

**Fountain Creek Watershed, Flood Control and Greenway District
BOARD OF DIRECTORS
MINUTES**

July 23, 2010

The meeting was held at:
City of Colorado Springs, City Council Chambers
107 N. Nevada Avenue, Suite 325
Colorado Springs, CO 80903

1. CALL TO ORDER AND ESTABLISHMENT OF A QUORUM:

Pueblo County Commissioner Jeff Chostner called the meeting to order at 1:05 p.m.

In attendance were the following duly designated members of the Board of Directors of the District:

<u>Name</u>	<u>Appointing Authority</u>
Jeff Chostner	Pueblo County
Jane Rhodes	Fountain Creek Land Owner
Jeri Howells	Alternate - City of Fountain
Larry Small	City of Colorado Springs
Dennis Hisey	El Paso County
Richard Skorman	Citizens Advisory Group
Ingrid Richter	Alternate Municipal Rep
<u>Excused</u>	
Max Stafford	EPC Small Municipalities
Larry Atencio	City of Pueblo
Leroy Mauch	Lower Arkansas Water Conservancy District

A quorum was noted. Also present were Dan Kogovsek, Legal Counsel, and Gary Barber, Interim Executive Director.

2. APPROVAL OF AGENDA

Upon motion duly made, seconded, and unanimously carried, the agenda was approved.

3. APPROVE MINUTES OF PRIOR BOARD MEETING

Upon motions duly made, seconded, and unanimously carried, the minutes of the Board meeting of June 25th, 2010 and the special meeting held July 12th, 2010 were approved.

4. PUBLIC COMMENT – none

5. DIRECTOR COMMENTS –

Ingrid Richter introduced herself as the small municipality alternate.
Larry Small thanked the City of Colorado Springs for hosting this month's meeting.
Dennis Hisey welcomed Ingrid Richter to the board.

6. REGULAR REPORTS:

6A. Technical Advisory Committee – Dennis Maroney

Gary Barber directed the attention of the board to the questions in the board packet that were produced by TAC members. Dennis Maroney introduced visitors from FEMA, CWCB and Michael Baker Jr. Inc.

FEMA PRESENTATION –Dave Jula and others

El Paso County DFIRM Project

- Countywide DFIRM was initiated in 2007
- Scope:
 - Incorporation of several existing data studies, including Fountain Creek Templeton gap levee
 - Convert rest of county into DFIRM format
- Independent QA/QC Reviews
- FEMA alternative methodology
- Current status

Preliminary scheduled for October 30, 2011

CWCB requested USACE update to hydrology along Fountain Creek through El Paso, Pueblo and Teller Counties

- Effective FEMA studies reflect a large discrepancy in discharges at the El Paso/Pueblo County boundary
- El Paso – 93,000 cfs; Pueblo – 64,000 cfs (29,000 cfs difference)

USACE Analysis - April 2004

- Gage FFA
- Regression Equation comparisons
- Rainfall runoff model (used for final discharge recommendation)

USACE contracted with URS to refine analysis – March 2006

- purpose-update rainfall runoff model to reflect updated local land use data; develop future conditions model; and refine model to include minor subbasins.
- submitted to FEMA for incorporation in ongoing DFIRM project

FEMA Independent QA/QC Review – May 2009

- Modified Puls method used for routing portions of watershed in an attempt to calibrate to the FFA
- FEMA requested additional data to support analysis
- All concerns resolved with exception to backup data to support Modified Puls application.
- Could not use USACE/URS analysis due to lack of backup data that is required in the event of an appeal.

Modified Puls Tabular Data

- Data was discussed and effects shown

FEMA Alternative Analysis

- FEMA contracted Baker to perform an alternative analysis using defensible methodologies
- Used FFA on 7 gages along Fountain Creek that had adequate years of data (at least 10 years as per Bulletin 17B requirements)

- Gages do not have consistent and concurrent records that document historic floods (1921 and 1935 historic floods estimated for near Pinon gage)
- Bulletin 17B methods were used to compensate for these deficiencies
 - Low outliers censored and adjusted
 - High outlier threshold and historic adjustment used
 - Weighted skew
- Graphs with gage analysis for different areas were then shown
- Gage analysis results were shown and discussed
- Comparison to effective FIS and to USACE/URS results

TAC questions for FEMA:

USAF - USAFA

Q: How can the disparity between the URS/USGS studies and this analysis be explained?

- FFA Analysis vs. Rainfall Runoff Methods

Q: The only gage station with a significant data set appears to be the Pueblo gage. The Study uses a statistical-analysis method, which calculates hypothetical-flood discharges. Statistical analysis is generally applied to natural un-urbanized streams. I think it is safe to say that this basin has seen significant urbanization within the last three decades, so the gage records that represent more natural conditions may no longer directly apply. Would it seem more appropriate that a computer simulation technique be used? How has the extensive urbanization within the basin been accounted for?

- Acceptable to use statistical analysis at these locations
- Gage data extends over time period suitable to capture urban development in area
- Trends (or lack of trends) shown on next slides

PPACG

Q: How come flow data from other USGS gauging stations was not used to supplement the data from the seven stations that were used? Flow data appears to be available from USGS stations: 07103707, 07103970, 07104905 and other stations but was not used?

- Only applicable gage sites were used
- Gages noted are either not on Fountain Creek or do not have peak flow data (water quality versus peak flow)

Q: on page 6, Paleo-hydrologic analyses flows appear to be used for 1965 although on page 4 it looks like the data set for the Pueblo station includes actual flows. Were Paleo flows replaced with actual flows for this station?

- 1965 peak flow value of 47,000 was published USGS data point, which was derived from Paleohydrologic analysis

Q: When the system record is modified to extend the period of record does it include any analysis other than the Paleohydrologic analysis? That is when the period of record is extended from 41 to 70 years does it really include 29 years of data or just 2 to 3 years of data?

- Adding Paleohydrologic data as historic peaks gives extra weight to the systematic record to get equivalent of 70 years of data.
- Follows Bulletin 17B methodology

City of Colorado Springs

Q: There has been considerable development within the Fountain Creek watershed since much of the data used in the frequency analysis was collected. Shouldn't this be accounted for in the selection of flood flow estimates?

- Gage data extends over time period suitable to capture urban development in area
- Up to 2008 peaks (up to 2001 used in USACE original study), minimal or no trends in the annual peak flows as shown previously

Q: Why does the selected Frequency Curve not fit the data better above about the 10-year return period? The projected frequency curves consistently fall below recorded data and the estimated flows in this range of the charts. It appears that a positive skew applied to all of the data sets would provide a better fit with the data and with the estimated flows from the Paleo record and the URS analysis. In most cases it appears that a positive skew would put the URS estimates very close to the frequency curves.

- The applied weighted skew (combination of statistical skew and general skew) at all 7 of the gages is positive

City of Pueblo Stormwater Utility

Q: What is the impact of using a gauge station with 19 years of records in determining flood frequency flows?

- Minimum gage record is 10 years for FFA using Bulletin 17B guidelines
- Base flood discharges are consistent – Discharges vs. Drainage Area

Q: What impact will new DFIRM mapping have in the upper reaches of the watershed where proposed mapping will reflect significant peak flow changes from the current effective FIS, the CORP Study, the URS Study: flood insurance requirements, flood plain widths, flood plain encroachment, existing & future infrastructure and flood plain preservation?

- Communities can adopt ordinance more stringent than minimum NFIP requirements
- Possibly acquire the spaces of concern and maintain them as open space or put "disclaimers" in their permits with language like "although this designated outside of the SFHA on the FIRM, areas outside of mapped SFHA can be subject to flooding and flood insurance is recommended"

Q: What response has FEMA received from the CORP or URS regarding the "Mapping on Demands" letter of May 26, 2009?

- Email response from Corps and letter response from URS
- Subsequent phone call with USACE and URS
- Determined there is no backup data for Modified Puls application

Q: Is there a reasonable explanation for the good correlation of peak flows in the lower portion of the watershed and such a wide divergence of flow values in the upper reaches of Fountain Creek?

- Upper reaches may have difference hydrologic region (mountainous) than lower regions (plains)
- Historic floods occurred at lower reaches (Jimmy Camp Creek, Monument Creek, etc.)

Q: What is the significance of "Paleo Records" when final frequency curves always fall below these data points?

- Paleohydrologic results may have possible recurrence intervals of 500 to 2000 years

- Extending historic period in FFA would bring curve closer to data points but lower discharges
- Including paleoflood data does increase the estimates of the flood discharges – systematic record has more weight

Others

Q: In the upper reaches through Colorado Springs, the predicted peak flows of the Baker report are significantly lower than those of the current effective FIS and those of the more recent reports conducted by the USACE and URS. Is FEMA confident that the lower peak flows of the Baker report represent actual 100-year flood conditions, especially when considering that the peak flows of the more recent reports may be more reflective of the current substantial urbanization?

- Effective base flood discharges appear to be high
- Studies from 1960s and 1970s were used to develop effective discharges. Historic peaks had a greater impact for the short gage records available in the 1970s
- Peak flows from gage data have captured urbanization in areas, as discussed previously

NEXT Steps

- perform hydraulic analysis for Fountain Creek
- Resolve Templeton Gap certification
- Issue Preliminary DFIRM for El Paso County
 - October 20, 2011
- Post preliminary processing for DFIRM
 - Approximately 11-13 months for Effective DFIRM – these are the maps that will be used by the flood insurance industry.

6B. Citizens Advisory Group – Ferris Frost

The TAC will be doing a booth at the State Fair. There will be brochures and a video playing.

6C. Financial Reports and Approval of Invoices – Gary Barber

Upon motion duly made, seconded, and unanimously carried, payment of the following invoices was approved:

Master Plan Fund	
THK	\$ 21,008.88
General Fund	
Garald Barber	\$ 5,000.00
DMSC, LLC	\$ 180.00
Elise Bergsten	<u>\$ 225.00</u>
Total	\$ 5,405.00

Mr. Barber presented financial statements through June, 2010. Upon motion duly made, seconded, and unanimously carried, the financial report was approved.

6D. Legal Report – none

6E. Executive Director’s Report – Gary Barber (see report)
Headwaters Magazine

- A recent issue includes an article written about the district, titled "Fountain Creek's New Advocate".

City of Fountain collaboration

- Wells Property: The City of Fountain is working to purchase this property, which has historic and environmental value. City of Fountain, El Paso County, GOCO, the Fountain Creek District, Colorado State Parks, and the Fountain Creek Foundation could all potentially be involved. The 7-acre site could include a community building and trails.

Project Administration

- Draft Scope for Flood Control Study has been received.

Strategic Watershed Planning

- Working on a global watershed map to show the public the scope of projects that are happening within the watershed.

7. OLD BUSINESS

7A. BYLAWS FOR THE DISTRICT

Gary recommends scheduling another special meeting that may be attended telephonically in order to get bylaws approved.

7B. CONTRACTING FOR GRANTS – Professional Services Agreement for Approval
Mr. Cole Emmons went over proposed contract for Matrix Design Group, Inc. This item was continued, to be addressed at the next meeting.

7C. TASK ORDER APPROVALS

Task Order 2010#1 MATRIX is for Stormwater Design Criteria Public Policy Workshops. Mr. Barber recommended continuation of this item.

8. NEW BUSINESS

9. OTHER BUSINESS

10. EXECUTIVE SESSION (if required)

11. CONFIRM NEXT MEETING TIME AND LOCATION

Upon motion made, duly seconded and unanimously carried, it was resolved that the next meeting of the District Board of Directors would take place at 1:00 p.m. on Friday, August 27th at the City of Pueblo's City Council Chambers.

12. ADJOURNMENT

The meeting adjourned at 2:20 p.m.

Larry Small, Secretary