

**ATTACHMENT L: PRELIMINARY DRAINAGE ANALYSIS**



# Preliminary Drainage Report

Xcel – Pathways Segment 5 Transmission Line

El Paso County, Colorado

Submittal Date: July 15, 2024



Owner: Public Service Company of Colorado, a  
Colorado Company – Sascha Archie, PM

1800 Larimer Street, Suite 1300

Denver, Colorado, 80202

(719) 869-4118

Sasha.Archie@xcelenergy.com



By: Samuel Acosta, PE

5555 Tech Center Drive, Suite 310

Colorado Springs, Colorado 80919

(719) 272-8894

## Engineer's Statement

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing the report.



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Samuel Acosta, PE  
Registered Professional Engineer  
State of Colorado  
No. 52470



Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.

\_\_\_\_\_  
[Name, Title]  
[Business Name]  
[Address]

\_\_\_\_\_  
Date

El Paso County:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 and 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

\_\_\_\_\_  
Joshua Palmer, P.E.  
County Engineer / ECM Administrator

\_\_\_\_\_  
Date

Conditions:

\_\_\_\_\_  
County Engineer

\_\_\_\_\_  
Date

Conditions:



## Purpose

The purpose of this report is to present the stormwater criteria for Xcel Pathways Segment 5 and document the drainage analysis and supporting calculations to meet the County's criteria.

## General Information

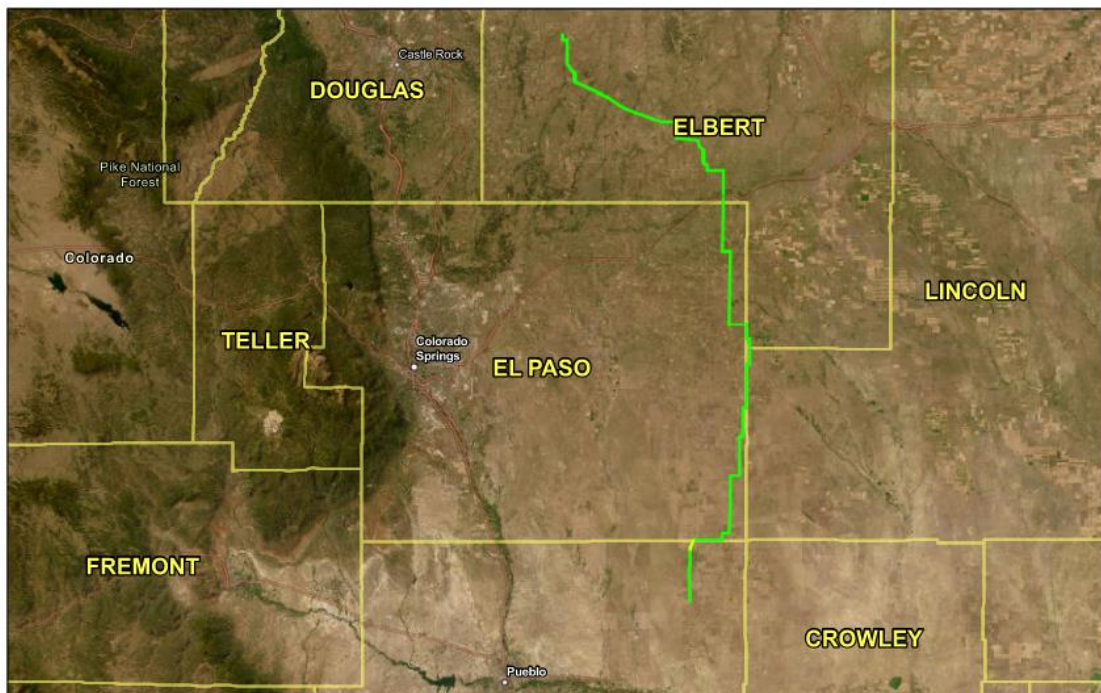
The Colorado Power Pathway project (Pathway) is an investment proposed by Xcel Energy to improve the state's electric grid, increase electric reliability and enable future renewable energy development around the state. Pathway includes the installation of approximately 560 miles of new 345-kilovolt (kV) double-circuit transmission line as well as new and expanded substations. This Preliminary Drainage Report is part of a larger packet submittal regarding the build of 45 miles of new 345-kilovolt (kV) double-circuit transmission line for the Pathway Segment 5 El Paso County Transmission Line Build project (Project).

## Location

The Project is located in El Paso County, Colorado and begins at proposed transmission line structure 328 (located 1.12 miles southwest of the intersection of Summit Street and Simla Highway) and runs south for 45 miles to proposed transmission line structure 64 (located 1.13 miles north of intersection of Prairie Hill Road and County Road 3608).

The project is located in the following townships and ranges: T11S R60W, T12S R60W, T13S R59W, T13S R60W, T14S R59W, T14S R60W, T15S R59W, T15S R60W, T16S R60W, T17S R60W, T17S R61W.

See Figure 1 below for the Vicinity Map.



**Figure 1: Vicinity Map**

The average space between structures is 860 feet. The new line is comprised of a mix of monopole, tangent, and dead-end steel pole structures, with pole foundation diameters varying from 3 feet to 10 feet. The proposed structure locations are within the existing PSCo right-of-way.

## Description of Property

The Project area through the County is approximately 782 acres with a utility easement width of 150 feet. The existing corridor generally consists of undeveloped and agricultural land uses with moderate to sparse levels of vegetation. Vegetation generally consists of grass land and areas of shrubbery near watercourses.

Topography along the project corridor consists of gently rolling terrain with intermittent areas of perennial floodplains and ephemeral drainageways.

The estimated change from vegetated area to imperviousness area due to the structure foundations is less than 0.5 acres over the span of 45 miles, roughly 171 square feet of new impervious surface per mile of line, a de minimis change. The substations addressed in the cover letter are not located within El Paso County, and therefore have not been included in this report.

Soils conditions along the project corridor vary but generally consist of hydraulic soil group Type A and Type B soils.

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Major drainageways along the project corridor include West Branch Creek, Steels Fork Creek, Little Horse Creek, Horse Creek, North Fork Horse Creek, and Mustang Creek. All creek and/or tributary crossings are located in Flood Zone A.

The following creek crossings are included in FEMA FIRM Panel # 08041C0900G:  
The project passes through an Unnamed Tributary of West Branch Creek, along County Road 1, north of the intersection of Gieck Road and County Road 1. The project passes through Steels Fork Creek along County Road 1, south of the intersection of State Highway 94 and County Road 1.

The following creek crossings are included in FEMA FIRM Panel # 08041C0675G:  
The project passes through Little Horse Creek Unnamed Tributary, along County Road 133 just south of the intersection of County Road 133 and County Road 12. The project passes through Little Horse Creek, at the intersection of Little Corona Road and North Rush Road. The project

passes through Horse Creek along North Rush Road, south of the intersection of Cold Iron Road and North Rush Road, and north of the intersection at Judge Orr Road and North Rush Road. The project passes through North Fork Horse Creek, just south of the intersection of Funk Road and Simla Highway.

The following creek crossings are included in FEMA FIRM Panel # 08041C0450G: The project passes through an Unnamed Tributary of Mustang Creek, just north of the intersection of Hoot Owl Road and Simla Highway. The project passes through Mustang Creek just north of the intersection of Alta Vista Road and Simla Highway. The project passes through Mustang Creek along Harrisville Road, east of the intersection of Harrisville Road and Oil Well Road. The project passes through Mustang Creek along Oil Well Road, just north of the intersection of Harrisville Road and Oil Well Road.

Panels 08041C1275G, 08101C0175D, 08101C0200D, 08041C1300G, 08041C1100G do not contain any creek crossings related to the project.

There are no known irrigation ditches or underground irrigation systems that will be affected by this project.

## Drainage Basins and Sub-Basins

### Major Basin Descriptions.

No drainage basin studies were found within the El Paso County Drainage Basin Plans and Studies for the project area. Specific locations of the project creek crossings are discussed in detail in the “Floodplains” section of this report. FEMA maps supporting that discussion are attached in Appendix B.

Multiple portions of the project are within special flood hazard Zone A.

In proposed conditions, the drainage basin patterns will remain the same as pre-construction conditions. This project is anticipated to have minor localized grading impacts throughout with the installation of foundations for the overhead transmission line. The foundations will be placed at approximately 860 foot intervals along the line of installation.

## Drainage Design Criteria

### Development Criteria Reference.

The El Paso County Drainage Basin Plans were used to verify that no drainage basin studies were present in the area of the project. FEMA FIRM maps were used to verify creek crossings and flood hazard zones for the project.

### Hydrologic Criteria.

Since the proposed improvements will only add an impervious area less than 0.5 acres over the span of 45 miles, existing condition capacity and runoff for the project area are presumed to stay the same. Calculations for existing conditions storage, discharge, and peak runoff were not verified.

## Drainage Facility Design

### General Concept.

The Project begins at proposed transmission line structure 328 (located 1.12 miles southwest of the intersection of Summit Street and Simla Highway) and runs south for 4.5 miles to proposed transmission line structure 64 (located 1.13 miles north of intersection of Prairie Hill Road and County Road 3608).

The average space between structures is 860 feet. The new line is comprised of a mix of monopole, tangent, and dead-end steel pole structures, with pole foundation diameters varying from 3 feet to 10 feet. The proposed structure locations are within the existing PSCo right-of-way.

The Project area through the County is approximately 782 acres with a utility easement width of 150 feet. The estimated change from vegetated area to imperviousness area due to the structure foundations is less than 0.5 acres over the span of 4.5 miles, roughly 171 square feet of new impervious surface per mile of line, a de minimis change.

Surface water flow from the project area will not change due to the minor localized grading impacts and structure installation. Given the line length and lack of drainage changes due to construction, a drainage plan figure has not been included with this memo.

Site disturbance would include minor grading and mowing (if needed) around the structures, grading for temporary access roads, installation of concrete foundations, and placement of conductor wire. The temporarily disturbed areas will be restored to existing vegetated conditions as nearly as practical once construction is complete. Impacts to existing grade due to permanent access are expected to be minimal and have a de minimis impact on drainage flow, direction, and flow concentration therefore, hydrologic and hydraulic calculations and tabulations have not been included in this memo.

### Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) shows the project area located on Panel No. 08041C0450G in El Paso County, effective February 17, 2010. Panel No. 08041C0675G in El Paso County, effective March 17, 1997. Panel No. 08041C0900G in El Paso County, effective March 17, 1997. Panel No. 08041C1100G in El Paso County, effective March 17, 1997. Panel No. 08041C1275G in El Paso County, effective March 17, 1997. The project is also located in panels 08101C0175D, 08101C0200D, and 08041C1300G, however their area was not printed and therefore these panels are not included in Appendix B. The project area is located along West Branch Creek, Steels Fork Creek, Little Horse Creek, Horse Creek, North Fork Horse Creek, and Mustang Creek. All creek and/or tributary crossings are in Zone A, which is defined as having “No Base Flood Elevations Determined”.

No increase to either the floodplain width or water surface elevation will result from the project because the proposed transmission line foundations will be located to avoid floodplains and floodways. This will cause no increase to the floodplain width or water surface elevation. This certification is intended as proof of meeting the requirements set forth in the El Paso County's Drainage Criteria Manual.

The following documentation in accordance with standard Engineering practice was used to support our findings:

- a) The preliminary Xcel Pway Segment 5 structure location KMZ
- b) FEMA FIRM panels 08041C1275G, 08101C0175D, 08101C0200D, 08041C1300G, 08041C1100G, 08041C0900G, 08041C0675G, 08041C0450G. Panels 08101C0175D, 08101C0200D, and 08041C1300G area was not printed and therefor are not included in Appendix B.

## Erosion Control

Erosion and sediment control plans will be developed based on the El Paso County Standards and provided after Concept Design. Erosion and sediment control will be provided for construction activity throughout the entirety of the project.

## Water Quality

Proposed improvements include installing new transmission line foundations which range in 3 feet to 10 feet in diameter which are spaced approximately 860 feet apart. These proposed foundations will not alter the proposed runoff patterns and will add a trivial amount of additional impervious area per mile of transmission line. The substations addressed in the cover letter are not located within El Paso County, and therefor have not been included in the water quality analysis of this report.

The Project area through the County is approximately 782 acres with a utility easement width of 150 feet. The estimated change from vegetated area to imperviousness area due to the structure foundations is less than 0.5 acres over the span of 45 miles, roughly 171 square feet of new impervious surface per mile of line, a de minimis change.

## Maintenance

The Project area through the County is approximately 782 acres with a utility easement width of 150 feet.

The temporarily disturbed areas will be restored to existing vegetated conditions as nearly as practical once construction is complete.

Permanent access will be provided through existing easements. Maintenance around the proposed foundations are expected to be minimal and required on an as-needed basis.

## Conclusion

The design of Xcel's Pathways Segment 5 Transmission Line project is in conformance with El Paso County's Drainage Criteria Manual. The design will adequately protect public health,



safety, and general welfare and have no adverse impacts on public rights-of-way or offsite properties.

## References

- El Paso County Drainage Criteria Manual, Rev October 2018.
- FEMA Map Service Center (<https://msc.fema.gov/portal/home>)



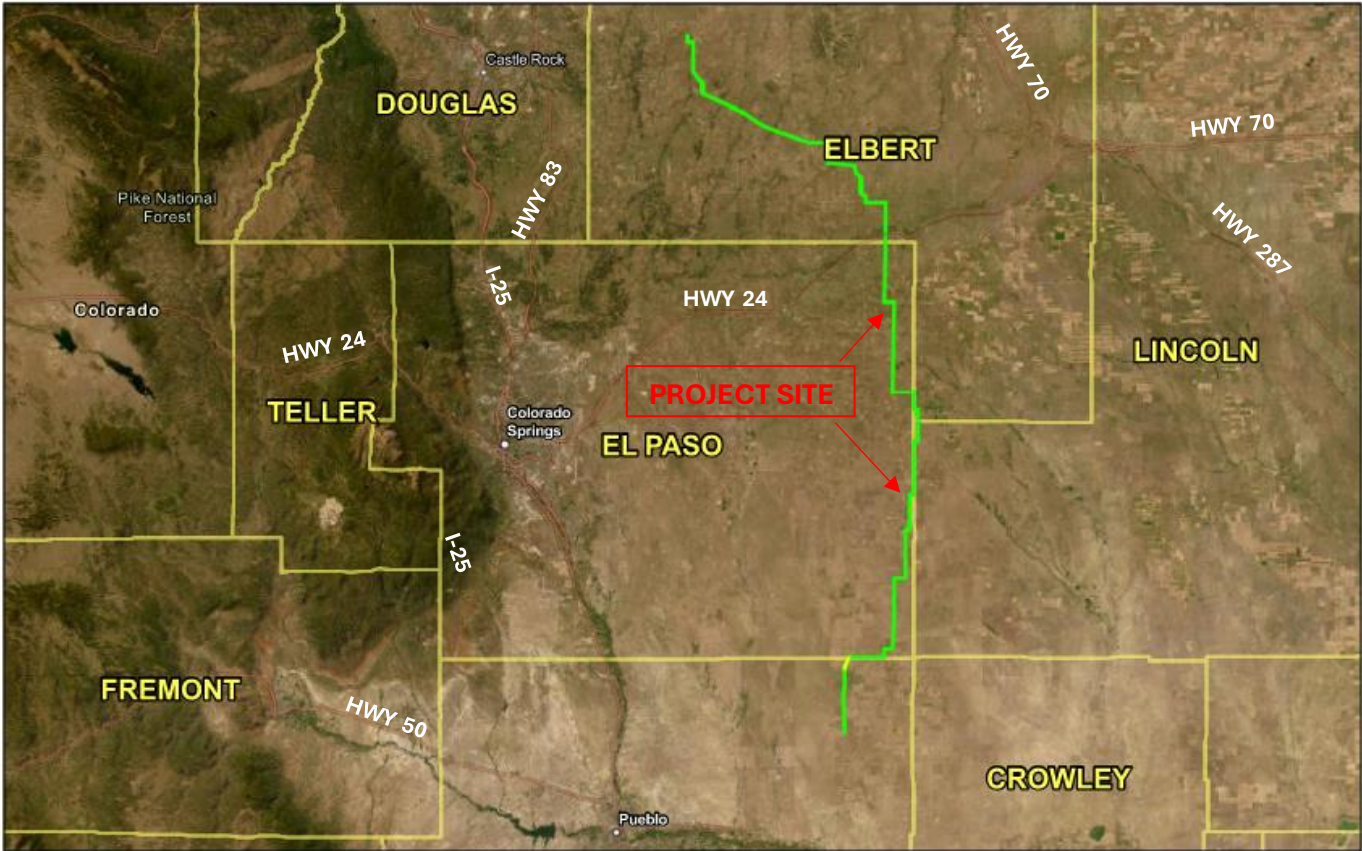
## Appendix

- A. Vicinity Map
- B. FEMA Firm Panels
- C. Floodplain Statement of No-Impact
- D. Design Drawings
- E. Drainage Letter of Conformance Checklist



## Appendix A – Vicinity Map







## Appendix B – FEMA FIRM Maps

**NOTES TO USERS**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updates or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevation Tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations** shown on this map apply only (landward of 0.0' North American Vertical Datum of 1988 (NAVD83)). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations Table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations Table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The horizontal datum was NAD83 (GRS80) spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD83)**. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geospatial Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geospatial Survey website at <http://www.ngs.noaa.gov/> or contact the National Geospatial Survey at the following address.

NGS Information Services  
NOAA, NIMS12  
National Geospatial Survey  
95MG-2, #9202  
1315 East-West Highway  
Silver Spring, MD 20910-3202

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

**Base Map** information shown on this FIRM was provided in digital format by Elbert County CIE Department and Anderson Consulting Engineers, Inc. These data are current as of 2009.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel delineations that differ from what is shown on this map.

**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

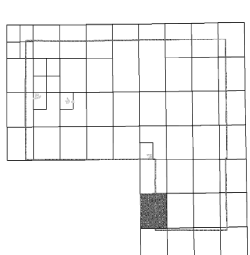
Contact **FEMA Map Service Center** at 1-800-350-0616 for information on available products associated with the FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-Map (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/>.

**Elbert County Vertical Datum Offset Table**

Flooding Source	Vertical Datum Offset (ft)
N/A	N/A

**Panel Location Map**



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado



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**LEGEND**

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

In the annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, X, VE, V1, V2, V3, V4, V5, V6, and V7. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

In Base Flood Elevations determined by Flood Elevation Determination.

**ZONE A** Flood Elevation Determination. For areas of minimal ponding, Base Flood Elevations determined.

**ZONE AE** Flood Elevation Determination. For areas of minimal ponding, Base Flood Elevations determined.

**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain), average depth determined. For areas of minimal ponding, velocities also determined.

**ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently discontinued. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

**7PMF AAA** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action), no Base Flood Elevations determined.

**ZONE VE** Coastal flood zone with velocity hazard (wave action); base flood floodway determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increases in flood height.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from the 1% annual chance flood.

**OTHER AREAS**

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

OPAs areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary  
Floodway boundary  
Zone D boundary  
CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.  
Base flood elevation line and water elevation in feet.  
Base Flood Elevation value where (within action zone) elevation is feet.

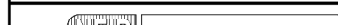
Refer to the North American Vertical Datum of 1988 (NAVD 83)

○ A ○ A Cross section line  
23 23 Traversed line  
91° 07' 30.00" 32° 22' 30.00" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)  
1:250,000 1:250,000 1000-meter Universal Transverse Mercator grid lines, ZONE 13  
000000+1 5000-foot grid ticks; Colorado State Plane coordinate system, central zone (EPSNCRS03); Lambert Conformal Conic Projection  
LUXS1D Bench mark (see explanation in notes to users section of the FIS report)  
M1.5 River Mile

**MAP REPOSITORIES**  
Refer to Map Repositories list on Map Index

**EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP**  
MARCH 17, 2011

For community map revision history prior to countywide mapping, refer to the Community Map history table located in the Flood Insurance Study report for this jurisdiction.  
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-9620.



**MAP SCALE 1" = 2000'**

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**  
FLOOD INSURANCE RATE MAP  
ELBERT COUNTY,  
COLORADO  
AND INCORPORATED AREAS

**PANEL 1025 OF 1200**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS**

COMMUNITY	NUMBER	NUMBER	DATE	DATE
ELBERT COUNTY	1025	1025	03/17/11	03/17/11

MAP NUMBER  
**08030C1025C**

**EFFECTIVE DATE:**  
MARCH 17, 2011  
Federal Emergency Management Agency

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To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profile and Floodway Data and/or Summary of Stillwater Elevations tables combined within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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NGS Information Services  
NOAA, NIMS12  
National Geospatial Survey  
SSMC-3, 8022  
1315 East-Walk Highway  
Silver Spring, MD 20910-3282

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**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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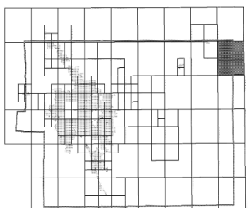
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**El Paso County Vertical Datum Offset Table**

Flooding Zones	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

**Panel Location Map**



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In Base Flood Elevations determined by Base Flood Elevations determined.

**ZONE A** Base Flood Elevations determined.

**ZONE AE** Base Flood Elevations determined.

**ZONE AH** Base Flood Elevations determined.

**ZONE AO** Flood depths of 1 to 3 feet (basely sheet from on-shore lands), average depth determined. For areas of sheet on floodplains, velocities also determined.

**ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was inadequately designed. Zone AR indicates the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

**7ZMF AREA** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

**ZONE VE** Coastal flood zone with velocity hazard (wave action); base flood floodplains determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increase in flood height.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage slope less than 1 percent; these areas are protected by levees from the 1% annual chance flood.

**OTHER AREAS**

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplains.

**ZONE D** Areas in which flood hazards are undetermined; plus other.

**COASTAL HARBOR REVERSE CURVE SYSTEM (CRBS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

CRBS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary  
Floodway boundary  
Zone D boundary  
CRBS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.  
Base flood elevation lines and water elevation in feet.  
Base flood elevation where water uniform within zone; elevation in feet.

Referenced to the North American Vertical Datum of 1988 (NAVD 88)

▲ Bench mark  
— Cross section line  
— Transverse line

91° 07' 30.00"  
92° 32' 30.00"

100-meter Universal Transverse Mercator grid UTM, Zone 13  
500-foot grid ticks, Colorado State Plane coordinate system, central zone (PROJCRS COG)  
Lambert Conformal Conic Projection

Bench mark (see explanation in Notes to Users section of the map panel)

M.D. River Mile

**MAP REPOSITORIES**

Refer to Map Repository list of Map Index

CTP/COE DATE OF COUNTY/STATE FLOOD INSURANCE RATE MAP  
MARCH 17, 1997

EFFECTIVE DATES OF REVISIONS TO THIS PANEL  
DECEMBER 7, 2018 - to update coordinates, to change Base Flood Elevations and Special Flood Hazard Areas to update map format, to add fields and map frames, and to incorporate previously issued Letters of Map Amendment.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the flood insurance study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-368-9620.

**MAP SCALE 1" = 2000'**

0 1000 2000 4000 FEET  
0 800 1600 3200 METERS

**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0450G**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**EL PASO COUNTY, COLORADO AND INCORPORATED AREAS**

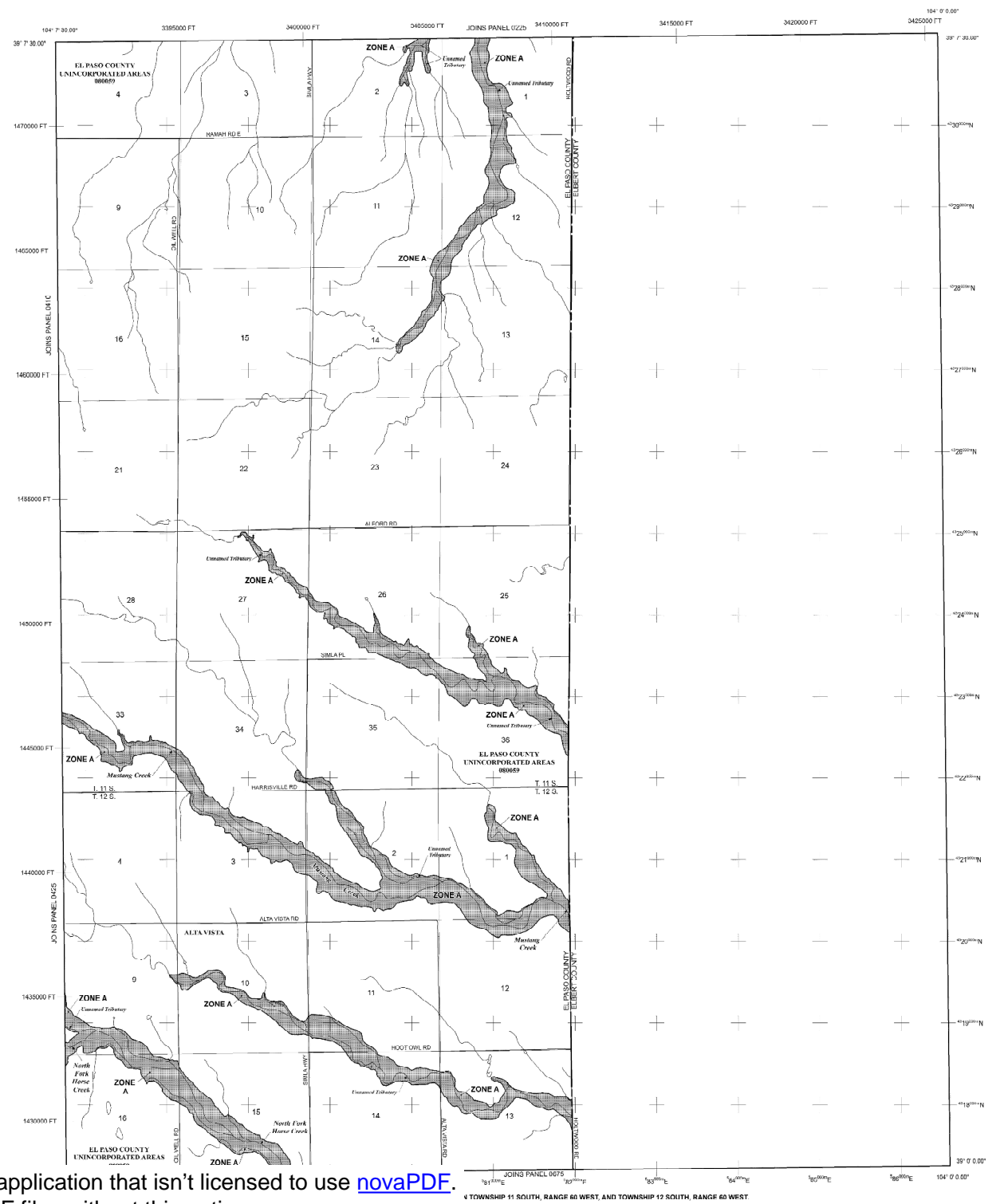
**PANEL 450 OF 1300**  
(SEE MAP INDEX FOR FIRM LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	0000	0450	A

Map Number 08041C0450G

MAP REVISED DECEMBER 7, 2018  
Federal Emergency Management Agency

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**NOTES TO USERS**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Base Flood Elevations tabular information within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations** shown on this map apply only (inward of 0.1' North American Vertical Datum of 1988 (NAVD88)). Users of this FIRM should be aware that coastal base flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the flood insurance study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The horizontal datum was NAD83 GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRM for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geospatial Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geospatial Survey website at <http://www.ngs.noaa.gov> or contact the National Geospatial Survey at the following address:

NGS Information Services  
NOAA, NHD512  
National Geospatial Survey  
SSMC-3, #0202  
1215 East-Wash Highway  
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov>.

**Base Map** information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

This map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel variations that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable in the FIS report. As a result, the profile baselines may deviate significantly from the new base map stream channel representation and may appear outside of the floodplain.

**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (MIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/mfp>.

**El Paso County Vertical Datum Offset Table**

Flooding Source	Vertical Datum Offset (ft)
-----------------	----------------------------

REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION

**Panel Location Map**



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado



**LEGEND**

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The special flood hazard area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, X, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

**In Base Flood Floodways Determined**

- ZONE A** Base Flood Elevations determined.
- ZONE AE** Flood depths of 1 to 3 feet (locality areas of ponding); Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (locality areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (basely sheet flow on sloping terrain); average depth determined. For areas of sheet flow floodway velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was inadequately designed. Zone AR indicates that the former flood control system is being removed to provide protection from the 1% annual chance or greater flood.
- 7ZMF AREA** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); base flood floodway elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increases in flood height.

**OTHER FLOOD AREAS**

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage waste less than 1 foot; most areas are protected by levees from the 1% annual chance flood.

**OTHER AREAS**

- ZONE X** Areas determined to be outside the 0.2% annual chance floodway.
- ZONE D** Areas in which flood hazards are undetermined; also possible.

**COASTAL BARRIERS RIPOURCE'S SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area of different Base Flood Elevations; Flood depths or flood velocities.
- Base flood elevation line and water elevation in feet.
- Base flood elevation value where uniform within zone; elevation in feet.

\* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- Cross section line
- Traverse line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 100-meter Universal Transverse Mercator grid lines, Zone 13
- 500-foot grid ticks, Colorado State Plane coordinate system, central area (PROJCS=CRS)
- Lambert Conformal Conic Projection
- Bench mark (see explanation in Notes to Users section of the FIS report)
- River Mile

**MAP REPOSITORIES**

Refer to Map Repository List of Map Index

**EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP**  
MARCH 17, 1997

**EFFECTIVE DATES OF REVISIONS TO THIS PANEL**  
DECEMBER 7, 2018 - to update coordinates, to change Base Flood Elevations and Special Flood Hazard Areas to comply with FEMA 1549-1-10 and 1549-1-10a, and to incorporate previously issued Letters of Map Amendment.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the flood insurance study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-368-9620.

**MAP SCALE 1" = 2000'**

1000 2000 4000 FEET  
800 0 800 1200 METERS

**PANEL 0675G**

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**EL PASO COUNTY, COLORADO AND INCORPORATED AREAS**

**PANEL 675 OF 1300**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	0675	675	G

**MAP NUMBER**  
08041C0675G

**MAP REVISED**  
DECEMBER 7, 2018

Federal Emergency Management Agency

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13TH TOWNSHIP 12 SOUTH, RANGE 80 WEST, AND TOWNSHIP 13 SOUTH, RANGE 80 WEST.

**NOTES TO USERS**

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To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations** shown on this map apply only (landward of 0.0' North American Vertical Datum of 1988 (NAVD88)). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The horizontal datum was NAD83 GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geospatial Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geospatial Survey website at <http://www.ngs.noaa.gov> or contact the National Geospatial Survey at the following address:

NGS Information Services  
NOAA, NHC512  
National Geospatial Survey  
SSMC-3, 80202  
1215 East-Wash Highway  
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov>.

**Base Map** information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

This map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel conditions that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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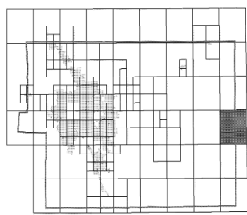
Contact **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (HMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

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**El Paso County Vertical Datum Offset Table**

Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

**Panel Location Map**



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado, Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado



**LEGEND**

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Areas A, AE, AO, AR, X, Y, VE, V, and VE-1. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

In Base Flood Floodways determined:

- ZONE A** Base Flood Elevations determined.
- ZONE AE** Flood depths of 1 to 3 feet (locality areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (basely sheet flow on sloping terrain); average depth determined. For areas of sheet flow floodways, velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was inadequately described. Zone AR indicates the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- 7ZMF AREA** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); base flood floodway elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increases in flood height.

**OTHER FLOOD AREAS**

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile; areas protected by levees from the 1% annual chance flood.
- OTHER AREAS** Areas determined to be outside the 0.2% annual chance floodway areas in which flood hazards are undetermined, just possible.

**COASTAL BARRIERS RE SOURCE'S SYSTEM (CRBS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

CRBS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CRBS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood depths or Flood velocities.
- Base flood elevation line and water elevation in feet; base flood elevation value where uniform within zone; elevation in feet.
- 5/3 (EL. 887)
- Referenced to the North American Vertical Datum of 1988 (NAVD 88)
- Cross section line
- Transverse line
- 91° 07' 30.00" 32° 22' 30.00"
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 100-meter Universal Transverse Mercator grid ticks, Zone 13
- 500-foot grid ticks, Colorado State Plane coordinate system, central zone (PROJCS: NAD83, Lambert Conformal Conic Projection)
- Bench mark (see explanation in Notes to Users section of the FIS report)
- M1.5 River Mile

**MAP REPOSITORIES**

Refer to Map Repository list of Map Index

**EFFECTIVE DATE OF COUNTYwide FLOOD INSURANCE RATE MAP**  
MARCH 17, 1997

**EFFECTIVE DATES OF REVISIONS TO THIS PANEL**  
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas to update map format, to add fields and map frames, and to incorporate previously issued Letters of Map Amendment.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-368-9620.

**MAP SCALE 1" = 2000'**

0 1000 2000 4000 FEET  
0 0 100 200 METERS

**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0900G**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**EL PASO COUNTY, COLORADO AND INCORPORATED AREAS**

**PANEL 900 OF 1300**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

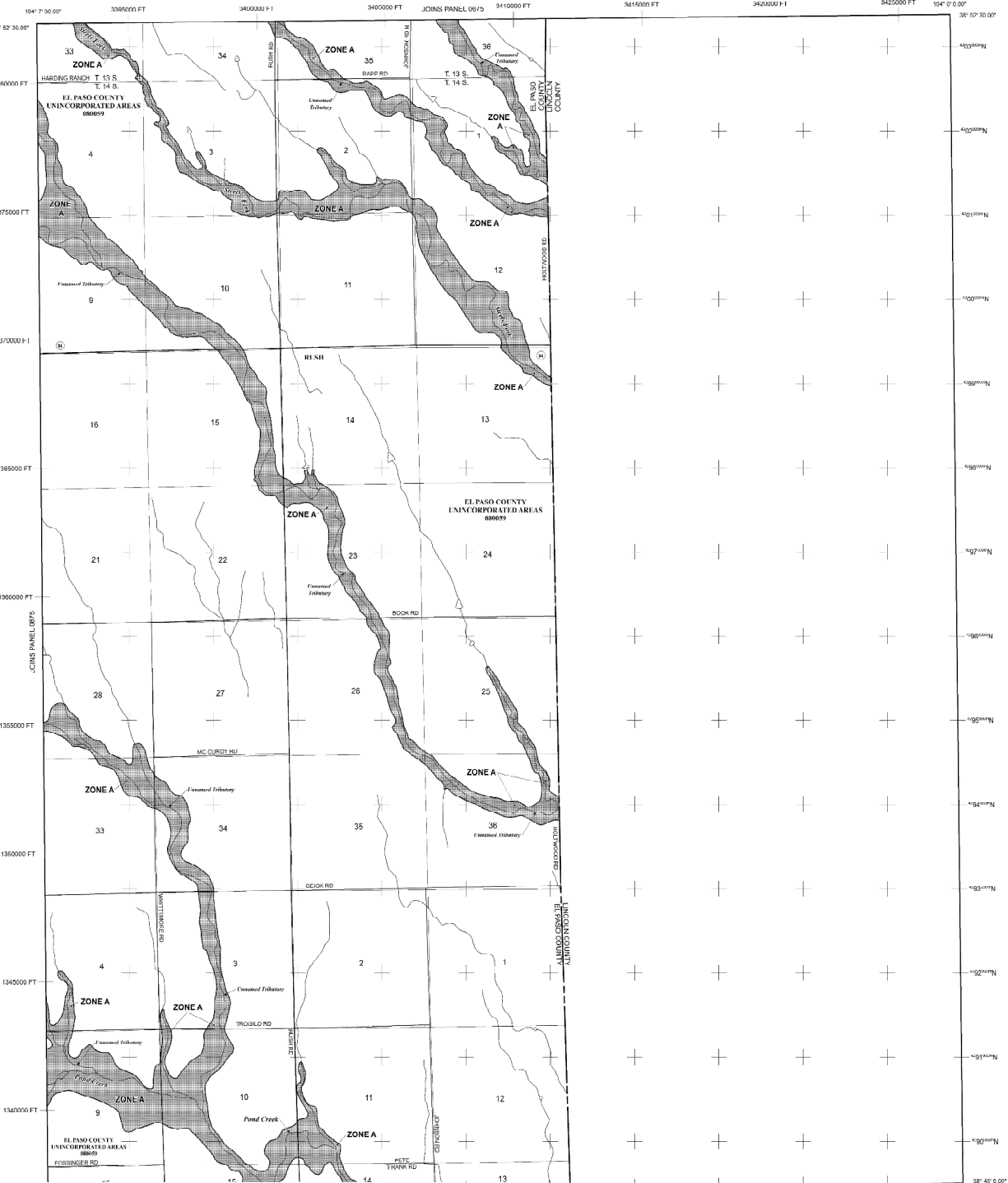
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	0900	0900G	A

MAP NUMBER  
**08041C0900G**

MAP REVISED  
**DECEMBER 7, 2018**

Federal Emergency Management Agency



RANGE 80 WEST, AND TOWNSHIP 14 SOUTH, RANGE 80 WEST, AND TOWNSHIP 13 SOUTH, RANGE 80 WEST.

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NOTES TO USERS

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To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway redlines and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12. The horizontal datum was NAD83. Geoid separation differences in datum, orthorectification or UTM zone stone used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988 (NAVD88). These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Service  
NODAP, NNGS-12  
National Geodetic Survey  
SSM-C-3, #9202  
1315 East-West Highway  
Silver Spring, MD 20910-0202

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (201) 713-3202 or visit its website at <http://www.ngs.noaa.gov/>.

Data Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

This map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contain authoritative hydraulic data) may reflect stream channel delineations that differ from what is shown on this map. The profile baselines reported on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable in the FIS report. As a result, the profile baselines may change significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or dis-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

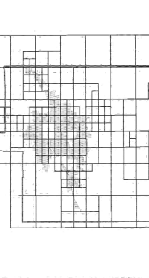
Contact FEMA Map Service Center (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-6227 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of the map. The MCI may also be reached by fax at 1-800-368-9620 and its website at <http://www.msc.fema.gov/>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-6227) or visit the FEMA website at <http://www.fema.gov/business/firm/>.

El Paso County Vertical Datum Offset Table

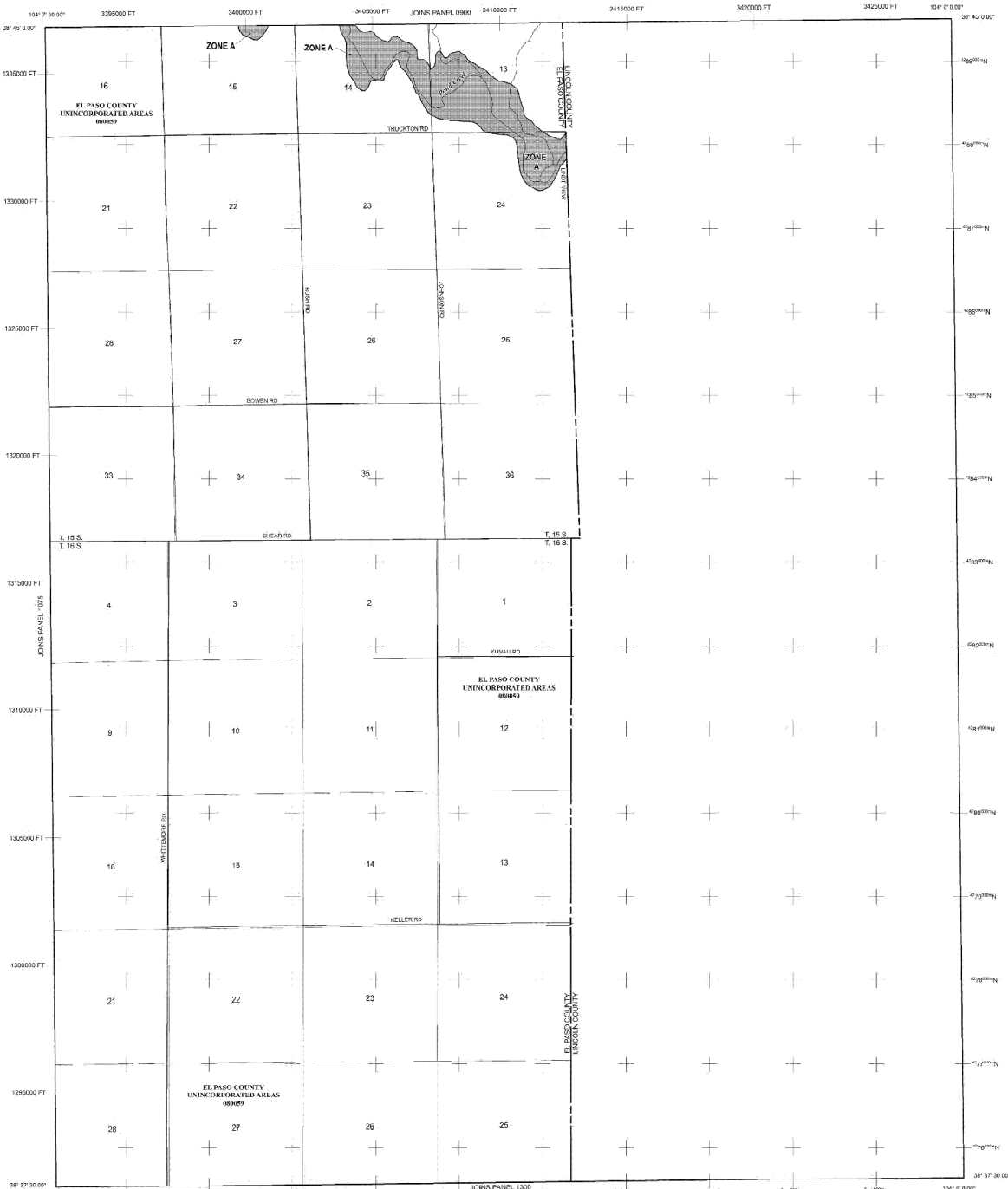
Table with 2 columns: Feeding Source, Vertical Datum Offset (ft)

Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Parties (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 15 SOUTH, RANGE 60 WEST, AND TOWNSHIP 16 SOUTH, RANGE 60 WEST

LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO UNDRAINAGE BY THE 1% ANNUAL CHANCE FLOOD
ZONE A
ZONE AE
ZONE AO
ZONE A99
ZONE V
ZONE VP
FLOODWAY AREAS IN ZONE AE
OTHER FLOOD AREAS
OTHER AREAS
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
MAP REPOSITORIES

PANEL 1100G
FIRM FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO AND INCORPORATED AREAS
PANEL 1100 OF 1300
MAP NUMBER 08041C1100G
MAP REVISED DECEMBER 7, 2018
Federal Emergency Management Agency



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tabular information within the Flood Insurance Study (FIS) report that accompanies this FIRI. Users should be aware that BFEs shown on the FIRI represent rounded whole-foot elevations. These BFEs are intended for flood insurance purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRI for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only (inward of 0.0' North American Vertical Datum of 1988 (NAVD88)). Users of this FIRI should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRI.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The horizontal datum was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRIs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRI.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988 (NAVD88). These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geospatial Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geospatial Survey website at http://www.ngs.noaa.gov or contact the National Geospatial Survey at the following address:

NGS Information Services
NOAA, NHD512
National Geospatial Survey
SSMC-3, #3022
1315 East-Wash Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov.

Base Map information shown on this FIRI was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

This map reflects more detailed and up-to-date stream channel configurations and floodplain delineations than those shown on the previous FIRI for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRI may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel variations that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact FEMA Map Service Center (MSC) via the FEMA Map Information eXchange (MIX) 1-877-336-2627 for information on available products associated with this FIRI. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report and/or digital versions of this map. The MSC may also be reached by Fax at 1-900-536-9620 and its website at http://www.msc.fema.gov/.

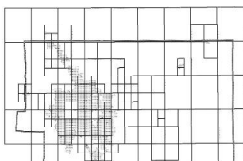
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfp.

El Paso County Vertical Datum Offset Table

Table with 2 columns: Flooding Source, Vertical Datum Offset (ft)

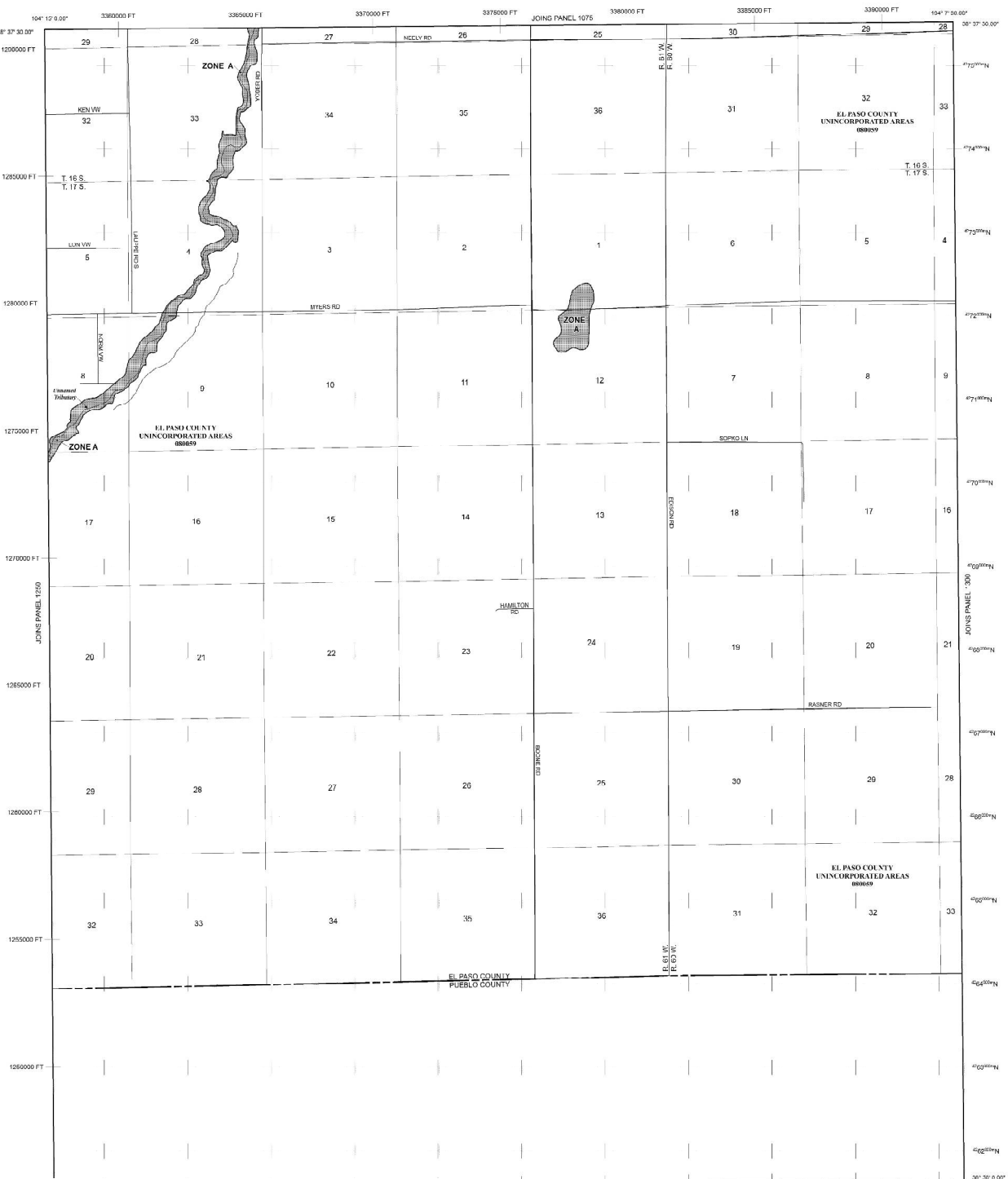
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION

Panel Location Map



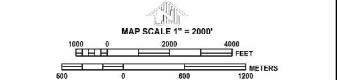
This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado, Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
ZONE A
ZONE AE
ZONE AO
ZONE AR
ZONE AV
ZONE V
ZONE X
ZONE D
ZONE D-50
OTHER FLOOD AREAS
OTHER AREAS



Panel 1275G
FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO AND INCORPORATED AREAS
PANEL 1275 OF 1300
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
EL PASO COUNTY 06336 1275 0
MAP NUMBER 08041C1275G
MAP REVISED DECEMBER 7, 2018
Federal Emergency Management Agency





## Appendix C – Floodplain Statement of No-Impact



July 12, 2024

Dear Keith Curtis  
Floodplain Administrator Pikes Peak Regional Building Department  
2880 International Cir,  
Colorado Springs, CO 80910

Dear Mr. Curtis,

I certify that I am a duly qualified registered Professional Engineer or Architect licensed in the state of Colorado.

I preliminarily certify that the proposed impacts from Xcel's PWAY Segment 5 Transmission Line Project as conceptually detailed on the construction drawings will result in zero rise in the FEMA designated 100-year flood heights, and no increase in the 100-year discharge and no increase in the 100-year floodplain width, at published and unpublished cross sections of the current FEMA floodplains and waterways as shown on following FEMA FIRM Panels.

FEMA FIRM panels 08041C1275G, 08101C0175D, 08101C0200D, 08041C1300G, 08041C1100G, 08041C0900G, 08041C0675G, 08041C0450G. Please note that panels 08101C0175D, 08101C0200D, and 08041C1300G are not printed.

The following creek crossings are included in FEMA FIRM Panel # 08041C0900G:

The project passes through an Unnamed Tributary of West Branch Creek, along County Road 1, north of the intersection of Gieck Road and County Road 1. The project passes through Steels Fork Creek along County Road 1, south of the intersection of State Highway 94 and County Road 1.

The following creek crossings are included in FEMA FIRM Panel # 08041C0675G:

The project passes through Little Horse Creek Unnamed Tributary, along County Road 133 just south of the intersection of County Road 133 and County Road 12. The project passes through Little Horse Creek, at the intersection of Little Corona Road and North Rush Road. The project passes through Horse Creek along North Rush Road, south of the intersection of Cold Iron Road and North Rush Road, and north of the intersection at Judge Orr Road and North Rush Road. The project passes through North Fork Horse Creek, just south of the intersection of Funk Road and Simla Highway.



The following creek crossings are included in FEMA FIRM Panel # 08041C0450G:

The project passes through an Unnamed Tributary of Mustang Creek, just north of the intersection of Hoot Owl Road and Simla Highway. The project passes through Mustang Creek just north of the intersection of Alta Vista Road and Simla Highway. The project passes through Mustang Creek along Harrisville Road, east of the intersection of Harrisville Road and Oil Well Road. The project passes through Mustang Creek along Oil Well Road, just north of the intersection of Harrisville Road and Oil Well Road.

Panels 08041C1275G, 08101C0175D, 08101C0200D, 08041C1300G, 08041C1100G do not contain any creek crossings related to the project.

This certification is intended as proof of meeting the requirements set forth in the Pikes Peak Regional Building Code RBC313.20.1. This preliminary certification is based on the conceptual transmission foundation layout and foundation sizing. This preliminary certification will be validated and resubmitted once the transmission line structure locations are finalized and floodplain modeling results are completed.

I offer the following documentation in accordance with standard Engineering practice to support my findings:

- a) PWAY Segment 5 Preliminary Layout KMZ
- b) PWAY Segment 5 Preliminary Drainage Report
- c) FEMA FIRM Panels

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Samuel D. Acosta, P.E. CFM  
Registered Professional Engineer  
State of Colorado  
No. 52470



## Appendix D – Design Drawings

TO BE INCLUDED WITH THE  
PRELIMINARY DESIGN SUBMITTAL



## Appendix E - Drainage Letter of Conformance Checklist



2880 International Circle, Suite 110  
 Colorado Springs, CO 80910  
 Phone 719-520-6300  
 Fax 719-520-6695  
 www.elpasoco.com

**EL PASO COUNTY PLANNING AND  
 COMMUNITY DEVELOPMENT  
 DEPARTMENT**

**PRELIMINARY DRAINAGE REPORT (PDR) CHECKLIST**

Revised: January 2022

<b>Preliminary Drainage Report</b>		
The purpose of the Preliminary Drainage Report is to identify specific solutions to problems onsite and offsite resulting from proposed land development, including issues existing prior to development. The PDR shall generally conform to the following outline format and major headings, and contain the applicable information listed.		
	<b>Applicant</b>	<b>PCD</b>
<b>Please confirm each item below has been included by placing a check mark in the "Applicant" column. See right for an example. The "PCD" column is for office use only.</b>	✓	Office use only
<b>Report Contents</b>		
1	Table of contents, pages numbered	
2	Existing/Historic and Developed Conditions Plans at the end of the report	
<b>General Location</b>		
1	City and County, and local streets within and adjacent to the subdivision.	
2	Township, Range, section, 1/4 section.	
3	Major drainage ways and existing facilities.	
4	Names of surrounding platted developments.	
<b>Description of Property</b>		
1	Area in acres	
2	Ground cover, (type of trees, shrubs, vegetation)	
3	General topography	
4	General soil conditions	
5	Major drainageways	
6	Irrigation facilities	
7	Utilities and other encumbrances	
<b>Major Basin Descriptions</b>		
1	Reference should be made to major drainageway planning studies; Such as Drainage Basin Planning Studies; Flood Hazard delineation reports, and flood insurance studies or maps if available.	
2	A floodplain statement shall be provided indicating whether any portion of the development is in a designated floodplain as delineated on the current FEMA mapping.	
3	Major basin drainage characteristics.	
4	Identification of all nearby irrigation facilities and other obstructions which could influence or be influenced by local drainage.	
<b>Sub-Basin Descriptions</b>		
1	Discussion of historic drainage patterns of the property in question	
2	Discussion of offsite drainage flow patterns and their impact on the development	



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**PRELIMINARY DRAINAGE REPORT (PDR) CHECKLIST**

Revised: January 2022

<b>Drainage Design Criteria</b>		
1	Reference all criteria, master plans, and technical information used for report preparation and design; any deviation from such material must be discussed and justified.	
2	Discussion of previous drainage studies (i.e. PDR, drainage basin planning studies, master plans, flood insurance studies) for the site in question that influence or are influenced by the drainage design and how the studies affect drainage design for the site	
<b>Four-Step Process</b>		
1	Runoff reduction proposed.	
2	Stabilization of drainage ways proposed/discussed.	
3	Proposed Stormwater Quality Capture Volume (WQCV) proposed.	
4	Identify Best Management Practices (BMP's) to be used to control industrial and commercial pollutants.	
<b>Hydrologic Criteria</b>		
1	Identify design rainfall.	
2	Identify runoff calculation method.	
3	Identify design storm recurrence intervals	
4	Identify detention discharge and storage calculation method.	
5	Note ECM Appendix I Full Spectrum Detention (FSD) requirement.	
<b>Drainage Facility Design - General Concept</b>		
1	Discussion of compliance with offsite runoff considerations.	
2	Discussion of anticipated and proposed drainage patterns.	
3	Discussion of the content of tables, charts, figures, plates or drawings presented in the report.	
<b>Drainage Facility Design - Specific Details</b>		
1	Presentation of existing and proposed hydrologic conditions including approximate flow rates entering and exiting the subdivision with all necessary calculations.	
2	Presentation of approach to accommodate drainage impacts on existing or proposed improvements and facilities.	
3	Presentation of proposed facilities with respect to alignment, material and structure type.	
4	Discussion of drainage impact of site constraints such as streets, utilities, existing and proposed structures.	
5	Environmental features and issues shall be presented if applicable.	
6	Discussion of maintenance access and aspects of the preliminary design.	
7	Discussion and analysis of existing and proposed downstream drainage facilities and their ability to convey developed runoff from the proposed development.	
<b>Drawing Contents</b>		
1	General Location Map: A map shall be provided in sufficient detail to identify drainage flows entering and leaving the development and general drainage patterns. The map should be at a scale of 1"=50' to 1"=2000'. The map shall identify any major construction (i.e. development, irrigation ditches, existing detention facilities, culverts, storm sewers, etc.) that shall influence or be influenced by the subdivision.	
2	Drainage Plan: Map (s) of the proposed development at a scale of 1"=20' to 1"=200' shall be included to identify existing and proposed conditions on or adjacent to the site in question.	
3	The drainage plan shall delineate all sub-basins and proposed initial and major facilities as well as provide a summary of all initial and major flow rates at design points. All floodplains affecting the site shall be shown.	