINAGE PLAN
EAST ARROYO EVALUATION

EAST ARROYO
SUGGESTIONS OF IMPROVEMENT

- Storm Drain Improvement
  - Placing of new culverts
- XDS-7 no culvert under N Broadway St. Installation of a culvert under roadway would require grading of ditch. Ditch property not owned by City. Requires land acquisition.
- XDS-8 no culvert under East Riverside Dr. Installation of a culvert under roadway would also require grading of ditch. Ditch property not owned by City. Requires land acquisition.
- Improvements not feasible due to land acquisition.

Upstream of XDS-7

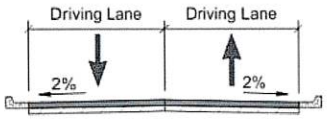
Upstream of XDS-8

XDS-2 Plan View

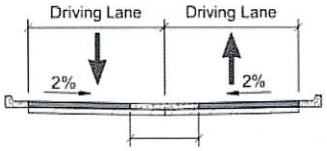
T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

DOWNTOWN T OR C SUGGESTIONS OF IMPROVEMENT

- **Drainage Improvements**
  - Invert roadway crowns
  - Alter grading at intersection to drain N Broadway south.
- Invert crowns on Post St, S Foch St, S Pershing St, Mims St.
- A 6-ft valley gutter may also be required to improve water conveyance at inverted crowns.
- Clancy St and Daniels St are already inverted and can be improved by installing a 6-ft valley gutter to improve water conveyance.



EXISTING TYPICAL ROAD SECTION

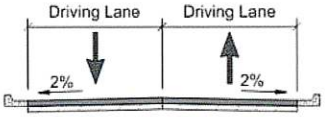


PROPOSED TYPICAL ROAD SECTION

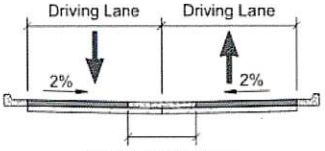
25

T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

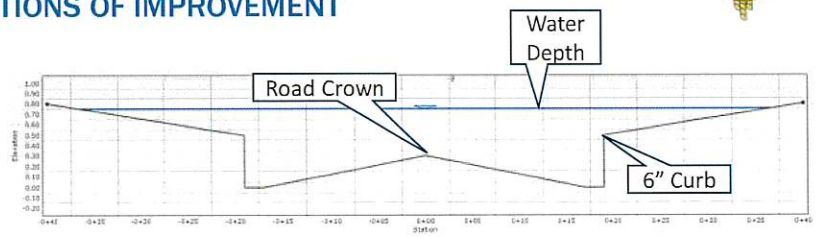
DOWNTOWN T OR C SUGGESTIONS OF IMPROVEMENT

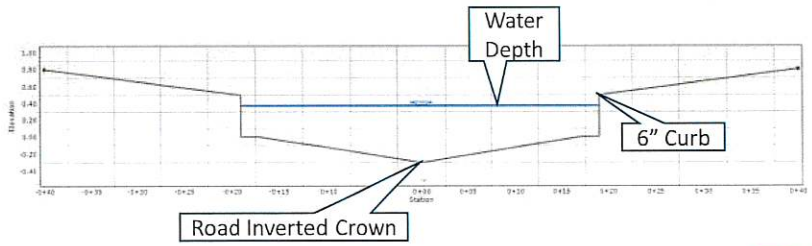


EXISTING TYPICAL ROAD SECTION



PROPOSED TYPICAL ROAD SECTION





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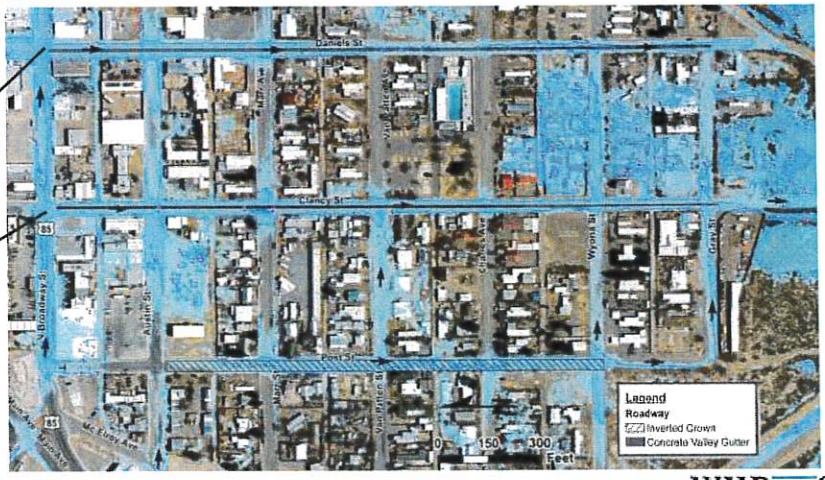
T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

DOWNTOWN T OR C SUGGESTIONS OF IMPROVEMENT

- Drainage Improvements
  - Invert roadway crowns
  - Alter grading at intersection to drain N Broadway south.



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T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

DOWNTOWN T OR C SUGGESTIONS OF IMPROVEMENT

- Drainage Improvements
  - Invert roadway crowns
  - Alter grading at intersection to drain N Broadway south.

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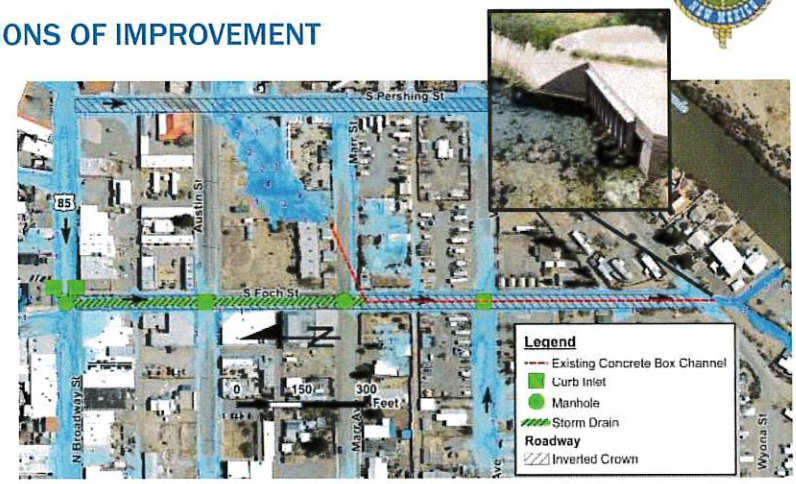
T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

DOWNTOWN T OR C SUGGESTIONS OF IMPROVEMENT

- Storm Drain Improvements
  - Placement of new drop/curb inlets as required.
  - Placement of new storm drain
- The roadways in the downtown area a very flat ranging in slopes of 0.2% - 0.8% in the roadways that are conveying stormwater to the Rio Grande (ie. Post St, Clancy St, Daniels St, S Foch St, S Pershing St and Mims St.
- S Foch St has an underground concrete box culvert that drains geothermal water from the museum down to the Rio Grande. It is approximately shown in red.



T OR C DOWNTOWN MASTER DRAINAGE PLAN EVALUATION

IMPROVEMENT COSTS

LOCATION	IMPROVEMENT COST	IMPROVEMENT DESCRIPTION
POST ST	$1,900,000	ROADWAY DRAINAGE IMPROVEMENT (INVERTED CROWN)
CLANCY ST	$800,000	ROADWAY DRAINAGE IMPROVEMENT (6-FT VALLEY GUTTER)
DANIELS ST	$800,000	ROADWAY DRAINAGE IMPROVEMENT (6-FT VALLEY GUTTER)
S FOCH ST	$2,600,000	ROADWAY & STORM DRAINAGE IMPROVEMENTS (INVERTED CROWN)
S PERSHING ST	$1,500,000	ROADWAY DRAINAGE IMPROVEMENT (INVERTED CROWN)
MIMS ST	$1,100,000	ROADWAY DRAINAGE IMPROVEMENT (INVERTED CROWN)
XDS-1	MAINTENANCE	MAINTENANCE – CULVERT CLEANING
XDS-2	MAINTENANCE	MAINTENANCE – CULVERT CLEANING

T OR C DOWNTOWN MASTER DRAINAGE PLAN PROJECT SCHEDULE

CURRENT STUDY SCHEDULE

- Existing Conditions Analysis October 11, 2023 **(Complete)**
  - **Public Meeting – October 11, 2023**
  - **Last Day for Public Comments – October 25, 2023**
- Finalize Master Drainage Report – December 1, 2023 **(Pending)**
  - Complete Master Plan Writeup – October 25, 2023
  - Complete Internal QC Submittal – November 1, 2023
  - Preliminary Master Plan Submittal to City – November 8, 2023
  - City Review Period – November 22, 2023
  - Final Master Plan Submittal – December 1, 2023
- Begin Preliminary Design – To Be Determined
- Anticipated Construction – To Be Determined

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QUESTIONS OR COMMENTS?

Call Us
505-348-5212

Email Us
Craig.tom@nv5.com

Mail Us
NV5
Attn. T or C Downtown Master Drainage Plan
6501 Americas Pkwy NE, Ste 400
Albuquerque, NM 87110

Comments are requested by October 25

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