



June 24, 2009

Ms. Stephanie Routh, CFM
Map IX – Mainland - Dewberry
7204 North 16th Street, Suite 108
Phoenix, AZ 85020

Re: 2009 FIS and DFIRM for Pima County, Arizona

Dear Ms. Routh,

Thank you for the materials submitted for the Pima County DFIRM and FIS and the opportunity for review and comment. I and my staff have reviewed the materials submitted against our internal records of Letters of Map Revisions, prior reviews of the DFIRMS, the 2006 SOMA letter, and the CMG drainage study. We have the following comments on the materials.

2009 FIS

1. Section 1.2 of the FIS should make reference to the construction of the Lower Santa Cruz Levee by Pima County Flood Control district. This levee extends from just south of Avra Valley Road to Sanders Road in Marana on the east bank of the Santa Cruz River.
2. Section 1.2 of the FIS should refer to the drainage study performed for the Lower Santa Cruz Levee entitled "Lower Santa Cruz Levee (Continental Ranch to Sanders Road.)" by Pima County Flood Control District and Town of Marana September 1998.
3. Section 1.2 of the FIS should refer to the drainage study performed for Santa Cruz Floodway entitled "Letter of Map Revision, Town of Marana and Pima County, AZ Lower Santa Cruz River RS 9.19 to RS2.94", January 31, 2003 by Kimley Horn and Associates.
4. Page 3 of Section 1.2 of the FIS makes reference to the CMG study. Please add that the report was titled "Marana Tortolita Alluvial Fan Study", CMG #28004.
5. Page 5 of Section 1.3 of the FIS can apparently fill in the date of the CCO meeting for this FIS as June 29, 2009.
6. Page 6, Table 2 can now add Derrio, Guild, Cañada Aqua East, Cañada Agua West, and Prospect Washes to the Tortolita Fan detailed study area.
7. Page 7, Table 3 can now remove the Tortolita Fan Area from the approximate study area.

8. Add to Table 4 LOMR's, Marana

Community	Flooding Source/ Project Identifier	Date Issued	Type
Town of Marana	Santa Cruz River	March10, 2005	LOMR
Town of Marana	Santa Cruz River	October 26,2006	LOMR
Town of Marana	Santa Cruz River	April 26, 2007	LOMR
Town of Marana	Santa Cruz River	September 16, 2004	LOMR
Town of Marana	Rillito Creek/ Santa Cruz	April 22, 2004	LOMR
Town of Marana	Santa Cruz River	August 31, 1999	LOMR
Town of Marana	Prospect Wash	April 19, 2004	LOMR

9. Page 17, Table 5 – please add to the Santa Cruz River at Cortaro Farms the July 31, 2006 date as being a significant flood. This flood caused the closure of several bridges and some damage in a subdivision beyond the levee.
10. Page 22 – The single sentence on the Tortolita Alluvial Fan could be moved to page 25 or beyond which describes Marana flooding.
11. Page 22 – The paragraph on the East embankment of the Southern Pacific Railroad could be moved to page 25 or beyond which describes Marana flooding. Also, due to mergers and acquisitions it is now the Union Pacific Railroad. For simplicity, I would recommend a simple search and replace of the entire document to replace “Southern Pacific Railroad” with “Union Pacific Railroad (formerly Southern Pacific)” and “SPRR” with “UPRR (fmr SPRR)”.
12. Page 25 – The paragraph on the Santa Cruz flooding makes no reference to the 1993 floods or the 2006 floods – though the 2006 flood was contained by the levee and only affected far NW Marana beyond the levee.
13. Page 25 – The paragraph on the Santa Cruz flooding makes reference to a non-existent section 10.1. Based on the previous FIS, it appears that the historical pictures of flooding have been dropped from this FIS. Either the historical photos section needs to be reinstated or the reference to section 10.1 needs to be dropped.
14. Page 27, Section 2.4 – The first paragraph of this section should be revised as NW Marana and Rillito are protected by the Lower Santa Cruz Levee which makes the existing text regarding irrigation canals moot. Also, Green Valley is not downstream from Tucson.
15. Page 31, Section 2.4 – The paragraph regarding bank protection of the Pima County Landfill should also be revised as the area is protected by the Lower Santa Cruz Levee.
16. Section 2.4 should make reference to bank protection on the west bank of the Santa Cruz from Ina Road to the end of the Tucson Mountains.
17. Page 38 Revised Countywide Analyses – In the paragraph on the CMG drainage study where it references the NOAA Atlas 14 please add that the upper 90% confidence level was used.

18. The Pima County/Oro Valley/Marana study of the Cañada del Oro (CDO) that was recently approved and to be part of this FIS/DFIRM is missing from the revised countywide analysis section.
19. The CDO restudy values are not represented in Table 6.
20. Page 42, Table 6 – Derrio Canyon Wash incorrectly uses 6,900 cfs as the 1-percent chance peak discharge. Per the CMG study, the discharge is **5,344 cfs**. This is an apparent miss at correcting the study as all the other values from the CMG study are used and 6,900 cfs was the prior 1999 FIS value for Derrio.
21. Page 48, Table 6 – Santa Cruz River at “Cortaro Road” and “Cortaro Farms Road” is either a duplication or a holdover prior to road realignments. The correct current road name at this crossing is Cortaro Road. The Cortaro Farms Road line can be deleted.
22. Page 65 – the Revised analyses section is missing the Oro Valley study on the CDO.
23. Page 67 – to be absolutely clear, it would be helpful to have the formula for the conversion between NGVD and NAVD. Some people add when they should subtract.
24. Page 71 – The paragraph regarding the Central Arizona Project Canal should drop inventory ID #71. ID #71 was a farm dike on the west side of I-10 that was not the CAP and was not studied by CMG.
25. Section 4.2 – Again, please provide a statement in this section referencing the Kimley Horn Associates study on the Floodway of Northwest Marana beyond Sanders Road entitled “Letter of Map Revision, Town of Marana and Pima County, AZ Lower Santa Cruz River RS 9.19 to RS2.94”, dated January 31, 2003.
26. Page 89, bibliography – The dates of the CMG volumes are: Volume 1 April 25, 2008, Revised October 8, 2008; Volume 2 June 16, 2008; Volume 3 October 14, 2008.
27. The two studies referenced earlier in comments 2 and 3 on the Santa Cruz should be added to the bibliography.

May 29, 2009 SOMA letter

Due to the economic slowdown in real estate, there has been little activity between the 2006 SOMA letter the Town received (later rescinded) and the current 2009 preliminary SOMA letter. Also, the Town’s Tortolita Fan drainage study by CMG has restudied much of the east and northwest sides of Marana, allowing many former letter of map changes to be superseded by the new FIRM. Finally, several of the LOMCs that were previously accounted for by the 2006 SOMA now erroneously appear as to be redetermined. For ease, we have grouped our comments in the order of the four categories of the SOMA letter.

1. LOMCs incorporated: In addition to the three LOMCs already listed, the Town of Marana suggests that the following LOMCs be added under the “Incorporated” status on a revision to the May 2009, 2009 SOMA letter:
 - a. LOMR 3-09-1071P (Panels 1010L, 1020L, 1030L, 1040L) for a portion of the Santa Cruz River within the Town jurisdictional boundaries. The Town has observed that this LOMR has now been reflected in the preliminary DFIRMs, and suggests that this LOMR be included under the category of “Incorporated” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA

letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.

- b. LOMR 02-09-1039P (Panels 1010L, 1020L, 1030L, 1035L, 1040L 1045L, 1065L) for the Lower Santa Cruz River levee. The Town has observed that this LOMR has now been reflected in the preliminary DFIRMs, and suggests that this LOMR be included under the category of “Incorporated” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.
 - c. LOMR 2006 98-09-353P (Panel 1655L) for the Santa Cruz River between Cortaro Road and Ina Road. The Town has observed that this LOMR has now been reflected in the preliminary DFIRMs, and suggests that this LOMR be included under the category of “Incorporated” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.
 - d. LOMR 06-09-BD84P (Panels 1010L, 1020L) for the Santa Cruz River between RS 6.34 and RS 8.24. The Town has observed that this LOMR has now been reflected in the preliminary DFIRMs, and suggests that this LOMR be included under the category of “Incorporated” in a revised SOMA letter. Currently, this LOMC is listed as “To Be Redetermined”.
 - e. LOMR 06-09-BB43P (Panel 1010L) for a segment of the Santa Cruz River. This LOMR is outside of the Town’s jurisdictional boundaries, but the Santa Cruz River floodplain does extend from the affected area, into the Town limits. The Town has observed that this LOMR appears to have been reflected in the water surface elevations of the Santa Cruz River floodplain extending into the Town limits, and suggests that this LOMR be included under the category of “Incorporated” in a revised SOMA letter. Currently, this LOMC is not included on the SOMA letter.
2. LOMCs not incorporated: The Town of Marana agrees with the placement of LOMA 02-09-1491A, for the Silverbell Place subdivision in the vicinity of the Yuma Mine Wash floodplain, in this category. However, it was noted that two lots were dropped from this LOMA in the current SOMA letter. These lots are numbers 109 and 135. Technically, both these lots are just outside of the drawn floodplain limits, but since they were included in the original LOMA, the Town would prefer that these two lots be included in the revalidation for this LOMA indicated on this SOMA letter. We feel that while a redundancy, it will avoid confusion by flood hazard mapping companies. Please add these lots to this LOMA.

3. LOMCs Superseded: In addition to the twelve LOMCs already listed, the Town of Marana suggests that the following LOMCs be added under the “Superseded” status on a revision to the May 2009, 2009 SOMA letter:
- a. LOMR 03-09-1149P (Panels 1065L, 1070L, 1655L) for the Canada Agua East Alluvial Fan. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.
 - b. LOMR 04-09-0697P (Panel 1055L) for the Ruelas Wash. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.
 - c. LOMR 04-09-0308P (Panel 1065L) for the Prospect Wash. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.
 - d. LOMR 03-09-0698P (Panel 1055L) for the Ruelas Wash. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. This LOMC also appeared in the June 29, 2006 SOMA letter as “Incorporated”. Currently, this LOMC is listed as “To Be Redetermined”.
 - e. LOMR 09-09-0300X (Panels 1065L, 1070L, and 1655L) for delineation of inactive alluvial fan areas for Canada Agua East Alluvial Fan. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. Currently, this LOMC is listed as “To Be Redetermined”.
 - f. LOMR 09-09-0301X (Panels 1065L, 1070L, and 1655L) for Canada Agua West. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. Currently, this LOMC is listed as “To Be Redetermined”.

- g. LOMR 02-09-1197P (Panels 1060L, 1070L) for the Upper Canada Agua West Alluvial Fan. A portion of the affected area is within the Town jurisdictional boundaries. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. Currently, this LOMC is not included on the SOMA letter.
 - h. LOMR-F 01-09-601A (Panel 1655L) for Lot 113 of the Oshrin Park subdivision, having to do with the AH zone resulting from the nearby Union Pacific Railroad Tracks. The Town has observed that this LOMR-F has now been superseded by the study completed by CMG Drainage Engineering, and suggests that this LOMR-F be included under the category of “Superseded” in a revised SOMA letter. Currently, this LOMC is not included on the SOMA letter.
 - i. LOMR 00-09-346P (Panels 1065L, 1655L) for the Hardy Wash. The area of revision is partially within the Town’s jurisdictional boundaries. The Town has observed that this LOMR has now been superseded by the study completed by CMG Drainage Engineer, and suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. Currently, this LOMC is not included on the SOMA letter.
 - j. LOMA 06-09-B514A (panel 1055L) for Dos Lagos. This LOMA originally covered lots 11, 29-21, 24-29 of the Dos Lagos Subdivision. Subsequent LOMRs removed the area entirely from the FEMA floodplain. This LOMA area has also now been superseded by the study completed by CMG Drainage Engineer and the Town suggests that this LOMR be included under the category of “Superseded” in a revised SOMA letter. Currently, this LOMC is not included on the SOMA letter.
4. LOMCs To Be Redetermined: based on the above comments, The Town of Marana suggests that all ten of the LOMCs currently listed under this category be moved to either “Incorporated” or “Superseded” status on a revised SOMA letter and that this section will now be blank.

DFIRM mapping comments

The majority of the Town’s comments on the DFIRM prints involve minor cleanup of text typos and such. There are two areas of the Town outside of the CMG study area that appear to need GIS shape correction. Both areas are detailed in separate, small reports with corrected GIS shapes provided. These areas include a new backwater area shown in the north section of Continental Ranch and the Carmack Wash in southern Marana. Comments on the DFIRMs are by panel. Where missing name locations are not obvious or where the mapping contractor does not have familiarity with an area, please do not hesitate to call the Town of Marana staff listed at the end of this letter for assistance in sending a markup.

1. Panel 0420L
 - a. Please label Pinal Airpark Road, Interstate 10, Union Pacific Railroad, Central Arizona Project Canal, and Missile Base Road.
2. Panel 0440L
 - a. Please delete the two notes at the bottom of the panel that says “Derrio Canyon Alluvial Fan”, as the location indicated is not in the Derrio Canyon watershed.
3. Panel 0445L
 - a. Please label Carpenter Ranch Road (parallel with Cottonwood Canyon Wash) within the Town of Marana jurisdictional limits.
4. Panel 0475L
 - a. Panel Not Printed, No Comments
5. Panel 1010L
 - a. Please change the street label “Harding Rd.” to “Hardin Rd.”.
6. Panel 1030L
 - a. No Comments
7. Panel 1035L
 - a. No Comments
8. Panel 1055L
 - a. Please label Wild Burro Wash (large wash at middle center of the panel), and Prospect Wash (AO Zone at extreme lower right corner of the panel).
9. Panel 1060L
 - a. Please relabel “Teale Butte Tr.” to “Teal Blue Tr.”, at the bottom center of the panel.
 - b. Please label Canada Agua West at the bottom of the panel – left of center.
10. Panel 1020L
 - a. No Comments
11. Panel 1040L
 - a. No Comments
12. Panel 1045L
 - a. Please see the attached letter regarding the El Rio at Continental Ranch subdivision, and the AE floodplain adjacent to the western boundary of that subdivision.
 - b. West of the mountain, Lambert Lane is labeled as “Lambert Ln.” and “Silverbell Rd.”. Please remove the Silverbell Road label for the segment of the roadway west of the mountain.

13. Panel 1065L

- a. Please relabel the alignment currently labeled as “Redhawk Bl.” and “Tortolita Dr.” to “Dove Mountain Blvd.”

14. Panel 1070L

- a. Please relabel “El Camino de Marana” to “El Camino de Mañana” in the upper left hand corner of the panel.
- b. Please eliminate the label “Unnamed Wash” at the upper center of the panel.

15. Panel 1650L

- a. No Comments

16. Panel 1655L

- a. As information, this is the panel where two lots were dropped from LOMA 02-09-1491A, which covers the Silverbell Place subdivision and the Yuma Mine Wash floodplain (Zone A). Technically, both these lots are just outside of the drawn floodplain limits, but since they were included in the original LOMA, the Town as asked that these two lots be included in the revalidation for this LOMA indicated on the May 29, 2009 SOMA letter under SOMA comments.
- b. Please place labels on this panel for the Hardy Wash and Yuma Mine Wash.
- c. Please utilize linework instead of shapes for the linear Zone A floodplains on the north and south sides of the Cortaro Ranch subdivision (located just east of Interstate 10, and just north of W. Cortaro Farms Road), and place notes to the effect that those floodplains are contained within the channels and basins constructed for that development. The Town is concerned that while the floodplains are contained in the basins per GIS, flood hazard determination companies may erroneously determine adjacent lots to be in a floodplain. This is the only comment overriding the CMG drainage study shapes supplied to FEMA.
- d. The Zone X label at the bottom of the panel should actually indicate Zone A. Please make the correction.
- e. Please correct the spelling from “Cotaro Rd” to “Cortaro Rd.” near the southwest terminus of Cortaro Road.

17. Panel 1660L

- a. For the railroad tracks on this panel, please change the label from “Southern Pacific Railroad” to “Union Pacific Railroad”.
- b. For the shaded Zone X just northeast of the Rillito Creek / Santa Cruz River confluence, since this area consists of a large pit, the Town of Marana suggests that this area could be a Zone A instead of a shaded Zone X to indicate the potential for pit wall failure.
- c. Please see the attached letter report and corrected GIS shapefiles regarding the Thornydale Crossing commercial subdivision, and the A Zone floodplain associated with the Carmack Wash adjacent to that subdivision.

- d. Starview Drive is incorrectly labeled. The correct label should be “Camino de la Tierra”. Also, Camino de la Tierra is incompletely labeled slightly further northeast (parallel to the Canada del Oro Wash).
- e. The Town of Marana would like to see the inclusion of the “CDO LOMR”, Case No. 08-09-1811P, being sponsored by the Town of Oro Valley, in these DFIRMs. This LOMR does impact a significant parcel within the Marana portion of this panel.

18. Panel 1665L

- a. No Comments

19. Panel 1666L

- a. No Comments

Jurisdictional Boundaries

The Town of Marana has made 2 annexations since the map modernization process was suspended in 2007 that are missing from the draft maps. Marana Ordinance 2007.30 annexed a portion of Pima County that appears in panel 1010L. Marana Ordinance 2009.09 annexed a portion of Pima County that appears in panel 1655L. It should be noted that the 2009 annexation occurred on June 2, 2009 and is not effective until 30 days from council action. Nevertheless, there has been no referendum petition filed to object to this annexation so we request that it be considered completed as far as the map modernization process is concerned. The annexation will be effective July 2, 2009. The Town will notify FEMA should the annexation be referred. Copies of the annexation ordinances and a GIS shape file of the Town’s boundaries are being supplied with this letter.

Again, I would like to thank FEMA for the opportunity to comment on this new FIRM for our community. I and my staff stand ready to assist FEMA with interpretation of any comments and quick review of draft changes based on our comments. I and my staff can be reached at the numbers provided below. All team members were instrumental in and familiar with this review.

Keith Brann 520-382-2629

Carl Larson 520-382-2668

Gus Myers 520-382-2672

Glenn Phillips 520-382-2667

Sincerely,



Keith Brann, P.E., CFM
Town Engineer

Cc: William R. Blanton, Jr., FEMA DC
Ed Curtis, FEMA Region IX
Suzanne Shields, Pima County Regional Flood Control

Attachments to Stephanie Routh:

Letter report on Carmack Wash GIS shape correction
Letter report on El Rio at Continental Ranch GIS shape correction
Compact disc of
 electronic copy of these letters
 corrected shape files for Carmack Wash
 corrected shape files for El Rio
 current Marana jurisdictional boundary
 copies of Marana annexation ordinances