

**City of Santa Barbara, Santa Barbara, California**  
**Cooperating Technical Partner**  
**Mapping Activity Statement**

**Agreement – Digital Topographic Data Development**

In accordance with the Cooperating Technical Partner, The City of Santa Barbara, Memorandum of Agreement dated September 24, 2001, between City of Santa Barbara, Santa Barbara, California, and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement is as follows:

**1. Objective and Scope:** The objective of this Agreement is to develop digital topographic data for Arroyo Burro Creek area. (see exhibit "A" attached) The digital topographic data will be used for hydraulic modeling and floodplain mapping to produce Digital Flood Insurance Maps (DFIRMs) for the City of Santa Barbara.

**2. Period of Performance:** This Mapping Activity will begin on October 1, 2001 and will be completed no later than October 1, 2002. This Mapping Activity may be terminated at the option of FEMA or City of Santa Barbara, Santa Barbara, California, in accordance with the provisions of the September 24, 2001 City of Santa Barbara, Santa Barbara, California Memorandum Agreement.

**4. Standards:** The following standards and documents are relevant to this Mapping Activity:

Survey Methodology:

- Global Positioning System (GPS) Surveys: Follow National Geodetic Survey publication NGS-58, "Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standard: 2 cm and 5 cm)," November 1997.
- Aerial Surveys: Follow United States Army Corps of Engineers (USACE) EM 1000-1-1000, "Photogrammetric Mapping," March 31, 1993.
- Conventional Surveys: Follow standard American Congress on Surveying and Mapping (ACSM) procedures.
- Hydrographic Surveys: Follow USACE EM 1110-2-1003, "Hydrographic Surveys," October 31, 1994.

Draft LIDAR specifications are available on FEMA's Website at [www.fema.gov/mit/tsd/MM\\_lidar.htm](http://www.fema.gov/mit/tsd/MM_lidar.htm).

Guidelines and Specifications for Study Contractors (FEMA 37). FEMA is in the process of revising Aerial Mapping and Surveying Specifications in FEMA 37, Appendix 4. The revisions will include procedures for evaluating Triangulated Irregular Network (TIN) data in accordance with the new National Standards for Spatial Data Accuracy (NSSDA) for data used in automated and semi-automated hydrologic and hydraulic modeling. Once those specifications are complete, they will apply to this Mapping Activity. Digital mapping submissions will comply with the requirements of Chapter 9 and Appendix 7 of FEMA 37.

**5. Products:** City of Santa Barbara, Santa Barbara, California shall make the following products available:

- TIN data on CD-ROM.
- Hardcopy topographic maps.
- Report summarizing methodology and results.
- Completed Form 5 of Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions (MT-2).

- Checkpoint analyses to assess the accuracy of TIN data, including Root Mean Square Error (RMSE) calculations to support vertical accuracy.
- Identification of remote sensing data voids and methods used to supplement data voids.
- National Geodetic Survey (NGS) data sheets for Network Control Points (NCP) used to control remote sensing and ground surveys.

6. Schedule and Milestones:

Milestone 1: Products for the first milestone to be provided to the FEMA Regional Project Manager include:

- Documentation of methodology, data analyses, date of survey/data collection, NCP, and other relevant information.
- Work plan for supplementing data voids caused by limitations of remote sensing and/or source of any supplementary data collection.

Milestone 2 (Final Products): Final products for the first milestone to be provided to the FEMA Regional Project Manager include:

- TIN data on CD-ROM.
- Hardcopy topographic maps.
- Report summarizing methodology and results.
- Completed Form 5 of MT-2.
- Checkpoint analyses to assess the accuracy of TIN data including RMSE calculations to support vertical accuracy.
- Identification of remote sensing data voids and methods used to supplement data voids.
- NGS data sheets for NCP used to control remote sensing and ground surveys.

Final products will be made available in accordance with the Period of Performance described in Section 2 of this Mapping Activity Statement.

7. Certification: The following certificates apply to this Mapping Activity (as appropriate): Registered Professional Engineer or Licensed Land Surveyors will certify topographic information, in accordance with 44 CFR 65.5(c). Certification of topographic information by the American Society for Photogrammetry and Remote Sensing (ASPRS) is also acceptable.
8. Technical Assistance and Resources: City of Santa Barbara, Santa Barbara, California, may obtain copies of FEMA-issued Letters of Map Change (LOMCs), archived engineering backup data, and data collected as part of the Mapping Needs Assessment Process from FEMA's Map Coordination Contractor (MCC). The MCC may be contacted at 1-877 FEMA MAP (1-877-336-2627).

General technical and programmatic information, such as FEMA 265, the Quick-2 computer program, and the MT-2 forms, can be downloaded from FEMA's Flood Hazard Mapping Website ([www.fema.gov/mit/tsd/](http://www.fema.gov/mit/tsd/)). Specific technical and programmatic support may be provided through FEMA's MCC; such assistance should be requested through the FEMA MCC Project Manager specified in Section 12 of this Mapping Activity Statement.

City of Santa Barbara, Santa Barbara, California may also consult with FEMA MCC Project Manager to request support in the areas of selection of data sources, selection of digital data accuracy standards, assessing vertical data accuracy, selection of data collection methods, selection of sub-contractors, and GIS-based engineering and modeling training.

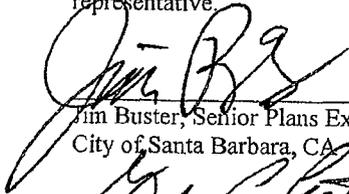
9. Contractors: Procurement of subcontractors using Federal funds provided as part of this Mapping Activity will comply with the requirements of 44 CFR 13.36.

10. **Quality Assurance/Quality Control (QA/QC) Procedures:** City of Santa Barbara, Santa Barbara, California will undertake internal QA/QC reviews to ensure that the products described under Section 5 of this Mapping Activity Statement conform with standards outlined under Section 4 of this Mapping Activity Statement. Additionally, an independent review for compliance with these standards will be undertaken by The County of Santa Barbara Flood Control District. The QA/QC procedures outlined in Chapter 10 of FEMA 37 should be followed during the development of the approximate Zone A analyses and mapping.

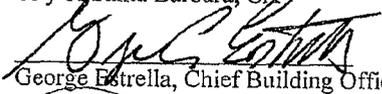
11. **Reporting:**

12. **Points of Contact:** The FEMA Regional Project Manager is \_\_\_\_\_ and the CTP Project Manager is Jim Buster, Senior Plans Examiner/Floodplain Coordinator, subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. If it is necessary, the assistance of FEMA's MCC should be requested through the FEMA MCC Project Manager.

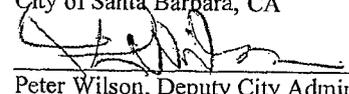
Each party has caused this Mapping Activity Statement to be executed by its duly authorized representative.

  
\_\_\_\_\_  
Jim Buster, Senior Plans Examiner/Floodplain Coordinator  
City of Santa Barbara, CA

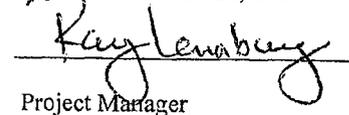
9-24-01  
Date

  
\_\_\_\_\_  
George Estrella, Chief Building Official  
City of Santa Barbara, CA

9-24-01  
Date

  
\_\_\_\_\_  
Peter Wilson, Deputy City Administrator  
City of Santa Barbara, CA

9/24/01  
Date

  
\_\_\_\_\_  
Project Manager  
Federal Emergency Management Agency

9/28/01  
Date

Approved as to form  
**Daniel J. Wallace, City Attorney**  


FEDERAL EMERGENCY MANAGEMENT AGENCY  
COOPERATING TECHNICAL PARTNERS  
MEMORANDUM OF AGREEMENT

**AGREEMENT** is made on September 24, 2001 by these parties: City of Santa Barbara, Santa Barbara, CA. and the Federal Emergency management Agency (FEMA).

**BECAUSE** the National Flood Insurance Program (NFIP) established by the National Flood Insurance Act of 1968 has several purposes, the most significant being

- To better indemnify individuals from losses through the availability of flood insurance;
- To reduce future flood damages through community flood plain management regulations; and
- To reduce cost for disaster assistance and flood control.

**BECAUSE** a critical component of this Program is the identification and mapping of the nation's floodplains to create a broad-based awareness of flood hazards and to provide the data necessary for coinunity floodplain management programs and to actuarially rate flood insurance;

**BECAUSE** FEMA administers the NFIP and is authorized by § 1360 of the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4101), to establish and update flood-risk zone data in floodplain areas. Further, in the identification of flood prone areas, FEMA is authorized to consult with, receive information from, and enter into agreements or other arrangements with the head of any State, regional, or local agency;

**BECAUSE** FEMA encourages strong Federal, State, regional and local partnerships for the purposes of reducing flood losses and disaster assistance; FEMA and its State, regional, and local partners have determined that it is advantageous to encourage and formalize greater cooperation in the flood hazard identification and mapping processes; and many communities and the agencies that serve them have developed considerable technical capabilities and resources that provide the opportunity to improve and expand the collection, development, and evaluation of flood hazard data; and

**BECAUSE** The City of Santa Barbara, Santa Barbara, CA. participates in the NFIP (*or shares flood protection and/or floodplain management responsibilities with communities that participate in the NFIP*), and The City of Santa Barbara, Santa Barbara, CA. (*or the communities represented by The **City** of Santa Barbara, Santa Barbara, CA.*), has been deemed by FEMA to be in good standing in the NFIP; and

**BECAUSE** The City of Santa Barbara, Santa Barbara, CA. has expressed a desire to perform certain functions in the flood hazard identification process and has provided evidence that it has sufficient technical capability and will dedicate the resources necessary to perform those functions.

**NOW THEREFORE**, it is mutually agreed that the parties enter into this Agreement to work together to create and maintain accurate, up-to-date flood hazard data for The City of Santa Barbara, Santa Barbara, CA. (*or communities served by The City of Santa Barbara, Santu Barbara, CA*) subject to the terms and conditions recited below.

### **1. CONSULTATIONS**

The parties shall collaborate on flood hazard identification activities and shall consult with each other to fully integrate each other's contributions into flood hazard identification efforts. Questions regarding the execution of this Agreement will be resolved by an implementation committee consisting of a FEMA representative and a City of Santa Barbara representative. In states where statutory and/or regulatory requirements require the State's review and/or approval of new flood hazard data, a State representative also will serve on the implementation committee as appropriate. If the implementation committee is unable to resolve technical issues, the issues may be resolved through alternative dispute resolution procedures.

### **2. EVALUATION AND REPORTING**

The parties shall, on an annual basis, review the partnership created by this Agreement to determine and document the activities undertaken to maintain accurate flood hazard data and to revise the Agreement as necessary.

### **3. RESOURCE COMMITMENT**

The parties agree to commit the appropriate and available human, technical, and financial resources sufficient to coordinate effectively with all entities impacted by flood hazard identification efforts to implement this Agreement

### **4. STANDARDS**

Unless otherwise indicated, all flood hazard identification activities will be accomplished according to FEMA 37, *Flood Insurance Study Guidelines and Specifications for Study Contractors*, dated January 1995 and *Guidelines and Specifications for Flood Map Production Coordination Contractors*, Final Draft, dated February 17, 1999, and all subsequent revisions to these documents.

### **5. SPECIFIC INITIATIVES**

Specific initiatives or projects to be performed are attached to this Agreement in the form of appendices. The parties will be obligated to perform as described in these appendices.

### **6. TERM**

The respective duties, responsibilities, and commitments of the parties in this Agreement shall begin on the date this Agreement is signed by the parties and may be periodically renewed, revised, or terminated at the option of any of the parties. The parties agree that a 60-day notice shall be given prior to the termination of this Agreement.

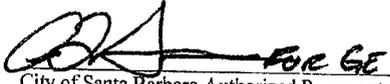
**THEREFORE**, each party has caused this Agreement to be executed by its duly authorized representatives on the date mentioned above.



City of Santa Barbara Authorized Representative  
Peter Wilson, Deputy City Administrator

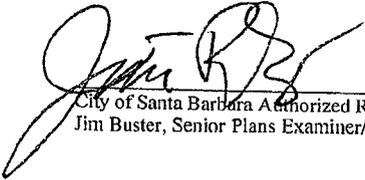
9/24/01  
Date

Approved as to form  
Daniel J. Wallace, City Attorney



City of Santa Barbara Authorized Representative  
George Estrella, Chief Building Official

9-24-01  
Date



City of Santa Barbara Authorized Representative  
Jim Buster, Senior Plans Examiner/Floodplain Coordinator

9-24-01  
Date



FEMA Authorized Representative

9-28-01  
Date

John Eldridge  
FEMA Authorized Representative (Printed)

9-28-01  
Title