

**REQUEST FOR QUALIFICATIONS**

**PROFESSIONAL DESIGN SERVICES FOR  
STRUCTURE ELEVATIONS**

**FOR THE TOWN OF LYONS, CO**

**February 16, 2017**

**Town of Lyons  
432 5<sup>th</sup> Avenue, P.O. Box 49, Lyons, CO 80540  
PH: (303)823-6622  
[www.townoflyons.com](http://www.townoflyons.com)**

**Project Number: HMGP-52-R**

**PROPOSALS DUE: Friday, March 10, 2017 by 4:00 P.M.**

# **PROFESSIONAL DESIGN SERVICES FOR STRUCTURE ELEVATIONS**

## **FOR THE TOWN OF LYONS, CO**

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### **EXHIBITS**

<b><u>EXHIBIT</u></b>	<b><u>TITLE</u></b>
A	SCOPE OF WORK
B	SAMPLE FEE & COST SCHEDULE
C	STANDARD SERVICES CONTRACT
D	ILLEGAL ALIEN CERTIFICATE
E	PROPOSAL ACKNOWLEDGEMENT
F	CDBG-DR PUBLIC INFRASTRUCTURE PROGRAM REQUIRED PROCUREMENT AND CONTRACT DOCUMENTS
G	FEMA GRANT PROGRAM REQUIREMENTS FOR PROCUREMENT CONTRACTS

### **ATTACHMENTS**

<b><u>ATTACHMENT</u></b>	<b><u>TITLE</u></b>
A	STRUCTURE ELEVATION GUIDANCE FOR SUBGRANTEES
B	TOWN OF LYONS FLOOD PLAIN DEVELOPMENT PERMIT CHECKLIST
C	ENGINEERING PRINCIPLES AND PRACTICES FOR RETROFITTING FLOOD-PRONE RESIDENTIAL STRUCTURES
D	TOWN OF LYONS FLOOD PLAIN DEVELOPMENT PERMIT REVIEW CRITERIA
E	TOWN OF LYONS GUIDANCE FOR RE-BUILDING IN THE FLOOD WAY

## I. INTRODUCTION

### REQUEST FOR QUALIFICATIONS (RFQ) RFQ Number: HMGP-52-R

Town Contact: Philip R. Strom  
Email Address: philip.strom@longmontcolorado.gov  
Telephone Number: 720-438-8818

#### Pre-Proposal Conference

A Pre-Submittal Conference is optional, but highly encouraged, and will be held on Wednesday, February 22, 2017 at 1:30p.m. at the structures to be elevated. Beginning at the 401 2<sup>nd</sup> Avenue and then proceeding to 109 Park in Lyons. The purpose of this conference is to discuss this RFQ or any terms and conditions contained herein as well as review the project sites.

#### Submittals must be received no later than:

Friday, March 10, 2017, at or before 4:00 pm local time

*Proposals received after this date and time will not be considered for award.*

**The TOWN will only accept proposals in bound hard copy format and does not accept proposals submitted via fax, email, or other electronic means. Proposals are to be submitted in a sealed Package with the following on the outside of the envelope:**

Company Name  
RFQ Title  
RFQ Number  
Due Date and Time

#### Package must include:

- One (1) Original Proposal, identified as “Original”
- Five (5) Copies of Proposal
- One Copy of Proposal on a CD-ROM or external flash drive – Include both original and public viewing versions, if applicable
- Do not submit price or cost information, this is a RFQ and price or cost will not be used in evaluation. If selected, cost and price will then be submitted and negotiated with the Town.

#### Americans with Disabilities Act

If you need special assistance or services to be provided under the provisions of the Americans with Disabilities Act (ADA), please contact the Town of Lyons at (303) 823-6622 at least 48 hours in advance of any scheduled event.

#### Deliver proposals to (preferred method):

Town of Lyons  
Attention: Philip Strom  
432 5<sup>th</sup> Avenue  
Lyons, CO 80540

#### Or mail proposals to:

US Postal Service Only:

Town of Lyons  
Attention: Philip Strom  
PO Box 49

Other Delivery Services:

Town of Lyons  
Attention: Philip Strom  
432 5<sup>th</sup> Avenue  
Lyons, CO 80540

**Schedule of Events (subject to change) All times are given in local Colorado time:**

RFQ Issued	Thursday, February 16, 2017
Pre-Proposal Conference	Wednesday, February, 22, 1:30 pm (Mountain Time)
Deadline for Questions	Tuesday, February 28, 2017, 5:00 p.m.
Question and Answers Issued	By Friday, March 3, 2017, 5:00 p.m.
Proposal due Date and Time	Friday, March 10, 2017, 4:00 p.m.

This RFQ was advertised in the following publications and web bases services:

- Rocky Mountain e-bid ([www.rockymountainbidsystem.com](http://www.rockymountainbidsystem.com))
- Town of Lyons Web page ([www.townoflyons.com](http://www.townoflyons.com))
- Colorado Office of Economic Development and International Trade (<http://choosecolorado.com/>)

## II. PROJECT BACKGROUND, UNDERSTANDING AND GOALS

### A. Background

#### 1. Overview of 2013 Flood

Boulder County, Colorado, experienced a catastrophic flood event from September 11th, 2013 through September 15th, 2013. Beginning September 9th, more than 17 inches of rain fell along the Colorado Front Range. This was an historic event, and the rainfall triggered flash floods across Boulder County and the surrounding region. In different parts of the county, the event ranged from a 100-year flood to a 1,000- year flood.

This disaster was different than past disasters in Boulder County. Rivers and creeks cut new paths, washing away structures, leaving massive amounts of debris and destroying access to structures. Many structures that were not in the floodplain were damaged or destroyed because of dramatic river and creek breaches, landslides, and water moving with velocity and carrying large debris that crashed into structures. Debris rushing down creeks and rivers caused destruction to bridges, culverts and roads, in addition to housing structures.

In response to the 2013 flood, the city, town and county governments of Boulder County engaged in a collaborative process for CDBG Disaster Recovery (CDBG-DR) project and program prioritization and implementation. Unmet needs and priorities were developed on regional basis to approach CDBG-DR strategically to best address the greatest and most pressing flood recovery issues in our communities. Boulder County and the units of local government within the county have formed a collaborative partnership, the Boulder County Collaborative (BCC) among its impacted communities with a focus on strategic coordination for long-term recovery. These partners have played and will continue to play an integral part in the recovery of Boulder County. These partners include governmental, private, and nonprofit agencies.

#### 2. Overview of Project

The FEMA Hazard Mitigation Grant Program (HMGP) provided a grant to the Town of Lyons (Town) to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The structural elevation of two separate structures generally involves physically raising existing structures to an elevation of one (1) foot above the base flood elevation (BFE) as required by the State of Colorado floodplain management regulations for residential structures. The State's regulations are located at: <http://cwcb.state.co.us/legal/pages/cwcbfloodplainrulesandregulationsprocess.aspx>

Structure elevation may be achieved through a variety of methods. Foundations must be designed to properly address all necessary loads (wind, snow, seismic...) per local building codes and ordinances and be appropriately connected to the floor structure above. Utilities must be properly elevated. Buildings proposed for elevation must be structurally sound and capable of being elevated safely.

### **3. Project Locations**

The two structures to be elevated are located at:

- a) 401 2<sup>nd</sup> Avenue, Lyons, CO 80540
- b) 109 Park, Lyons, CO 80540

### **B. Understanding**

The Town of Lyons desires to have a professional and well thought out set of plans and specifications to issue to contractors for bidding for the elevations of structures. The documents must include clear and concise data and specifications to maximize the utilization of the grants and adhere to the required permitting procedures and supporting environmental activities. The final product will be a set of plans, specifications and documents for the Town to issue public notice for construction bids. The documents must include the required provisions, statements, documents and requirement of the grants.

### **C. Goals**

The Town of Lyons will be enforcing certain FEMA/CDBG-DR goals. As such, the Town must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

Affirmative steps must include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
6. Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (1) through (5) of this section.

**The proposer will be required to report these steps on the Prime Contractor's MBE/WBE & Labor Surplus Area Outreach Form in Exhibit F attached to this RFQ.**

### **III. ADMINISTRATIVE INFORMATION**

#### **A. Issuing Office**

The Town of Lyons agent listed herein is to be the sole point of contact concerning this RFQ. Proposers shall not directly contact other personnel regarding matters concerning this RFQ or to arrange meetings related to such.

#### **B. Project Requirements**

##### **1. General Requirements**

The selected team will be expected to provide a full range of services and accept project management responsibility at all levels.

##### **2. Project Standards, Guidelines and Specifications** The following is a list of technical references applicable to this project. The Design team will be responsible for complying with the current editions of the listed references.

- Town of Lyons, Manual of Design and Construction Standards, Latest Edition
- Lyons Recovery Action Plan
- St Vrain Creek Master Plan
- CDBG-DR Federal Contract Provisions and Forms

##### **3. Electronic Data Submittals** Electronic Data shall be submitted in a format that is usable by the Town of Lyons. The primary windows based computer software that is currently used by Town of Lyons is:

- Drafting –AutoCAD Civil 3D 2012 or greater
- Plotting -Adobe PDF
- Word Processing -Microsoft Word 2010
- Spreadsheets -Microsoft Excel 2010

#### **C. Period of Award**

The effective date of providing the required product and services shall be from award of the contract through completion of final design services.

#### **D. Minimum Mandatory Qualifications of Proposer**

The lead proposer must specialize in providing services for similar projects and have successfully completed the design similar projects in the past five years. The design team team's proposed Project Manager must have five (5) years of experience (minimum) in designing/managing similar projects.

#### **E. Inquiries**

Prospective proposers may make written inquiries by e-mail before the written inquiry deadline concerning this RFQ to obtain clarification of requirements. There will be opportunity to make inquiries during the pre-proposal conference. No inquiries will be accepted after the deadline. Inquiries regarding this RFQ (be sure to reference RFQ number) should be referred to:

E-Mail: [philip.strom@longmontcolorado.gov](mailto:philip.strom@longmontcolorado.gov)  
Subject Line: HMGP-52-R – (Consultant Name) – (Date) – Questions on RFQ

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Response to proposers' inquiries will be e-mailed in a timely manner. Proposers cannot rely on any other statements that clarify or alter any specification or other term or condition of the RFQ.

**Should any interested proposer find any part of the listed specifications, terms and conditions to be discrepant, incomplete, or otherwise questionable in any respect, it shall be the responsibility of the concerned party to notify the Town of such matters immediately upon discovery.**

## **F. Insurance**

The successful contractor will be required to provide a Certificate of Insurance or other proof of insurance naming the Town of Lyons and its agents as "additional insured". Coverage must include COMMERCIAL GENERAL LIABILITY coverage with minimum limits of \$1,000,000, and WORKERS COMPENSATION coverage with limits in accordance with State of Colorado requirements. Contractor must provide Town with proof of EMPLOYER'S LIABILITY coverage with limits of at least \$500,000. COMPREHENSIVE AUTOMOBILE LIABILITY with minimum limits for bodily injury and property damage coverage of at least \$1,000,000, plus an additional amount adequate to pay related attorneys' fees and defense costs, for each of Consultant's owned, hired or non-owned vehicles assigned to or used in performance of this Agreement.

## **G. Modification or Withdrawal of Proposals**

Proposals may be modified or withdrawn by the proposer prior to the established due date and time.

## **H. Minor Informalities**

Minor informalities are matters of form rather than substance evident from the response or insignificant mistakes that can be waived or corrected without prejudice to other vendors. The Town may waive such informalities or allow the vendor to correct them depending on which is in the best interest of the Town.

## **I. Responsibility Determination**

The Town will make awards only to responsible vendors. The Town reserves the right to assess proposer responsibility at any time in this RFQ process and may not make a responsibility determination for every proposer.

## **J. Acceptance of RFQ Terms**

A proposal submitted in response to this RFQ shall constitute a binding offer. The autographic signature of a person who is legally authorized to execute contractual obligations on behalf of the proposer shall indicate acknowledgment of this condition. A submission in response to this RFQ acknowledges acceptance by the proposer of all terms and conditions as set forth herein. A proposer shall identify clearly and thoroughly any variations between its proposal and the RFQ in the cover letter. Failure to do so shall be deemed a waiver of any rights to subsequently modify the terms of performance, except as outlined or specified in the RFQ.

## **K. Protested Solicitations and Awards**

When to File: Protests must be submitted in writing (via email, U.S. Mail or courier) and received by the Town Administration at 423 5<sup>th</sup> Avenue/ PO Box 49, Lyons CO 80540 prior to award of a contract. This can be submitted before or during a Board of Trustees meeting in which a contract will be approved.

Protests based upon restrictive specifications or alleged improprieties in any type of solicitation, which are apparent prior to either the proposal or bid due date must be filed no later than three (3) working days prior to the bid opening date or proposal closing date.

Process: The protest must include, at a minimum, the following:

- 1) The name and address of the protestor
- 2) Appropriate identification of the procurement by Bid number or title or Request for Proposal Number or Title
- 3) A statement of the reasons for the protest
- 4) Any available exhibits, evidence or documents substantiating the protest

Decision: The Town Administrator shall make a decision, in writing, on a protest within seven (7) working days after receiving all relevant, requested information. This decision shall be based on and limited to a review of the issues raised by the protesting bidder, offeror, or contractor, and shall set forth each factor taken into account in reaching the decision. The decision of the Town Administrator is final.

Withholding of Award: When a protest has been filed before an award, the Town Board shall not make an award before it has resolved the protest. If a protest has been filed before the opening of bids or closing of request for proposals, the Town will resolve the protest prior to closing the solicitation, unless the Town determines that:

- 1) The items to be procured are urgently required; or
- 2) Delivery or performance will be unduly delayed by failure to make the award promptly; or
- 3) Failure to make prompt award will otherwise cause undue harm to the Town

## **L. Confidential/Proprietary Information**

The Town neither requests nor encourages the submission of confidential/proprietary information in response to this Request for Proposal. All proposals will be confidential until a contract is awarded and fully executed. At that time, all proposals and documents pertaining to the proposals will be open for public inspection, except for the material that is proprietary or confidential. However, requests for confidentiality can be submitted to the Town provided that the submission is in accordance with the following procedures. This remains the *sole responsibility* of the proposer. The Town will make no attempt to cure any information that is found to be at a variance with this procedure. The proposer may not be given an opportunity to cure any variances after proposal opening. **Neither a proposal in its entirety, nor proposal price information will be considered confidential/proprietary.** Questions regarding the application of this procedure must be directed to the contact for the Town listed in this RFQ.

***Procedure:***

- 1) The proposer will submit one (1) additional complete proposal clearly marked "FOR PUBLIC VIEWING." In this version of the proposal, the proposer will black out all text and/or data that it wishes to be considered confidential and denote the information as "proprietary" or "confidential".
- 2) A written description will accompany the "FOR PUBLIC VIEWING" copy of the proposal identifying the material that the proposer is considering proprietary or

confidential. Specific reasoning as to why each item is to remain confidential, *other than* recitation of a specific state or federal statute, is required.

- 3) Where a proposer has submitted a “FOR PUBLIC VIEWING” version of their proposal, that version will be open to the public while the other copies of that proposer’s proposals will be maintained as confidential material. Proposals that are determined to be at variance with this procedure may be declared non-responsive by the Town, and not given further consideration.

## **M. Acceptance of Proposal Content**

The contents of the proposal (including persons specified to implement the project) of the successful contractor shall become contractual obligations into the contract award. Failure of the successful proposer to perform in accordance with these obligations may result in cancellation of the award and such proposer may be removed from future solicitations.

## **N. RFQ Cancellation**

The Town reserves the right to cancel this RFQ at any time, without penalty.

## **O. Negotiation of Award**

In the event only one (1) responsive proposal is received by the Town, the Town reserves the right to negotiate the award for the services with the proposer submitting the proposal in lieu of accepting the proposal as is.

## **P. Contract**

The Consultant will enter into a contract with the Town for this work. The contract will set for the agreement and responsibilities as outlined in this RFQ. The anticipated Contract term is one year.

## **Q. RFQ Response/Material Ownership**

All material submitted regarding this RFQ becomes the property of the Town, unless otherwise noted in the RFQ.

## **R. Incurring Costs**

The Town is not liable for any cost incurred prior to issuance of a legally executed contract.

## **S. Utilization of Award by Other Agencies**

The Town reserves the right to allow other State and local governmental agencies, political subdivisions, and/or school districts to utilize the resulting award under all terms and conditions specified and upon agreement by all parties. Usage by any other entity shall not have a negative impact on the Town of Lyons in the current term or in any future terms.

## **T. Non-Discrimination:**

The proposer shall comply with all applicable state and federal laws, rules and regulations involving nondiscrimination on the basis of race, color, religion, national origin, age or sex.

## **U. News Releases**

Neither the Town, nor the proposer, shall make news releases pertaining to this RFQ prior to execution of the contract without prior written approval of the other party. Written consent on the Town's behalf is provided by the Public Information Office.

## **V. Taxes**

The Town is exempt from all federal excise taxes and all Colorado State and local government sales and use taxes. Where applicable, contractor will be responsible for payment of use taxes.

## **W. Assignment and Delegation**

Neither party to any resulting contract may assign or delegate any portion of the agreement without the prior written consent of the other party.

## **X. Availability of Funds**

Financial obligations of the Town payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted and otherwise made available. In the event funds are not appropriated, any resulting contract will become null and void, without penalty to the Town.

## **Y. Standard of Conduct**

The successful firm shall be responsible for maintaining satisfactory standards of employees' competency, conduct, courtesy, appearance, honesty, and integrity, and shall be responsible for taking such disciplinary action with respect to any employee, as may be necessary. The Town may request the successful firm to immediately remove from this assignment any employee found unfit to perform duties due to one or more of the following reasons:

- 1) Neglect of duty.
- 2) Disorderly conduct, use of abusive or offensive language, quarreling, intimidation by words or actions or fighting.
- 3) Theft, vandalism, immoral conduct or any other criminal action.
- 4) Selling, consuming, possessing, or being under the influence of intoxicants, including alcohol, or illegal substances while on assignment for the Town.

## **Z. Unlawful Employees, Contractors and Subcontractors**

Contractor shall not knowingly employ or contract with an illegal alien to perform work under this Contract. Contractor shall not knowingly contract with a subcontractor that (a) knowingly employs or contracts with an illegal alien to perform work under this Contract or (b) fails to certify to the Contractor that the subcontractor will not knowingly employ or contract with an illegal alien to perform work under this Contract.

### **AA. Verification Regarding Illegal Aliens**

Contractor has confirmed the employment eligibility of all employees newly hired for employment to perform work under this Contract through participation in either the E-verify program administered jointly by the United States Department of Homeland Security and the Social Security Administration or the employment verification program of the Colorado Department of Labor & Employment.

## **BB. Limitation Regarding E-Verify Program**

Contractor shall not use either E-verify or Colorado Department of Labor & Employment program procedures to undertake pre-employment screening of job applicants while performing this Contract.

## **CC. Duty to Terminate a Subcontract; Exceptions**

If Contractor obtains actual knowledge that a subcontractor performing work under this Contract knowingly employs or contracts with an illegal alien, the Contractor shall, unless the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien:

- 1) Notify the subcontractor and the Town within three days that the Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and
- 2) Terminate the subcontract with the subcontractor if, within three days of receiving notice that the Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien, the subcontractor does not stop employing or contracting with the illegal alien.

## **DD. Duty to Comply with State Investigation**

Contractor shall comply with any reasonable request of the Colorado Department of Labor and Employment made in the course of an investigation pursuant to C.R.S. 8-17.5-102 (5).

## **EE. Damages for Breach of Contract**

In addition to any other legal or equitable remedy the Town may be entitled to for a breach of this Contract, if the Town terminates this Contract, in whole or in part, due to Contractor's breach of any provision of this Contract, Contractor shall be liable for actual and consequential damages to the Town.

## **FF. Other Statutes**

1. The signatory hereto avers that he/she is familiar with Colorado Revised Statutes , 18-8-301, et seq. (Bribery and Corrupt Influence) and 18-8-401, et seq. (Abuse of Public Office) as amended, and that no violation such provisions is present.
2. The signatory hereto avers that to his/her knowledge, no Town of Lyons employee has any personal or beneficial interest whatsoever in the service or property described herein. See CRS 24-18-201 and CRS 24-50-507.

## **IV. PROPOSAL SUBMISSION**

Following are the response requirements for this RFQ. All specific response items represent the minimum information to be submitted. Deletions or incomplete responses in terms of content or aberrations in form may, at the Town's discretion, render the proposal non-responsive.

**Proposers shall submit in a sealed package:**

- One (1) Original Proposal, identified as "Original"
- Five (5) Copies of Proposal
- One Copy of Proposal on a CD-ROM or external flash drive – Include both original and public viewing versions, if applicable

To facilitate the evaluation, proposer shall submit and organize all responses in the same order as listed in Section VI. Proposals that are determined to be at a variance with this requirement may not be accepted. The Town only accepts proposals in hard copy format and does not accept proposals submitted via fax, email, or other electronic means. Late proposals will not be accepted. It is the responsibility of the proposer to ensure that the proposal is received at the Town of Lyons, Town Hall, on or before the proposal opening date and time.

The outside of the package will include the following information:

- Company Name
- RFQ Number
- RFQ Title
- Due Date and Time

## **V. RESPONSE FORMAT**

The following items are to be included in your proposal, in the order listed. Deviation may render your proposal non-responsive.

### **A. Cover Letter**

Include a cover letter introducing your company, summarizing your qualifications, and detailing any exceptions to this RFQ. This letter should also provide principal contact information for this RFQ, including address, telephone number, e-mail, and website (if applicable).

### **B. Use of Subcontractors/Partners**

There may be areas for use of subcontractors or partners in this project. If you are utilizing this approach, your proposal must list the subcontractors/partners, their area(s) of expertise, and include all other applicable information herein requested for each subcontractor/partner. Please keep in mind that the Town will contract solely with your company, therefore subcontractors/partners remain your sole responsibility to follow the same requirements.

### **C. Minimum Mandatory Qualifications**

Include an itemized description of how your company meets each of the minimum mandatory qualifications outlined in the Scope of Work Above. Failure to meet or exceed these requirements will disqualify your response.

### **D. Company Information**

- 1) Provide the following information as listed: Company Name, Address, Phone Number, and Names of Principals.
- 2) Identify the year in which your company was established and began providing consulting services.
- 3) Describe any pending plans to sell or merge your company.
- 4) Provide a comprehensive listing of all the services you provide.

### **E. Company and Personnel Qualifications**

Describe your business philosophy and identify the individuals who will be involved in the project, their responsibilities and amount of time each is expected to spend on the project. Include a brief description of the design team's previous experience with similar projects. Provide resumes of the key personnel that will be performing the proposed services, including the primary project manager. Changes in the project team may not be made unless conditions beyond the control of Consultant develop, in which case, changes in above personnel may be made only upon advance written approval by Town. The Town reserves the right to request changes in personnel of Consultant working under this Agreement.

Information should include, but is not limited to:

1. Provide the names and resumes of the key personnel that will be performing the proposed services, including the primary project manager.
2. Provide a complete list of all sub-consultants the lead firm will use for the project along with an organizational chart showing relationship of each consultant to the lead firm. Include the amount of time that each is expected to spend on the project.

- a) Provide a statement of past projects where the team, or members of the team have worked together and identify which team members were involved and the name and location of those projects.
  - b) Indicate for each sub-consultant team member, the primary contact and names and titles of their work group members.
  - c) Provide a chart showing each sub-consultant, primary contact name, phone number, email address, and mailing address.
  - d) Provide a short statement for the lead consultant and each sub-consultant noting their expertise in their area of consulting and why they have been selected as part of the project team. It is important to clarify each team member's qualifications and experience in their area of responsibility.
3. Demonstrate the ability, capability and skills necessary to perform the Contract or provide the services required to successfully complete this project.

## **F. Recent Experience with Similar Projects.**

1. List a minimum of two (2) projects of similar nature to this project that the lead consultant and the sub-consultants have had DIRECT involvement within the past five years. Be specific on why the reference project is similar to this project. Include the referenced project name, a brief description, original budget, final cost, if the project was completed on time and a reference name and phone number.
2. Discuss your familiarity with Lyons, Boulder County, and permitting local construction conditions as they pertain to this project.
3. Failure on the part of any Consultant to carry out a previous contract satisfactory shall be deemed sufficient cause for disqualification.
4. Additionally, provide a list of three (3) references/customers that either have or are currently receiving services similar to the scope of services required by the Town under this RFQ (list must include name, address, telephone number, email address and contact person). The Town reserves the right to contact the references provided in your proposal as well as other references without prior notification to you.

## **G. Approach to Scope of Work**

1. Describe any project approaches or ideas that you would apply to this project that you feel would enhance the quality of your services. Provide detailed information about what makes your approach unique and best suited for this project.
2. Describe how the firm will accomplish the work in an effective and timely manner. Include design philosophy, project control, project schedule, understanding of project scope, awareness of issues, and potential issues/problems that would need to be addressed early in the design process to prevent delays.
3. Explain the proposed work plan with a detailed description of the specific tasks as noted in the Scope of Services of this RFQ. Include additional tasks and their purpose as needed to explain completing the work. Include critical path items, milestones and completion dates on the schedule.
4. Describe the methods and timeline of communication your firm will use with the Town's project manager, other involved Town staff, and other interested parties.

## **H. Project Control**

1. Describe how your firm will control costs for this project and meet schedule requirements.

2. Describe what software or methods your company utilizes to establish and track the project timeline/schedule. Identify how the design schedule (internal checks & balances) is monitored to ensure that key milestone dates are met. Indicate if any previous project designs exceeded the project schedule and if so, explain why and what steps have been taken to ensure it does not occur on the future projects.

#### **I. Proximity to Project Location**

1. Identify the primary office that will complete the work and its location with respect to the project site. Describe the firm's ability to respond to field conditions or issues that may arise during the design or construction.

#### **J. Proposed Scope of Work**

1. Provide a detailed scope to complete the project as identified above and amended by your proposal. Include description of work items included that are not specifically identified in the request, but the proposer believes are necessary to complete the scope. Provide a standard rate sheet effective for the course of the project that lists all categories of employees and reimbursable expenses.

#### **K. Required Documents**

1. Illegal Alien Certificate. This required form is included as Exhibit D.
2. Proposal Acknowledgement. This required form is included as Exhibit E.
3. CDBG-DR Public Infrastructure Program Required Procurement and Contract Documents. The required forms are included in Exhibit F

## VI. EVALUATION AND AWARD

### A. Proposal Evaluation

All proposals submitted in response to this RFQ will be evaluated by a committee of Town, in accordance with the criteria described below. Consultant's proposals will be evaluated on the criteria listed below. These criteria will be the basis for review of the written proposals and determine the short-list of consultants for interviews (if required). Total scores will be tabulated, and the consultant with the proposal that is deemed to be the most advantageous to the Town will be selected. If the Town requests presentations by short-listed proposers, committee members may revise their initial scores based upon additional information and clarification received in this phase. In preparing responses, proposers should describe in great detail how they propose to meet the specifications as detailed in the previous sections. Specific factors will be applied to proposal information to assist the Town in selecting the most qualified proposer for this contract. Evaluation criteria that will be used are as follows, listed in order of relative importance:

1. Evaluation Criterion #1 - Company and Personnel Qualifications (20%)
  - Qualifications and abilities of professional personnel
  - Experience on similar projects as a team
  - Commitment of key members to project
  - Firm's size, organizational structure and flexibility
  - Firms technical disciplines and capabilities of sub-consultants on team
2. Evaluation Criterion #2 - Recent Experience with Similar Projects (20%)
  - Firm's recent, relevant project history
  - Demonstrated ability to control costs
  - Demonstrated ability to meet schedule
  - Demonstrated ability to do quality work
3. Evaluation Criterion #3 - Approach to Scope of Work (20%)
  - Firm's demonstrated clear understanding of the project goals
  - Aggressiveness of project schedule
  - Has the firm formulated a successful approach to the project?
  - Where appropriate, are possible design alternatives suggested?
  - Where appropriate, has the firm exhibited sensitivity to public concerns?
4. Evaluation Criterion #4 - Project Control (15%)
  - Cost Control
  - Scheduling Method
  - Quality Control
5. Evaluation Criterion #5 - Proximity to Project Location (5%)
  - Ability to respond to field conditions
  - Team's work location relative to the project location
6. Evaluation Criterion #6 – Proposed Scope (20%)

- Does the Scope of Work align with the Listed Scope and the Town's Goals
- Has the consultant identified innovative alternatives or well thought out additions to the scope

A presentation and/or demonstration may be requested by short-listed proposers prior to award. A presentation/demonstration may not be required, and therefore, complete information should be submitted with your proposal.

#### **B. Determination of Responsibility of the Proposer**

The Town awards contracts to responsible and responsive consultants only. The Town reserves the right to make its proposer responsibility determination at any time in this RFQ process and may not make a responsibility determination for every proposer. A “Responsible proposer” is defined by this proposal as one who has “the capability in all respects to perform fully the contract requirements, presents, perseverance, experience, integrity, reliability, capabilities, facilities, equipment, and credit which will assure good faith performance.” The Town reserves the right to request information as it deems necessary to determine a proposer’s responsibility. If the proposer fails to supply the requested information, the Town shall base the determination of responsibility upon any available information or may find the proposer non-responsible if such failure is unreasonable.

*Note: This will also be Exhibit A of the Contract*

# Exhibit A

## Scope of Work

*(Relating to Town of Lyons Home Elevations)*

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## I. The Services

### A. General Administrative Tasks

The Consultant shall perform the following administrative Tasks in connection with and as part of the Services:

1. The Consultant shall provide continuous communication with the Town of Lyons (Town) and, as directed by the Town. The Consultant shall furnish to the Town copies of all correspondence related thereto. The Consultant shall cooperate promptly and in good faith with the Town and the Boulder County Collaborative (BCC) in the Consultant's preparation of reports and minutes of meetings.
2. The Consultant is expected to submit a Progress Schedule to the Town at the onset of work to establish a schedule of meetings, work product review and revision periods, and critical deadlines. Upon approval of the Progress Schedule by the Town, the Consultant will commence the tasks outlined in the Progress Schedule. The Consultant will be expected to manage this process of communication and to present Project progress and provide a forum for review and feedback. Methods of communication include the following:
  - a) Kick-off meetings with the Town and, as applicable, BCC staff
  - b) Regular working group sessions with the Town. A minimum number of these meetings must be in person.
  - c) As deemed necessary by the Town, presentation of final results to certain stakeholder groups, the Town, and representatives of the BCC.
3. The Consultant shall arrange meetings and presentations as requested by the Town, including regular (e.g., biweekly) project team(s) progress meetings, and in advance shall provide necessary data and Work Product for such meetings (including agendas) and shall keep meeting minutes which shall be provided to the Town following such meetings.
4. The Consultant shall submit a monthly Progress Report to the Town starting on the first (1st) Business Day of the first (1st) calendar month after the Contract Date and along with each invoice for each subsequent month thereafter until the completion of the Services. Each Progress Report shall include an analysis of the Consultant's progress as it relates to the Services and the approved Progress Schedule and each of the following:
  - a) Narrative description of the Services performed during the reporting period;
  - b) Actual time used (timesheets) for each Task (as defined below) and sub-Task in relation to the Progress Schedule approved by the Town
  - c) Reasons for any delays in the targeted completion dates;
  - d) Changes in completion/target dates for the required Services;
  - e) Need and justification for any extensions of time; and
  - f) Activities requiring a decision or action by the Town and/or any other Person

### B. Task 1: Existing Conditions

For each home, the Consultant shall undertake the following which, collectively, constitutes "Task 1" of the Services:

1. Preparation and Review
  - a) Collect, review, and categorize a comprehensive list of publicly available reports, studies, plans, and other background documents and other documents made available by the Town.
  - b) Identify and document lessons learned/best practices from other similar projects within and outside Colorado. This may relate to technical/engineering issues, design considerations,

ecological/habitat considerations, public process, permitting, maintenance, and operations among other topics.

2. Site Conditions
  - a) Visit and inspect the two properties as required to become familiar with such areas and their surroundings.
  - b) Create and catalogue a comprehensive photo survey of each property in their current condition.
  - c) Survey and analyze current conditions of the properties, including:
    - Utilities and topographical survey
    - Flood plain
    - Natural features
    - Tax lots and land uses; jurisdiction/ownership
  - d) Provide a Geotechnical Report for each site sufficient for foundation design
3. Site Plan
  - a) Must meet Flood Plain Development Permit requirements
  - b) Prepare a consolidated site plan, showing streets, blocks and lots, curb lines, building footprints, driveways, and property boundaries. This site plan will be used throughout the project to present information in a clear and consistent format.
4. Regulatory Framework
  - a) Identify and assess applicable laws, regulations, policies, and plans across all levels of government.
  - b) Outline all required Town/State/Federal permits and approvals, with estimated timelines, required information/materials, and level of review (i.e. discretionary vs. administrative).
  - c) In conjunction with (b), describe the anticipated environmental review process and documents.

### C. Task 2: Architectural & Engineering Design/Plans

For each home, the Consultant shall undertake the following which, collectively, constitutes “Task 2” of the Services:

1. Geotechnical Recommendation Letter
2. Structural Calculations for Building Department Review
3. Work with homeowners and elevation guidance to achieve as many goals of the stakeholders within the scope of the budget and guidelines
4. Final Engineering Plans
  - a) Civil Site/Grading/Utility Plan
  - b) Architectural Plans and Elevations
  - c) Structural Plans
  - d) Construction Details
  - e) Response to Town and State comments
  - f) 50% Construction Document (CD) Submittal
  - g) 100% Final CD Submittal
  - h) Consultant will provide two (2) sets bond copies and PDF/AutoCAD digital versions of the above plan for each submittal
5. Final Design Specifications
6. Costs Estimates
  - a) Order of Magnitude Engineer’s Opinion of Costs (30% CD)

- b) Engineer's Opinion of Costs (50% CD)
- c) Final Engineer's Opinion of Costs

#### D. Task 3: Permitting

For each home, the Consultant shall undertake the following which, collectively, constitutes "Task 3" of the Services:

- 1. This task will include all application preparation and permitting fees for all required permits including the following permits:
  - a) Town of Lyons Building Permit
  - b) Floodplain Development Permit

#### E. Task 4: Construction Administration

For each home, the Consultant shall undertake the following which, collectively, constitutes "Task 4" of the Services:

- 1. Pre –bid Presentation & Explanation
  - a) Assist the Town in presenting/explaining CD's to prospective General Contractors (GC's).
  - b) Be available to answer questions and provide clarifications about CD's
- 2. Assist the Town in evaluation and recommendation of construction bids.
- 3. Attend any bid/negotiation meetings.
- 4. Visit the site at intervals appropriate to the Stage of Construction in order to inspect and report on the progress of the Project in relationship to the design intent.
- 5. Provide recommendation of payment to the GC.
- 6. Attend meetings with the Town and the General Contractor regarding the progress of the Project.
- 7. Review submittals, punch lists, shop drawings, samples, pay requests, change orders, etc. provided by the GC
- 8. Complete final walk thru and punch list for the GC.
- 9. Prepare a final FEMA Elevation Certificate based on survey information provided by the GC.

#### F. Task 5: Construction Testing

For each home, the Consultant shall undertake the following which, collectively, constitutes "Task 5" of the Services:

- 1. Consultant will provide the following construction testing services as requested:
  - a) Soils Testing
  - b) Concrete Testing
  - c) Foundation Observations with Building Department review

## II. Anticipated Progress Schedule

Task	2017		
	April-June	July-Sept	Oct-Dec
Existing Conditions			
Design			
Permitting			
Construction Administration			
Construction Testing			

*Note: Do Not Submit with Proposal, this will also be Exhibit B of the Contract*

## Exhibit B

### SAMPLE FEE AND COST SCHEDULE

#### **Home Elevations**

##### **A. Task 1: Existing Conditions**

1. Preparation & Review	\$	-
2. Site Conditions	\$	-
3. Site Plan	\$	-
4. Regulatory Framework	\$	-
	<b>Task 1 Subtotal:</b>	<b>\$</b> <b>-</b>

##### **B. Task 2: Architectural & Engineering Design Plans**

1. Geotechnical Recommendation Letter	\$	-
2. Structural Calculations	\$	-
3. Stakeholder Coordination	\$	-
4. Final Engineering Plans	\$	-
5. Final Design Specifications	\$	-
6. Cost Estimates	\$	-
	<b>Task 2 Subtotal:</b>	<b>\$</b> <b>-</b>

##### **C. Task 3: Permitting**

1. Permitting	\$	-
	<b>Task 3 Subtotal:</b>	<b>\$</b> <b>-</b>

##### **D. Task 4: Construction Administration**

1. Pre-bid Presentation & Explanation	\$	-
2. Bid Evaluation	\$	-
3. Bid Negotiation	\$	-
4. Construction Inspection & Reporting	\$	-
5. GC Payment Review	\$	-
6. Construction Progress Meetings	\$	-
7. Submittal Review	\$	-
8. Punchlist Management	\$	-
9. Final FEMA Elevation Certificate	\$	-
	<b>Task 4 Subtotal:</b>	<b>\$</b> <b>-</b>

##### **E. Task 5: Construction Testing**

1. Soils Testing	\$	-
2. Concrete Testing	\$	-
3. Foundation Observations	\$	-
	<b>Task 5 Subtotal:</b>	<b>\$</b> <b>-</b>

**Proposed Maximum Contract Price:** \$ -

## Exhibit C

### Town of Lyons DISASTER RECOVERY SERVICES AGREEMENT

This DISASTER RECOVERY SERVICES AGREEMENT ("Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_, by and between the TOWN OF LYONS, COLORADO, a municipal corporation of the State of Colorado, with offices at 432 5<sup>th</sup> Avenue, Lyons, Colorado 80540 (the "Town"), and \_\_\_\_\_ with offices at \_\_\_\_\_ (the "Contractor").

#### WITNESSETH

WHEREAS, the Town requires certain professional services as more fully described in Exhibit A;

WHEREAS, the Town issued a Request for Proposals for the services which are the subject of this Agreement; and

WHEREAS, the time for submittal of proposals has passed, and the Town has evaluated the proposals submitted against previously established criteria; and

WHEREAS, the Town has identified the Contractor as the most qualified responsible bidder; and

WHEREAS, the Contractor represents that it possesses the necessary qualifications to perform these services; and

WHEREAS, the Town desires to contract with the Contractor subject to the terms of this Agreement.

NOW, THEREFORE, for the consideration herein expressed, it is agreed as follows by and between the Town and the Contractor that the Contractor shall perform the following:

#### 1.0 SERVICES AND PURPOSE OF AGREEMENT

- 1.1 Services. The Town desires to achieve, secure, receive, or obtain certain service(s) or work product(s) as more specifically described in **Exhibit A** (the "Services"). Exhibit A describes the requirements and deliverables required by this Agreement and is incorporated herein by reference. As an independent contractor, the Contractor offers and agrees to perform and/or deliver the Services in accordance with the terms and conditions of this Agreement. The Parties recognize and acknowledge that, although the Town has requested certain general services to be performed or certain work product to be produced, the Contractor has offered to the Town the process, procedures, terms, and conditions under which the Contractor plans and proposes to achieve or produce the services and/or work product(s) and the Town, through this Agreement, has accepted such process, procedures, terms, and conditions as binding on the Parties.

- 1.2 Town Representative. The Town assigns [Representative's Name] as the Town Representative for this Agreement. The Town Representative will monitor the Contractor's progress and performance under this Agreement and shall be available to the Contractor to respond to questions, assist in understanding Town policies, procedures, and practices, and supervise the performance of any Town obligations under this Agreement.
- 1.3 Changes to Services. Any changes to the Services that are mutually agreed upon between the Town and the Contractor shall be made in a formal writing referencing this Agreement and, only upon execution by both Parties of such formal writing, shall become an amendment to the Services described in this Agreement. To be effective, any written change must be signed by the Contractor and by the Town or by a person expressly authorized in writing to sign on behalf of the Town. Changes to the Services or to this Agreement shall not be made through oral agreement or electronic mail messages.
- 1.4 Meeting Attendance. The Contractor shall attend such meetings of the Town relative to the Scope of Work set forth in Exhibit A as may be requested by the Town. Any requirement made by the named representatives of the Town shall be given with reasonable notice to the Contractor so that a representative may attend.
- 1.5 Agreement to Comply with Requisite Provisions Based On Funding Source. If checked below, the Town will pay in whole or in part for the Services rendered hereunder with federal or State based grant funding. Contractor agrees to comply with all provisions set forth in any Attachment as noted and if checked)
  - Attachment A, Federal Emergency Management Agency's ("FEMA") Grant Program Requirements for Procurement Contracts if FEMA funding is used for the Work
  - Attachment B, Colorado Community Development Block Grant Disaster Recovery Program funds (hereinafter referred to as CDBG-DR funds) Requirements for Contracts if CDBG-DR funding is used for the Work
- 1.6 Lawful Performance. It is further agreed that no party to this Agreement will perform contrary to any state, federal, or county law, or any of the ordinances of the Town of Lyons, Colorado.

## 2.0 COMPENSATION

- 2.1 Commencement of and Compensation for Services. Following execution of this Agreement by the Town, the Contractor shall be authorized to and shall commence performance of the Services as described in Exhibit A, subject to the requirements and limitations on compensation as provided by this Section 2.0 and its subsections. Compensation to be paid hereunder shall not exceed [Written Not to Exceed Amount] Dollars (\$\_\_\_\_\_) unless a larger amount is agreed to by and between the Parties in accordance with the amendment requirements of this Agreement.

- A. Method of Compensation. The Contractor shall perform the Services and shall

invoice the Town for work performed based on the rates and/or compensation methodology and amounts described in **Exhibit B** subject to the not to exceed amount set forth in this Section. Monthly, partial, progress payments shall be made by the Town to the Contractor for the percentage of the Scope of Work completed. Progress payments shall not constitute a waiver of the right of the Town to require the fulfillment of all material terms of this Agreement and the delivery of all improvements embraced in this Agreement.

- B. Final payment may be requested by the Contractor upon completion and acceptance, by the Town, of all work or Services as set forth in Exhibit A. The total amount of final payment shall consist of the compensation set forth in paragraph 2.1, as adjusted in accordance with approved change orders, if applicable, less all previous payments to the Contractor.
- C. Should work beyond that described in Exhibit A be required, it will be paid for as extra work at a cost to be agreed upon in separate written agreement by the Town and the Contractor prior to commencement of the additional work. Such additional agreements shall be executed and approved by all persons required by Town purchasing ordinances or policies.
- D. The Town, before making any payment, may require the Contractor to furnish releases or receipts from any or all persons performing work under this Agreement and/or supplying material or services to the Contractor, or any subcontractor if this is deemed necessary to protect the Town's interest. The Town, however, may in its discretion make payment in part or full to the Contractor without requiring the furnishing of such releases or receipts.

2.2 Reimbursable Expenses. If this Agreement is for lump sum compensation, there shall be no reimbursable expenses. If the Agreement is for compensation based on a time and materials methodology, the following shall be considered "reimbursable expenses" for purposes of this Agreement and may be billed to the Town without administrative mark-up but which must be accounted for by the Contractor and proof of payment shall be provided by the Contractor with the Contractor's monthly invoices:

- None
- Vehicle Mileage (billed at not more than the prevailing per mile charge permitted by the IRS as a tax deductible business expense)
- Printing and Photocopying Related to the Services (billed at actual cost)
- Long Distance Telephone Charges Related to the Services
- Postage and Delivery Services
- Lodging and Meals (but only with prior written approval of the Town as to dates and maximum amount)

Any fee, cost, charge, or expense incurred by the Contractor not otherwise specifically authorized by this Agreement shall be deemed a non-reimbursable cost

that shall be borne by the Contractor and shall not be billed or invoiced to the Town and shall not be paid by the Town.

- 2.3 Increases in Compensation or Reimbursable Expenses. Any increases or modification to the compensation or reimbursable expenses shall be subject to the approval of the Town and shall be made only by written amendment of this Agreement executed by both Parties.
- 2.4 Payment Processing. The Contractor shall submit invoices and requests for payment in a form acceptable to the Town. Invoices shall not be submitted more often than once each month unless otherwise approved by this Agreement or in writing by the Town in accordance with the amendment requirements of this Agreement. Unless otherwise directed or accepted by the Town, all invoices shall contain sufficient information to account for all appropriate measure(s) of Contractor work effort (e.g., task completion, work product delivery, or time) and all authorized reimbursable expenses for the Services during the stated period of the invoice. Following receipt of a Contractor's invoice, the Town shall promptly review the Contractor's invoice. All Town payments for Services rendered pursuant to this Agreement shall be issued in the business name of Contractor only, and in no event shall any such payments be issued to an individual. In no event shall any Town payments to Contractor be in the form of or based upon a salary or an hourly wage rate.
- 2.5 Town Dispute of Invoice or Invoiced Item(s). The Town may dispute any Contractor compensation and/or reimbursable expense requested by the Contractor described in any invoice and may request additional information from the Contractor substantiating any and all compensation sought by the Contractor before accepting the invoice. When additional information is requested by the Town, the Town shall advise the Contractor in writing, identifying the specific item(s) that are in dispute and giving specific reasons for any request for information. The Town shall pay the Contractor within forty-five (45) days of the receipt of an invoice for any undisputed charges or, if the Town disputes an item or invoice and additional information is requested, within thirty (30) days of acceptance of the item or invoice by the Town following receipt of the information requested and resolution of the dispute. To the extent possible, undisputed charges within the same invoice as disputed charges shall be timely paid in accordance with this Agreement. Payment by the Town shall be deemed made and completed upon hand delivery to the Contractor or designee of the Contractor or upon deposit of such payment or notice in the U.S. Mail, postage pre-paid, addressed to the Contractor.

### **3.0 CONTRACTOR'S REPRESENTATIONS AND OFFERED PERFORMANCE**

The Contractor offers to perform the Services in accordance with the following Contractor-elected practices and procedures. By this Agreement, the Town accepts such offer and the following are hereby made part of the terms and conditions of this Agreement:

- 3.1 General. The Contractor shall become fully acquainted with the available information related to the Services. The Contractor shall affirmatively request from the Town Representative and the Town such information that the Contractor, based on the

Contractor's professional experience, should reasonably expect is available and which would be relevant to the performance of the Services. The Contractor shall promptly inform the Town concerning ambiguities and uncertainties related to the Contractor's performance that are not addressed by the Agreement. The Contractor shall provide all of the Services in a timely and professional manner. The Contractor shall comply with all applicable federal, state and local laws, ordinances, regulations, and resolutions.

- 3.2 **Independent Contractor.** The Contractor shall perform the Services as an independent contractor and shall not be deemed by virtue of this Agreement to have entered into any partnership, joint venture, employer/employee or other relationship with the Town. This Agreement does not require the Contractor to work exclusively for the Town. This Agreement shall not be interpreted as the Town dictating or directing the Contractor's performance or the time of performance beyond a completion schedule and a range of mutually agreeable work hours, but shall be interpreted as the Contractor's offer and Town acceptance of terms and conditions for performance. The Contractor's business operations shall not be combined with the Town by virtue of this Agreement, and the Town will not provide any training to Contractor, its agents, or employees beyond that minimal level required for performance of the Services. The Parties acknowledge that the Contractor may require some assistance or direction from the Town in order for the Services to meet the Town's contractual expectations. Any provisions in this Agreement that may appear to grant the Town the right to direct or control Contractor or the Services shall be construed as Town plans or specifications regarding the Services.
- 3.3 **Liability for Employment-Related Rights and Compensation.** The Contractor shall be solely responsible for all compensation, benefits, insurance and employment-related rights of any person providing Services hereunder during the course of or arising or accruing as a result of any employment, whether past or present, with the Contractor, as well as all legal costs including attorney's fees incurred in the defense of any conflict or legal action resulting from such employment or related to the corporate amenities of such employment. The Contractor will comply with all laws, regulations, municipal codes, and ordinances and other requirements and standards applicable to the Contractor's employees, including, without limitation, federal and state laws governing wages and overtime, equal employment, safety and health, employees' citizenship, withholdings, reports and record keeping. **CONTRACTOR ACKNOWLEDGES THAT NEITHER IT NOR ITS AGENTS OR EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS UNLESS CONTRACTOR OR SOME ENTITY OTHER THAN THE TOWN PROVIDES SUCH BENEFITS. CONTRACTOR FURTHER ACKNOWLEDGES THAT NEITHER IT NOR ITS AGENTS OR EMPLOYEES ARE ENTITLED TO WORKERS' COMPENSATION BENEFITS. CONTRACTOR ALSO ACKNOWLEDGES THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON ANY MONEYS EARNED OR PAID PURSUANT TO THIS AGREEMENT.** To the maximum extent permitted by law, Contractor waives all claims against the Town for any Employee Benefits; the Contractor will defend the Town from any claim and will indemnify the Town against any liability for any Employee Benefits for the Contractor imposed on

the Town ; and the Contractor will reimburse the Town for any award, judgment, or fine against the Town based on the position the Contractor was ever the Town 's employee, and all attorneys' fees and costs the Town reasonably incurs defending itself against any such liability.

- 3.4 Interaction with Public. The Contractor recognizes that its conduct during the performance of the Services hereunder reflects upon its reputation in the community as well as upon the public perception of the Town. Therefore, the Contractor offers and warrants to the Town that the Contractor, its agents and employees will conduct all of their interactions with the citizens and the public relating to the performance of the Services hereunder in such a manner as to provide customer service that reflects positively upon its reputation and the Town's public image.
- 3.5 Subcontractors. The Parties recognize and agree that subcontractors may be utilized by the Contractor for the performance of certain Services if and as described more particularly in **Exhibit A**; however, the engagement or use of subcontractors will not relieve or excuse the Contractor from performance of any obligations imposed in accordance with this Agreement and Contractor shall remain solely responsible for ensuring that any subcontractors engaged to perform Services hereunder shall perform such Services in accordance with all terms and conditions of this Agreement.
- 3.6 Standard of Performance. In performing the Services, the Contractor warrants that it shall use that degree of care, skill, and professionalism ordinarily exercised under similar circumstances by highly competent members of the same profession practicing in the State of Colorado. The Contractor represents to the Town that the Contractor is, and its employees or sub-contractors performing such Services are, properly licensed and/or registered within the State of Colorado for the performance of the Services (if licensure and/or registration is required by applicable law) and that the Contractor and employees possess the skills, knowledge, and abilities to perform the Services competently, timely, and professionally in accordance with this Agreement. In addition, the Contractor warrants and represents that it will provide the Services in accordance with more specific standards of performance as are included within **Exhibit A**. The Contractor represents, covenants and agrees that the Services will be provided to the Town free from any material errors. The Contractor's failure to meet or exceed any of the foregoing standards and warranties may be considered a material breach of this Agreement and may be grounds for termination of the Agreement pursuant to Section 4.0 below, in addition to any other remedies as provided in Section 9.0 below.
- 3.7 Review of Books and Records. The Contractor shall promptly comply with any written Town request for the Town or any of its duly authorized representatives to reasonably access and review any books, documents, papers, and records of the Contractor that are pertinent to the Contractor's performance under this Agreement for the purpose of the Town performing an audit, examination, or other review of the Services.

3.8 Licenses and Permits. The Contractor shall be responsible at the Contractor's expense for obtaining, and maintaining in a valid and effective status, all licenses and permits necessary to perform the Services unless specifically stated otherwise in this Agreement.

3.9 Affirmative Action. The Contractor warrants that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor warrants that it will take affirmative action to ensure applicants are employed, and employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

3.10 Employment of or Contracts with Illegal Aliens. The Contractor shall not knowingly employ or contract with an illegal alien to perform work under this Agreement. The Contractor shall not contract with a subcontractor that fails to certify that the subcontractor does not knowingly employ or contract with any illegal aliens. By entering into this Agreement, the Contractor certifies as of the date of this Agreement that it does not knowingly employ or contract with an illegal alien who will perform work under this contract for Services and that the Contractor will participate in the e-verify program or department program in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under the public contract for services. The Contractor is prohibited from using either the e-verify program or the department program procedures to undertake pre-employment screening of job applicants while this Agreement is being performed. If the Contractor obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien, the Contractor shall be required to notify the subcontractor and the Town within three (3) days that the Contractor has actual knowledge that a subcontractor is employing or contracting with an illegal alien. The Contractor shall terminate the subcontract if the subcontractor does not stop employing or contracting with the illegal alien within three (3) days of receiving the notice regarding Contractor's actual knowledge. The Contractor shall not terminate the subcontract if, during such three (3) days, the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien. The Contractor is required to comply with any reasonable request made by the Department of Labor and Employment made in the course of an investigation undertaken to determine compliance with this provision and applicable state law. If the Contractor violates this provision, the Town may terminate this Agreement, and the Contractor may be liable for actual and/or consequential damages incurred by the Town, notwithstanding any limitation on such damages provided by such Agreement.

3.11 Duty to Warn. The Contractor agrees to call to the Town's attention errors in any drawings, plans, sketches, instructions, information, requirements, procedures, and/or other data supplied to the Contractor (by the Town or by any other party) that it becomes aware of and believes may be unsuitable, improper, or inaccurate in a

material way. However, the Contractor shall not independently verify the validity, completeness or accuracy of such information unless included in the Services or otherwise expressly engaged to do so by the Town.

#### 4.0 TERM AND TERMINATION

- 4.1 Term. This Agreement shall be effective on the **Insert Date day of 20Year at 12:01 a.m.**, (the "Effective Date") and shall terminate at the earlier of the date on which all obligations of the parties have been met (to include all Services have been completed) or **11:59 p.m. on Insert Date, 20Year**, or on a prior date of termination as may be permitted by this Agreement; provided, however, that the Parties may mutually agree in writing to extend the term of this Agreement, subject to annual appropriation. Those provisions that survive termination, to include the indemnification obligations and any warranty obligations, shall remain in effect past termination.
- 4.2 Continuing Services Required. The Contractor shall perform the Services in accordance with this Agreement commencing on the Effective Date until such Services are terminated or suspended in accordance with this Agreement. The Contractor shall not temporarily delay, postpone, or suspend the performance of the Services without the written consent of the Town Council, Town Manager, the Town Representative, or other Town employee expressly authorized in writing to direct the Contractor's services.
- 4.3 Town Unilateral Termination. This Agreement may be terminated by the Town for any or no reason upon written notice delivered to the Contractor at least ten (10) days prior to termination. In the event of the Town's exercise of the right of unilateral termination as provided by this paragraph:
  - A. Unless otherwise provided in any notice of termination, the Contractor shall provide no further services in connection with this Agreement after receipt of a notice of termination; and
  - B. All finished or unfinished documents, data, studies and reports prepared by the Contractor pursuant to this Agreement shall be delivered by the Contractor to the Town and shall become the property of the Town; and
  - C. The Contractor shall submit to the Town a final accounting and final invoice of charges for all outstanding and unpaid Services and reimbursable expenses performed prior to the Contractor's receipt of notice of termination and for any services authorized to be performed by the notice of termination as provided by Section 4.3(A) above. Such final accounting and final invoice shall be delivered to the Town within thirty (30) days of the date of termination; thereafter, no other invoice, bill, or other form of statement of charges owing to the Contractor shall be submitted to or accepted by the Town.

4.4 Termination for Non-Performance. Should a party to this Agreement fail to materially perform in accordance with the terms and conditions of this Agreement, this Agreement may be terminated by the performing party if the performing party first provides written notice to the non-performing party which notice shall specify the non-performance, provide both a demand to cure the non-performance and reasonable time to cure the non-performance, and state a date upon which the Agreement shall be terminated if there is a failure to timely cure the non-performance. For purpose of this Section 4.4, "reasonable time" shall be not less than five (5) business days. In the event of a failure to timely cure a non-performance and upon the date of the resulting termination for non-performance, the Contractor shall prepare a final accounting and final invoice of charges for all performed but unpaid Services and authorized reimbursable expenses. Such final accounting and final invoice shall be delivered to the Town within fifteen (15) days of the date of termination; thereafter, no other invoice, bill, or other form of statement of charges owing to the Contractor shall be submitted to or accepted by the Town. Provided that notice of non-performance is provided in accordance with this Section 4.4, nothing in this Section 4.4 shall prevent, preclude, or limit any claim or action for default or breach of contract resulting from non-performance by a Party.

4.5 Unilateral Suspension of Services. The Town may suspend the Contractor's performance of the Services at the Town's discretion and for any reason by delivery of written notice of suspension to the Contractor which notice shall state a specific date of suspension. Upon receipt of such notice of suspension, the Contractor shall immediately cease performance of the Services on the date of suspension except: (1) as may be specifically authorized by the notice of suspension (e.g., to secure the work area from damage due to weather or to complete a specific report or study); or (2) for the submission of an invoice for Services performed prior to the date of suspension in accordance with this Agreement.

4.6 Delivery of Notice of Termination. Any notice of termination permitted by this Section 4.0 and its subsections shall be addressed to the person signing this Agreement on behalf of either Town or Contractor at the address shown below or such other address as either party may notify the other of and shall be deemed given upon delivery if personally delivered, or forty-eight (48) hours after deposited in the United States mail, postage prepaid, registered or certified mail, return receipt requested.

## 5.0 INSURANCE

5.1 Insurance Generally. During the term of this Agreement, the Contractor shall obtain and shall continuously maintain, at the Contractor's expense, insurance of the kind and in the minimum amounts specified as follows by checking the appropriate boxes:

The Contractor shall obtain and maintain the types, forms, and coverage(s) of insurance deemed by the Contractor to be sufficient to meet or exceed the Contractor's minimum statutory and legal obligations arising under this Agreement ("Contractor Insurance"); or

- The Contractor shall secure and maintain the following ("Required Insurance"):
  - Worker's Compensation Insurance in the minimum amount required by applicable law for all employees and other persons as may be required by law. Such policy of insurance shall be endorsed to include the Town as a Certificate Holder.
  - Comprehensive General Liability insurance with minimum combined single limits of \_\_\_\_\_ Dollars (\$\_\_\_\_\_.\_\_\_\_\_) each occurrence and of \_\_\_\_\_ Dollars (\$\_\_\_\_\_.\_\_\_\_\_) aggregate. The policy shall be applicable to all premises and all operations of the Contractor. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations. The policy shall contain a severability of interests provision. Coverage shall be provided on an "occurrence" basis as opposed to a "claims made" basis. Such insurance shall be endorsed to name the Town as Certificate Holder and name the Town, and its elected officials, officers, employees and agents as additional insured parties.
  - Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than \_\_\_\_\_ Dollars (\$\_\_\_\_\_.\_\_\_\_\_) each occurrence with respect to each of the Contractor's owned, hired and non-owned vehicles assigned to or used in performance of the Services. The policy shall contain a severability of interests provision. Such insurance coverage must extend to all levels of subcontractors. Such coverage must include all automotive equipment used in the performance of the Agreement, both on the work site and off the work site, and such coverage shall include non-ownership and hired cars coverage. Such insurance shall be endorsed to name the Town as Certificate Holder and name the Town, and its elected officials, officers, employees and agents as additional insured parties.
  - Professional Liability (errors and omissions) Insurance with a minimum limit of coverage of \_\_\_\_\_ Dollars (\$\_\_\_\_\_.\_\_\_\_\_) per claim and annual aggregate. Such policy of insurance shall be obtained and maintained for one (1) year following completion of all Services under this Agreement. Such policy of insurance shall be endorsed to include the Town as a Certificate Holder.

The Required Insurance shall be procured and maintained with insurers with an A- or better rating as determined by Best's Key Rating Guide. All Required Insurance shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Contractor.

5.2 Additional Requirements for All Policies. In addition to specific requirements imposed on insurance by this Section 5.0 and its subsections, insurance shall conform to all of the following:

- A. For both Contractor Insurance and Required Insurance, all policies of insurance shall be primary insurance, and any insurance carried by the Town, its officers, or its employees shall be excess and not contributory insurance to that provided by the Contractor; provided, however, that the Town shall not be obligated to obtain or maintain any insurance whatsoever for any claim, damage, or purpose arising from or related to this Agreement and the Services. The Contractor shall not be an insured party for any Town-obtained insurance policy or coverage.
- B. For both Contractor Insurance and Required Insurance, the Contractor shall be solely responsible for any deductible losses.
- C. For Required Insurance, no policy of insurance shall contain any exclusion for bodily injury or property damage arising from completed operations.
- D. For Required Insurance, every policy of insurance shall provide that the Town will receive notice no less than thirty (30) days prior to any cancellation, termination, or a material change in such policy or in the alternative, the Contractor shall provide such notice as soon as reasonably practicable and in no event less than thirty (30) days prior to any cancellation, termination, or a material change in such policy.

5.3 Failure to Obtain or Maintain Insurance. The Contractor's failure to obtain and continuously maintain policies of insurance in accordance with this Section 5.0 and its subsections shall not limit, prevent, preclude, excuse, or modify any liability, claims, demands, or other obligations of the Contractor arising from performance or non-performance of this Agreement. Failure on the part of the Contractor to obtain and to continuously maintain policies providing the required coverage, conditions, restrictions, notices, and minimum limits shall constitute a material breach of this Agreement upon which the Town may immediately terminate this Agreement, or, at its discretion, the Town may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the Town shall be repaid by Contractor to the Town immediately upon demand by the Town, or at the Town's sole discretion, the Town may offset the cost of the premiums against any monies due to the Contractor from the Town pursuant to this Agreement.

5.4 Insurance Certificates. Prior to commencement of the Services, the Contractor shall submit to the Town certificates of insurance for all Required Insurance. Insurance limits, term of insurance, insured parties, and other information sufficient to demonstrate conformance with this Section 5.0 and its subsections shall be indicated on each certificate of insurance. Certificates of insurance shall reference the Project Name as identified on the first page of this Agreement. The Town may request and the Contractor shall provide within three (3) business days of such request a current certified copy of any policy of Required Insurance and any endorsement of such

policy. The Town may, at its election, withhold payment for Services until the requested insurance policies are received and found to be in accordance with the Agreement.

## **6.0 CLAIMS, INDEMNIFICATION, HOLD HARMLESS AND DEFENSE**

- 6.1 **Notices of Claim.** A Party shall notify the other Party immediately and in writing in the event that a Party learns of a third-party claim or an allegation of a third-party claim arising or resulting from the Parties' performance or failure to perform pursuant to this Agreement. The Parties shall reasonably cooperate in sharing information concerning potential claims.
- 6.2 **Claims Challenging Town Law, Ordinance, Rule, or Policy/Procedure.** In the event any claim is asserted by a third-party against the Town and/or the Contractor alleging that any law, statute, ordinance, rule or approved Town policy or procedure is unlawful, unconstitutional or otherwise improper, then:
  - A. The Contractor shall not be entitled to and shall not defend such claim; and
  - B. The Town may, at its sole discretion, elect to defend, not defend, settle, confess, compromise, or otherwise direct the manner in which such claim is addressed; and
  - C. The Contractor shall reasonably cooperate with the Town in any Town defense of such claim although the Contractor shall bear any cost or expense incurred by the Contractor in such cooperation, including but not limited to the Contractor's cost and expense incurred in consultation with its own legal counsel; and
  - D. Only if authorized by law and without waiving the provisions of the Colorado Constitution or the Colorado Governmental Immunity Act, the Town shall indemnify and hold Contractor harmless for any damages, liability, expenses, or court awards, including costs and attorney's fees that are or may be awarded as a result of any loss, injury or damage sustained or claimed to have been sustained by any third-party, including but not limited to, any person, firm, partnership, or corporation, in connection with or arising out of such claim.
- 6.3 **Indemnification for Certain Claims.** For any claim not within the scope of Section 6.2 above, Contractor expressly agrees to indemnify and hold harmless the Town, and any of its council members, board members, commissioners, officials, officers, agents, Contractors, attorneys, or employees from any and all damages, liability, expenses, or court awards, including costs and attorney's fees that are or may be awarded as a result of any loss, injury or damage sustained or claimed to have been sustained by any third-party, including but not limited to, any person, firm, partnership, or corporation, in connection with or arising out of any intentional, reckless, negligent or tortious conduct, error, omission, or act of commission by Contractor or any of its employees, agents, or others acting on Contractor's behalf in performance of the Services. Nothing in this Agreement shall be construed as constituting a covenant, promise, or agreement by the Contractor to indemnify or

hold the Town, its elected officials, board members, commissioners, officials, officers, agents, contractors, attorneys, or employees harmless for any negligence solely attributable to the Town, its elected officials, boards, commissions, officials, officers, agents, Contractors, attorneys, or employees. The Contractor's obligation to indemnify pursuant to this Section shall survive the completion of the Services and shall survive the termination of this Agreement.

**6.4 Defense of Claims.**

- A. **Claims Against Both the Town and Contractor.** In the event any claim is asserted by a third-party against both the Town and Contractor arising out of any Party's performance of the Services which claim is not within the scope of Section 6.2 above, the Town shall be entitled to elect to defend such claim on behalf of both the Town and Contractor subject to the provisions governing indemnification set forth in this Section. In the event that the Town elects to defend such claim, the Town shall consult with Contractor in such defense but the Town is entitled to exercise its independent discretion in the manner of defense, including but not limited to the selection of litigation counsel and the discretion to settle, confess, compromise, or otherwise direct and dispose of any claim. In the event that the Town elects to defend such claim, Contractor may at its own cost and expense elect to assume the defense of Contractor, in which case Contractor shall bear its own attorneys' fees, costs, and expenses in such defense and such fees, costs, and expenses shall not be subject to indemnification pursuant to this Section.
- B. **Claims Against Only One Party.** In the event of any claim asserted by a third-party against only one Party to this Agreement arising out of any Party's performance of the Services which claim is not within the scope of Section 6.2 above, the Party shall be entitled to elect to defend such claim on behalf of such Party subject to the provisions governing indemnification set forth in this Section. Where appropriate, the defending Party may also elect to join the other Party through third-party practice or otherwise in accordance with the Colorado Rules of Civil Procedure or other applicable rules, in which case the joined Party may defend such claim subject to indemnification pursuant to this Section. In the event that a Party elects to intervene voluntarily in any claim asserted against the other Party arising out of any Party's performance of the Services or any claim that any law, statute, ordinance, rule or approved Town policy or procedure is unlawful, unconstitutional or otherwise improper, the intervening Party shall bear its own attorneys' fees, costs, and expenses in such intervention and such fees, costs, and expenses shall not be subject to indemnification pursuant to this Section.

**7.0 RECORDS AND OWNERSHIP OF DOCUMENTS**

- 7.1 **Retention and Open Records Act Compliance.** All records of the Contractor related to the provision of Services hereunder, including public records as defined in the Colorado Open Records Act ("CORA"), and records produced or maintained in accordance with this Agreement, are to be retained and stored in accordance with the Town's records retention and disposal policies. Those

records which constitute “public records” under CORA are to be at the Town offices or accessible and opened for public inspection in accordance with CORA and Town policies. Public records requests for such records shall be processed in accordance with Town policies. Contractor agrees to allow access by the Town and the public to all documents subject to disclosure under applicable law. Contractor’s willful failure or refusal to comply with the provisions of this Section shall result in the immediate termination of this Agreement by the Town. For purposes of CORA, the Town Clerk is the custodian of all records produced or created as a result of this Agreement. Nothing contained herein shall limit the Contractor’s right to defend against disclosure of records alleged to be public.

7.2 Town’s Right of Inspection. The Town shall have the right to request that the Contractor provide to the Town a list of all records of the Contractor related to the provision of Services hereunder retained by the Contractor in accordance with this subsection and the storage location and method. Contractor agrees to allow inspection at reasonable times by the Town of all documents and records produced or maintained in accordance with this Agreement.

7.3 Ownership. Any work product, materials, and documents produced by the Contractor pursuant to this Agreement shall become property of the Town of Lyons upon delivery and shall not be made subject to any copyright unless authorized by the Town. Other materials, methodology and proprietary work used or provided by the Contractor to the Town not specifically created and delivered pursuant to the Services outlined in this Agreement may be protected by a copyright held by the Contractor and the Contractor reserves all rights granted to it by any copyright. The Town shall not reproduce, sell, or otherwise make copies of any copyrighted material, subject to the following exceptions: (1) for exclusive use internally by Town staff and/or Town contractors; or (2) pursuant to a request under the Colorado Open Records Act, C.R.S. § 24-72-203, to the extent that such statute applies; or (3) pursuant to law, regulation, or court order. The Contractor waives any right to prevent its name from being used in connection with the Services.

7.4 Return of Records to Town. At the Town’s request, upon expiration or termination of this Agreement, all records of the Contractor related to the provision of Services hereunder, including public records as defined in the Colorado Open Records Act (“CORA”), and records produced or maintained in accordance with this Agreement, are to be returned to the Town in a reasonable format and with an index as determined and requested by the Town.

## **8.0 FORCE MAJEURE**

Neither the Contractor nor the Town shall be liable for any delay in, or failure of performance of, any covenant or promise contained in this Agreement, nor shall any delay or failure constitute default or give rise to any liability for damages if, and only to extent that, such delay or failure is caused by “force majeure.” As used in this Agreement, “force majeure” means acts of God, acts of the public enemy, acts of terrorism, unusually severe weather, fires, floods, epidemics, quarantines, strikes, labor disputes and freight embargoes, to the extent such events were not

the result of, or were not aggravated by, the acts or omissions of the non-performing or delayed party.

## **9.0 REMEDIES**

In addition to any other remedies provided for in this Agreement, and without limiting its remedies available at law, the Town may exercise the following remedial actions if the Contractor substantially fails to perform the duties and obligations of this Agreement. Substantial failure to perform the duties and obligations of this Agreement shall mean a significant, insufficient, incorrect, or improper performance, activities or inactions by the Contractor. The remedial actions include:

- A. Suspend the Contractor's performance pending necessary corrective action as specified by the Town without the Contractor's entitlement to an adjustment in any charge, fee, rate, price, cost, or schedule; and/or
- B. Withhold payment to the Contractor until the necessary services or corrections in performance are satisfactorily completed; and/or
- C. Deny payment for those services which have not been satisfactorily performed, and which, due to circumstances caused by the Contractor, cannot be performed, or if performed would be of no value to the Town ; and/or
- D. Terminate this Agreement in accordance with this Agreement; and/or
- E.  Other remedies as may be provided by attached addendum or addenda.

The foregoing remedies are cumulative and the Town, in its sole discretion, may exercise any or all of the remedies individually or simultaneously.

## **10.0 MISCELLANEOUS PROVISIONS**

- 10.1 **No Waiver of Rights.** A waiver by any Party to this Agreement of the breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by either Party. The Town's approval or acceptance of, or payment for, services shall not be construed to operate as a waiver of any rights or benefits to be provided under this Agreement. No covenant or term of this Agreement shall be deemed to be waived by the Town except in writing signed by the Town Council or by a person expressly authorized to sign such waiver, and any written waiver of a right shall not be construed to be a waiver of any other right or to be a continuing waiver unless specifically stated.
- 10.2 **No Waiver of Governmental Immunity.** Nothing in this Agreement shall be construed to waive, limit, or otherwise modify any governmental immunity that may be available by law to the Town, its officials, employees, contractors, or agents, or any other person acting on behalf of the Town and, in particular, governmental immunity afforded or available pursuant to the Colorado

Governmental Immunity Act, Title 24, Article 10 of the Colorado Revised Statutes.

- 10.3 Binding Effect. The Parties agree that this Agreement, by its terms, shall be binding upon the successors, heirs, legal representatives, and assigns; provided that this Section 10.3 shall not authorize assignment.
- 10.4 No Third-party Beneficiaries. Nothing contained in this Agreement is intended to or shall create a contractual relationship with, cause of action in favor of, or claim for relief for, any third-party, including any agent, sub-consultant or sub-contractor of Contractor. Absolutely no third-party beneficiaries are intended by this Agreement. Any third-party receiving a benefit from this Agreement is an incidental and unintended beneficiary only.
- 10.5 Article X, Section 20/TABOR. The Parties understand and acknowledge that the Town is subject to Article X, § 20 of the Colorado Constitution ("TABOR"). The Parties do not intend to violate the terms and requirements of TABOR by the execution of this Agreement. It is understood and agreed that this Agreement does not create a multi-fiscal year direct or indirect debt or obligation within the meaning of TABOR and, therefore, notwithstanding anything in this Agreement to the contrary, all payment obligations of the Town are expressly dependent and conditioned upon the continuing availability of funds beyond the term of the Town's current fiscal period ending upon the next succeeding December 31. Financial obligations of the Town payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available in accordance with the rules, regulations, and resolutions of Town of Centennial, and other applicable law. Upon the failure to appropriate such funds, this Agreement shall be terminated.
- 10.6 Governing Law, Venue, and Enforcement. This Agreement shall be governed by and interpreted according to the law of the State of Colorado. Venue for any action arising under this Agreement shall be in the appropriate court for Boulder County, Colorado. To reduce the cost of dispute resolution and to expedite the resolution of disputes under this Agreement, the Parties hereby waive any and all right either may have to request a jury trial in any civil action relating primarily to the enforcement of this Agreement. The Parties agree that the rule that ambiguities in a contract are to be construed against the drafting party shall not apply to the interpretation of this Agreement. If there is any conflict between the language of this Agreement and any exhibit or attachment, the language of this Agreement shall govern.
- 10.7 Survival of Terms and Conditions. The Parties understand and agree that all terms and conditions of the Agreement that require continued performance, compliance, or effect beyond the termination date of the Agreement shall survive such termination date and shall be enforceable in the event of a failure to perform or comply.

10.8 Assignment and Release. All or part of the rights, duties, obligations, responsibilities, or benefits set forth in this Agreement shall not be assigned by the Contractor without the express written consent of the Town. Any written assignment shall expressly refer to this Agreement, specify the particular rights, duties, obligations, responsibilities, or benefits so assigned, and shall not be effective unless approved by the Town through the authorizing agent executing this Agreement. No assignment shall release the Contractor from performance of any duty, obligation, or responsibility unless such release is clearly expressed in such written document of assignment.

10.9 Interpretation and Mutual Negotiation. It is the intent of the Parties that this Agreement shall in all instances be interpreted to reflect the Contractor's status as an independent contractor with the Town and that in no event shall this Agreement be interpreted as establishing an employment relationship between the Town and either Contractor or Contractor's employees, agents, or representatives. The Parties agree that this Agreement is the result of mutual negotiation between the Parties and that the Agreement shall not be construed against the Town on grounds relating to drafting, revision, review, or recommendation by any agent or representative of the Town. The Parties further agree that all warranties in this Agreement are made by the Contractor to induce the Town to accept the Contractor's offer to enter into this Agreement and have been incorporated into the Agreement at the Contractor's request.

10.10 Paragraph Captions. The captions of the paragraphs and sections are set forth only for the convenience and reference of the Parties and are not intended in any way to define, limit or describe the scope or intent of this Agreement.

10.11 Agreement Controls. In the event a conflict exists between this Agreement and any term in any exhibit attached or incorporated into this Agreement, the terms in this Agreement shall supersede the terms in such exhibit.

10.12 Integration and Amendment. This Agreement represents the entire and integrated agreement between the Town and the Contractor and supersedes all prior negotiations, representations, or agreements, either written or oral. Any amendments to this Agreement must be in writing and be signed by both the Town and the Contractor.

10.13 Severability. Invalidation of any of the provisions of this Agreement or any paragraph, sentence, clause, phrase, or word herein or the application thereof in any given circumstance shall not affect the validity of any other provision of this Agreement.

10.14 Incorporation of Exhibits. Unless otherwise stated in this Agreement, exhibits, applications, or documents referenced in this Agreement shall be incorporated into this Agreement for all purposes. In the event of a conflict between any incorporated exhibit and this Agreement, the provisions of this Agreement shall govern and control.

10.15 Notices. Unless otherwise specifically required by a provision of this Agreement, any notice required or permitted by this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified mail or registered mail, postage and fees prepaid, addressed to the Party to whom such notice is to be given at the address set forth below or at such other address as has been previously furnished in writing, to the other Party. Such notice shall be deemed to have been given when deposited in the United States Mail properly addressed to the intended recipient.

**If to the Town:**

**If to Contractor:**

Town Administrator Lyons Town Hall PO Box 49 432 5th Ave, Lyons, CO 80540	Contractor's Name Contractor's Address
With Copy to: Town Attorney Widner Michow & Cox LLP 13133 E. Arapahoe Road, Suite 100 Centennial, Colorado 80112	With Copy to:

10.16 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall constitute an original and all of which shall constitute one and the same document. In addition, the Parties specifically acknowledge and agree that electronic signatures shall be effective for all purposes, in accordance with the provisions of the Uniform Electronic Transactions Act, Title 24, Article 71.3 of the Colorado Revised Statutes.

## **11.0 ATTACHMENTS**

The following are attached to this Agreement for reference:

- Contractor's Certificate(s) of Insurance
- Contractor Proof of Professional Licensing
- Other

## **12.0 AUTHORITY**

The individuals executing this Agreement represent that they are expressly authorized to enter into this Agreement on behalf of Town of Lyons and the Contractor and bind their respective entities.

REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK-SIGNATURE PAGE FOLLOWS

**THIS AGREEMENT is executed and made effective as provided above.**

**TOWN OF LYONS, COLORADO:**

Approval by Town Board of Trustees

Not Required

By:

\_\_\_\_\_  
Mayor or Mayor Pro Tem

Approval by Town Administrator

Not Required

By:

\_\_\_\_\_  
Victoria Simonsen, Town Administrator

ATTEST:

\_\_\_\_\_  
Debra K. Anthony Town Clerk

APPROVED AS TO FORM (*Excluding Exhibits*)

Not Required

\_\_\_\_\_  
For Town Attorney's Office

**CONTRACTOR:**

By: \_\_\_\_\_

Printed name: \_\_\_\_\_

Its: \_\_\_\_\_

---

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) ss.  
The foregoing Disaster Recovery Services Agreement was acknowledged before me this \_\_\_\_\_ day of

\_\_\_\_\_, 2015, by \_\_\_\_\_ as \_\_\_\_\_ of  
\_\_\_\_\_, a \_\_\_\_\_.

Witness my hand and official seal.

My commission expires: \_\_\_\_\_.

---

Notary Public  
(Required for all contracts (C.R.S. § 8-40-202(2)(b)(IV)))

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**EXHIBIT A**  
**SCOPE OF SERVICES**

**EXHIBIT B**  
**COMPENSATION**

## **Exhibit D**

### **Illegal Alien Certificate CONTRACTOR'S CERTIFICATION OF COMPLIANCE**

Pursuant to Colorado Revised Statute, § 8-17.5-101, et seq., as amended 5/13/08, as a prerequisite to entering into a contract for services with the Town of Lyons, Colorado, the undersigned Contractor hereby certifies that at the time of this certification, Contractor does not knowingly employ or contract with an illegal alien who will perform work under the attached contract for services and that the contractor will participate in the E-Verify Program or Department program, as those terms are defined in C.R.S. § 8-17.5-101, et seq., in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under the attached contract for services.

CONTRACTOR:

Company Name Date

---

Name (Print or Type)

---

Signature

---

Title

## **Exhibit E** **Proposal Acknowledgement**

**PROJECT NAME: PROFESSIONAL DESIGN SERVICES FOR HOME ELEVATIONS, HMGP-52-R**

**Failure to complete, sign and return this submittal page with your proposal may be cause for rejection.**

Contact Information Response	Response
Company Name	
Name and Title of Primary Contact	
Person	
Company Address	
Phone Number	
Email Address	
Company Website	

**By signing below I certify that:**

- I am authorized to bid on my company's behalf.
- I am not currently an employee of the Town of Lyons.
- None of my employees or agents are currently employees of the Town of Lyons.
- I am not related to any Town of Lyons employee or Elected Official.

---

**Signature of Person Authorized on Company's Behalf Date**

Note: If you cannot certify the above statements, please explain in the space provided below.

ADDENDUM TO CONTRACT



**CDBG-DR PUBLIC INFRASTRUCTURE PROGRAM  
REQUIRED PROCUREMENT AND CONTRACT DOCUMENTS**

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**INSTRUCTION TO BCC PARTNERS AND SPECIAL DISTRICTS**

This packet contains general conditions for use with procurement contract and subrecipient agreements that are funded in whole or in part by the U.S. Department of Housing and Urban Development ("HUD") under Title I of the Housing and Community Development Act of 1974 (Pub. L. 93-383) as amended. This Boulder County Collaborative (BCC) Community Development Block Grant – Disaster Recovery (CDBG-DR) required bid and contract documents must be included as an attachment, expressly made a part of, and incorporated by reference.

This is a federally funded project. The contractor and subcontractors must comply with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards contained at 2 CFR Part 200. However, Federal Emergency Management Agency (FEMA) Match projects are required to comply with 44 CFR Part 13.36 instead of 2 CFR Part 200.

Minority and Women Owned Business Enterprises, Labor Surplus Area Firms, and Section 3 Business Concerns seeking bid opportunities under this project are encouraged to respond.

The Provision of this Agreement shall apply to subcontractors and their officers, agents and employees in all respects as if they were employees of the contractor. The contractor shall not be discharged from its obligations and liabilities, but shall be liable for all acts and negligence of subcontractors, and their officers, agents and employees, as if they were employees of the contractor.

**FEDERAL REGISTER NOTICES**

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Federal Register Notices applicable to the use of CDBG-DR Funds are available on the HUD Web site at  
<https://www.hudexchange.info/cdbg-dr/cdbg-dr-laws-regulations-and-federal-register-notices>.

**SECTION 3 NOTICE**

HUD recently issued proposed amendments to the Section 3 regulations in 24 CFR Part 135. If HUD finalizes and promulgates the amendments to 24 CFR Part 135 during the term of this Agreement, the Contractor or Subrecipient will be required to adhere to the amended 24 CFR Part 135.

Boulder County Collaborative Community Development Block Grant Disaster Recovery (CDBG-DR) is an Equal Opportunity Employer and no otherwise qualified individual shall be subjected to discrimination on the basis of race, color, religion or religious affiliation, sex, familial status, age, genetics, disability, or national origin in any phase of employment.

**Enclosed is a set of documents related to compliance with Federal and local requirements concerning public infrastructure and facilities improvement projects under Boulder County Collaborative CDBG-DR.**

*Note: This document is to be used as a guide for contractors and subcontractors working on Boulder County Collaborative Community Development Block Grant Disaster Recovery projects. It is not verified to be all inclusive and the contractor is fully responsible for complying with all federal regulations applicable to the CDBG program.*

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## I. STANDARD CDBG CONTRACT PROVISIONS SUMMARY

1. Contracts other than small purchases shall contain administrative, contractual or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate.
2. All contracts in excess of \$10,000 shall contain suitable provision for termination for cause and for convenience by the grantee, including the manner by which it will be effected and the basis for settlement.
3. All construction contracts awarded in excess of \$10,000 by grantees and their contractors or subgrantees shall contain a provision requiring compliance with Executive Order 11246, entitled "Equal Employment Opportunity," as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).
4. All contracts and subgrants for construction or repair shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 USC 874) as supplemented in Department of Labor regulations (29 CFR, Part 3).
5. All construction contracts in excess of \$2,000 must include a provision for compliance with the Davis-Bacon Act (40 USC 276a to a-7) as supplemented by Department of Labor regulations (29 CFR, Part 5).
6. Where applicable, all contracts awarded by grantees and subgrantees in excess of \$2,000 for construction contracts and in excess of \$2,500 for other contracts which involve the employment of mechanics or laborers shall include a provision for compliance with Section 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by the Department of Labor regulations (29 CFR, Part 5).
7. The contract shall include notice of requirements and regulations pertaining to reporting and patent rights respect to any discovery or invention which arises or is developed in the course of or under such contract, and of grantor agency requirements and regulations pertaining to copyrights and rights in data.
8. All negotiated contracts awarded by grantees shall include a provision to the effect the grantee, subgrantee, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract, for the purpose of making audit, examination, excerpts, and transcriptions.
9. Grantees shall require contractors to maintain all required records for three years after grantees make final payments and all other pending matters are closed.
10. Contracts, subcontracts, and subgrants of amounts in excess of \$150,000 shall contain a provision which requires compliance with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 USC 1857(h)), Section 508 of the Clean Water Act (33 USC 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR, Part 15), which prohibit the use of non-exempt Federal contracts, grants, or loans of facilities included on the EPA List of Violating Facilities. The provision shall require reporting of violations to the grant agency and to the USEPA Assistance Administrator for Enforcement (EN-329).
11. Contracts shall recognize mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

## II. APPLICABLE PROVISIONS CHECKLIST

Check all boxes that apply for this procurement/contract, then refer to applicable sections throughout this document.

**Type of Contract:**

Professional Services       Construction

**Solicitation Type:**

Small Purchase (under \$150,000 for CDBG-DR projects and \$100,000 for FEMA Match projects or more stringent local requirement)  
 Request for Proposals or Requests for Qualifications above the small purchase limit  
 Invitation for Bid above the small purchase limit

**Applicable Provisions:**

Administrative, Contract, or Legal Remedies (all contracts in excess of \$150,000)  
 Termination Clause (all contracts in excess of \$10,000)  
 Equal Employment Opportunity (all construction contracts in excess of \$10,000)  
 Davis Bacon Act (all construction contracts in excess of \$2,000 except for new construction, rehabilitation, demolition, or elevation of non-contiguous housing units or 8 or less contiguous housing units)  
 Contract Work Hours and Safety Standards Act (all contracts in excess of \$100,000 that employ mechanics or laborers)  
 Copeland Anti-Kickback Act (if Davis Bacon applies)  
 Rights to Inventions Clause (all contracts)  
 Clean Air Act and the Federal Water Pollution Control Act (all contracts in excess of \$150,000)  
 Debarment and Suspension (all contracts)  
 Byrd Anti-Lobbying Amendment (all contracts in excess of \$100,000)  
 Procurement of Recovered Materials (all contracts that procure in excess of \$10,000 of materials)  
 Section 3 Clause (all contracts in excess of \$100,000)  
 Energy Efficiency Clause (all contracts)

**Applicable Forms:**

**Forms to be Submitted WITH Contractor's Bid/Proposal**

MBE/WBE and Labor Surplus Area Procurement Clause  
 Form of Statement of Bidder's Qualifications (all bids/proposals)  
 Wage/Fringe Benefit Certification Form (only if Davis Bacon applies)  
 Bid Bond Certification (5% bond for construction bids over \$100,000)  
 Certificate of Corporate Principal (all bids/proposals)  
 Certification of Bidder Regarding Equal Employment Opportunity (construction bids over \$10,000)  
 Certification of Bidder Regarding Federal Labor Standards and Davis-Bacon Act (only if Davis Bacon applies)  
 Certification of Contractor/Subcontractor Regarding Section 3 and Segregated Facilities (only if Section 3 applies)  
 Certifications of Bidder Regarding Civil Rights (all bids/proposals)  
 Non-Collusion Affidavit of Prime Bidder (all bids/proposals)  
 Contractor/Subcontractor's Section 3 Plan (only if Section 3 applies)  
 Contractor/Subcontractor's Section 3 Tables A & B (only if Section 3 applies)

**Forms to be Submitted PRIOR TO Contract Award**

- Certification of Bidder Regarding Section 3 (only if Section 3 applies)
- Section 3 Certification for Business (only if Section 3 applies)
- Report of Additional Classification and Rate (HUD 4230-A form) (only if Davis Bacon applies)
- Performance Bond (100% of contract award for all construction contracts over \$100,000)
- Payment Bond (100% of contract award for all construction contracts over \$100,000)

**Additional Forms for Use DURING Contract Term**

- Certified Payroll Form (only if Davis Bacon applies)
- Payroll Deduction Authorization Form (only if Davis Bacon applies)
- Other Deductions on Certified Payroll (only if Davis Bacon applies)
- Section 3 Monthly Compliance Form (only if Section 3 applies)
- Employee Data and Certification Form (only if Section 3 applies)
- Section 3 Posted Notice to Project Residents (only if Section 3 applies)
- Required Jobsite Posters
  - Applicable Wage Determination (only if Davis Bacon applies)
  - Equal Employment Opportunity (construction contracts over \$10,000)
  - Employee Rights Under the Davis-Bacon Act (only if Davis-Bacon applies)

### III. FEDERAL CONTRACT PROVISIONS

#### SECTION 1 – GENERAL INFORMATION

##### CONFLICT OF INTEREST

2 CFR 200.318 & 24 CFR 570.611

In the procurement of supplies, equipment, construction and or services by recipients and subrecipients, any conflict of interest is prohibited. No persons who exercise or have exercised any functions or responsibilities with respect to CDBG activities assisted under this part or who are in a position to participate in a decision making process or gain inside information with regard to such activities, may obtain a financial interest or benefit from a CDBG-assisted activity, or have a financial interest in any contract, subcontract, or agreement with respect to a CDBG-assisted activity, or with respect to the proceeds of the CDBG-assisted activity, either for themselves or those with whom they have business or immediate family ties, during their tenure or for one year thereafter.

##### CODE OF CONDUCT

2 CFR 200.317 & 2 CFR 200.318

The recipient of CDBG grant funds shall maintain written standards of conduct governing the performance of employees engaged in the award and administration of contracts stating that no employee, officer, or agent shall participate in the selection, award, or administration of a contract supported by Federal funds if a real or apparent conflict of interest would be involved.

##### RECORD RETENTION

2 CFR 200.333 & 24 CFR 570.506

Financial records, supporting documents, statistical records and all other records pertinent to a grant shall be retained for a period of five years. If any litigation, claim, negotiation, audit or other action is started before the expiration of the five-year period, the records shall be retained until all litigations, claims or audit findings involving the records have been resolved. The retention period starts from the date of the submission of the final expenditure report or, from the date of the submission of the annual financial status report covering the last expenditure of grant funds for that year.

##### ACCESS TO RECORDS

2 CFR 200.336

The awarding agency and the Comptroller General of the United States, or any of their authorized representatives, shall have the right of access to any pertinent books, documents, papers or other records which are pertinent to the grant in order to make audits, examinations, excerpts and transcripts. The right of access in this section must not be limited to the required retention period but shall last as long as the records are retained.

#### CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(2 CFR 200.326. Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 – 49 CFR 20)

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief that:

No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed with this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 311352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000, and that all such recipients shall certify and disclose accordingly.

## RIGHTS TO INVENTIONS MADE BY NONPROFIT ORGANIZATIONS AND SMALL BUSINESS FIRMS UNDER GOVERNMENT GRANTS, CONTRACTS, AND COOPERATIVE AGREEMENTS

2 CFR 200.326 & 37 CFR 401

For any funding agreement (contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority) awarded to a small business firm (defined at 15 U.S.C. 632 and 13 CFR 121.5) or nonprofit organization (except those subject to 35 U.S.C. 212) for the performance of experimental, developmental, or research work funded in whole or in part by the Federal government, the standard clause at 37 CFR 401.14 or the alternative provisions at 37 CFR 401.03 apply.

## CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION PRIMARY COVERED TRANSACTIONS

(2 CFR 200.213 & 2 CFR 200.326. Applicable to all Federal-aid contracts 49 CFR 29)

By signing and submitting this proposal, the prospective primary participant is providing the certification set out below. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

The prospective primary participant shall provide immediate written notice to the department or agency to which this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

The terms "covered transaction", "debarred", "suspended", "ineligible", "lower tier covered transaction", "participant", "person", "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the non-procurement portion of the "Lists of Parties Excluded from Federal Procurement or Non-procurement Programs" (Non-procurement List) which is compiled by the General Services Administration.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

If a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statement, or receiving stolen property.

Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in this certification; and have not within a 3-year period preceding this application proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

#### CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION APPLICABLE TO ALL SUBCONTRACTS, PURCHASE ORDERS AND OTHER LOWER TIER TRANSACTIONS OF \$25,000 OR MORE

*2 CFR 200.213 & 2 CFR 200.326*

By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and or debarment.

The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Non procurement List.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

If a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and or debarment.

The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

## OTHER PROVISIONS

Any and all contractors, subcontractors, independent contractors, suppliers, facilitators or any person participating in any program or activity receiving federal financial assistance shall:

- a. Prohibit discrimination based on race, color or national origin under Title VI of the Civil Rights Act of 1964;
- b. Prohibit discrimination on the basis of sex under Title VII of the Civil Rights Act of 1964 and amended by the Equal Employment Opportunity Act of 1972;
- c. Prohibit discrimination on the basis of age under the Age Discrimination Act of 1975;
- d. Prohibit discrimination on the basis of disability under Section 504 of the Rehabilitation Act of 1973;
- e. Take affirmative action to employ and advance qualified disabled people under Section 503 of the Rehabilitation Act of 1973
- f. Promote and insure equal opportunity for all persons, without regard to race, color, religion, sex, or national origin under Executive Order 11246 as Amended;
- g. Display posters which summarize the Federal laws prohibiting job discrimination based on race, color, sex, national origin, religion, age, equal pay and disability;
- h. Prohibit discrimination based on disability under the Americans with Disabilities Act of 1990;
- i. Assure that all buildings assigned for public use be designed, constructed and altered so as to be accessible to and usable by persons with physical disabilities under the Architectural Barriers Act of 1968; and
- j. Avoid maintaining or providing any segregated facilities.

Any and all contractors, subcontractors, independent contractors, suppliers, facilitators or any person participating in any program or activity receiving federal financial assistance shall:

- a) Comply with the provisions for the elimination of Lead- Based paint hazards under 24 CFR Part 35;
- b) Take all necessary precautions to guard against damages to property and injury to persons.

## SECTION 2 – EQUAL EMPLOYMENT OPPORTUNITY PROVISIONS

### NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more)

Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract.

The Equal Opportunity Construction Contractor Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.D. 12101 *et seq.*) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO.

The contractor will work with the awarding agency and the Federal Government in carrying out EEO obligations and in their review of his or her activities under the contract.

The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and for on-the-job training."

### EEO OFFICER

The contractor will designate and make known to the awarding agency an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

### DISSEMINATION OF POLICY

All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

- a) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO officer.
- b) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
- c) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority employees.

Notices and posters identifying the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

### RECRUITMENT OF EMPLOYEES

When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor

will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusive hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementations of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

## SELECTION OF SUBCONTRACTORS, PROCUREMENT OF MATERIALS AND LEASING OF EQUIPMENT

The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

The contractor shall notify all potential subcontractors and suppliers of his or her EEO obligations under this contract.

Disadvantaged business enterprises (DBE) as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees.

The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

## EEO RECORDS AND REPORTS

The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives. The records kept by the contractor shall document the following:

- a) The number of minority and non-minority group members and women employed in each work classification on the project; The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
- b) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
- c) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

## NONSEGREGATED FACILITIES

Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.

By the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, all parties certify that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location under its control, where segregated facilities are maintained. The contractor agrees that a breach of this certification is a violation of the EEO provisions of this contract. The contractor further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

As used in this certification, the term "segregated facilities" refers to facilities provided for employees which are segregated by explicit directive, or on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override, (e.g. disabled parking).

The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

## FALSIFICATION OF DOCUMENTS

The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

The contractor or subcontractor shall make the records required available for inspection, copying, or transcription by authorized representatives of the awarding agency or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the awarding agency, HUD or DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds of debarment action pursuant to 29 CFR 5.12.

## SECTION 3

The purpose of Section 3 requires that recipients of HUD funds and their contractors and subcontractors provide jobs and other economic opportunities to low-income persons. The CDBG project service area for Section 3 compliance will be the nonmetropolitan county.

Contractors and subcontractors participating in federally-assisted projects are required to track and report their activity relative to the hiring and training of low and moderate income persons and the use of local businesses owned by low-income persons. This information must be reported by all contractors and subcontractors prior to project completion utilizing the "Section 3: Economic Opportunities for Low and Very Low Income Persons" form.

All Section 3 covered contracts shall include the following Section 3 clause:

"The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170lu (Section 3). The parties to this contract agree to comply with this Section and certify that they are under no contractual or other impediment that would prevent them from complying with these regulations. The contractor agrees to notify each labor organization or representative workers with which the contractor has a collective bargaining agreement of the contractor's commitments under this Section 3 clause and include this clause in every subcontract subject to compliance with the Section 3 regulations. The contractor will certify that any vacant employment positions, including training positions, that are filled after the contractor is selected but before the contract is executed with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractors obligations under this section of the Code of Federal Regulations. Noncompliance with HUD's regulations in this Part may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts."

## OFFICE OF FEDERAL CONTRACT COMPLIANCE (OFCCP)

For federally assisted construction contracts, the OFCCP administers and enforces Executive Order 11246, as amended. This Order prohibits discrimination and requires affirmative action to ensure equal employment opportunity without regard to race, color, sex, religion and/or national origin; and the implementing regulations at 41 CFR Parts 60-1 through 60-50. Generally, all contractors and subcontractors holding non-exempt federally assisted construction contracts and subcontracts exceeding \$10,000 must comply with Executive Order 11246.

A "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity" (Executive Order 11246) is to be included in the bid solicitations for all federally assisted construction contracts and subcontracts in excess of \$10,000. The Notice, which is published at 41 CFR 60-4.2, informs the contractor bidder of the affirmative action requirements imposed under Executive Order 11246, including the specified goals for minority and female participation.

Covered federally assisted construction contracts and subcontracts must incorporate the equal opportunity clause found at 41 CFR 60-1.4 (b).

The equal opportunity clause may be expressly included in each contract or subcontract or incorporated by reference. Importantly, the equal opportunity clauses are deemed to be a part of every covered construction contract and subcontract even if they are not physically incorporated in the contract documents.

In addition to the equal opportunity clauses, federally assisted construction contracts and subcontracts in excess of \$10,000 must include the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" which are found at 41 CFR 60-4.3. The specifications describe the affirmative action obligations and set forth the specific affirmative action steps the construction contractor must implement in order to make a good faith effort to achieve the goals for minority and female participation that were listed in the bid solicitation.

Additional information regarding OFCCP Compliance may be found at [www.dol.gov/fesa/OFCCP](http://www.dol.gov/fesa/OFCCP) or, at 1-800-397-6251. The Indiana office is located at 46 East Ohio Street, Suite 419, Indianapolis, IN 46204 and phone number is 317-226-5860.

## SECTION 3 – ENVIRONMENT

### CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(2 CFR 200.326. Applicable to all Federally assisted construction contracts and to all related subcontracts of \$150,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 *et seq.*, as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 *et seq.*, as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

That the firm shall promptly notify the awarding agency of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

That the firm agrees to include or cause to be included the requirements of this Section in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

### PROCUREMENT OF RECOVERED MATERIALS

2 CFR 200.322. State agencies and agencies of a political subdivision of a state that are using assistance under a Program NOFA for procurement, and any person contracting with such an agency with respect to work performed under an assisted contract, must comply with the requirements of Section 6002 of the Solid Waste Disposal Act. In accordance with Section 6002, these agencies and persons must procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired in the preceding fiscal year exceeded \$10,000; must procure solid waste management services in a manner that maximizes energy and resource recovery; and must have established an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines. Please refer to [www.epa.gov/osw/conserve/tools/cpg/pdf/r cra- 6002.pdf](http://www.epa.gov/osw/conserve/tools/cpg/pdf/r cra- 6002.pdf) for complete text and requirements of Section 6002.

### ENERGY EFFICIENCY

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

The Contractor agrees to include the above paragraph in each third party subcontract financed in whole or in part with Federal assistance. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

## SECTION 4 – FEDERAL LABOR STANDARDS PROVISIONS (HUD FORM 4010)

### APPLICABILITY

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

### PROVISIONS

## MINIMUM WAGES

**A. 1. (i) Minimum Wages.** All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

**(ii) (a)** Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

- (1)** The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2)** The classification is utilized in the area by the construction industry; and
- (3)** The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

**(b)** If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

**(c)** In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

**(d)** The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

**(iii)** Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

**(iv)** If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

## WITHHOLDING

**2. Withholding.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

## PAYROLLS AND BASIC RECORDS

**3. (i) Payrolls and basic records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section I(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section I(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

**(ii) (a)** The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

**(b)** Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- (1)** That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;
- (2)** That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
- (3)** That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

**(c)** The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

**(d)** The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

**(iii)** The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

## APPRENTICES AND TRAINEES

### 4. Apprentices and Trainees.

**(i) Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

**(ii) Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

**(iii) Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

## *COPELAND ANTI-KICKBACK ACT*

2 CFR 200.326

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

## *SUBCONTRACTS*

**6. Subcontracts.** The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

## *CONTRACT TERMINATION; DEBARMENT*

2 CFR 200.213 & 2 CFR 200.326

**7. Contract termination; debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

## *COMPLIANCE WITH DAVIS BACON ACT AND RELATED ACT REQUIREMENTS*

**8. Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

## *DISPUTES CONCERNING LABOR STANDARDS*

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

## *CERTIFICATION OF ELIGIBILITY*

**10. (i) Certification of Eligibility.** By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

**(ii)** No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

**(iii)** The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

## *COMPLAINTS, PROCEEDINGS, OR TESTIMONY BY EMPLOYEES*

**11. Complaints, Proceedings, or Testimony by Employees.** No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

## *CONTRACT WORK HOURS AND SAFETY STANDARDS ACT*

2 CFR 200.326

**B. Contract Work Hours and Safety Standards Act.** The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

**(1) Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

**(2) Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

**(3) Withholding for unpaid wages and liquidated damages.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

**(4) Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

## HEALTH AND SAFETY

**C. Health and Safety.** The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

**(1)** No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

**(2)** The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

**(3)** The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

## IV. SOLICITATION DOCUMENTS

The following sections contain documents to be included in the bid or proposal solicitation.

### DAVIS BACON ACT

#### **The Davis Bacon Act**

In Construction contracts involving an excess of \$2000, unless exclusively in connection with the demolition or rehabilitation of residential property containing fewer than 8 units, the Contractor shall pay and the Subrecipient shall cause its contractor to pay all laborers and mechanics at a rate not less than those determined by the Secretary of Labor to be prevailing for Boulder County, which rates are to be provided by the Agency. These wage rates are a federally mandated minimum only, and will be superseded by any State or County requirement mandating higher wage rates. The contractor also agrees to comply with Department of Labor Regulations pursuant to the Davis-Bacon Act found in 29 CFR Parts 1, 3, 5 and 7, which enforce statutory labor standards provisions.

#### **Project Wage Decision**

Davis-Bacon wage decisions are established by the DOL for various types of construction (e.g. heavy, highway) and apply specifically to Boulder County areas. The wage decisions are modified from time to time. For the latest wage decision rates, go to the US DOL wage decision website:

[Davis-Bacon Labor Standards Guide – \(Control + Click to follow the link\)](#)

It is the responsibility of the sub-grantee to provide the proper wage decision and the administration and enforcement of the Federal labor standards provisions on contracts covered by Davis-Bacon requirements.

It is the responsibility of the contractor (prime or general contractor) to ensure full compliance of all employers (the contractor, subcontractors and any lower tier subcontractors) with the labor standards provisions applicable to the project.

If additional wage classifications are needed for this job and are not shown on the applicable wage decision, call the contract administrator for help with requesting an additional classification to be added/ approved.

#### **ATTACH WAGE DECISION TO THE END OF THIS CONTRACT ADDENDUM**

NOTE: Sub-grantee or their engineers should monitor <http://wdol.gov> while the bid remains open to ensure that the wage determination hasn't changed. If the wage determination changes more than **10 days before** the bid opening date, the solicitation will need to be modified to reflect the new wage rate. The wage determination is valid for 90 days after bid opening. If the contract is not awarded within 90 days, the wage determination must be updated with any changes that have occurred during that period. If the contract is awarded within 90 days, the original wage determination becomes fixed for the life of the contract.

## SECTION 3 CLAUSE

### SECTION 3 CLAUSE (24 CFR Part 135.38)

***All section 3 covered contracts and subcontracts shall include the following clause (referred to as the Section 3 clause):***

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low-and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section.

The contractor agrees to submit, and shall cause its subcontractors to submit, monthly reports detailing the number of new employees hired, the number of new Section 3 employees hired, and any affirmative efforts made to direct hiring efforts to low and very-low income persons, particularly persons who are recipients of HUD assistance for housing.

## SECTION 3 DEFINITIONS

### **“SECTION 3 RESIDENT” MEANS:**

1. A public housing resident who resides in the metropolitan area or non-metropolitan county in which the Section 3 covered assistance is expended and who is considered to be a low-to very low-income person; or
2. An individual who resides in the metropolitan area or Non-metropolitan County in which the Section 3 covered assistance is expended and who is considered to be a low-to very low-income person.

### **“NEW HIRE” MEANS:**

A person who is not on the contractor’s payroll at the time of selection for the Section 3 award.

## SECTION 3 BUSINESS DEFINED

A Section 3 Business concern is a business:

1. That is 51 % or more owned by a Section 3 Boulder County resident(s); or
2. Whose permanent, full-time employees include persons, at least 30 % of whom are currently Section 3 residents or within three years of the date of first employment with the business concern were Section 3 Boulder County residents; or
3. That provide evidence of a commitment to subcontract in excess of 25 % of the total dollar award of all subcontracts to be awarded to business concerns that meet the qualifications set forth in (1) or (2) above.

*A person seeking the training or employment preference; or a business seeking the preference provided by Section 3 bears the responsibility of providing evidence (if requested) that the person is eligible for that preference.*

## V. REQUIRED BID/PROPOSAL FORMS

***The following sections contain forms the Contractor must complete and submit with the bid or proposal.***

## PRIME CONTRACTOR'S MBE/WBE & LABOR SURPLUS AREA OUTREACH FORM

NOTICE: Must be completed and submitted WITH the bid or proposal

***The prime contractor, if subcontracts are to be let, is required to take the following affirmative steps to ensure that, whenever possible, subcontracts are awarded to small business firms, minority business firms, women's business enterprises, and labor surplus area firms. 2 CFR 200.321***

- (1) Place qualified small and minority businesses and women's business enterprises on solicitation lists;
- (2) Assure that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- (3) Divide total requirements, when economically feasible, into small tasks or quantities to permit maximum participation by small and minority business and women's business enterprises;
- (4) Establish delivery schedules when the requirements of the work permit, which will encourage participation by small and minority-owned businesses and women-owned business enterprises;
- (5) Use the services and assistance of the Small Business Administration and the Minority Business Development Agency Department of Commerce; and
- (6) Require the subcontractor, if further subcontracts are to be let, to take the affirmative steps in paragraphs (1) through (5).

Contractor should clearly document the communication and outreach to the certified business. Documentation may include mail logs, phone logs, or similar records documenting the use of the above identified sources of information about MBE/WBE firms, the efforts to contact them, and other efforts to meet the above requirements.

Firm	Date	Notes

The links below are to be used to solicit qualified small and minority business and women's business enterprises in the state of Colorado:

- [Diverse Business Directory](#) (Control + Click to follow the link)
- [Colorado Unified Certification Program \(UCP\) Directory](#) (Control + Click to follow the link)
- Request Colorado Office of Economic Development and International Trade (OEDIT) to post the solicitation: [oedit.info@state.or.us](mailto:oedit.info@state.or.us)

The U.S. Department of Labor maintains a current list of Labor Surplus Areas. *The 2017 Labor Surplus Areas (LSA) list produced by the U.S. Department of Labor does not include any LSAs within or near Boulder County, the nearest Colorado LSA is approximately 190 miles away. LSAs in Colorado include: Costilla County, Fremont County, Huerfano County, Rio Grande County, Saguache County, and City of Pueblo. (effective date of LSA list: 10/1/2016 – 9/30/2017). The best resource for outreach to these LSAs is through OEDIT since this organization maintains region-specific business resources.*

**NOTE:** The above links are not meant to be comprehensive. Contractors are encouraged to use other available sources.

**FORM OF STATEMENT OF BIDDER'S QUALIFICATIONS**  
**NOTICE: Must be completed and submitted WITH the bid or proposal**

All questions must be answered. The data given must be clear and comprehensive. This statement must be notarized.

1. Name of Bidder: \_\_\_\_\_
2. Business Address: \_\_\_\_\_
3. When Organized: \_\_\_\_\_
4. Bidder is a (an): \_\_\_\_\_  
(Individual - Partnership - Corporation)

The full name and addresses of all persons interested in this proposal as partners and/or principal(s) are: If business is carried out in any other name(s) than that of the principal(s) or partner(s), also state such name(s) and address(es).

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**CORPORATION**

Corporation is incorporated in the State of: \_\_\_\_\_

President is: \_\_\_\_\_

Treasurer is: \_\_\_\_\_

Place of Business: \_\_\_\_\_

5. How many years have you been engaged in the contracting business under your present firm or trading name? \_\_\_\_\_
6. Financial Statement: (Attach Separate Sheet)
7. Credit Available for this Contract \$ \_\_\_\_\_
8. Contracts Now on Hand, Gross Amounts \$ \_\_\_\_\_
9. Have you ever refused to sign a contract at your original bid?  
\_\_\_\_\_
10. Have you ever defaulted on a contract?  
\_\_\_\_\_

**FORM OF STATEMENT OF BIDDER'S QUALIFICATIONS**  
**NOTICE: Must be completed and submitted WITH the bid or proposal**

11. Remarks:

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13. The undersigned hereby authorizes and requests any person to furnish any information requested by \_\_\_\_\_ in verification of the recitals comprising this Statement of Bidder's Qualifications.

Date at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.  
  
\_\_\_\_\_  
(Name of Bidder)

By: \_\_\_\_\_

STATE OF \_\_\_\_\_)

COUNTY OF \_\_\_\_\_)

\_\_\_\_\_, being duly sworn, deposes and says that they  
are \_\_\_\_\_ of \_\_\_\_\_ and their answers to the  
foregoing questions and all statements therein contained are true and correct.

\_\_\_\_\_  
(Name of Bidder)

Sworn to before me this: \_\_\_\_\_

Day of \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC

My commission expires: \_\_\_\_\_

Title: \_\_\_\_\_

WAGE/FRINGE BENEFIT CERTIFICATION FORM

NOTICE: Must be completed and submitted **WITH** the construction bid proposal (over \$2,000)

**INSERT WAGE/FRINGE BENEFIT CERTIFICATION FORM HERE**

## BID BOND CERTIFICATION

NOTICE: Must be completed and submitted **WITH** the construction bid proposal  
(over \$100,000)

**KNOW ALL MEN BY THESE PRESENTS**, that we the undersigned, \_\_\_\_\_ as PRINCIPAL,  
AND \_\_\_\_\_, as SURETY are held and firmly bound unto  
\_\_\_\_\_ hereinafter called the Grantee/Local Public Agency in the penal  
sum of \_\_\_\_\_ Dollars, (\$ \_\_\_\_\_), lawful money of the United States, for the payment  
of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors,  
and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that whereas the PRINCIPAL has submitted the  
Accompanying Bid, dated \_\_\_\_\_, \_\_\_\_\_ for \_\_\_\_\_.

**NOW, THEREFORE**, if the PRINCIPAL shall not withdraw said Bid within the period specified therein after the  
opening of the same, or, if no period be specified, within thirty (30) days after the said opening, and shall  
within the period specified therefore, or if no period specified, within ten (10) days after the prescribed  
forms are presented to him for signature, enter into a written Contract with the Grantee/Local Public Agency  
in accordance with the Bid as accepted, and give bond with good and sufficient surety or sureties, as may  
be required, for the faithful performance and proper fulfillment of such contract; or in the event of the  
withdrawal of said Bid within the period specified, or the failure to enter into such Contract and give such  
bond within the time specified, if the Principal shall pay the Grantee/Local Public Agency the difference  
between the amount specified in said Bid and the amount for which the Grantee/Local Public Agency may  
procure the required work or supplies or both, if the latter be in excess of the former, then the above  
obligation shall be void and of no effect, otherwise to remain in full force and virtue.

**IN WITNESS WHEREOF**, the above-bounded parties have executed this instrument under their several seals  
this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, the name and corporate seal of each corporate  
party being hereto affixed and these present signed by its undersigned representative, pursuant to authority  
of its governing body.

1. Forms of Bid Bonds prepared to meet the requirements of local or State laws or the needs of the  
Grantee/Local Public Agency should be substituted for this form where necessary.

\_\_\_\_\_  
(SEAL)

\_\_\_\_\_  
(SEAL)

By: \_\_\_\_\_

## CERTIFICATE OF CORPORATE PRINCIPAL

NOTICE: Must be completed and submitted **WITH** the bid or proposal

I, \_\_\_\_\_, certify that I am the \_\_\_\_\_ of the corporation named as Contractor herein; that \_\_\_\_\_ who signed this Agreement on behalf of the Contractor, was then \_\_\_\_\_ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Corporate  
Seal

\_\_\_\_\_

*(Corporate Secretary)*

## CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

NOTICE: Must be completed and submitted **WITH** the bid or proposal

### INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) days after bid opening. No contract shall be awarded unless such report is submitted.

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### CERTIFICATION BY BIDDER

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NAME AND ADDRESS OF BIDDER (Include ZIP Code)

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1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.

Yes                    No

---

2. Compliance reports were required to be filed in connection with such contract or subcontract.

Yes                    No

---

3. Bidder has filed all compliance reports due under applicable instructions.

Yes                    No                    None Required

---

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?

Yes                    No

---

Name and Title of Signer (Please type)

---

Signature

Date

## CERTIFICATION OF BIDDER REGARDING FEDERAL LABOR STANDARDS AND DAVIS-BACON ACT

**NOTICE: Must be completed and submitted WITH the construction bid or proposal**

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Name of Prime Contractor

Project Name and Number

**Bidder:**

This certification is required to insure that the proposed Bidder understands that the Project or program to which the construction work covered by any construction greater than \$2,000, is being assigned by the United States of America and that the various Federal Labor Standards Provisions, summarized in the Form HUD-4010, "Federal Labor Standards Provisions" are included in any such contract, pursuant to the provisions applicable to such Federal assistance. Nothing, however, shall prohibit the payment of more than the prevailing wage rate to any construction worker employed on the construction project.

**Wage Determination:**

Federal prevailing wage rates for construction labor can be obtained from the Wage Determination Online system:

**<http://www.wdol.gov/>**

**Wage Determination Posting:**

Contractors and sub-contractors shall post the prevailing wage rates for each craft and classification in a prominent and easily place at the site of the work, or at such places as are used by them to pay workers.

The undersigned is required to ensure that all specifications and/or contracts include all applicable Federal wage rate determination and the required labor standards provisions summarized by Form **HUD-4010, "Federal Labor Standards Provisions."**

**Weekly Certified Payrolls:**

It is the responsibility of each contractor and sub-contractor to submit weekly certified payrolls for project work (<http://www.dol.gov/whd/forms/wh347.pdf>)

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Name and Address of Bidder (include ZIP code):

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Name and Title of Signer (Print or Type)

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Signature

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Date

## CERTIFICATION OF CONTRACTOR/SUBCONTRACTOR REGARDING SECTION 3 AND SEGREGATED FACILITIES

**NOTICE: Must be completed and submitted WITH the bid or proposal (over \$100,000)**

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Name of Contractor or Sub-Contractor

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Project Name and IFB Number

The undersigned hereby certifies that:

- (a) Section 3 provisions are included in the Contract if this is a Section 3 project.
- (b) The above state company is a signatory to the Contractor's Section 3 Plan.
- (c) No segregated facilities will be maintained as required by Title VI of the Civil Rights Act of 1964.

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Name and Title of Signer (Type of Print)

---

Signature

---

Date

## CERTIFICATIONS OF BIDDER REGARDING CIVIL RIGHTS

**NOTICE: Must be completed and submitted WITH the bid or proposal**

The undersigned is fully aware that this contract is wholly or partially federally funded, and further, agrees to abide by the:

**Civil Rights Act of 1964, Title VI**, as amended, that provides no person on the basis of Race, Color, or National Origin shall be excluded from participation, denied program benefits, or subjected to discrimination.

**And, Civil Rights Act of 1968, Title VIII**, as amended, will not discriminate in housing on the basis of Race, Color, Religion, Sex, or National Origin.

**And, Rehabilitation Act of 1973, Section 504**, as amended, that no otherwise qualified individual shall solely by reason of his or her handicap be excluded from participation and/or employment, denied program benefits, subjected to discrimination under any program receiving federal funds;

**And, Housing and Community Development Act of 1974, Section 109**, as amended, that no person shall be excluded from participation (including employment), denied program benefits, or subjected to discrimination on the basis of Race, Color, National Origin, Sex, Age, and Handicap under any program or activity funded in whole or part under Title I (CDBG) of the Act. And, Age Discrimination Act of 1975, as amended, that no person shall be excluded from participation, denied program benefits, or subjected to discrimination on the basis of age under any program or activity receiving federal funds.

**And, Americans with Disabilities Act of 1990**, as amended, that there shall be no employment discrimination against "qualified individuals with disabilities."

**And, Executive Order 11063**, that no person shall, on the basis of race, color, religion, sex, or national origin, be discriminated against in housing and related facilities provided with federal assistance, or lending practices with respect to residential property when such practices are connected with loans insured or guaranteed by the federal government.

**And, Executive Order 11246**, as amended, that no person shall be discriminated against, on the basis of race, color, religion, sex, or national origin, in any phase of employment during the performance of federal or federally assisted construction contracts in excess of \$10,000.

### **EQUAL EMPLOYMENT OPPORTUNITY**

During the performance of the contract, the CONTRACTOR agrees as follows:

1. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, familial status, religious affiliation or handicap. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, sex, color, national origin, familial status, religious affiliation or handicap. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the GRANTEE setting forth the provisions of this non-discrimination clause.
2. The CONTRACTOR will, in all solicitation or advertisements for employees placed by or on behalf of the CONTRACTOR for the GRANTEE, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, national origin, familial status, religious affiliation or handicap. 3. The CONTRACTOR will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.
3. The CONTRACTOR will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his/her books, records, and accounts by the GRANTEE's Department of Housing and/or Community Development and the Secretary of Labor

for purposes of investigation to ascertain compliance with such rules, regulations and orders.

4. In the event of the CONTRACTOR's non-compliance with any provision of this contract or with any of such rules, regulations or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
5. The CONTRACTOR will include the provisions of the subparagraphs 12 (a) through (f) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provision will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as the GRANTEE's Department of Housing and/or Community Development may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that in the event the CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the GRANTEE's Department of Housing and/or Community Development, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

#### **AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS –SECTION 503**

(IF CONTRACT IS \$25,000 OR OVER)

1. The CONTRACTOR will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The CONTRACTOR agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
2. The CONTRACTOR agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act. 3. In the event of the CONTRACTOR's non-compliance with the requirements of this clause, actions for non-compliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
4. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the CONTRACTOR's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.
5. The CONTRACTOR will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the CONTRACTOR is bound by the terms of Section 503 of Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.
6. The CONTRACTOR will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each subcontractor with respect to any subcontract or purchase order as the Director of the Office of Federal contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.

#### **ACCESS TO RECORDS AND RECORDS RETENTION**

The undersigned certifies, to the best of his or her knowledge and belief that:

1. The individual, sole proprietor, partnership, corporation, and/or association agrees to permit Boulder County Collaborative, State of Colorado, U. S. Department of Housing and Urban Development (HUD), and the Office of the Inspector General and/or their designated representatives to have access to all records for review, monitoring, and audit during normal

working hours.

2. The individual, sole proprietor, partnership, corporation, and/or association agrees to retain all records for at least five years following the closeout date or the resolution of all audit findings, whichever is later.

#### **CONFLICT OF INTEREST**

The undersigned is fully aware that this contract is wholly or partially federally funded, and further, by submission of the bid or proposal that the individual or firm, certifies that:

1. There is no substantial interest, as defined by Colorado Statutes, with any public official, employee, agency, commission, or committee with the Boulder County Collaborative.
2. Any substantial interest, as defined by Colorado Statutes, with any public official, employee, agency, commission, or committee (including members of their immediate family) with Boulder County Collaborative that develops at any time during this contract will be immediately disclosed to Boulder County Collaborative.

#### **ANTI-LOBBYING CERTIFICATION**

The undersigned certifies, to the best of his or her knowledge and belief that:

1. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
2. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this Certification be included in the award documents for all sub-awards to all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub- recipients shall certify and disclose accordingly.

#### **CERTIFICATIONS SIGNATURE FORM**

*Return this form with proposal.*

These Certifications (Civil Rights, Equal Employment Opportunity, Affirmative Action for Handicapped Workers – Section 503, Access to Records and Records Retention, Conflict of Interest, Lobbying) are a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of these Certifications is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code.

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(Typed name of official)

(Signature of Official)

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(Typed name of entity)

(Date)

## NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

NOTICE: Must be completed and submitted **WITH** the bid or proposal

State of \_\_\_\_\_)

County of \_\_\_\_\_) ss.

\_\_\_\_\_, being first duly sworn, deposes and says that:

1. He/She is \_\_\_\_\_ of \_\_\_\_\_, the Bidder that has submitted the attached Bid;
2. He/She is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
3. Such Bid is genuine and is not a collusive or sham Bid;
4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the (*Grantee/Local Public Agency*) or any person interested in the proposed Contract; and
5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

\_\_\_\_\_  
(Signed)

\_\_\_\_\_  
(Name & Title)

Subscribed and sworn to before me  
this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

\_\_\_\_\_  
(Notary Public)

My commission expires \_\_\_\_\_.

## SECTION 3 REQUIREMENTS

**NOTICE: Must be completed and submitted WITH the bid or proposal (over \$100,000)**

**Boulder County Collaborative is committed to comply with Section 3 of the Housing and Urban Development Act of 1968. This Act encourages the use of Section 3 businesses and the hiring of low income residents of the community for projects or programs using or assisted with HUD funding, as applicable.**

### HUD Funded Contracts in excess of \$100,000

All applicable bid proposals and contracts shall include the following Section 3 language.

- a. The work to be performed under this contract is on a project assisted under a program providing direct federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12U.S.C. 170lu. Section 3 requires that the greatest extent feasible, opportunities for training and employment be given lower income residents of the project areas, and contracts for work in connection with the project be awarded to business concerns residing in the project area.
- b. The parties to this contract will comply with the provision of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR and all applicable rules and orders of the Department issued thereunder prior to the execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.
- c. The contractor will send to each labor organization or representative of workers with which he has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of his commitments under the Section 3 clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.
- d. The contractor will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for, or recipient of federal financial assistance, take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR 135. The contractor will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR 135, and will not let any subcontract unless the subcontractor has first provided it with the requirements of these regulations.
- e. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR 135, and all applicable rules and orders of the Department, issued thereunder prior to the execution of the contract, shall be a condition of the federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its contractors and subcontractors, its successors and assigns to those sanctions specified by the grant or loan agreement or contract through which federal assistance is provided, and to such sanctions as are specified by 24 CFR 135.

Boulder County Collaborative shall require each contractor on all HUD funded public or residential construction jobs exceeding \$100,000, to prepare a written Section 3 plan as a part of their bids. All Section 3 plans shall be reviewed and approved by Boulder County Collaborative and retained according to the Records Retention Plan.

## CONTRACTOR/SUBCONTRACTOR'S SECTION 3 PLAN

**(Required if contract exceeds \$100,000)**

**NOTICE: Must be completed and submitted WITH the bid or proposal**

\_\_\_\_\_  
(Name of contractor/Subcontractor) agrees to implement the following specific affirmative action steps

directed at increasing the utilization of lower income residents and businesses within the City/Town of \_\_\_\_\_.  
\_\_\_\_\_.

- A. The boundaries of the Section 3 covered project area is Boulder County, Colorado and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plan.
- B. To attempt to recruit from within the County the necessary number of lower income residents through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as State Employment Service and or Workforce Boulder County.
- C. To maintain a list of all lower income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.
- D. To insert this Section 3 Plan in all bid documents, and to require all bidders on subcontracts to submit a Section 3 Plan including utilization goals and the specific steps planned to accomplish these goals.
- E. To ensure that subcontracts, which are typically let on a negotiated rather than a bid basis, in areas other than Section 3 covered project areas, are also let on a negotiated basis whenever feasible, if let in a Section 3 covered project area.
- F. To formally contact unions, subcontractors, and trade associations to secure their cooperation for this program.
- G. To ensure that all appropriate project area business concerns are notified of pending subcontractual opportunities.
- H. To maintain records, including copies of correspondence, memoranda, etc. which document that all of the above affirmative action steps have been taken.
- I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of this Section 3 Plan.
- J. To list on Table A information related to subcontracts to be awarded.
- K. To list on Table B all projected workforce needs for all phases of this project by occupation, trade, skill level, and number of positions.

As officers and representatives of \_\_\_\_\_, we the undersigned have read

(Name of Contractor/Subcontractor)

and fully agree to this Section 3 Plan, and become a party to the full implementation of this program.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

## CONTRACTOR/SUBCONTRACTOR'S SECTION 3 TABLES A & B

TABLE A

## PROPOSED SUBCONTRACTS BREAKDOWN

NOTICE: Must be completed and submitted WITH the bid or proposal (over \$100,000)

FOR THE PERIOD COVERING \_\_\_\_\_ 20 \_\_\_\_\_ THROUGH \_\_\_\_\_, 20 \_\_\_\_\_  
(Duration of the CDBG-DR-Assisted Project)

\*The Project Area is coextensive with the City/Town of: \_\_\_\_\_ boundaries.

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## Company

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Project Name

---

**Project/IFB Number**

---

EEO Officer (Signature)

Date

TABLE B

ESTIMATED PROJECT WORKFORCE BREAKDOWN

NOTICE: Must be completed and submitted WITH the bid or proposal (over \$100,000)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
Job Category	Total Estimated Positions	No. Positions Currently Occupied By Permanent Employees	No. Positions Not Currently Occupied	No. Positions To Be Filled w/LIPAR*
Officers/Supervisors				
Professionals				
Technicians				
Housing Sales/Rental/Mgmt.				
Office Clerical				
Service Workers				
Others				

TRADE:

Journeymen				
Apprentices				
Maximum No. Trainees				
Others				

TRADE:

Journeymen				
Apprentices				
Maximum No. Trainees				
Others				

\*Lower Income Project Area Residents. A Section 3 qualifying person is one whose household resides in Boulder County and whose income does not exceed the income limit for the size of household as per the Section 8 Income Limits for Boulder County.

---

Company

## VI. REQUIRED CONTRACT FORMS

***The following sections contain documents the Contractor must complete and submit prior to contract execution.***

## CERTIFICATION OF BIDDER REGARDING SECTION 3

**NOTICE: Due by Contractor PRIOR TO Contract Execution (over \$100,000)**

**Name of Prime Contractor**

### Project Name and Number

The undersigned hereby certifies that:

A. The positions listed under Part B that have been filled by \_\_\_\_\_  
(Name of Prime Contractor)

were not filled to circumvent the contractor's obligation to provide employment opportunities, including training positions, for Section 3 residents, as required by Section 3 of the Housing and Urban Development Act of 1968 and the implementing regulations, 24 CFR Part 135.

B. Employment positions filled since \_\_\_\_\_.  
(Date of Selection)

#### Employment Positions Filled:

C. No employment positions have been filled since \_\_\_\_\_.  
(Date of Selection)

---

**Name and Title of Signer**

---

**Signature**

Date

### SECTION 3 CERTIFICATION FOR BUSINESS

*NOTICE: Due by Contractor PRIOR TO Contract Execution (over \$100,000)*

Project Name: \_\_\_\_\_ Contract Number: \_\_\_\_\_

Contractor Name: \_\_\_\_\_

It is the policy of the Congress and the purpose of the federal Section 3 policy to ensure that the employment and other economic opportunities generated by federal financial assistance for housing, economic and community development programs shall, to the greatest extent feasible, be directed toward low and very low income persons, particularly those who are the recipients of government assistance for housing.

**Does your business qualify as a Section 3 business? \_\_\_\_\_ Yes \_\_\_\_\_ No**

To qualify as a Section 3 business, you must meet one or more of the following three criteria (please check all that apply as per 24 CFR, Subchapter B, Part 135.5):

- Is owned (51% or more) by Section 3 residents (defined below\*)
- Employs in permanent, full-time positions, at least 30% persons whom are currently Section 3 residents OR whom were Section 3 residents within three years of the date of first employment with the business
- Provides evidence of a commitment to subcontract in excess of 25% of the dollar award of all subcontracts to be awarded to businesses that meet one of the above definitions.

\* Section 3 residents are persons who either live in public housing or are at or below the following income qualifications:

[https://www.hudexchange.info/resource/reportmanagement/published/HOME\\_IncomeLmts\\_State\\_CO\\_2015.pdf](https://www.hudexchange.info/resource/reportmanagement/published/HOME_IncomeLmts_State_CO_2015.pdf)

COUNTY	Type of Household	1 Person	2 Person	3 Person	4 Person	5 Person	6 Person	7 Person	8 Person
BOULDER	Low Income	\$46,100	\$52,650	\$59,250	\$65,800	\$71,100	\$76,350	\$81,600	\$86,900

I certify that the above information is accurate, and agree to provide records upon request for verification of my eligibility as a Section 3 business.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name (printed)

\_\_\_\_\_  
Date

**HUD FORM 4230A – REPORT OF ADDITIONAL CLASSIFICATION AND RATE**

*NOTICE: Due by Contractor PRIOR TO Contract Execution (applicable to Davis Bacon only)*  
*Contractor to complete Sections 8-10.*

<b>U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT REPORT OF ADDITIONAL CLASSIFICATION AND RATE</b>		<b>HUD FORM 4230A</b> OMB Approval Number 2501-0011 (Exp. 01/31/2010)
<b>1. FROM</b> (name and address of requesting agency) <b>Colorado Department of Local Affairs</b>	<b>2. PROJECT NAME AND NUMBER</b>	
	<b>3. LOCATION OF PROJECT</b> (City, County and State)	
<b>4. BRIEF DESCRIPTION OF PROJECT</b>	<b>5. CHARACTER OF CONSTRUCTION</b> <input type="checkbox"/> Building <input type="checkbox"/> Residential <input type="checkbox"/> Heavy <input type="checkbox"/> Other (specify) <input type="checkbox"/> Highway	
	<b>6. WAGE DECISION NO.</b> (include modification number, if any)	
<input type="checkbox"/> COPY ATTACHED		<b>7. WAGE DECISION EFFECTIVE DATE</b>
<b>8. WORK CLASSIFICATION(S)</b>	<b>HOURLY WAGE RATES</b>	
	<b>BASIC WAGE</b>	<b>FRINGE BENEFIT(S) (if any)</b>
<b>9. PRIME CONTRACTOR</b> (name, address)		<b>10. SUBCONTRACTOR/EMPLOYER, IF APPLICABLE</b> (name, address)
<b>Check All That Apply:</b> <p><input type="checkbox"/>The work to be performed by the additional classification(s) is not performed by a classification in the applicable wage decision.  <input type="checkbox"/>The proposed classification is utilized in the area by the construction industry.  <input type="checkbox"/>The proposed wage rate(s), including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage decision.  <input type="checkbox"/>The interested parties, including the employees or their authorized representatives, agree on the classification(s) and wage rate(s).  <input type="checkbox"/>Supporting documentation attached, including applicable wage decision.</p>		
<b>Check One:</b> <p><input type="checkbox"/>Approved, meets all criteria. DOL confirmation requested.  <input type="checkbox"/>One or more classifications fail to meet all criteria as explained in agency referral. DOL decision requested.</p>		
<b>Agency Representative</b> <small>(Typed name and signature)</small> <small>Phone Number</small>		<b>FOR HUD USE ONLY LR2000:</b>  <b>Log in:</b> <b>Log Out:</b>

## **Report of Additional Classification and Wage Rate**

**U.S. Department of Housing and Urban Development Office of Labor Relations**  
(Exp. 09/30/2006)

OMB Approval No. 2501-0011

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. The information is considered non-sensitive and does not require special protection. This information is required to obtain benefits. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.

Employers engaged on HUD-assisted construction projects subject to Davis-Bacon wage requirements must pay no less than the wages determined to be prevailing by the Secretary of Labor to all laborers and mechanics engaged on the construction work. On occasion, the applicable Davis-Bacon wage decision does not contain all of the work classifications and wage rates needed to complete the construction work. This information collection facilitates the addition of needed work classifications and wage rates for the construction work involved. This form is used by HUD and local agencies administering HUD programs to report employer request(s) for additional classification and wage rates so that an appropriate wage rate can be approved by the Department of Labor for the construction work. This information collection is required by Department of Labor regulations at 29 CFR 5.5. While no assurances of confidentiality are pledged to respondents, HUD generally discloses these data only in response to a Freedom of Information request.

### Instructions:

#### General:

Contractors/Employers: Do not need to complete this form. Submit a written, signed request to the responsible contracting agency naming the work classifications and the wage rates, including any fringe benefits that are proposed.

Local Agency Staff: Complete items 2 through 10. Submit one copy of this form to the DOLA CDBG Program Coordinator with a copy of the applicable Davis-Bacon wage decision and the written request from the employer naming the work classifications and wage rates that are proposed. (The employer's request must be made in writing and must be signed.)

1. For HUD or State CDBG Office use. Enter the name and address of HUD Office (or State CDBG office) submitting the report and to which the DOL reply should be sent.
2. Enter the name and number of the project or contract involved.
3. Enter the location of the project involved: city, county and state.
4. Describe the construction involved, e.g., new construction or rehabilitation, number and type of buildings, number of stories, number of units (as applicable). For example, New construction: 3 – 4-story buildings; 120 units.
5. Enter the character of construction as defined by DOL for Davis-Bacon prevailing wage rate purposes.
6. Enter the number of the Davis-Bacon wage decision applicable to the construction work. Include the number of wage decision modifications (if any) applicable to the work.
7. Enter the effective date of the wage decision for the project. (See DOL regulations at 29 CFR 1.6.)
8. Enter the work classifications and corresponding hourly basic wage rates and fringe benefit rates (if any) requested.
9. Self-explanatory.
10. If the requesting employer is not the prime contractor, enter the name and address of the subcontractor/employer making the request.

#### Remainder of Form: HUD Labor Relations/State CDBG use.

HUD Labor Relations/State CDBG Staff: Evaluate the employer's request against the criteria for approval (see DOL Regulations, 29 CFR Part 5, and related contract labor standards provisions). The criteria are reflected in "checklist" form to ensure that each factor is considered and to ensure that supporting documentation, including a copy of the applicable wage decision, is attached. Check the box next to each criterion that is met; do not check the box next to any criterion that is not met.

If the request meets all criteria, check the appropriate box, enter the name and telephone number of the HUD/State CDBG agency representative, and sign and date the form. Submit one copy of the completed form to the DOL with a copy of the applicable Davis-Bacon wage decision and the written request from the employer involved.

If the request fails to pass all criteria, check the appropriate box, enter agency contact information, and sign and date the form. Submit one copy of the completed form to the DOL with a copy of the applicable Davis-Bacon wage decision, the written request from the employer involved, and a cover letter explaining how the employer's request failed to meet one or more of the criteria.

#### Submission of Report

Completed forms shall be sent to: Branch of Construction

## PERFORMANCE AND PAYMENT BONDING REQUIREMENTS

*NOTICE: Due by Contractor **PRIOR TO** Contract Execution (over \$100,000)*

State of Colorado regulations require a Grantee and/or its contractor (or subcontractors) performing the work to secure the following:

**PAYMENT BOND.** A "payment bond" is one executed in connection with a contractor to assure payment, as required by law, of all persons supplying labor and material in the execution of the work provided for in the contract. A Payment Bond is required on the part of the contractor for one-hundred percent (100%) of the contract price. The bond shall be obtained from a company holding a certificate of authority as an acceptable surety. A certified or cashier's check or a bank money order may be accepted in lieu of a bond.

**PERFORMANCE BOND.** A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract. A Performance Bond is required on the part of the contractor for one-hundred percent (100%) of the contract price. The bond shall be obtained from a company holding a certificate of authority as an acceptable surety. A certified or cashier's check or a bank money order may be accepted in lieu of a bond.

## PERFORMANCE BOND

*NOTICE: Due by Contractor PRIOR TO Contract Execution (over \$100,000)*

We, \_\_\_\_\_,  
(Name of Contractor or Company)  
contractor under \_\_\_\_\_ contractor # \_\_\_\_\_  
(Name of OWNER) (Contract Number)  
(hereafter "THE CONTRACT") as PRINCIPAL and \_\_\_\_\_, as Surety, a  
(Name of Surety)  
corporation organized under the laws of the State of \_\_\_\_\_ and authorized to  
(State)  
transact business in the State of Colorado, with an office at \_\_\_\_\_  
(Address)  
hereby bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally,  
to the \_\_\_\_\_, Colorado, (OWNER) as Obligee, in the amount of \_\_\_\_\_  
(OWNER) (Contract Amount)  
DOLLARS, in United States currency, for the performance of THE CONTRACT.

WHEREAS, the PRINCIPAL (Contractor) entered into THE CONTRACT with the \_\_\_\_\_  
(OWNER)  
dated \_\_\_\_\_, 20\_\_\_\_\_, for \_\_\_\_\_  
(Project Name and Location)  
according to the plans and specifications contained in THE CONTRACT, a copy of which is made a part  
hereof;

The conditions of this Performance Bond are that, if the PRINCIPAL (Contractor) fully and faithfully:

- a) completes the work strictly according to the terms of the CONTRACT, and;
- b) for a period of one year after the issuance of the Notice of Project Construction Acceptance or until all warranty work is completed, repairs or replaces where required (or pays the cost thereof) all work performed under the terms of the CONTRACT;

then this bond is null and void. Otherwise, upon written notification from the OWNER, the Surety shall take one of the following actions at the Surety's expense:

1. Arrange for the PRINCIPAL (Contractor), with consent of the OWNER, to perform and complete THE CONTRACT; or
2. Undertake to perform and complete THE CONTRACT itself, through its agents or through independent contractors. (The Surety is then bound by all of the provisions of THE CONTRACT); or

3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of THE CONTRACT, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with a performance bond and a labor and material bond executed by qualified sureties equivalent to the bonds issued on THE CONTRACT, and pay to the OWNER the amount of all damages incurred by the OWNER due to the default of PRINCIPAL (Contractor) including correction of defective work (if any), additional legal, design professional and delay costs, and the cost of completion of THE CONTRACT subject to the amount of this bond. In addition to these conditions, this bond includes, by reference, all applicable provisions stated in § 38-26-106, C.R.S, as amended.

If the Surety does not commence performance of the Work or cause commencement of performance of the work within ten days from the date of the written notification from the OWNER, the OWNER may take over the CONTRACT and, without prejudice to any other remedies, complete the CONTRACT and the PRINCIPAL and Surety are liable to the OWNER for all damages incurred by OWNER due to the default of PRINCIPAL (Contractor) including correction of defective work (if any), additional legal, design professional and delay costs, and the cost of completion of THE CONTRACT subject to the amount of this bond.

THE SURETY, for value received, agrees that no extension of time, change in, addition to, or other modification of the terms of THE CONTRACT or Work to be performed shall in any way affect its obligation on this bond and the Surety hereby waives notice of any such extension of time, change, addition or modifications.

The OWNER shall bring any action against the Surety on this bond no later than two years from the published date of Final Settlement.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

WITNESS

PRINCIPAL

---

By its President

WITNESS

SURETY

---

TITLE

BY: \_\_\_\_\_  
Its Attorney-in-fact

**NOTE:** Date of BOND must not be prior to date of Contract. If the Contractor is Partnership, all partners should execute BOND.

**IMPORTANT:** Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

## PAYMENT BOND

***NOTICE: Due by Contractor PRIOR TO Contract Execution (over \$100,000)***

Know all people by these presents that:

---

(Name of Contractor or Company)

---

(Address)

A \_\_\_\_\_ hereinafter called PRINCIPAL, and \_\_\_\_\_  
(Corporation/Partnership) (Name of Surety Company)

---

(Address)

hereinafter called SURETY, are held and firmly bound unto

---

(Name of OWNER)

---

(OWNER's Address)

hereinafter called OWNER, in the penal sum of \$ \_\_\_\_\_ Dollars in lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, successors, and assigns, jointly and severally, firmly in these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the PRINCIPAL entered into a certain CONTRACT with the OWNER dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the construction of:

PROJECT NAME: \_\_\_\_\_

NOW THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, SUB-CONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such CONTRACT, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK whether by SUB-CONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the CONTRACT or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the CONTRACT or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, and this the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

PRINCIPAL:

\_\_\_\_\_  
(By its President)

\_\_\_\_\_  
Witness as to Principal

SURETY:

\_\_\_\_\_  
Title

By \_\_\_\_\_  
(Its Attorney-in-fact)

\_\_\_\_\_  
Witness as to Surety

**NOTE:** Date of BOND must not be prior to date of CONTRACT. If CONTRACTOR is Partnership, all partners should execute BOND.

**IMPORTANT:** Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

## VII. ADDITIONAL FORMS/DOCUMENTS FOR USE DURING CONTRACT TERM

***The following sections contain documents the Contractor must complete and submit periodically for the life of the Contract.***

### **SUMMARY OF CONTENTS AND SUBMITTAL REQUIREMENTS:**

#### **1. Certified Payroll Form (WH 347)**

To be turned in for each week of job from each contractor/subcontractor with each pay request. Can use your own payroll documents as long as all information required on this form is included on your own payroll forms. You are required to include page 2 certification statement. If you are using your own payroll format you may attach the certification form the back of the WH-347.

If additional wage classifications are needed for this job and are not shown on the applicable wage decision, call the contract administrator for help with requesting an additional classification to be added/approved.

#### **2. Payroll Deduction Authorization for “other deductions” on Certified Payroll (Only if applicable)**

#### **3. Section 3 Monthly Report for Contractor and Subcontractor**

- Contractor and subcontractor are required to submit a Monthly Compliance Form and an Employee Data and Certification form for all new hires.
- Contractor and Subcontractor are required to submit a Notice of termination and job problems related to Section 3 eligible workers.
- Contractor payment requests may be held until all reporting requirements have been met.

#### **4. Section 3 Employee Data Certification**

#### **5. Section 3 Posted Notice to Project Residents**

## CERTIFIED PAYROLL FORM

*NOTICE: For Davis Bacon Act-Applicable Projects Only*

*A fillable form is available at the following link: <https://www.dol.gov/whd/forms/wh347.pdf>*



Rev. Dec. 2008

第二部分 人物与事件

(40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to furnish weekly a statement to each employee during the preceding week.<sup>1</sup> U.S. Department of Labor (the DOL) regulations at 29 C.F.R. § 5.5(a)(3) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete, and that each laborer on the project has been paid no less than the prime Davis-Bacon prevailing wage rate for the work performed. DOL and Federal contracting agency review this information to determine that employees have received legally required wages and fringe benefits.

### Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

(over)

Date \_\_\_\_\_

I, \_\_\_\_\_  
(Name of Signatory Party) \_\_\_\_\_ (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

— on the

(Contractor or Subcontractor) \_\_\_\_\_; that during the payroll period commencing on the \_\_\_\_\_  
(Building or Work) \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and ending the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_  
all persons employed on said project have been paid the full weekly wages earned, that no rebates have  
been or will be made either directly or indirectly to or on behalf of said

from the full  
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

90 Stat. 768, 72 Stat. 357, 73 Stat. 357, 75 Stat. 357 (S. 145), and described below.

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(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

**(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS**

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

**(c) EXCEPTIONS**

**REMARKS:**

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR  
SUBCONTRACTOR TO PENALTY PURSUANT TO THE CONTRACT.

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

**PAYROLL DEDUCTION AUTHORIZATION FORM**  
**“OTHER DEDUCTIONS” ON CERTIFIED PAYROLL**  
***NOTICE: For Davis Bacon Act-Applicable Projects Only***  
***Contractors place this form on Company Letterhead***

Project Name: \_\_\_\_\_

Employee's Name: \_\_\_\_\_

I, \_\_\_\_\_ hereby authorize \_\_\_\_\_ to  
(Employee Name) (Name of Employer/Company)  
deduct \$ \_\_\_\_\_ from my paycheck.

This deduction is for:

Loan Repayment       Retirement       Profit Sharing  
 Advance       Charitable Donations  
 Savings Bonds       Insurance Premiums  
 Other: \_\_\_\_\_

This deduction is to be made:

One time only       Weekly       Monthly       times over  weeks  
 Other: \_\_\_\_\_

Employee's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

You may make payroll deductions as permitted by DOL regulations 29 CFR Part 3. These regulations prohibit the employer from requiring employees to “kick-back” (i.e. give up or return to the employer) any of their earnings other than those identified.

You need to submit this documentation only one time per employee, unless changes in deductions or durations take place.

**\*If deductions are being made for child support, a copy of the court ordered withholding must be included.**

## SECTION 3 MONTHLY COMPLIANCE REPORT

*NOTICE: For Contracts over \$100,000*

Project Name: \_\_\_\_\_ Contract Number: \_\_\_\_\_

Contractor Name: \_\_\_\_\_ For the Month of: \_\_\_\_\_

### **A. Hiring - Select one:**

- I have not hired any new employees during the month specified.
- I have hired \_\_\_\_ Section 3 employees, and/or \_\_\_\_\_ non-Section 3 employees during the month.

### **B. Recruitment**

- I have taken one or more of the following recruitment steps to hire a Section 3 resident with the highest training and employment priority ranking: (check all that apply)
- I have made the Regional Workforce Solutions Center, and/or the Regional Workforce website the initial contact for all new hires.
- I have advertised to fill vacancy (ies) at the site(s), where work is taking place, in connection with this project. Below, I have checked the steps I have taken to find Section 3 low-income residents, from the targeted groups and neighborhoods, to fill any vacancies.
- Placed signs or posters in prominent places at project site(s).
- Taken photographs of the above item to document that the above step was carried out.
- Distributed employment flyers to the administrative office of the local Public Housing Authority.
- Contacted employment referrals or Youthbuild Program referrals.
- Kept a log of all applicants and indicated the reasons why Section 3 residents who applied were not hired.
- Retained copies of any employment applications completed by Public Housing Authority, Section 8 certificate or voucher holders or other Section 3 residents.
- Sent a notice about Section 3 training and employment requirements and opportunities to labor organizations or to worker representatives with whom our firm has a collective bargaining or other agreement.

### **C. Verification**

- I have attached proof of all checked items.
- I hereby certify that the above information is a true and correct.

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Signature of Authorized Representative of Contractor/Subcontractor

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Title

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Name

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Date

## EMPLOYEE DATA CERTIFICATION FORM

***NOTICE: For Contracts over \$100,000***

The U.S. Department of Housing and Urban Development (HUD) requires that Boulder County Collaborative document the income of newly hired persons working on federally-funded construction projects. This form may also be utilized as supportive documentation for **Section 3 Certifications for Business form** and is intended to comply with HUD Community Development Block Grant requirements.

## Section I

Applicant's Name: \_\_\_\_\_ Job Title: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

**What is your race? (Circle one)**

## WHITE

## BLACK/AFRICAN AMERICAN

## ASIAN

### AMERICAN INDIAN/ALASKAN NATIVE

### **NATIVE HAWAIIAN/OTHER PACIFIC ISLANDER**

## BLACK/AFRICAN AMERICAN & WHITE

## ASIAN & WHITE

## OTHER MULTIRACIAL

Is your family of Hispanic origin? (Circle one)

YES

NO

Do you currently reside in Public Housing? If yes, you do not need to fill out the rest of this form.  
(Circle one) **YES** **NO**

Have you been unemployed in the last 3 years? If yes, you do not need to fill out the rest of this form.  
(Circle one) **YES** **NO**

## Section II

How many people are in your family? (Circle one) 1 2 3 4 5 6 7 8+

What is your family's gross annual income (before taxes)?

I certify that all of the above information is true and correct to the best of my knowledge.

**DATE:** \_\_\_\_\_

### Employee Signature

## SECTION 3 POSTED NOTICE TO PROJECT RESIDENTS

*NOTICE: For Contracts over \$100,000*

The project \_\_\_\_\_ is being funded by the U.S. Department of Housing and Urban Development under the - Disaster Recovery Funding Program. This notice complies with the Boulder County Collaborative Section 3 Plan and is intended to inform the public, in particular project residents, of the economic opportunities (jobs) created through the use of the federal award.

Contractor/subcontractor intends to hire for the following positions:

Number of jobs	Title	Description of Qualifications/Licensure /Certification

### Section 3 preferences:

1. Persons residing in the project area and who are of low- to very-low-income
2. Participants in HUD Youthbuild
3. Homeless Persons
4. Residents of the local Public Housing Authority
5. Residents of the local Section 8 Housing Assistance Programunits

For more information including job applications, apprenticeships, training positions, and qualifications, contact:

Name of Contractor: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: Phone: \_\_\_\_\_

Estimated construction start date: \_\_\_\_\_

REQUIRED JOBSITE POSTERS

*See proceeding pages*

# Equal Employment Opportunity is **THE LAW**

## **Private Employers, State and Local Governments, Educational Institutions, Employment Agencies and Labor Organizations**

Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations are protected under Federal law from discrimination on the following bases:

### **RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN**

Title VII of the Civil Rights Act of 1964, as amended, protects applicants and employees from discrimination in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment, on the basis of race, color, religion, sex (including pregnancy), or national origin. Religious discrimination includes failing to reasonably accommodate an employee's religious practices where the accommodation does not impose undue hardship.

### **DISABILITY**

Title I and Title V of the Americans with Disabilities Act of 1990, as amended, protect qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship.

### **AGE**

The Age Discrimination in Employment Act of 1967, as amended, protects applicants and employees 40 years of age or older from discrimination based on age in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment.

### **SEX (WAGES)**

In addition to sex discrimination prohibited by Title VII of the Civil Rights Act, as amended, the Equal Pay Act of 1963, as amended, prohibits sex discrimination in the payment of wages to women and men performing substantially equal work, in jobs that require equal skill, effort, and responsibility, under similar working conditions, in the same establishment.

### **GENETICS**

Title II of the Genetic Information Nondiscrimination Act of 2008 protects applicants and employees from discrimination based on genetic information in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. GINA also restricts employers' acquisition of genetic information and strictly limits disclosure of genetic information. Genetic information includes information about genetic tests of applicants, employees, or their family members; the manifestation of diseases or disorders in family members (family medical history); and requests for or receipt of genetic services by applicants, employees, or their family members.

### **RETALIATION**

All of these Federal laws prohibit covered entities from retaliating against a person who files a charge of discrimination, participates in a discrimination proceeding, or otherwise opposes an unlawful employment practice.

### **WHAT TO DO IF YOU BELIEVE DISCRIMINATION HAS OCCURRED**

There are strict time limits for filing charges of employment discrimination. To preserve the ability of EEOC to act on your behalf and to protect your right to file a private lawsuit, should you ultimately need to, you should contact EEOC promptly when discrimination is suspected:

The U.S. Equal Employment Opportunity Commission (EEOC), 1-800-669-4000 (toll-free) or 1-800-669-6820 (toll-free TTY number for individuals with hearing impairments). EEOC field office information is available at [www.eeoc.gov](http://www.eeoc.gov) or in most telephone directories in the U.S. Government or Federal Government section. Additional information about EEOC, including information about charge filing, is available at [www.eeoc.gov](http://www.eeoc.gov).

## Employers Holding Federal Contracts or Subcontracts

Applicants to and employees of companies with a Federal government contract or subcontract are protected under Federal law from discrimination on the following bases:

### RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN

Executive Order 11246, as amended, prohibits job discrimination on the basis of race, color, religion, sex or national origin, and requires affirmative action to ensure equality of opportunity in all aspects of employment.

### INDIVIDUALS WITH DISABILITIES

Section 503 of the Rehabilitation Act of 1973, as amended, protects qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship. Section 503 also requires that Federal contractors take affirmative action to employ and advance in employment qualified individuals with disabilities at all levels of employment, including the executive level.

### DISABLED, RECENTLY SEPARATED, OTHER PROTECTED, AND ARMED FORCES SERVICE MEDAL VETERANS

The Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, prohibits job discrimination and requires affirmative action to employ and advance in employment disabled veterans, recently separated veterans (within

three years of discharge or release from active duty), other protected veterans (veterans who served during a war or in a campaign or expedition for which a campaign badge has been authorized), and Armed Forces service medal veterans (veterans who, while on active duty, participated in a U.S. military operation for which an Armed Forces service medal was awarded).

### RETALIATION

Retaliation is prohibited against a person who files a complaint of discrimination, participates in an OFCCP proceeding, or otherwise opposes discrimination under these Federal laws.

Any person who believes a contractor has violated its nondiscrimination or affirmative action obligations under the authorities above should contact immediately:

The Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210, 1-800-397-6251 (toll-free) or (202) 693-1337 (TTY). OFCCP may also be contacted by e-mail at [OFCCP-Public@dol.gov](mailto:OFCCP-Public@dol.gov), or by calling an OFCCP regional or district office, listed in most telephone directories under U.S. Government, Department of Labor.

## Programs or Activities Receiving Federal Financial Assistance

### RACE, COLOR, NATIONAL ORIGIN, SEX

In addition to the protections of Title VII of the Civil Rights Act of 1964, as amended, Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color or national origin in programs or receiving Federal financial assistance. Employment discrimination is covered by Title VI if the primary objective of the financial assistance is provision of employment, or where employment discrimination causes or may cause discrimination in providing services under such programs. Title IX of the Education Amendments of 1972 prohibits employment discrimination on the basis of sex in Educational programs or activities which receive Federal financial assistance.

### INDIVIDUALS WITH DISABILITIES

Section 504 of the Rehabilitation Act of 1973, as amended, prohibits employment discrimination on the basis of disability in any program or activity which receives Federal financial assistance. Discrimination is prohibited in all aspects of activities employment against persons with disabilities who, with or without reasonable accommodation, can perform the essential functions of the job.

If you believe you have been discriminated against in a program of any institution which receives Federal financial assistance, you should immediately contact the Federal agency providing such assistance.

# EMPLOYEE RIGHTS UNDER THE DAVIS-BACON ACT

## FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

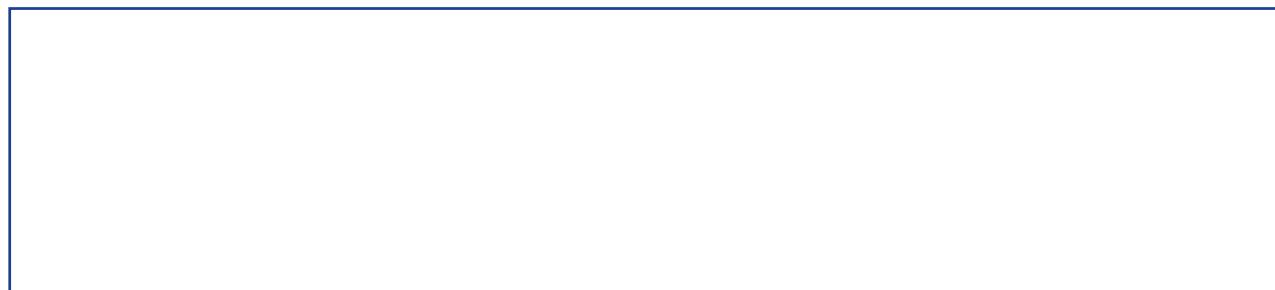
**PREVAILING WAGES** You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

**OVERTIME** You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

**ENFORCEMENT** Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

**APPRENTICES** Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

**PROPER PAY** If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:



or contact the U.S. Department of Labor's Wage and Hour Division.



For additional information:

**1-866-4-USWAGE**

(1-866-487-9243) TTY: 1-877-889-5627



**WWW.WAGEHOUR.DOL.GOV**

**ATTACHMENT A**

**FEDERAL EMERGENCY MANAGEMENT AGENCY'S ("FEMA")  
GRANT PROGRAM REQUIREMENTS FOR PROCUREMENT CONTRACTS**

The work or services under the contract to which this Attachment A is attached ("Agreement") are funded in whole or in part through a grant from the Federal Emergency Management Agency's Grant Program which requires compliance with all the provisions contained in this Attachment to the Agreement and all other applicable Federal and State laws and regulations. If the Agreement is between the Town and the "Consultant," the term "Contractor" as used herein shall mean the "Consultant." The provisions below are incorporated into and made part of the Agreement.

**1.0 PERFORMANCE AND PAYMENT BONDS (44 C.F.R. § 13.36(H)(2) AND (3)):** Contractor must provide both a performance bond and a payment bond acceptable to the Town, each for one hundred percent (100%) of the Contract Price.

**2.0 EQUAL EMPLOYMENT OPPORTUNITY:** If this Agreement is for compensation in excess of \$10,000.00 (Contract Price > \$10,000), during the performance of this Agreement, the Contractor agrees as follows:

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- C. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- E. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- F. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted

construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

G. The Contractor will include the portion of the sentence immediately preceding subparagraph (1) and the provisions of subparagraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.”

**3.0 COPELAND ANTI-KICKBACK ACT (44 C.F.R. SECTION 13.36(i)(4)):**

A. Contractor. The Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

B. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clause in subparagraph (1) above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these Contract clauses.

C. Breach. A breach of the subparagraph contract clauses (1) or (2) above may be grounds for termination of the Contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

**4.0 COMPLIANCE WITH CONTRACT WORK HOURS AND SAFETY STANDARDS ACT:** If

this Agreement is for compensation in an amount greater than \$100,000.00 (Contract Price > \$100,000), the following shall apply:

A. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

B. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

- C. Withholding for unpaid wages and liquidated damages. The Town shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- D. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this section.

## **5.0 NOTICE OF STATE AND FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) REPORTING REQUIREMENTS AND REGULATIONS:**

- A. General. The Town is using Public Assistance grant funding awarded by FEMA to the State of Colorado and/or the Town to pay, in whole or in part, for the costs incurred under this Agreement. As a condition of Public Assistance funding under major disaster declaration FEMA-DR-4145, FEMA requires the State and thus the Town to provide various financial and performance reporting.
  - (1) It is important that the Contractor is aware of these reporting requirements, as the Town may require and the Contractor agrees to provide certain information, documentation, and other reporting in order to satisfy reporting requirements to the State of Colorado which, in turn, will enable the State of Colorado to satisfy reporting requirements to FEMA.
  - (2) Failure of the State of Colorado to satisfy reporting requirements to FEMA is a material breach of the FEMA-State Agreement, and could result in loss of federal financial assistance awarded to fund this Contract.
- B. Applicable Regulations and Policy. The applicable regulations, FEMA policy, and other sources setting forth these reporting requirements are as follows:
  - (1) 44 C.F.R. § 13.40 (Monitoring and Reporting Program Performance)
  - (2) 44 C.F.R. § 13.41 (Financial Reporting)
  - (3) 44 C.F.R. § 13.50(b) (Reports)
  - (4) 44 C.F.R. § 206.204(f) (Progress Reports)
  - (5) FEMA Standard Operating Procedure No. 9570.14, Public Assistance Program Management and Grant Closeout Standard Operating Procedure (Dec. 2013)
  - (6) FEMA-State (or Tribal) Agreement

- C. Financial Reporting. The State of Colorado is required to submit to the following financial reports to FEMA:
  - (1) Initial Report. An initial Federal Financial Report (SF 425) no later than 30 days after FEMA has approved the first Public Assistance project under FEMA-DR-4145.
  - (2) Quarterly Reports. Following submission of the initial report, quarterly Federal Financial Reports until submission of the final report described in the following subparagraph. Reports are due on January 30, April 30, July 30, and October 30.
  - (3) Final Report. A final Federal Financial Report within 90 days of the end of the period of performance for the Public Assistance grant.
- D. Performance Reporting. The State of Colorado is required to submit to the following financial reports to FEMA:
  - (1) Initial Report. An initial performance report no later than 30 days after FEMA has approved the first Public Assistance project under FEMA-DR-4145.
  - (2) Quarterly Reports. Following submission of the initial report, quarterly performance reports until submission of the final report described in the following subparagraph. Reports are due on January 30, April 30, July 30, and October 30.
  - (3) Final Report. A final performance report within 90 days of the end of the period of performance for the Public Assistance grant.

**6.0 ACCESS TO RECORDS:** The following access to records requirements apply to this Agreement:

- A. The Contractor agrees to provide the Town, the State of Colorado, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- B. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- C. The Contractor agrees to provide the Town, the State, the FEMA Administrator or their authorized representatives access to construction or other work sites pertaining to the work being completed under this Agreement.

**7.0 RETENTION OF RECORDS:** The Contractor agrees to maintain all books, records, accounts and reports required under this Contract for a period of not less than three years after the date of termination or expiration of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case Contractor agrees to maintain same until the Town, the State of Colorado, the FEMA Administrator, the Comptroller General of the United States, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related to the litigation or settlement of claims.

**8.0      CLEAN AIR ACT:** If this Agreement is for compensation in excess of \$150,000.00 (Contract Price > \$150,000):

- A. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- B. The Contractor agrees to report each violation to the Town and understands and agrees that the Town will, in turn, report each violation as required to assure notification to the State of Colorado, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- C. The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with federal assistance provided by FEMA.

**9.0      FEDERAL WATER POLLUTION CONTROL ACT:** If this Contract is for compensation in excess of \$150,000.00 (Contract Price > \$150,000):

- A. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- B. Contractor agrees to report each violation to the Town and understands and agrees that the Town will, in turn, report each violation as required to assure notification to the State of Colorado, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- C. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with federal assistance provided by FEMA.

**10.0      ENERGY CONSERVATION:** The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

**11.0      SUSPENSION AND DEBARMENT:** This Section applies if this Agreement/Contract or any subcontract awarded hereunder is for a “covered transaction” to include:

- (a) This Contract or any subcontract awarded hereunder is awarded in the amount of at least \$25,000, or
- (b) This Contract or any subcontract awarded hereunder requires the approval of FEMA, regardless of amount.

A. If this Contract or any subcontract awarded hereunder is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000, the Contractor is required to verify that none of the Contractor or any subcontractor as the case may be, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). By signing this Agreement, the Contractor certifies, to the best of its knowledge and belief, that it and its principals:

- (1) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by a federal department or agency;
- (2) have not within a five-year period preceding this Agreement had one or more public transactions (federal, State or local) terminated for cause or default; and

(3) have not within a five-year period preceding this proposal been convicted of or had a civil judgment rendered against them for (a) the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, State or local) transaction or contract under public transaction, or (b) violation of federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property

B. The Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

C. This certification is a material representation of fact relied upon by the Town. If it is later determined that the Contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State of Colorado and the Town), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

D. The Contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C throughout the period of this Contract. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.”

**12.0 AMERICANS WITH DISABILITIES ACT:** The Contractor shall be in compliance with the appropriate areas of the Americans with Disabilities Act of 1990 as enacted and from time to time amended and any other applicable federal regulation. A signed, written certificate stating compliance with the Americans with Disabilities Act may be requested at any time during the life of any purchase order or contract and with any new purchase order or contract issued by the Town.

**13.0 DAVIS BACON/PREVAILING WAGES: Check the Applicable Provision Below:**

Contractor/subcontractor is responsible for complying with the Davis Bacon Act (40 U.S.C. §§276a to 276a-7) as supplemented by Department of Labor regulations at 29 CFR pt.5, determining the applicable prevailing wage requirements pertaining to Contractor/Subcontractor’s Work, and will strictly comply with the requirements. Contractor/Subcontractor will keep complete and accurate records containing the name, address, the occupational title or titles for the work performed, the rate of pay, daily and weekly hours worked for each occupational title, deductions made, and actual wages paid for work performed by each worker. Subcontractor will submit the required compliance form and a reasonable number of certified copies of current payroll records on the proper form. Receipt of the information will be a condition precedent to making any payments to the Contractor/Subcontractor.

**OR**

Davis-Bacon Act wage rates as determined by the U.S. Department of Labor shall not apply for the construction of this project. (Stafford Act does not require Davis-Bacon Wage Act compliance if the Work is funded only with FEMA emergency funding.)

**14.0 PROVISIONS REQUIRED BY LAW DEEMED INSERTED:** Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any provision is not

inserted, or is not correctly inserted, then upon the application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

**15.0 AGREEMENT TO EXECUTE OTHER REQUIRED DOCUMENTS:** Contractor and all subcontractors, by entering into the Agreement, understand and agree that funding for the Work is provided under federal and/or state programs with specific contracting requirements. To the extent any such requirement is not otherwise set forth herein, Contractor agrees to execute such amendments or further agreements as may be necessary to ensure that the Town funding for the Work is provided.

**16.0 CONTRACTING WITH SMALL AND MINORITY FIRMS, WOMEN'S BUSINESS ENTERPRISE AND LABOR SURPLUS:** The Contractor and subcontractors will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible including, but not limited to, the following:

- (a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- (b) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;
- (c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- (d) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises; and
- (e) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

**17.0 COPYRIGHTS:** The Contractor acknowledges and agrees that the federal awarding agency reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for federal government purposes: (a) The copyright in any work developed under a grant, subgrant, or contract under a grant or subgrant; and (b) Any rights of copyright to which a grantee, subgrantee or a contractor purchases ownership with grant support.

**18.0 BYRD ANTI-LOBBYING AMENDMENT:** If this Contract is for compensation in excess of \$100,000.00 (Contract Price > \$100,000), the following shall apply:

- A. Contractor represents and acknowledges that it has filed the required certification that it has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. 1352.
- B. The Contractor or subcontractor shall obtain the certification set forth in subparagraph (A) of this section from any subcontractors and will insert in any subcontracts a clause requiring the subcontractors to obtain this certification from any lower tier subcontractors.

C. The prime Contractor shall be responsible for compliance with the clauses set forth in subparagraphs (1) and (2) of this section by any subcontractor or lower tier subcontractor.

**19.0 PROCUREMENT OF RECOVERED MATERIALS:** If the Town constitutes “a political subdivision of a state” as defined in 2 C.F.R. §200.322, Contractor agrees to comply with the requirements of Section 6003 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. In accordance with Section 6002, Contractor must:

(1) Procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired in the preceding fiscal year exceeded \$10,000;

(2) Procure solid waste management services in a manner that maximizes energy and resource recovery; and

(3) Must have established an affirmative procurement program for the procurement of recovered materials identified in the EPA guidelines.

**20. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT: Check the Applicable Provision Below:**

- [If checked, Attachment D is incorporated into this Agreement by reference.]** The federal award meets the definition of “funding agreement” under 37 C.F.R. §401.2(a) and this contract is between the Town and a small business firm or nonprofit organization regarding the substitution of parties, assignment, or performance of experimental, developmental, or research work under such funding agreement, the Town shall comply with the requirements of 37 C.F.R. Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperating Agreements,” and any implementing regulations issued by the awarding agency.
- The federal award does not qualify as a “funding agreement” and/or is not a contract with small business firm or nonprofit organization for the purpose of the substitution of parties, assignment, or performance of experimental, developmental, or research work under such funding agreement.

Accepted by Contractor on  
\_\_\_\_\_, 20\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
Title

Accepted by Town of Lyons on  
\_\_\_\_\_, 20\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
Title



**COLORADO**  
Division of Homeland Security  
& Emergency Management  
Department of Public Safety

## Structure Elevation Guidance for Subgrantees

HMGP elevation projects under DR-4145

August 2016, Version 3

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## RECORD OF CHANGES



# Structure Elevation Guidance for Subgrantees

## Purpose

This guidance has been prepared to assist subgrantees with administration of elevation projects. We recommend subgrantees also familiarize themselves with FEMA technical guidance to avoid potential issues. Potential elevation project issues include, but are certainly not limited to cost overruns, funding ineligible activities such as structure improvements, failure to secure permits, elevating to a lesser standard than required, failure to monitor individual elevation sites at critical points, improper openings to allow water flow, conversion of lower floor areas to living space, improper procurement for services and contractors, and insufficient documentation to process reimbursement requests. Please ensure that everyone participating in your project understands that issues could lead to the return of federal funds.

## References

FEMA has developed many references for elevating structures at risk from flooding. As a subgrantee, we recommend you, your service providers, your contractors, your local floodplain management staff, and your local building officials become familiar with FEMA guidance, including but not limited to relevant FEMA Technical Bulletins. Please note some bulletins and guides are relevant to residential structures; others are relevant to nonresidential structures. These bulletins are located at <https://www.fema.gov/media-library/resources-documents/collections/4>. If you scroll down the page, you have the option of printing a hard copy or downloading a digital copy.

Technical Bulletin 0, User's Guide to NFIP Technical Bulletins (2009)  
<https://www.fema.gov/media-library/assets/documents/1169>

Technical Bulletin 1, Openings in Foundation Walls and Walls of Enclosures (2008)  
<https://www.fema.gov/media-library/assets/documents/2644>

Technical Bulletin 2, Flood Damage-Resistant Materials Requirements (2008)  
<https://www.fema.gov/media-library/assets/documents/2655>

Technical Bulletin 5, Free-of-Obstruction Requirements (2008)  
<https://www.fema.gov/media-library/assets/documents/3490>

Technical Bulletin 7, Wet Floodproofing Requirements (1993)  
<https://www.fema.gov/media-library/assets/documents/3503>

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Technical Bulletin 11, Crawlspace Construction for Buildings Located in Special Flood Hazard Areas.  
(2001)  
[www.fema.gov/media-library/assets/documents/3527](http://www.fema.gov/media-library/assets/documents/3527)

FEMA P-312, Homeowner's Guide to Retrofitting- Third Edition (2014)  
[www.fema.gov/media-library/assets/documents/480](http://www.fema.gov/media-library/assets/documents/480)

FEMA P-259, Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures,  
3<sup>rd</sup> Edition (2012)  
[www.fema.gov/media-library-data/20130726-1506-20490-2593/fema259\\_complete\\_rev.pdf](http://www.fema.gov/media-library-data/20130726-1506-20490-2593/fema259_complete_rev.pdf)

FEMA 347, Above the Flood: Elevating Your Flood Prone House (2000)  
[www.fema.gov/media-library/assets/documents/725](http://www.fema.gov/media-library/assets/documents/725)

FEMA Hazard Mitigation Assistance (HMA) Tool for Identifying Duplication of Benefits (2012)  
[www.fema.gov/media-library-data/20130726-1901-25045-3291/duplication\\_of\\_benefits\\_guide\\_2013.pdf](http://www.fema.gov/media-library-data/20130726-1901-25045-3291/duplication_of_benefits_guide_2013.pdf)

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## Introduction

Structure elevation activities generally involve physically raising an existing structure to an elevation at the base flood elevation (BFE) or higher if required by FEMA or local ordinance. State of Colorado floodplain management regulations require residential structures to be elevated at least one (1) foot above the BFE; however, many local ordinances are more stringent. The State's regulations are located at <http://cwcb.state.co.us/legal/pages/cwcbfloodplainrulesandregulationsprocess.aspx>.

Structure elevation may be achieved through a variety of methods. Foundations must be designed to properly address all necessary loads (wind, snow, seismic...) per local building codes and ordinances and be appropriately connected to the floor structure above. Utilities must be properly elevated. Buildings proposed for elevation must be structurally sound and capable of being elevated safely.

When you have conflicting local building codes and FEMA guidance, local governments need to compare both and follow the most restrictive.

## Eligible Design Standards

At a minimum, FEMA requires Applicants and sub-applicants to design all structure elevation projects in accordance with the NFIP standards in 44 CFR Part 60.

FEMA encourages Applicants and sub-applicants to design all structure elevation projects in accordance with Flood Resistant Design and Construction, ASCE/SEI 24-14 (2014).

***Buildings proposed for structure elevation must be structurally sound and capable of being elevated safely.*** In addition, important design considerations for structure elevations consistent with 44 CFR Part 60 are as follows:

- ◆ The lowest floor of the structure must be elevated at least one (1) foot above the BFE or to the elevation specified in the local ordinance if higher. Upon completion of the elevation work, an Elevation Certificate (FEMA Form 81-31) verifying "as built" elevations must be completed to ensure that the structure complies with the local floodplain ordinance and NFIP floodplain management and HMA grant requirements.
- ◆ Elevation projects must be designed and adequately anchored to prevent flotation, collapse, and lateral movement of the structure due to hydrodynamic and hydrostatic loads, including the effects of buoyancy. FEMA recommends and the State requests that an engineer certify that the design elevation will withstand the depth and velocity of 100-year flood events (hydrostatic and hydrodynamic loads), any potential increase in wind load, or any other relevant load factors. If the community wishes to require design and construction certifications by a structural engineer, it may do so.
- ◆ For elevation projects with open foundations (piles, piers, posts, or columns), the space below the lowest floor must be free of obstructions or constructed with non-supporting breakaway walls, open wood lattice-work, or screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. Guidance on free-of-obstruction and breakaway wall requirements is available in [FEMA Technical Bulletin 5, Free-of-Obstruction](#)

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**Requirements (2008)**

- ◆ Houses over crawlspaces and basements can be elevated on solid foundation walls with appropriately designed and sized vents that allow water to flow into the structure to equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs to meet these criteria must be certified by a registered Professional Engineer or meet or exceed the criteria in 44 CFR Section 60.3(c)(5). Guidance on meeting this requirement can be found in [FEMA Technical Bulletin 1, Openings in Foundation Walls and Walls of Enclosures \(2008\)](#).
- ◆ A home with a basement can be elevated on solid foundation walls by creating a new masonry-enclosed area on top of an abandoned, filled-in basement or by using concrete foundations as reference in Technical Bulletin 11.
- ◆ For elevation projects on continuous foundation walls with fully enclosed areas below the lowest floor, the area must be used solely for parking of vehicles, building access, or storage as identified in 44 CFR Section 60.3(c)(5).
- ◆ For properties elevating using enclosure or raised slab techniques, subgrantees and homeowners are required to meet the guidance in FEMA Technical Bulletin 1 – Openings in Foundation Walls and Walls of Enclosures. Subgrantees and homeowners must consider all factors when elevating in areas of potential high velocities, including the recommendation that enclosures are not advised. If proposing a design not recommended in the bulletin, the design must be stamped by a professional engineer and provide documentation and evidence from the professional engineer that contradicts the bulletin's recommendation. This information must be provided to DHSEM for review and approval/denial before any construction work can begin. DHSEM will have an engineer review and comment on the design.
- ◆ Per Technical Bulletin 11, Best Practices for Crawlspace Foundations in SFHA, subgrade crawlspaces are not recommended. If your community is going to allow subgrade crawlspaces for this project, please provide justification for why backfilling the interior area to be level with or higher than the lowest adjacent grade is not the preferred method.
- ◆ Per Technical Bulletin 11, Best Practices for Crawlspace Foundations in SFHA, for structures elevated on an enclosure, the interior grade must be at or above the lowest adjacent exterior grade. If your community is going to allow the interior grade to be below the lowest adjacent exterior grade, please provide justification for why this is the preferred method.

## Elevation Methods

Standard structure elevation methods are identified in [FEMA P-312, Homeowner's Guide to Retrofitting- Third Edition \(2014\)](#), [FEMA P-259, Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures, 3<sup>rd</sup> Edition \(2012\)](#), and [FEMA 347, Above the Flood: Elevating Your Flood Prone House \(2000\)](#). In addition, FEMA has developed guidance for the design of appropriate foundations based on the requirements of the International Codes and other applicable standards. Furthermore, FEMA encourages Applicants and sub-applicants to design all structure elevation projects in accordance with ASCE/SEI 24-14 (2014).

Available elevation methods are:

- ◆ Elevating the existing structure onto piles, posts, or piers:
- ◆ Filling in the basement and replacing it with an elevated floor (you still have to elevate the

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- first floor); and
- ◆ Elevating by vertically extending the foundation walls of the home.

The method that is selected for elevating a house depends on factors such as:

- ◆ Foundation type;
- ◆ Condition of the house;
- ◆ Applicable and local building codes;
- ◆ Soil type and bearing capacity;
- ◆ Weight of the house and lateral forces on the house from water and other natural hazards such as winds and earthquakes;
- ◆ Height of proposed elevation above the grade level; and
- ◆ Number of additions to the original structure.

The most common foundation types are:

- ◆ Crawl space within foundation walls;
- ◆ Slab-on-grade; and
- ◆ Open type foundation: Piles, posts and columns.

## Eligible Structure Elevation Costs

Allowable costs are costs that are necessary and reasonable for the proper and efficient performance and administration of the Federal award. The following costs associated with structure elevation projects are generally allowable:

- ◆ Engineering services for design, structural feasibility analysis, and cost estimate preparation;
- ◆ Surveying, soil sampling, completion of elevation certificate, title search, deed recordation fees, legal and/or permitting fees, project administration, and construction management;
- ◆ Disconnecting all utilities;
- ◆ Building a foundation so the lowest floor is one (1) foot above the BFE or higher if required by local ordinance;
- ◆ Physical elevation of the structure and subsequent lowering and attachment of the structure onto a new foundation;
- ◆ Construction of a floor system that meets minimum building code requirements when the existing floor system cannot be elevated or is not appropriate for the new foundation
- ◆ Elevating utilities and service equipment, extending lines and pipes as necessary, and reconnecting utilities.
- ◆ Debris disposal and erosion control;
- ◆ Costs for repair of lawns, landscaping, sidewalks, and driveways **if damaged by elevation activities.** For landscape disturbed by the construction, requests will be considered on a case-by-case basis. FEMA makes the determination on eligibility. The homeowner must provide photographs or other documentation showing what landscaping was in place prior to the elevation. No additional program funds are available from FEMA or the State to cover these costs (Note: mature landscaping may be

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- replaced by juvenile plants);
- ◆ Construction of a utility room above the BFE only if there is no existing space within the house for this purpose or there is no alternative cost-effective way to elevate the utilities;
- ◆ Elevation of existing decks, porches, or stairs;
- ◆ Construction of new stairs, landings, and railings to access the elevated living space per minimum code or local ordinance if required by code other than HOA).
- ◆ Construction of ADA-compliant access facilities when an owner or a member of the owner's family has a permanent physical handicap and a physician's written certification. Only one ADA-compliant access is allowable for funding unless specified otherwise in applicable State or local codes. If ramps are not technically feasible, a mechanical chair lift may be installed;
- ◆ Documented reasonable living expenses (except food and personal transportation) that are incurred while the owner is displaced by the elevation construction. These expenses are capped at the amount in the subgrantee's approved HMGP application.
- ◆ Abatement of asbestos and lead-based paint; and
- ◆ Filling basements with compacted clean fill.

## Ineligible Structure Elevation Costs

Per the 2013 FEMA Addendum to the Hazard Mitigation Assistance Unified Guidance, certain structure elevation activities and their associated costs are not eligible. Ineligible costs specifically related to structure elevation include, but are not limited to, the following:

- ◆ Elevating structures that were not in compliance with current NFIP standards at the time of construction. Structures that fall into this category may be eligible for Increased Cost of Compliance (ICC) funding (up to \$30,000) through the NFIP to bring the structure into compliance if 1) the structure was insured with the NFIP at the time it was damaged and 2) the local floodplain administrator determined that the structure met the criteria for substantial damage or repetitive loss.
- ◆ Costs related to restoring, repairing, or replacing the structure or constructing additions to the habitable spaces of the structure. Only the costs of elevation and foundation retrofitting are eligible;
- ◆ Costs incurred for meeting compliance with HOA codes is not reimbursable;
- ◆ Costs related to building additions or auxiliary structures;
- ◆ If no landscaping was in place prior to the elevation, costs for new landscaping are not eligible.
- ◆ Construction of new decks or porches (example: there is a sliding glass door on the back of a home leading to a slab patio at grade - construction of a staircase, landing, and rails is necessary, eligible, and reasonable but a new deck is not);
- ◆ Any improvements for purely aesthetic reasons unless required by the EHP compliance review;
- ◆ Costs to replace or repair utility service components, which are undersized, inadequately designed, or unsafe unless required by code (except utility rooms noted as eligible costs);
- ◆ Basement fill-ins without physical elevation of the structure;
- ◆ Elevation of utilities without physical elevation of the structure;

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- ◆ Exterior finish on the exposed foundation of the elevated building, unless required by EHP compliance review and or local code (ineligible if only HOA code);
- ◆ Additional landscaping for ornamentation beyond what existed on the site prior to construction of the project (e.g., trees, shrubs).
- ◆ Costs for items required by an HOA (if applicable) that are not otherwise grant eligible. See the HOA Acknowledgement in the Elevation Project Agreement for further information.

## Duplication of Benefits

The HMGP elevation projects will be reviewed to identify duplication of benefits (DOB). DOB refers to when assistance from another funding source or sources is awarded to the homeowner with the intent to use the funds for the same purpose or activity covered by HMGP funding. Per FEMA, "If assistance under any program or source is used for other than its intended purpose, and that purpose is relevant to the funded mitigation activity, a DOB may exist...the property owner must use receipts to document the use of other assistance received for repair costs when similar construction costs are included in eligible project costs (such as replacement of exterior walls or roofing)." ([FEMA Hazard Mitigation Assistance Tool for Identifying Duplication of Benefits](#), page 4)

Other sources of funding may include private homeowners insurance, NFIP or NFIP-compliant flood insurance, FEMA Individuals and Households Program (IHP), Small Business Administration (SBA) repair and/or mitigation loans, NFIP Increased Cost of Compliance (ICC), private or non-profit sources, and charitable gifts. "Duplication [on elevation projects] is most likely to occur when dealing with ICC payments for the elevation of substantially damaged properties. ICC is a potential source of DOB when a property owner is eligible for ICC benefits but fails to file a claim. Property owners should file ICC claims for which they are eligible." (pg. 12)

DHSEM will request documentation of all proceeds received by the homeowner to evaluate during the DOB review.

## Funding

- ◆ Funds will be awarded from DHSEM directly to the subgrantee through a grant agreement.
- ◆ The Subgrantee or homeowner is responsible for a 12.5% cash match of the project's total cost from non-federal sources **and** is also responsible for any project overruns beyond the approved budget. This local match must be paid prior to the commencement of the elevation to ensure 100% of the funds are available to complete the elevation scope of work.
- ◆ If the homeowner is covering the local 12.5% cash match, the subgrantee will deposit the funds in a non-interest bearing escrow account. If the local match is coming from another source, other than a homeowner, such as CDBG-DR, it is not necessary to deposit the funds in an escrow account.
- ◆ If the cost to elevate the home increases, DHSEM must be notified immediately. Approval for a change order or increased cost must be obtained from DHSEM and the homeowner must submit the additional funds to the subgrantee in full before construction can proceed. Work involving change orders must not begin until approved by the State and FEMA.
- ◆ If the cost of the project exceeds \$175,000 and used the waiver to qualify for project

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- eligibility, a new Benefit Cost Analysis could be required by FEMA.
- ♦ If the waiver was used, the subgrantee and/or homeowner must cover the additional cost over \$175,000. Neither FEMA nor DHSEM will cover the additional expense.

## Procurement

1. The subgrantee must ensure all professional service and contract procurement meets federal and local procurement requirements.
2. The subgrantee will competitively procure architecture and engineering (A&E) services from firms qualified to design home elevation projects. The selected A&E firm will demonstrate an understanding of federal procurement requirements described in 44 CFR 13.36. Competitive procurement must be executed in performance with 44 CFR 13.36 and local ordinances, if the local ordinances are stricter.
3. Once selected, the A&E firm will use all available, current resources (FEMA, ASCE...) to design plans for the elevation project within the guidelines laid out in this document and with input from the subgrantee and homeowner.
4. The Subgrantee will submit the design plans to DHSEM concurrent to local review. DHSEM or its designee will review the design to make sure it is eligible for funding.
5. At the time of the review of design and engineering, DHSEM will make a determination as to whether the State will require future monitoring of the property to ensure compliance. Primary consideration in this determination will be based upon future risk of living space being developed below the elevated structure. After construction is complete, a follow up site visit will be conducted by State and local government representatives to ensure the correct determination regarding future monitoring has been made.
6. If DHSEM determines that future state monitoring of the property is necessary, the Subgrantee and homeowner will sign and submit Exhibit B *State of Colorado Acknowledgement of Conditions for Mitigation of Property in Special Flood Hazard Area with FEMA Grant Funds*. If DHSEM determines that future state monitoring is not required, the Subgrantee and homeowner should sign and submit Exhibit C *FEMA Acknowledgement of Conditions for Mitigation of Property in Special Flood Hazard Area with FEMA Grant Funds*.
7. Once the design is deemed eligible for funding and the relevant signed *Acknowledgement of Conditions* is received by DHSEM, the subgrantee and A&E firm will solicit bids from contractors qualified to perform home elevations in accordance with the procurement methods in 44 CFR 13.36. Local ordinance should be used if more stringent than 44 CFR 13.36.
8. The lowest-cost, qualified home elevation contractor is selected by the subgrantee with the involvement of the A&E firm and homeowner based on the cost estimate and experience. Selection criteria should be based on the contract cost and price methodology described in 44 CFR 13.36. The A&E firm should make sure the bid is accurate and reflects the scope of work. The subgrantee and homeowner must work together through this process. Before the contract is signed, bid specs and contract should be provided to DHSEM for review to verify the contract includes the design scope with the eligible FEMA items.
9. The contract will only include FEMA-eligible items and activities. Any ineligible work the homeowner wants the contractor to complete must be included in a separate contract between those two parties (the homeowner and the contractor). The homeowners, or Subgrantee if they so choose, must pay for these ineligible costs with non-HMGP funding.

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10. The Subgrantee, homeowner, and contractor will sign the FEMA-eligible contract once it's approved by DHSEM.
11. The subgrantee will issue a notice to proceed once approved by the State.
12. The subgrantee will pay both the A&E firm and home elevation contractor directly.

## Additional Subgrantee Requirements

1. The subgrantee will ensure the contractor is licensed, bonded, and properly insured for elevation projects.
2. During construction the subgrantee and/or A&E firm will review and approve the contractor's invoices to certify the work is performed in accordance with scope, schedule, and cost estimate. The subgrantee will follow their normal inspection process for building construction.
3. The subgrantee will ensure all necessary building inspections are conducted at the appropriate times and document site visits in accordance with their standard building process.
4. The subgrantee will ensure all required permits are on record and document compliance with the requirements in accordance with their standard building process.
5. The subgrantee will ensure all environmental and historic preservation requirements are met in accordance with FEMA's record of environmental considerations (included as an Exhibit to the grant agreement) and local ordinance. Environmental closeout procedures, including a list of required documents, are also described in Exhibits to the grant agreement.
6. The subgrantee will ensure all reimbursement requests are complete and meet state requirements before being submitted to DHSEM.
7. The subgrantee will submit quarterly performance and financial reports on time.
8. The Subgrantee will use co.emgrants.com for all grant purposes including but not limited to submitting reimbursement requests, quarterly reports, required documentation, and closeout documents and for storing all permits and inspection records.
9. The subgrantee will ensure all documentation is in order before requesting closeout. Please refer to the "Closeout" section beginning on page 10 of this document for a list of required documents.
10. The subgrantee will allow grantee monitoring and site visits.

## Reimbursement Requests and the Four Draw Process

Reimbursements can be processed monthly or by utilizing the Four Draw process below. DHSEM is willing to work with each Sub-grantee to streamline the reimbursement process as we understand each contractor invoices differently. If the Four Draw process is not used, the same documentation will be required to ensure each party involved is in agreement that the work has been completed satisfactorily. Please note that 10% of each reimbursement request for eligible costs will be held back and released upon closeout.

- ◆ **Phase 1 Pre-elevation/mobilization** -- 30% of the total elevation contract amount upon submittal of the following documents:  
Contractor itemized invoice(s)

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Contractor Non-Eligible Work Acknowledgement

Copies of required permits

Copy of fully executed contract between the homeowner, contractor, and subgrantee

Pre-elevation photographs – minimum of two (2) views each of front and back to show all four exterior walls and an adequate number of pictures for the interior (it is highly recommended the contractor take enough pictures to comprehensively document the state of the structure prior to beginning construction)

- ◆ **Phase 2 Raised, ready to set, building department inspections** – Second 30% of the total elevation contract amount, provided that at least 60% of the elevation construction is complete and the subgrantee submits the following:

Contractor itemized invoice(s)

Progress Report from contractor approved by A&E firm

Applicable building department inspection reports

Homeowner acceptance regarding completion percentage

Copies of requisite permits

Contractor Non-Eligible Work Acknowledgement (if original non-eligible work acknowledgement has been changed)

Phase 2 elevation photographs – minimum of two (2) views each of front and back to show all four exterior walls and an adequate number of pictures for the interior (it is highly recommended the contractor take enough pictures to comprehensively document the state of the structure prior to beginning construction).

- ◆ **Phase 3 Structure elevated to design height, foundation installed, mechanicals reconnected** - 30% of the total elevation contract amount, provided that at least 90% of the elevation construction is complete and upon receipt of inspector's report plus the submittal of the following:

Contractor itemized invoice(s)

Progress Report from Contractor approved by A&E firm

Applicable building department inspection reports

Homeowner acceptance regarding completion percentage

Contractor Non-Eligible Work Acknowledgement (if original non-eligible work acknowledgement has been changed)

Phase 3 elevation photographs – minimum of two (2) views each of front and back to show all four exterior walls and an adequate number of pictures for the interior

- ◆ **Phase 4 Final Inspection, occupancy certificate, all grant requirements met** - 10% of the total elevation contract amount, provided that the elevation construction is complete and upon receipt of inspector's report plus the submittal of the following:

Final contractor itemized invoice(s)

Post Elevation - Elevation Certificate (FEMA Form 086-0-33)

Certificate of occupancy

Proof of current NFIP flood insurance policy on the elevated home

Copy of contractor warranties that have been signed by homeowner

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Homeowner acceptance regarding 100% completed  
Final elevation photographs – minimum of three (3) views each of front and each side to show all four exterior walls and an adequate number of pictures for the interior

## Closeout

Closeout of structure elevation projects requires the following:

- ◆ Each subgrant must be completed in compliance with the approved SOW. DHSEM will conduct a site visit and collect photographs for a project subgrant to ensure the approved SOW was completed;
- ◆ Each subgrant must be completed in compliance with all environmental mitigation conditions attached to it;
- ◆ Actual expenditures must be documented and consistent with the SF-424A or SF-424C;
- ◆ All program income has been deducted from total project costs as specified in 44 CFR Section 13.25(g)(1);
- ◆ All project work was performed in accordance with all required permits and building codes as applicable to the approved project;
- ◆ Geospatial coordinates, in the form of latitude and longitude with an accuracy of +/- 20 meters (64 feet), have been provided for the project.
- ◆ A Certificate of Occupancy for each structure in the project to certify that the structure is code-compliant;
- ◆ A Final Elevation Certificate (FEMA Form 81-31) for each structure to ensure the structure has been elevated to the proper elevation;
- ◆ Record the signed *State of Colorado OR FEMA Acknowledgement on Conditions for Mitigation of Property in Special Flood Hazard Area with FEMA Grants Funds*, depending on which form is applicable to the individual property in question. This will include FEMA's required language as described in the following section, Reporting Requirements After Closeout.
- ◆ Certification by an engineer, floodplain manager, **or** senior local official that the completed structure elevation is in compliance with local ordinances and NFIP regulations, including all applicable NFIP Technical Bulletins;
- ◆ Front, rear, and side photographs of the final elevated structure; and
- ◆ Verification of flood insurance for each structure. The flood insurance policy must be effective at the time of closeout and must be maintained for the life of the property.

## Reporting Requirements After Closeout

If DHSEM determines from the design review process that future state monitoring of an elevated property is necessary, the Subgrantee will monitor the applicable property(s) on a three year cycle after project closeout with DHSEM. The Subgrantee will provide to DHSEM a letter every three years stating that the floodplain administrator or other qualified professional inspected all applicable properties elevated using HMGP funds and the properties still meet all necessary requirements including but not limited to meeting structural requirements and carrying flood insurance. The subgrantee's monitoring activities can consist of a drive-by property assessment, or exterior inspection, to verify that enclosed foundations have proper venting; areas below the lowest floor are

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solely used for parking of vehicles, building access, or storage; and areas below homes with open foundations are free of obstructions or constructed with non-supporting breakaway walls, open wood lattice-work, or screening that will collapse under wind and water loads without compromising the structural integrity of the home or foundation system. Additionally, DHSEM will accept photographic evidence and a certification provided by the property owner in-lieu of a physical inspection of the property by the Subgrantee.

The letter sent to DHSEM should state the results of the drive-by assessment. The subgrantee should also provide documentation that flood insurance has been maintained on the elevated property(ies). A copy of the flood insurance policy declaration is sufficient documentation.

It is recommended that the Subgrantee obtain access for inspection pursuant to adopted floodplain management ordinance. Local governments may have access for the initial inspection via their build code and permit process. Alternatively, the *State of Colorado Acknowledgement of Conditions for Mitigation of Property* should be modified to include access language if requested by the local government partner. DHSEM will work with Subgrantees on these modifications to the *State of Colorado Acknowledgement of Conditions for Mitigation of Property*. DHSEM will accept photographic evidence and a certification provided by the property owner in-lieu of a physical inspection of the property by the Subgrantee.

DHSEM is committed to maintaining the integrity of the HMGP funding and will provide periodic compliance reminders to Subgrantees. DHSEM and the Subgrantee are partners in the implementation of the program.

If a property does not meet all requirements, DHSEM must be notified immediately. The subgrantee will work with the State to determine a corrective course of action. If a property is found to be noncompliant, the preferred course of action is specific performance with the terms of HMGP funding including 44 CFR Part 60.3, Colorado program guidance, and the local floodplain ordinance within a specified time period. The subgrantee is responsible for notifying the property owner of the non-conforming conditions and specifying the actions needed to bring the property into compliance. DHSEM will provide technical assistance to the subgrantee upon request.

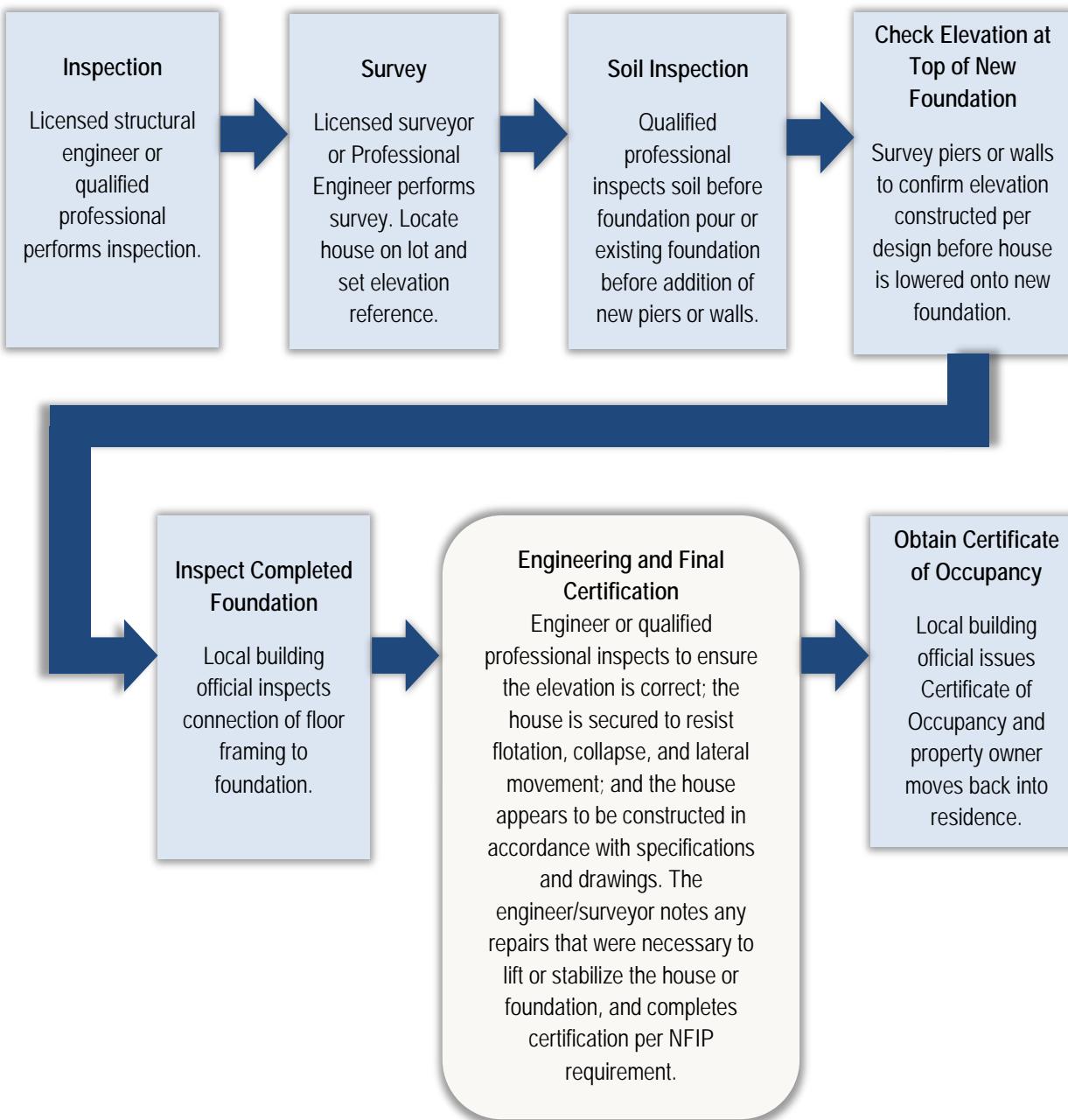
If the property remains non-compliant after specific performance period has expired, the State, with the advice, or at the direction of the Federal Emergency Management Agency (FEMA) may seek recoupment of the HMGP program funding for the project from the Subgrantee. This action will be taken pursuant to HMGP regulations, guidance, and the *State of Colorado Acknowledgement of Conditions for Mitigation of Property* in a Special Flood Hazard Area with FEMA Grant Funds (Exhibit B) executed by the Subgrantee and the property owner.

Please note that both the *State of Colorado* and *FEMA Acknowledgement of Conditions for Mitigation of Property* also spell out specific consequences for a failure to maintain flood insurance as follows:

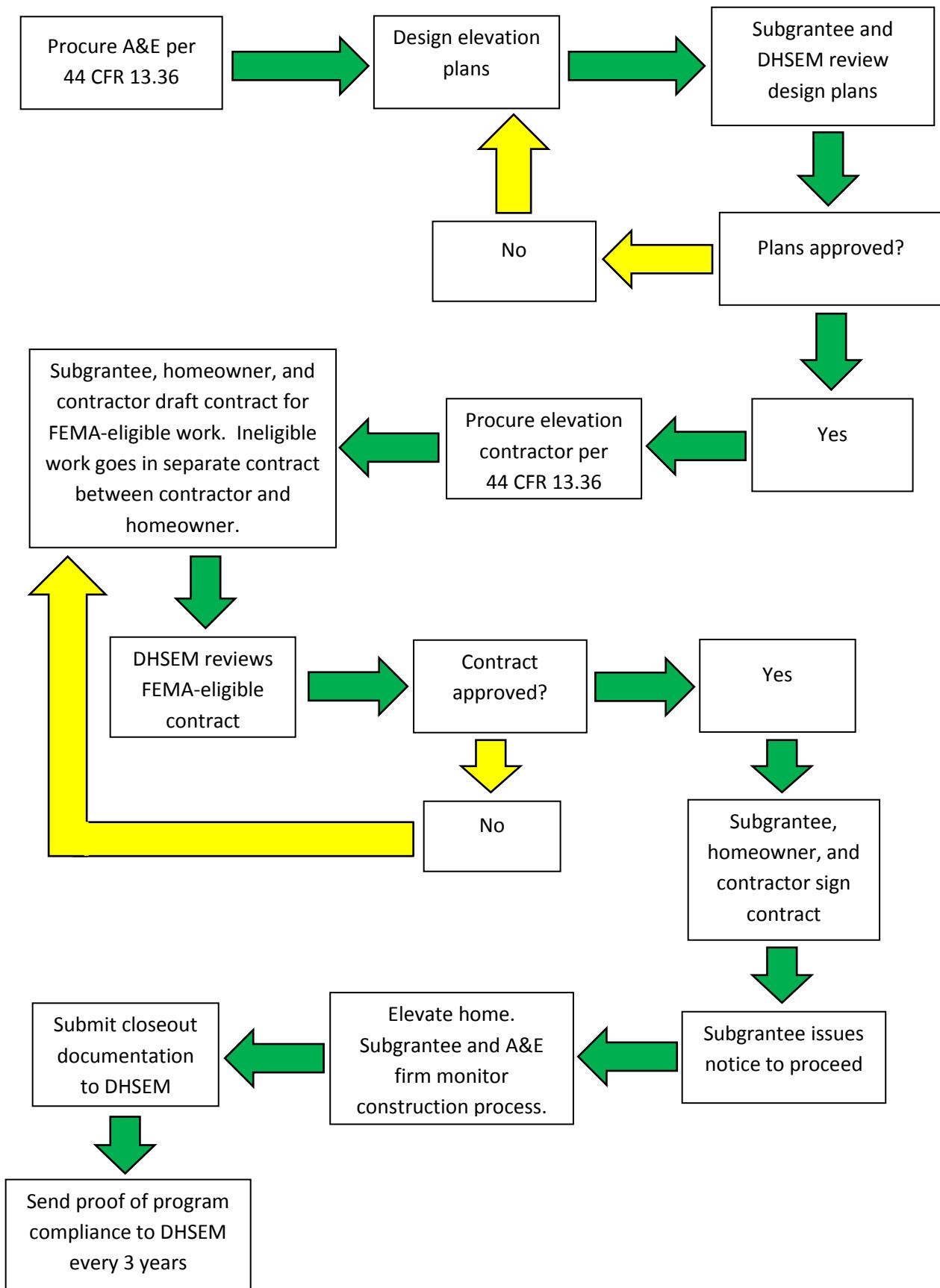
“This Property has received Federal hazard mitigation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster. The Property Owner is also required to maintain this property in accordance with the flood plain management

## Survey and Inspection Considerations

Surveying and inspections are required throughout the construction process. Certifications of the surveys ensure that the work has been performed in compliance with the structure-specific plans and specifications, applicable codes and standards, and minimum NFIP requirements.



## Exhibit A: DHSEM Elevation Implementation Process



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**Exhibit B: State of Colorado Acknowledgement of Conditions for Mitigation  
of Property in a Special Flood Hazard Area with FEMA Grant Funds**

Please see Exhibit B on the following pages.

**State of Colorado  
Hazard Mitigation Grant Program**

***Acknowledgement of Conditions for Mitigation of Property***

in a Special Flood Hazard Area  
with FEMA Grant Funds

Property Owner Name(s) \_\_\_\_\_

Property Address \_\_\_\_\_

Property is located in: \_\_\_\_\_ County, Colorado

State Parcel ID#(s) \_\_\_\_\_

Tax Map Number \_\_\_\_\_

Subdivision, \_\_\_\_\_ Block \_\_\_\_\_ Lot \_\_\_\_\_

Deed dated \_\_\_\_\_, Recorded \_\_\_\_\_

The Property is fully described on Exhibit A (attached)

Property Owner Mailing Address \_\_\_\_\_

City \_\_\_\_\_, State \_\_\_\_\_ Zip Code \_\_\_\_\_

Base Flood Elevation at the site is \_\_\_\_\_ feet (NAVD-\_\_\_\_).

Map Panel Number \_\_\_\_\_, effective date \_\_\_\_\_

As a recipient of Federally-funded hazard mitigation assistance under the Hazard Mitigation Grant Program, as authorized by 42 U.S.C. §5170c / Pre-Disaster Mitigation Program, as authorized by 42 U.S.C. §5133 / Flood Mitigation Assistance Program, as authorized by 42 U.S.C. §4104c / Severe Repetitive Loss, as authorized by 42 U.S.C. §4102a, the Property Owner accepts the following conditions:

1. This Property has received Federal hazard mitigation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster. The Property Owner is also required to maintain this property in accordance with the flood plain management criteria of Title 44 of the Code of Federal Regulations Part 60.3 and City/County Ordinance.

## Exhibit B

2. That the Property Owner has insured all structures that will **not** be demolished or relocated out of the SFHA for the above-mentioned property as described in Exhibit A to an amount at least equal to the project cost or to the maximum limit of coverage made available with respect to the particular property, whichever is less, through the National Flood Insurance Program (NFIP), as authorized by 42 U.S.C. §4001 *et seq.*, as long as the Property Owner holds title to the property as required by 42 U.S.C. §4012a.
3. That the Property Owner will maintain all structures on the above-mentioned property in accordance with the flood plain management criteria set forth in Title 44 of the Code of Federal Regulations (CFR) Part 60.3 and **City/County** Ordinance as long as the Property Owner holds title to the property. These criteria include, but are not limited to, the following measures:
  - i. Enclosed areas below the Base Flood Elevation will only be used for parking of vehicles, limited storage, or access to the building;
  - ii. All interior walls and floors below the Base Flood Elevation will be unfinished or constructed of flood resistant materials;
  - iii. No mechanical, electrical, or plumbing devices will be installed below the Base Flood Elevation; and
  - iv. All enclosed areas below Base Flood Elevation must be equipped with vents permitting the automatic entry and exit of flood water.

For a complete, detailed list of criteria, see **City/County** Ordinance attached to this document as Exhibit B. NFIP Map Panel Number \_\_\_\_\_ is attached as Exhibit C.

4. The above conditions are binding for the life of the property. To provide notice to subsequent purchasers of these conditions, the Property Owner agrees that the **City/County** will legally record with the county or appropriate jurisdiction's land records this Acknowledgement of Conditions.
5. Failure to abide by the above conditions may prohibit the Property Owner and/or any subsequent purchasers from receiving Federal disaster assistance with respect to this property in the event of any future flood disasters. If the above conditions are not met, the State of Colorado, upon demand from FEMA, may recoup the amount of the grant award with respect to the subject Property, and the Property Owner may be liable to repay such amounts.
6. Property Owner agrees to provide a certification and photographic evidence of compliance with Conditions 1 through 5 every three (3) years for a period of up to thirty (30) years from the date of the final certificate of occupancy or the actual life of the elevation improvement(s), whichever is less. Property Owner may provide access to the **City/County** to inspect the improvements in-lieu of providing the tri- annual certification and photographic evidence. While this certification procedure may be limited to 30 years, the Property Owner agrees that Conditions 1 through 5 must continue to be met for the life of the structure.

**Exhibit B**

This Agreement shall be binding upon the respective parties' heirs, successors, personal representatives, and assignees.

APPROVED BY THE CITY/COUNTY OF \_\_\_\_\_

By: \_\_\_\_\_

[Name, Title], Authorized Agent

WITNESSED BY:

\_\_\_\_\_

[Name of Witness]

## PROPERTY OWNER

---

[Property Owner(s) Name]

STATE OF COLORADO )  
 ) ss.  
COUNTY OF \_\_\_\_\_ )

Thee above and foregoing was subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 2016.

Witness my hand and official seal.

My commission expires: \_\_\_\_\_

## Notary Public

[SEAL]

## Attachments

## Attachment A – Legal Description of Property

## Attachment B – Applicable City/County Ordinances

## Attachment C – NFIP Map Panel

---

**Exhibit C: FEMA Acknowledgement of Conditions for Mitigation of Property  
in a Special Flood Hazard Area with FEMA Grant Funds**

Please see Exhibit C on the following pages.

**Model Acknowledgement of Conditions  
For Mitigation of Property in a Special Flood Hazard Area  
With FEMA Grant Funds**

Property Owner \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_, State \_\_\_\_\_ Zip Code \_\_\_\_\_

Deed dated \_\_\_\_\_, Recorded \_\_\_\_\_

Tax map \_\_\_\_\_, block \_\_\_\_\_, parcel \_\_\_\_\_

Base Flood Elevation at the site is \_\_\_\_\_ feet (NGVD).

Map Panel Number \_\_\_\_\_, effective date \_\_\_\_\_

As a recipient of Federally-funded hazard mitigation assistance under the Hazard Mitigation Grant Program, as authorized by 42 U.S.C. §5170c / Pre-Disaster Mitigation Program, as authorized by 42 U.S.C. §5133 / Flood Mitigation Assistance Program, as authorized by 42 U.S.C. §4104c / Severe Repetitive Loss, as authorized by 42 U.S.C. §4102a, the Property Owner accepts the following conditions:

1. That the Property Owner has insured all structures that will **not** be demolished or relocated out of the SFHA for the above-mentioned property to an amount at least equal to the project cost or to the maximum limit of coverage made available with respect to the particular property, whichever is less, through the National Flood Insurance Program (NFIP), as authorized by 42 U.S.C. §4001 *et seq.*, as long as the Property Owner holds title to the property as required by 42 U.S.C. §4012a.
2. That the Property Owner will maintain all structures on the above-mentioned property in accordance with the flood plain management criteria set forth in Title 44 of the Code of Federal Regulations (CFR) Part 60.3 and **City/County** Ordinance as long as the Property Owner holds title to the property. These criteria include, but are not limited to, the following measures:
  - i. Enclosed areas below the Base Flood Elevation will only be used for parking of vehicles, limited storage, or access to the building;
  - ii. All interior walls and floors below the Base Flood Elevation will be unfinished or constructed of flood resistant materials;
  - iii. No mechanical, electrical, or plumbing devices will be installed below the Base Flood Elevation; and
  - iv. All enclosed areas below Base Flood Elevation must be equipped with vents permitting the automatic entry and exit of flood water.

For a complete, detailed list of these criteria, see **City/County** Ordinance attached to this document.

3. The above conditions are binding for the life of the property. To provide notice to subsequent purchasers of these conditions, the Property Owner agrees that the **City/County** will legally record with the county or appropriate jurisdiction's land

records a notice that includes the name of the current property owner (including book/page reference to record of current title, if readily available), a legal description of the property, and the following notice of flood insurance requirements:

“This property has received Federal hazard mitigation assistance. Federal law requires that flood insurance coverage on this property must be maintained during the life of the property regardless of transfer of ownership of such property. Pursuant to 42 U.S.C. §5154a, failure to maintain flood insurance on this property may prohibit the owner from receiving Federal disaster assistance with respect to this property in the event of a flood disaster. The Property Owner is also required to maintain this property in accordance with the flood plain management criteria of Title 44 of the Code of Federal Regulations Part 60.3 and **City/County Ordinance**.”

4. Failure to abide by the above conditions may prohibit the Property Owner and/or any subsequent purchasers from receiving Federal disaster assistance with respect to this property in the event of any future flood disasters. If the above conditions are not met, FEMA may recoup the amount of the grant award with respect to the subject property, and the Property Owner may be liable to repay such amounts.

This Agreement shall be binding upon the respective parties' heirs, successors, personal representatives, and assignees.

THE **CITY/COUNTY OF** \_\_\_\_\_

A \_\_\_\_\_ municipal corporation

By: \_\_\_\_\_  
[Name, Title]

of the **City/County of** \_\_\_\_\_

&

\_\_\_\_\_  
[Name of Property Owner]

WITNESSED BY:

\_\_\_\_\_  
[Name of Witness]

[SEAL]

Notary Public

Town of Lyons  
Flood Plain Development Permit Review Criteria  
Page 1

Address: \_\_\_\_\_

Date: \_\_\_\_\_

Reference is made to Ordinance 920

Approval or denial of a Floodplain Development Permit by the Floodplain Administrator shall be based on all of the provisions of this ordinance and the following relevant factors (attach additional sheets if needed):

1. The danger to life and property due to flooding or erosion damage;
  
  
  
  
2. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
  
  
  
  
3. The danger that materials may be swept onto other lands to the injury of others;
  
  
  
  
4. The compatibility of the proposed use with existing and anticipated development;
  
  
  
  
5. The safety of access to the property in times of flood for ordinary and emergency vehicles;
  
  
  
  
6. The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems;
  
  
  
  
7. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;

Town of Lyons  
Flood Plain Development Permit Review Criteria  
Page 2

Address: \_\_\_\_\_ Date: \_\_\_\_\_

8. The necessity to the facility of a waterfront location, where applicable;
9. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
10. The relationship of the proposed use to the comprehensive plan for that area.

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_



# Engineering Principles and Practices

for Retrofitting Flood-Prone Residential Structures  
(Third Edition)

FEMA P-259 / January 2012



FEMA



# 4

# Determination of Hazards

Chapters 1 through 3 introduced retrofitting and guided the designer through the technical process of pre-selecting retrofitting techniques for consideration. In this chapter, the analyses necessary to determine the flood- and non-flood-related forces and other site-specific considerations that control the design of a retrofitting measure are presented. This information may be useful in determining which retrofitting alternatives are technically feasible, and in preparing BCAs for those alternatives. The analysis of hazards contributes to the design criteria for retrofitting measures, which are described in Chapter 5.

Retrofitting measures must be designed, constructed, connected, and anchored to resist flotation, collapse, and movement due to all combinations of loads and geotechnical conditions appropriate to the situation, including:

- flood-related hazards, such as hydrostatic and hydrodynamic forces, flood-borne debris impact forces, and site drainage considerations;
- site-specific flood-related hazards, such as alluvial fans, closed basin lakes, and movable bed streams;
- non-flood-related environmental loads, such as earthquake and wind forces; and
- site-specific soil or geotechnical considerations, such as soil pressure, bearing capacity, land subsidence, erosion, scour, and shrink-swell potential.

## 4.1 Analysis of Flood-Related Hazards

The success of any retrofitting measure depends on an accurate assessment of the flood-related forces acting upon a structure. Floodwater surrounding a building exerts a number of forces on the structure, including

lateral and vertical hydrostatic forces, hydrodynamic forces, and debris impact forces. In addition, certain flood-related conditions may pose a danger and require evaluation (e.g., site drainage, lake flooding, erosion debris flows) (see Figure 4-1).

Standing water or slow moving water can induce horizontal hydrostatic forces (pressures) against a structure, especially when floodwater levels on different sides of the structure are not equal. Saturated soils beneath the ground surface also impose hydrostatic loads on foundation components.



**Figure 4-1. Flood-related hazards (top left: alluvial fan; top right: moveable bed stream; bottom left: closed basin lake; bottom right: interior drainage)**

Hydrodynamic forces result from the velocity flow of water against or around a structure. These velocity flows, if fast enough, are capable of destroying solid walls and dislodging buildings with inadequate foundations. Impact loads are imposed on the structure by water-borne objects and their effects become greater as the velocity of flow and the weight of the objects increase. The basic equations for analyzing and considering these flood-related forces are provided in this chapter.

Minimum standards for flood-resistant design may be found in *Minimum Design Loads for Buildings and Other Structures* (ASCE 7) and *Flood Resistant Design and Construction* (ASCE 24). Equations for calculating the aforementioned forces for flood-related hazards can be found in technical publications from FEMA, such as FEMA P-55, *Coastal Construction Manual* (FEMA, 2011). FEMA P-55 provides guidance for designing and constructing residential buildings in coastal areas that will be more resistant to the damaging effects of natural hazards. The focus of this manual, FEMA 259, is on new residential construction and substantial improvement to existing residential buildings, principally detached single-family homes, attached single-family homes (townhouses), and low-rise (three-story or less) multi-family buildings.

## 4.1.1 Determining Flood Elevations

Determining the expected flood depth at a site is critical for the overall determination of flood-related hazards. The method for making this determination can vary depending on whether the site is subject to riverine or coastal flooding.

### 4.1.1.1 Riverine Areas

One method of determining the 100-year water-surface elevation involves using a DFIRM panel or a FIRM panel. The DFIRM or FIRM panel identifies the specific flood zone(s) and BFEs of the project area in question. For simplicity purposes, this manual, FEMA 259, determines flood depths using the DFIRM. On most DFIRMs, floodplain limits are delineated for the 1- and 0.2-percent-annual-chance flood. As an example, Figure 4-2 shows the portion of a community's DFIRM where a subject house is located.

In this example, the location of the house was determined by measuring the distance from the intersection of Anderson Drive and Shaftsberry Court. The house is located approximately 325 feet southeast of the intersection. Converting this distance to the map's scale (1 inch equals 500 feet), the house is 0.65 inch along Shaftsberry Court from its intersection with Anderson Drive.

The blue-dotted shading on the map represents the 100-year floodplain. The black-dotted shading denotes the 500-year floodplain. The house is located within the 100-year floodplain, in between the two wavy lines labeled 214. These lines denote



### NOTE

Additional information concerning the determination of flood-related forces is available in Section 5 of ASCE 7, *Minimum Design Loads for Buildings and Other Structures* (2010).

Minimum standards for flood-resistant design are available in ASCE 24, *Flood Resistant Design and Construction Standard* (2005).



### NOTE

Note that for maps with small scales (greater than 1"=400'), converting feet to inches can introduce inaccuracies in locating the home and in specifying the flood elevations impacting the site.

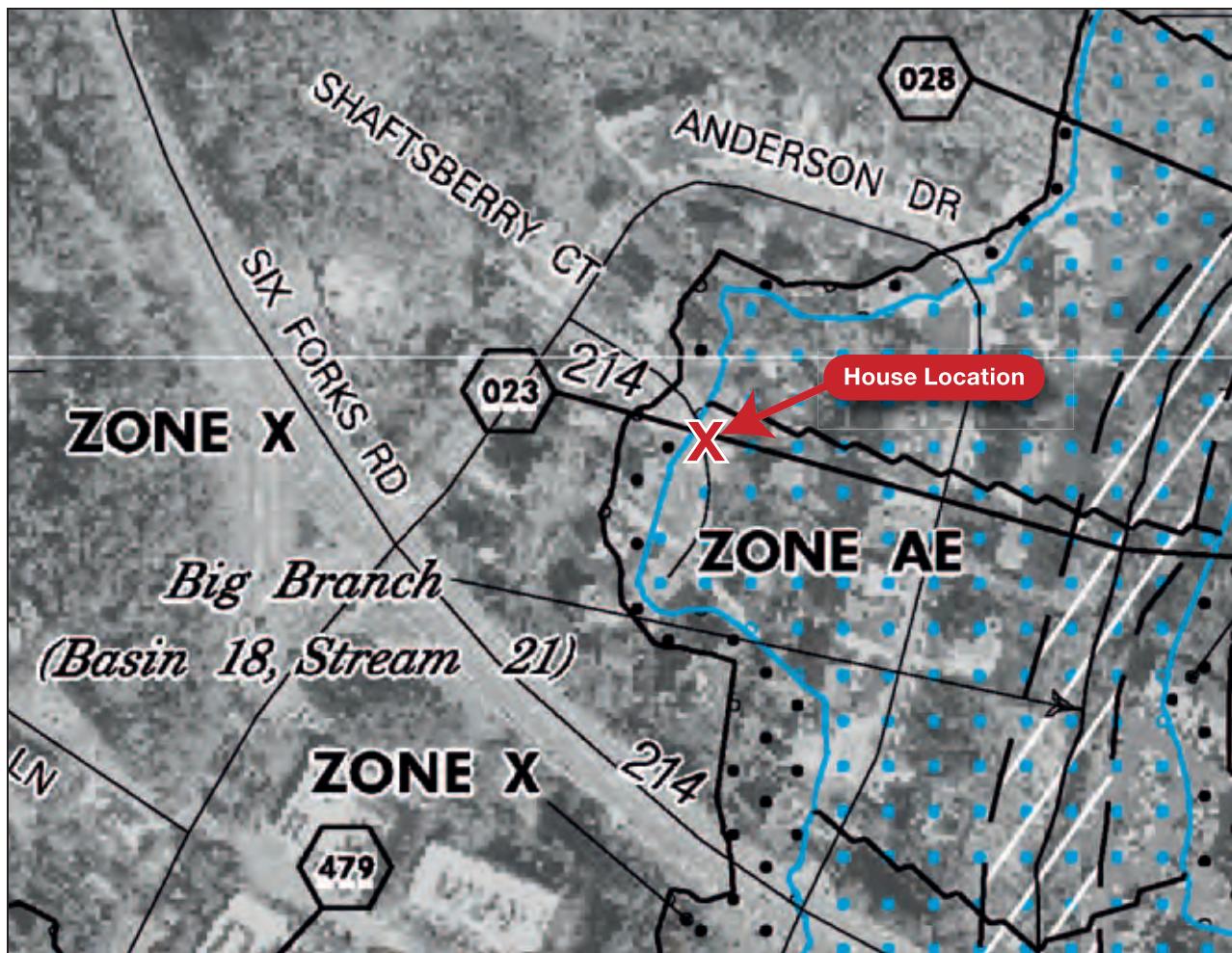


Figure 4-2. House and stream location on the DFIRM

the 100-year flood elevation at that location of Big Branch (Stream 21). Therefore, the 100-year flood elevation affecting the house in this example is 214 feet, based on the NAVD.

Flood elevations for the other frequencies are shown on the stream's water-surface profile in the FIS. For the above example, the position of the house on Big Branch (Stream 21) was determined by using the cross section line perpendicular to the stream labeled 023 as a reference point and measuring approximately 25 feet or 0.05 inch south on the DFIRM. The location of the stream is shown in Figure 4-2.

The house can be located on the Big Branch (Stream 21) flood profile (Figure 4-3) and measured 0.125 inch downstream of cross section 023 (25 divided by 200 feet per inch, which is the horizontal scale of the profile). This location is marked as the point on Big Branch (Stream 21) with water-surface elevations equivalent to the house. The elevations on the profile at this point are 207.0, 213.9, and 219.0 feet for the 10-, 100-, and 500-year floods, respectively. The bottom of the Big Branch (Stream 21) channel shown on the profile is at 191.7 feet.

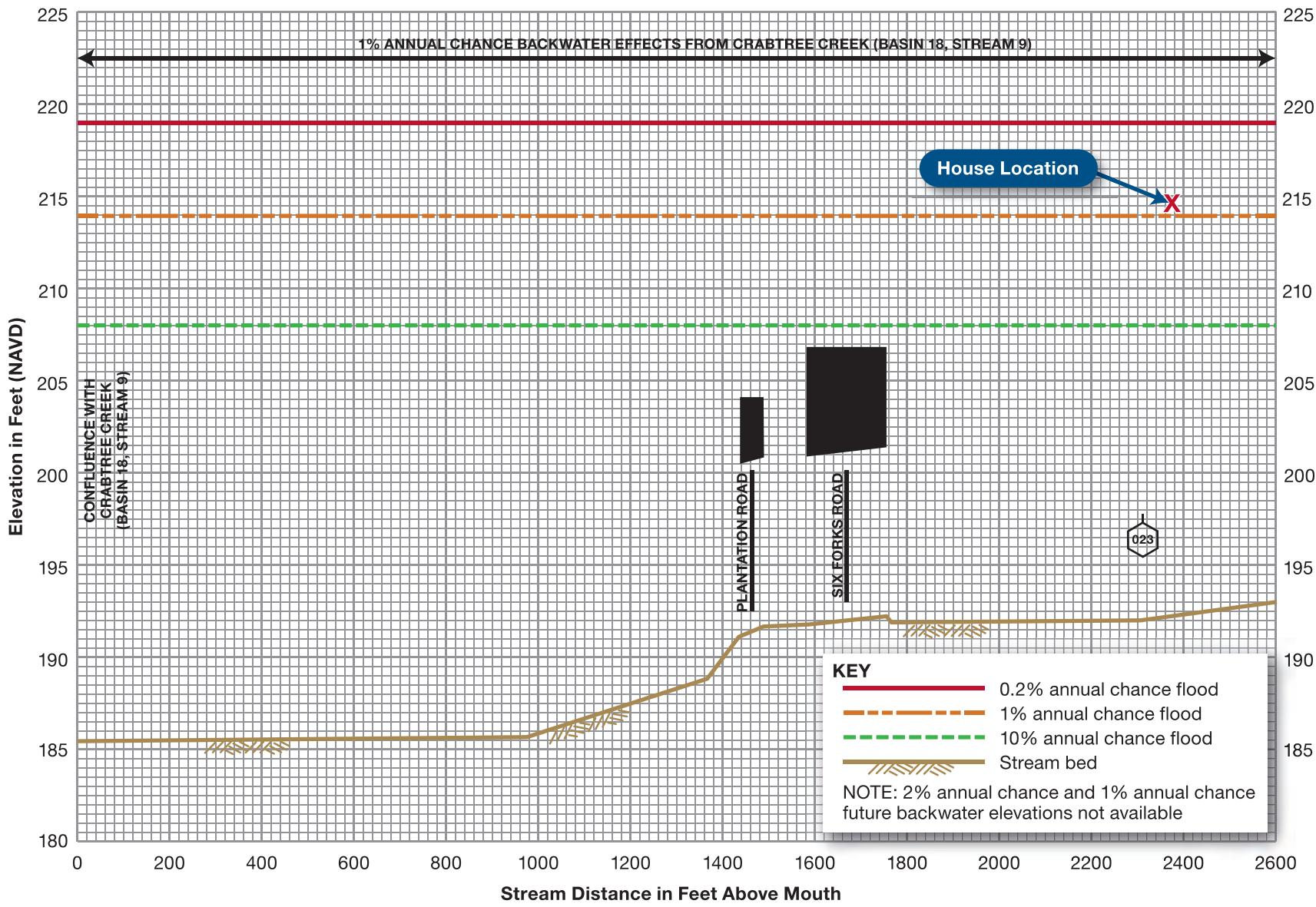


Figure 4-3. House location on flood profile for Big Branch (Stream 21)

Since Big Branch (Basin 18, Stream 21) is mapped as a Zone AE and has a floodway, a floodway data summary table can be obtained from the FIS. Table 4-1 depicts the floodway data table for this example. The regulatory BFE is listed as 213.9 feet below.

**Table 4-1. Floodway Data Summary Table for Big Branch (Stream 21)**

Flooding Source		Floodway			Base Flood Water-Surface Elevation (ft NAVD 88)			
Cross Section	Distance <sup>a</sup>	Width (ft)	Section Area (ft <sup>2</sup> )	Mean Velocity (ft/sec)	Regulatory	Without Floodway	With Floodway	Increase
Big Branch (Basin 10, Stream 8)								
013	1,255	110	419	3.3	254.0	253.6 <sup>b</sup>	254.6	1.0
054	5,360	70	156	6.5	276.3	276.3	276.3	0.0
Big Branch (Basin 18, Stream 21)								
023	2,308	140	1,193	3.0	213.9	209.0 <sup>c</sup>	209.4	0.4
028	2,765	110	1,024	3.5	213.9	209.5 <sup>c</sup>	209.8	0.3
034	3,358	120	773	4.6	213.9	210.1 <sup>c</sup>	210.6	0.5
043	4,297	70	439	7.6	213.9	214.0 <sup>c</sup>	214.9	0.9
048	4,813	40	430	7.8	220.1	220.1	220.2	0.1
058	5,774	100	1,918	2.1	232.8	232.8	233.5	0.7

SOURCE: FEMA FIS REPORT FOR WAKE COUNTY, NC

a. Feet above mouth

b. Elevation computed without consideration of backwater effects from Little River (Basin 10, Stream 1)

c. Elevation computed without consideration of backwater effects from Crabtree Creek (Basin 18, Stream 9)

#### 4.1.1.2 Coastal Areas

In coastal areas, the determination of the expected water surface elevation for the various RI floods is made by locating the structure and its flooding source on the DFIRM, identifying the corresponding flooding source/location row on the summary of stillwater elevation table, and selecting the appropriate elevation for the RI in question.

As an example, consider a building located on Marsh Bay Drive (as depicted on Figure 4-4). From the DFIRM, we can identify the flooding source as the Atlantic Ocean. The marked structure is located in a Zone AE, and has a BFE of 14 feet. In coastal areas, the BFE is equal to the stillwater elevation plus the associated wave height.

A review of the entire area map for the FIS would indicate the structure on Marsh Bay Drive is located between transect lines 46 and 47.



#### CROSS REFERENCE

A detailed discussion of the methodologies involved in computing wave heights and runup is beyond the scope of this manual. For more information, refer to:

- *Guidance for Wave Elevation Determination and V Zone Mapping* (FEMA, 2003)
- *Guidance for Pacific Coast of the United States* (FEMA, 2005a)
- *Guidance for Atlantic and Gulf Coasts of the United States* (FEMA, 2007)
- *FEMA P-55, Coastal Construction Manual*, Fourth Edition, (FEMA, 2011)

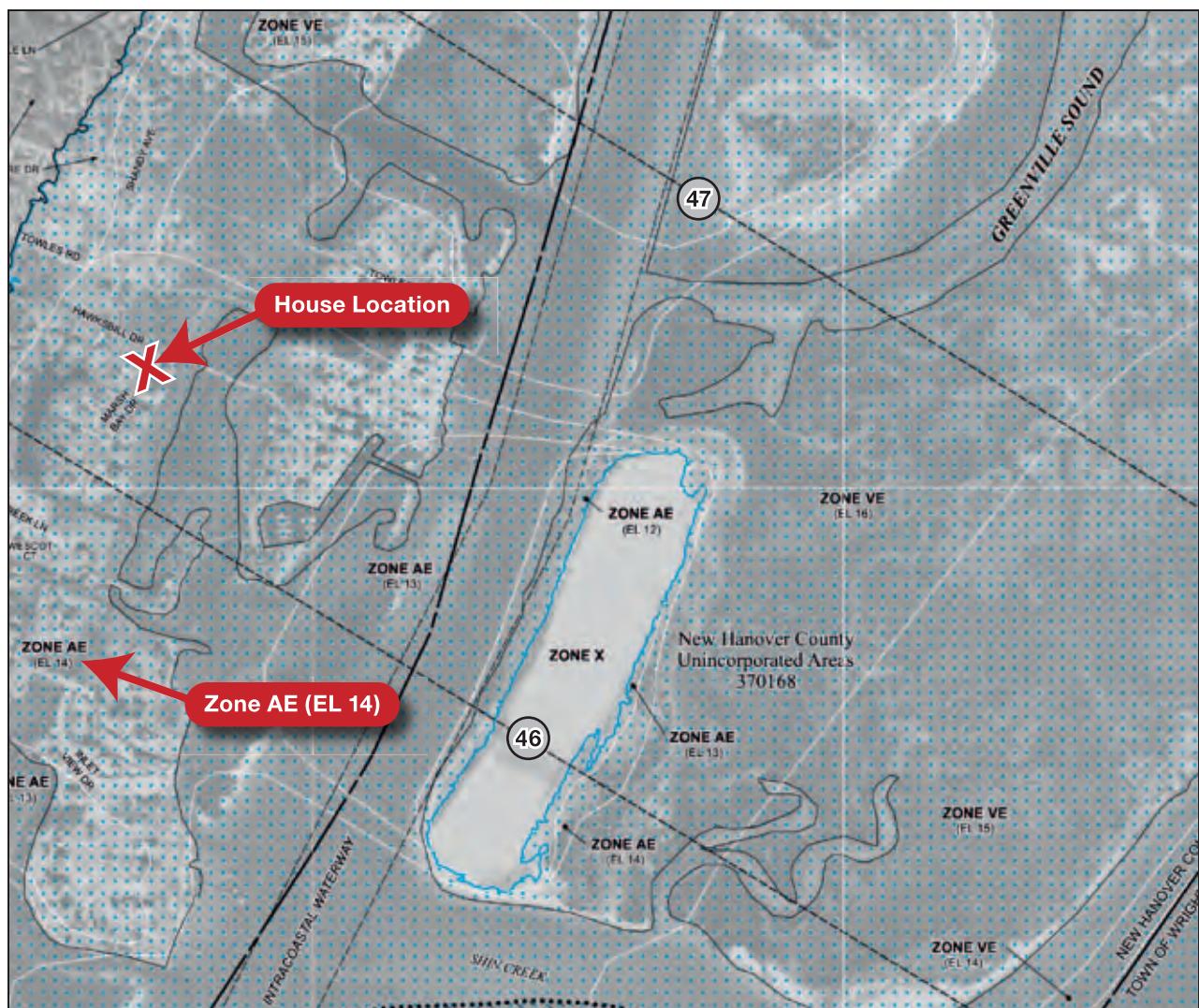


Figure 4-4. Coastal DFIRM showing house location and flood elevation

This flooding source/location is on the summary of stillwater elevations table (Table 4-2). From this table, the identified transect numbers are used to determine the stillwater flood elevations. Stillwater flood elevations of 5.7, 8.7, 12.2, and 12.4 feet in NAVD are identified for the 10-, 50-, 100-, and 500-year frequency floods (10-percent, 2-percent, 1-percent, and 0.2-percent-annual-exceedance probabilities), respectively.

## 4 DETERMINATION OF HAZARDS

Table 4-2. Summary of Coastal Analysis for the Atlantic Ocean Flooding Source

No.	Transect Location	Stillwater Elevation in ft NAVD 88				Wave Runup Analysis Zone Designation and BFE in ft NAVD 88	Wave Height Analysis Zone Designation and BFE in ft NAVD 88	Primary Frontal Dune Identified
		10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance			
45	Approximately 1.87 miles southeast of the intersection of Orchard Trc and Masonboro Sound Rd	5.7	8.7	12.2	12.4	N/A	VE 14-19 AE 12-14	Yes
46	Approximately 690 ft southeast of intersection of Jack Parker Blvd and S Lumina Ave	5.7	8.7	12.2	12.4	N/A	VE 14-19 AE 12-14	Yes
47	Approximately 580 ft southeast of the intersection of S Lumina Ave and Sunset Ave	5.7	8.7	12.2	12.4	N/A	VE 14-19 AE 12-14	Yes
48	Approximately 550 ft east of the intersection of S Lumina Ave and Bridgers St	5.7	8.7	12.2	12.4	N/A	VE 14-19 AE 12-14	Yes

SOURCE: FEMA FIS REPORT FOR NEW HANOVER COUNTY, NC

### 4.1.2 Flood Forces and Loads

Floodwater can exert a variety of forces on a building. This section describes these forces, which include hydrostatic, saturated soil, hydrodynamic, debris impact, and erosive forces and illustrates how they are computed.

#### 4.1.2.1 Flood Depth and Floodproofing Design Depth

After gathering flood data from the riverine or coastal DFIRM and FIS, it is possible to compute the depth of flooding at a structure for any of the RIs defined along the flooding source. Flood depth can be computed by subtracting the lowest ground surface elevation (grade) adjacent to the structure from the flood elevation for each flood frequency, as shown in Equation 4-1. Sample calculations using these equations are presented in Appendix C.

Many communities have chosen to exceed minimum NFIP building elevation requirements, usually by requiring freeboard above the BFE, but sometimes by regulating to a more severe flood than the base flood. In this manual, “design flood elevation” refers to the locally adopted regulatory flood elevation. If a community regulates to minimum NFIP requirements, the DFE is identical to the BFE. If a community has chosen to exceed minimum NFIP elevation requirements, the DFE exceeds the BFE. The DFE is always

**EQUATION 4-1: FLOOD DEPTH**

$$d = FE - GS \quad (\text{Eq. 4-1})$$

where:

$d$  = depth of flooding (ft)

$FE$  = flood elevation for a specific flood frequency (ft)

$GS$  = lowest ground surface elevation (grade) adjacent to a structure (ft)

**NOTE**

When computing flood depth, be sure to use the lowest ground surface adjacent to the structure in question as shown in Figure 4-5.

equal to or greater than the BFE and includes wave effects. One common way of specifying the DFE, using freeboard above BFE, is illustrated in Equation 4-2. Communities incorporate freeboard with the intent that structures be elevated above this level, but they may or may not intend that all design loads be based on this elevation (many communities require freeboard to achieve flood insurance premium savings or Community Rating System [CRS] discount points). The rationale for freeboard adoption should be investigated before flood loads are calculated.

**EQUATION 4-2: COMMON DEFINITION OF DESIGN FLOOD ELEVATION**

$$DFE = FE + f \quad (\text{Eq. 4-2})$$

where:

$DFE$  = design flood elevation (ft)

$FE$  = flood elevation for a specific flood frequency (ft)

$f$  = factor of safety (freeboard), typically a minimum of 1.0 ft

Determining the floodproofing design depth at the structure is very important for the flood load calculation process. Nearly every other flood load parameter or calculation (e.g., hydrostatic load, hydrodynamic load, vertical hydrostatic load, debris impact load, and local scour depth) depends directly or indirectly on the floodproofing design depth. The floodproofing design depth ( $H$ ) is the difference between the DFE and the lowest grade adjacent to the structure (Figure 4-5). This computation is shown in Equation 4-3.



## EQUATION 4-3: FLOODPROOFING DESIGN DEPTH

$$H = DFE - GS \quad (\text{Eq. 4-3})$$

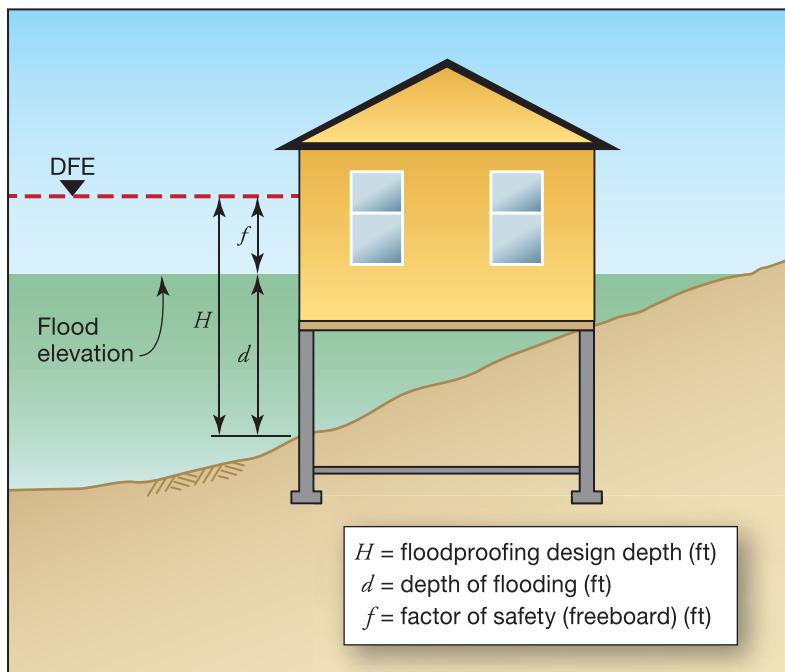
where:

$H$  = floodproofing design depth over which flood forces are considered (ft)

$DFE$  = design flood elevation (ft)

$GS$  = lowest ground surface elevation (grade) adjacent to the structure (or other reference feature such as a slab or footing) (ft)

**Figure 4-5.**  
Flood depth and design depth



#### 4.1.2.2 Hydrostatic Forces

The pressure exerted by still and slow moving water is called “hydrostatic pressure.” During any point of floodwater contact with a structure, hydrostatic pressures are equal in all directions and always act perpendicular to the surface on which they are applied. Pressures increase linearly with depth or “head” of water above the point under consideration. The summation of pressures over the surface under consideration represents the load acting on that surface. For structural analysis, hydrostatic forces, as shown in Figures 4-6 and 4-7, are defined to act:

- vertically downward on structural elements such as flat roofs and similar overhead members having a depth of water above them;

Hydrostatic Forces
Lateral water pressure
Combined water and saturated soil pressure
Equivalent hydrostatic pressures due to velocity
Vertical (buoyancy) water pressure

Figure 4-6. Hydrostatic forces

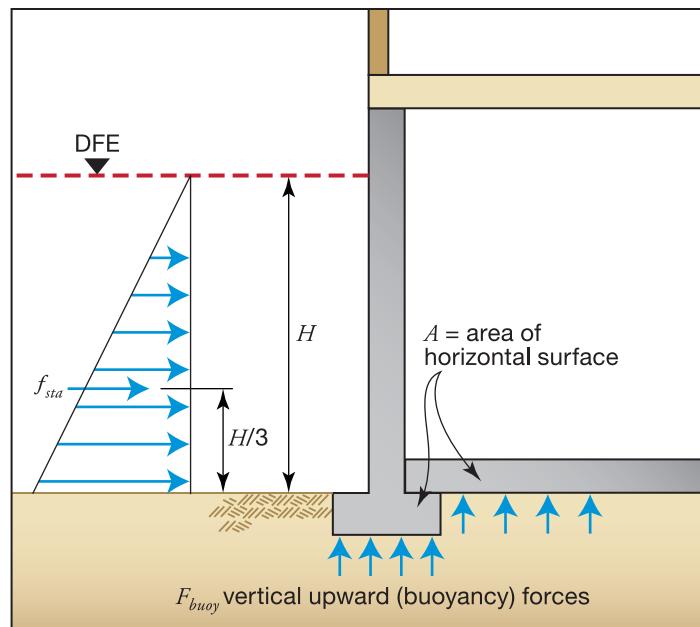


Figure 4-7. Diagram of hydrostatic forces

- vertically upward (uplift) from the underside of generally horizontal members such as slabs, floor diaphragms, and footings (also known as buoyancy); and
- laterally, in a horizontal direction on walls, piers, and similar vertical surfaces. (For design purposes, this lateral pressure is generally assumed to act on the receiving structure at a point one-third of the water depth above the base of the structure or two-thirds of the altitude from the water surface, which correlates to the center of gravity for a triangular pressure distribution.)

Hydrostatic forces include lateral water pressures, combined water and soil pressures, equivalent hydrostatic pressures due to velocity flows, and vertical (buoyancy) water pressures. The computation of each of these pressures is illustrated in the sections that follow.

For the purpose of this document, it has been assumed that hydrostatic conditions prevail for stillwater and water moving with a velocity of less than 10 ft/sec.

Hydrostatic loads generated by velocities up to 10 ft/sec may be converted to an equivalent hydrostatic load using the conversion equation, Equation 4-8, presented later in this chapter.

#### 4.1.2.3 Lateral Hydrostatic Forces

The basic equation for analyzing the lateral force due to hydrostatic pressure from standing water above the surface of the ground is illustrated in Equation 4-4.

**EQUATION 4-4: LATERAL HYDROSTATIC FORCES**

$$f_{sta} = \frac{1}{2} P_b H = \frac{1}{2} \gamma_w H^2 \quad (\text{Eq. 4-4})$$

where:

$f_{sta}$  = hydrostatic force from standing water (lb/lf) acting at a distance  $H/3$  above ground

$P_b$  = hydrostatic pressure due to standing water at a depth of  $H$  (lb/ft<sup>2</sup>), ( $P_b = \gamma_w H$ )

$\gamma_w$  = specific weight of water (62.4 lb/ft<sup>3</sup> for fresh water and 64.0 lb/ft<sup>3</sup> for saltwater)

$H$  = floodproofing design depth (ft)

**4.1.2.4 Saturated Soil Forces**

If any portion of the structure is below grade, saturated soil forces must be included in the computation in addition to the hydrostatic force. The equivalent fluid pressures for various soil types are presented in Tables 4-3 and 4-4. The equivalent fluid weight of saturated soil is not the same as the effective weight of saturated soil. Rather, the equivalent fluid weight of saturated soil is a combination of the unit weight of water and the effective saturated weight of soil.

**Table 4-3. Effective Equivalent Fluid Weight of Submerged Soil and Water**

Soil Type*	Equivalent Fluid Weight of Submerged Soil and Water (lb/ft <sup>3</sup> )
Clean sand and gravel (GW, GP, SW, SP)	75
Dirty sand and gravel of restricted permeability (GM, GM-GP, SM, SM-SP)	77
Stiff residual silts and clays, silty fine sands, clayey sands and gravels (CL, ML, CH, MH, SM, SC, GC)	82
Very soft to soft clay, silty clay, organic silt and clay (CL, ML, OL, CH, MH, OH)	106
Medium to stiff clay deposited in chunks and protected from infiltration (CL, CH)	142

\*Soil types are based on USDA Unified Soil Classification System; see Table 4-4 for soil type definitions.

Table 4-4. Soil Type Definitions Based on USDA Unified Soil Classification System

Soil Type	Group Symbol	Description
Gravels	GW	Well-graded gravels and gravel mixtures
	GP	Poorly graded gravel-sand-silt mixtures
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
Sands	SW	Well-graded sands and gravelly sands
	SP	Poorly graded sands and gravelly sands
	SM	Silty sands, poorly graded sand-silt-mixtures
	SC	Clayey sands, poorly graded sand-clay mixtures
Fine Grain Silt and Clays	ML	Inorganic silts and clayey silts
	CL	Inorganic clays of low to medium plasticity
	OL	Organic silts and organic silty clays of low plasticity
	MH	Inorganic silts, micaceous or fine sands or silts, elastic silts
	CH	Inorganic clays of high plasticity, fine clays
	OH	Organic clays of medium to high plasticity

#### 4.1.2.5 Combined Saturated Soil and Water Forces

When a structure is subject to hydrostatic forces from both saturated soil and standing water (illustrated in Figure 4-8), the resultant combined lateral force,  $f_{comb}$ , is the sum of the lateral water hydrostatic force,  $f_{sta}$ , and the differential between the water and soil pressures,  $f_{dif}$ . The basic equation for computing  $f_{dif}$  is shown in Equation 4-5.

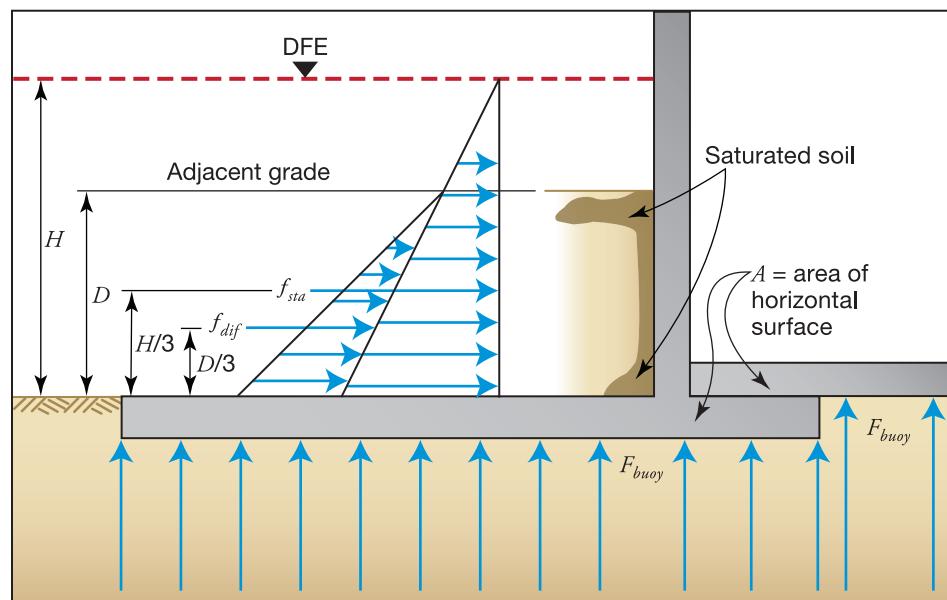


Figure 4-8.  
Combination soil/water hydrostatic and buoyancy forces



## EQUATION 4-5: SUBMERGED SOIL AND WATER FORCES

$$f_{dif} = \frac{1}{2}(S - \gamma_w)D^2 \quad (\text{Eq. 4-5})$$

where:

$f_{dif}$  = differential soil/water force acting at a distance  $D/3$  from the point under consideration (lb/lf)

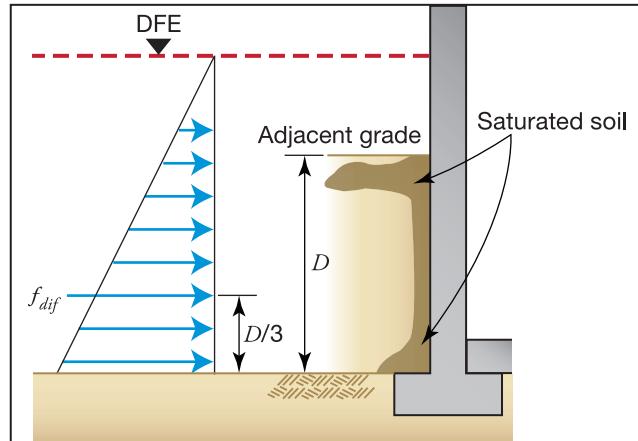
$S$  = equivalent fluid weight of submerged soil and water ( $\text{lb}/\text{ft}^3$ ) as shown in Table 4-3

$D$  = depth of saturated soil from adjacent grade to the top of the footer (ft)

$\gamma_w$  = specific weight of water (62.4  $\text{lb}/\text{ft}^3$  for fresh water and 64.0  $\text{lb}/\text{ft}^3$  for saltwater)

## NOTE

$f_{dif}$  acts at a point  $D/3$  where  $D$  is the distance from the adjacent grade to the top of the foundation footer.



## 4.1.2.6 Vertical Hydrostatic Forces

The basic equation for analyzing the vertical hydrostatic force (buoyancy) due to standing water (illustrated by Figure 4-7) is shown in Equation 4-6.

The computation of hydrostatic forces is vital to the successful design of floodwalls, sealants, closures, shields, foundation walls, and a variety of other retrofitting measures. The Hydrostatic Force Computation Worksheet (Figure 4-9) can be used to conduct hydrostatic calculations.

**EQUATION 4-6: BUOYANCY FORCES**

$$F_{buoy} = \gamma_w (Vol) \quad (\text{Eq. 4-6})$$

where:

$F_{buoy}$  = vertical hydrostatic force resulting from the displacement of a given volume of floodwater (lb)

$\gamma_w$  = specific weight of water (62.4 lb/ft<sup>3</sup> for fresh water and 64.0 lb/ft<sup>3</sup> for saltwater)

$Vol$  = volume of floodwater displaced by a submerged object (ft<sup>3</sup>)

**Hydrostatic Force Computation Worksheet**

Owner Name: \_\_\_\_\_ Prepared By: \_\_\_\_\_

Address: \_\_\_\_\_ Date: \_\_\_\_\_

Property Location: \_\_\_\_\_

**Constants**

$\gamma_w$  = specific weight of water = 62.4 lb/ft<sup>3</sup> for fresh water and 64.0 lb/ft<sup>3</sup> for saltwater

**Summary of Loads**

$f_{sta}$  =

$f_{dif}$  =

$f_{comb}$  =

$F_{bouy}$  =

**Variables**

$H$  = floodproofing design depth (ft) =

$D$  = depth of saturated soil (ft) =

$S$  = equivalent fluid weight of saturated soil (lb/ft<sup>3</sup>) =

$Vol$  = volume of floodwater displaced by a submerged object (ft<sup>3</sup>) =

**Lateral Hydrostatic Force (see Equation 4-4)**

$$f_{sta} = \frac{1}{2} P_b H = \frac{1}{2} \gamma_w H^2$$

**Submerged Soil and Water Forces (see Equation 4-5)**

$$f_{dif} = \frac{1}{2} (S - \gamma_w) D^2$$

**Buoyancy Force (see Equation 4-6)**

$$F_{bouy} = \gamma_w (Vol)$$

Note: Equations 4-4 and 4-5 do not account for equivalent hydrostatic loads due to the low velocity of floodwaters (less than 10 ft/sec). If velocity floodwater exists, use Equations 4-7 and 4-8. Refer to Chapter 8 of FEMA P-55, *Coastal Construction Manual* (FEMA, 2011) for discussion of hydrostatic loads.

**Figure 4-9. Hydrostatic Force Computation Worksheet**

#### 4.1.2.7 Hydrodynamic Forces

When floodwater flows around a structure, it imposes additional loads on the structure, as shown in Figure 4-10. These loads are a function of flow velocity and structural geometry.

Low velocity hydrodynamic forces are defined as situations where floodwater velocities do not exceed 10 ft/sec, while high velocity hydrodynamic forces involve floodwater velocities in excess of 10 ft/sec.



#### NOTE

Hydrodynamic forces have been shown to act on slab-on-grade houses to maximize their effects.

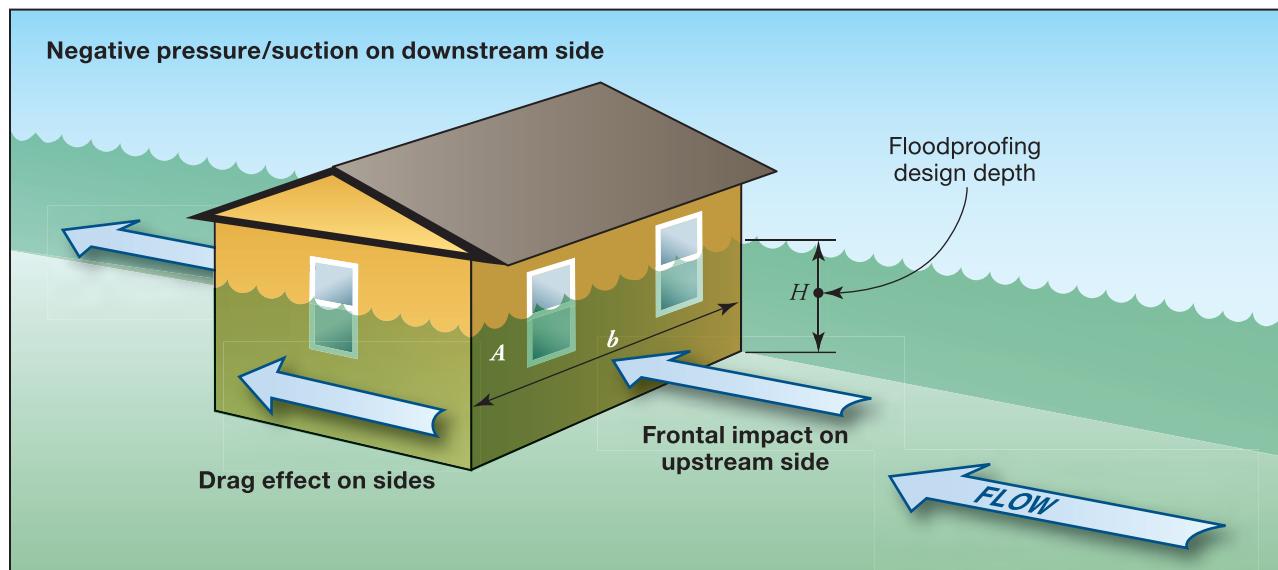


Figure 4-10. Hydrodynamic and impact forces

#### Low Velocity Hydrodynamic Forces

In cases where velocities do not exceed 10 ft/sec, the hydrodynamic effects of moving water can be converted to an equivalent hydrostatic force by increasing the depth of the water (head) above the flood level by an amount  $dh$ , which is shown in Equation 4-7.

The drag coefficient used in Equation 4-7 is taken from the *Shore Protection Manual, Volume 2* (USACE, 1984) and additional guidance is provided in ASCE 7. The drag coefficient is a function of the shape of the object around which flow is directed. The value of  $C_d$ , unless otherwise evaluated, shall not be less than 1.25 and can be determined from the width-to-height ratio,  $b/H$ , of the structure in question. The width ( $b$ ) is the length of the side perpendicular to the flow, and the height ( $H$ ) is the distance from the floodproofing design depth to the LAG level. Table 4-5 gives  $C_d$  values for different width-to-height ratios.



#### NOTE

Sources of data for determining flood flow velocity include hydraulic calculations, historical measurements, and rules of thumb. Floodwater that is 1 foot deep moving in excess of 5 ft/sec can knock an adult over and cause erosion of stream banks. Overbank velocities are usually less than stream channel velocities. If no data for flood flow velocity exists for a site, the reader should contact an experienced hydrologist or hydraulic engineer for estimates.

**EQUATION 4-7: CONVERSION OF LOW VELOCITY FLOW TO EQUIVALENT HEAD**

$$dh = \frac{C_d V^2}{2g} \quad (\text{Eq. 4-7})$$

where:

$dh$  = equivalent head due to low velocity flood flows (ft)

$C_d$  = drag coefficient (from Table 4-5)

$V$  = velocity of floodwater (ft/sec)

$g$  = acceleration of gravity (equal to 32.2 ft/sec<sup>2</sup>)

**Table 4-5. Drag Coefficients for Ratios of Width to Height (w/h)**

Width to Height Ratio ( $b/H$ )	Drag Coefficient ( $C_d$ )
1–12	1.25
13–20	1.3
21–32	1.4
33–40	1.5
41–80	1.75
81–120	1.8
>120	2.0

The value  $dh$  is then converted to an equivalent hydrostatic pressure through use of the basic equation for lateral hydrostatic forces introduced earlier in this chapter and modified, as shown in Equation 4-8.

**EQUATION 4-8:  
CONVERSION OF EQUIVALENT HEAD TO EQUIVALENT HYDROSTATIC FORCE**

$$f_{dh} = \gamma_w (dh) H = P_{dh} H \quad (\text{Eq. 4-8})$$

where:

$f_{dh}$  = equivalent hydrostatic force due to low velocity flood flows (lb/lf)

$\gamma_w$  = specific weight of water (62.4 lb/ft<sup>3</sup> for fresh water and 64.0 lb/ft<sup>3</sup> for saltwater)

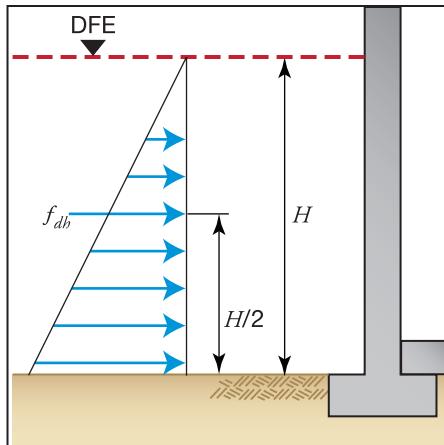
$dh$  = equivalent head due to low velocity flood flows (ft)

$H$  = floodproofing design depth (ft)

$P_{dh}$  = hydrostatic pressure due to low velocity flood flows (lb/ft<sup>2</sup>) ( $P_{dh} = \gamma_w (dh)$ )

**EQUATION 4-8:  
CONVERSION OF EQUIVALENT HEAD TO EQUIVALENT HYDROSTATIC FORCE**

(concluded)

**NOTE**

Although  $f_{db}$  is considered a hydrostatic force for velocities under 10 ft/sec, it acts at a point  $H/2$ , similarly to lateral hydrodynamic forces.

Equivalent Hydrostatic Force Computation Worksheet	
Owner Name: _____	Prepared By: _____
Address: _____	Date: _____
Property Location: _____	
<b>Constants</b>	
$\gamma_w$ = specific weight of water = 62.4 lb/ft <sup>3</sup> for fresh water and 64.0 lb/ft <sup>3</sup> for saltwater	
$g$ = acceleration of gravity = 32.2 ft/sec <sup>2</sup>	
<b>Variables</b>	
$H$ = design floodproof depth (ft) =	
$V$ = velocity of floodwater (10 ft/sec or less) =	
$P_{db}$ = hydrostatic pressure due to low velocity flood flows (lb/ft <sup>2</sup> ) =	
$b$ = width of structure perpendicular to flow (ft) =	
<b>Summary of Loads</b>	
$f_{db}$ =	
$f_{sta}$ =	
$f_{dif}$ =	
$f_{comb}$ =	
<b>Conversion of Low Velocity Flood Flow to Equivalent Head (see Equation 4-7)</b>	
$f_{db} = \gamma_w (db)H = P_{db}H$	
Develop $C_d$ :	
$b/H =$	
From Table 4-5; $C_d$ =	
<b>Conversion of Equivalent Head to Equivalent Hydrostatic Force (see Equation 4-8)</b>	
$P_d = C_d \rho \frac{V^2}{2}$	

Figure 4-11. Equivalent Hydrostatic Force Computation Worksheet

#### 4.1.2.8 High Velocity Hydrodynamic Forces

For special structures and conditions, and for velocities greater than 10 ft/sec, a more detailed analysis and evaluation should be made utilizing basic concepts of fluid mechanics and/or hydraulic models. The basic equation for hydrodynamic pressure is shown in Equation 4-9.



#### EQUATION 4-9: HIGH VELOCITY HYDRODYNAMIC PRESSURE

$$P_d = C_d \rho \frac{V^2}{2} \quad (\text{Eq. 4-9})$$

where:

$P_d$  = hydrodynamic pressure ( $\text{lb}/\text{ft}^2$ )

$C_d$  = drag coefficient (taken from Table 4-5)

$\rho$  = mass density of fluid (1.94 slugs/ $\text{ft}^3$  for fresh water and 1.99 slugs/ $\text{ft}^3$  for saltwater)

$V$  = velocity of floodwater ( $\text{ft}/\text{sec}$ )

After determination of the hydrodynamic pressure ( $P_d$ ), the total force ( $F_d$ ) against the structure (see Figure 4-10) can be computed as the pressure times the area over which the water is affecting (see Equation 4-10).



#### EQUATION 4-10: TOTAL HYDRODYNAMIC FORCE

$$F_d = P_d A \quad (\text{Eq. 4-10})$$

where:

$F_d$  = total force against the structure ( $\text{lb}$ )

$P_d$  = hydrodynamic pressure ( $\text{lb}/\text{ft}^2$ )

$A$  = submerged area of the upstream face of the structure ( $\text{ft}^2$ )

Figure 4-12 can be used in the computation of high velocity hydrodynamic forces.

Hydrodynamic Force (High Velocity) Computation Worksheet	
Owner Name: _____	Prepared By: _____
Address: _____	Date: _____
Property Location: _____	
<b>Constants</b>	<b>Summary of Loads</b>
$\rho$ = mass density of fluid (1.94 slugs/ft <sup>3</sup> for fresh water and 1.99 slugs/ft <sup>3</sup> for saltwater)	$P_d$ =
	$F_d$ =
<b>Variables</b>	
$V$ = velocity of floodwater, >10 ft/sec =	
$C_d$ = drag coefficient =	
$A$ = submerged area of upstream face of structure (ft <sup>2</sup> ) =	
<b>High Velocity Hydrodynamic Pressure (see Equation 4-9)</b>	
$P_d = C_d \rho \frac{V^2}{2}$	
Develop $C_d$ :	
$b/H$ =	
From Table 4-5; $C_d$ =	
<b>Total Hydrodynamic Force (see Equation 4-10)</b>	
$F_d = P_d A$	

Figure 4-12. Hydrodynamic Force (High Velocity) Computation Worksheet

#### 4.1.2.9 Impact Loads

Impact loads are imposed on the structure by objects carried by the moving water. The magnitude of these loads is very difficult to predict, but some reasonable allowance must be made for them in the design of retrofitting measures for potentially affected buildings. To arrive at a realistic allowance, considerable judgment must be used, along with the designer's knowledge of debris problems at the site and consideration of the degree of exposure of the structure. Impact loads are classified as:

- no impact (for areas of little or no velocity or potential source of debris);
- normal impact;
- special impact; and
- extreme impact.



#### CROSS REFERENCE

Section 5.4.5 of ASCE 7-10 and the corresponding commentary contain an extensive discussion on computing riverine and coastal impact loads.

### Normal Impact Forces

Normal impact forces relate to isolated occurrences of typically sized debris or floating objects striking the structure (see Figure 4-10 for location of frontal impact from debris). For design purposes, this can be considered a concentrated load acting horizontally at the flood elevation, or any point below it, equal to the impact force created by a typical object traveling at the velocity of the floodwater acting on a 1-square-foot surface of the submerged structure area perpendicular to the flow. Typical object size and mass will vary by location, but ASCE 7-10 *Commentary*, section C5.4.5 (Debris Weight), provides some guidance. The calculation of normal impact forces (loads) is shown in Equation 4-11.

The equation for calculating debris loads is given in the ASCE 7, *Commentary*. The equation has been converted into Equation 4-11, based on assumptions appropriate for the typical structures that are covered in this document.



#### NOTE

The assumption that debris velocity is equal to the flood velocity may overstate the velocities of large debris objects; therefore, engineering judgment may be required in some instances. Designers may wish to reduce debris velocity for larger objects.



#### EQUATION 4-11: NORMAL IMPACT LOADS

$$F_i = W V C_D C_B C_{Str} \quad (\text{Eq. 4-11})$$

where:

$F_i$  = impact force acting at the BFE (lb)

$W$  = weight of the object (lb)

$V$  = velocity of water (ft/sec)

$C_D$  = depth coefficient (see Table 4-6)

$C_B$  = blockage coefficient (taken as 1.0 for no upstream screening, flow path greater than 30 ft; see Table 4-7 for more information)

$C_{Str}$  = building structure coefficient

- = 0.2 for timber pile and masonry column supported structures 3 stories or less in height above grade

- = 0.4 for concrete pile or concrete or steel moment resisting frames 3 stories or less in height above grade

- = 0.8 for reinforced concrete (including insulated concrete) and reinforced masonry foundation walls

**Table 4-6. Depth Coefficient ( $C_D$ ) by Flood Hazard Zone and Water Depth**

Flood Hazard Zone and Water Depth	$C_D$
Floodway <sup>1</sup> or Zone V	1.0
Zone A, stillwater flood depth > 5 ft	1.0
Zone A, stillwater flood depth = 4 ft	0.75
Zone A, stillwater flood depth = 3 ft	0.5
Zone A, stillwater flood depth = 2 ft	0.25
Zone A, stillwater flood depth < 1 ft	0.0

<sup>1</sup> Per ASCE 24, a “floodway” is a “channel and that portion of the floodplain reserved to convey the base flood without cumulatively increasing the water surface elevation more than a designated height.”

**Table 4-7. Values of Blockage Coefficient ( $C_B$ )**

Degree of Screening or Sheltering within 100 ft Upstream	$C_B$
No upstream screening, flow path wider than 30 ft	1.0
Limited upstream screening, flow path 20 ft wide	0.6
Moderate upstream screening, flow path 10 ft wide	0.2
Dense upstream screening, flow path less than 5 ft wide	0.0

Often, there are regional differences between the size, shape, and weight of water-borne debris, and the debris velocity. Designers should consider locally adopted guidance because it may be based on more recent information or information specific to the local hazards than the information in ASCE 7.

The parameters in Equation 4-11 are also discussed in detail in Chapter 8 of FEMA P-55, *Coastal Construction Manual* (FEMA, 2011, Fourth Edition).

### Special and Extreme Impact Forces

Special impact forces occur when large objects or conglomerates of floating objects, such as ice floes or accumulations of floating debris, strike a structure. Where stable natural or artificial barriers exist that would effectively prevent these special impact forces from occurring, these forces may not need to be considered in the design. Details for calculating special impact loads are outlined in the ASCE 7 commentary section C5.4.5.



#### NOTE

Where extreme impact loads are a threat, the preferred retrofitting alternative is relocation.

Extreme impact forces occur when large, floating objects, such as runaway barges or collapsed buildings and structures, strike the structure (or a component of the structure). These forces generally occur within the floodway or areas of the floodplain that experience the highest velocity flows. It is impractical to design residential buildings to have adequate strength to resist extreme impact forces.

Impact forces are critical design considerations that must be thoroughly evaluated. The following Impact Force Computation Worksheet, Figure 4-13, can be used to conduct normal impact force calculations.

Impact Force Computation Worksheet	
Owner Name:	Prepared By:
Address:	Date:
Property Location:	
<b>Variables</b>	
$W$ = weight of the object (lb) $V$ = velocity of water (ft/sec) $C_D$ = depth coefficient (see Table 4-6) $C_B$ = blockage coefficient (taken as 1.0 for no upstream screening, flow path greater than 30 ft; see Table 4-7 for more information) $C_{Str}$ = building structure coefficient = 0.2 for timber pile and masonry column supported structures 3 stories or less in height above grade = 0.4 for concrete pile or concrete or steel moment resisting frames 3 stories or less in height above grade = 0.8 for reinforced concrete foundation walls (including insulated concrete forms)	
<b>Summary of Loads</b> $F_i$ =	
<b>Normal Impact Loads (see Equation 4-11)</b> $F_i = W V C_D C_B C_{Str}$	

Figure 4-13. Impact Force Computation Worksheet

#### 4.1.2.10 Riverine Erosion

The analysis of erosion that impacts stream banks and nearby overbank structures is a detailed effort that is usually accompanied by detailed geotechnical investigations. Some of the variables that impact the stability (or erodibility) of the stream banks include the following:

- critical height of the slope;
- inclination of the slope;
- cohesive strength of the soil in the slope;
- distance of the structure in question from the shoulder of the stream bank;
- degree of stabilization of the surface of the slope;



#### CROSS REFERENCE

1- to 24-hour rainfall intensities for each State are available from the National Weather Service (NWS) *Technical Memorandum NWS HYDRO-35*, “Technical Paper 40, NOAA Atlas 2” or “NOAA Atlas 14” available for download at: <http://www.nws.noaa.gov/oh/hdsc/currentpf.htm>.

Rainfall intensities are available for a range of storm frequencies, including the 2-, 10-, 25-, 50-, and 100-year events. The 2- or 10-year intensity rainfall is considered a minimum design value for pumping rates when floodwater prevents gravity discharge from floodwalls and levees. The 100-year intensity rainfall should be the maximum design value for sizing gravity flow pipes and/or closures.

- level and variation of groundwater within the slope;
- level and variation in level of water on the toe of the slope;
- tractive shear stress of the soil; and
- frequency of rise and fall of the surface of the stream.

Both FEMA and the USACE have researched the stability of stream banks in an effort to quantify stream bank erosion. However, concerns over the universal applicability of the research results preclude their inclusion in this manual. It is suggested that, when dealing with stream banks susceptible to erosion, the designer contact a qualified geotechnical engineer or a hydraulic engineer experienced in channel stability.

#### 4.1.3 Site Drainage

The drainage system for the area enclosed by a floodwall or levee must accommodate the precipitation runoff from this interior area (and any contributing areas such as roofs and higher ground parcels) and the anticipated seepage through or under the floodwall or levee during flooding conditions.

There are two general methods for removing interior drainage. The first is a gravity flow system, which provides a means for interior drainage of the protected area when there is no floodwater against the floodwall or levee. This is accomplished by placing a pipe(s) through the floodwall or levee with a flap gate attachment. The flap gate prevents flow from entering the interior area through the drainpipe when floodwater rises above the elevation of the pipe.

The second method, a pump system, removes accumulation of water when the elevation of the floodwater exceeds the elevation of the gravity drain system. A collection system composed of pervious trenches, underground tiles, or sloped surface areas transports the accumulating water to a sump area. In the levee application, these drains should be incorporated into the collection system. The anticipated seepage from under and through floodwalls and levees must also be taken into consideration by combining it with flow from precipitation (see Figure 4-14). It is important to verify that the pump system has a reliable power source that can handle the flooding in the area enclosed by the floodwall or levee. This is essential to the performance of the floodwall or levee system.

To determine the amount of precipitation that can collect in the contained area, the rainfall intensity, given in inches per hour, must be determined for a particular location. This value is multiplied by the enclosed area,  $A_a$ , in square feet, a residential terrain runoff coefficient ( $c$ ) of 0.7, and a conversion factor of 0.01. The answer is given in gallons per minute (gpm). See Equation 4-12.



##### NOTE

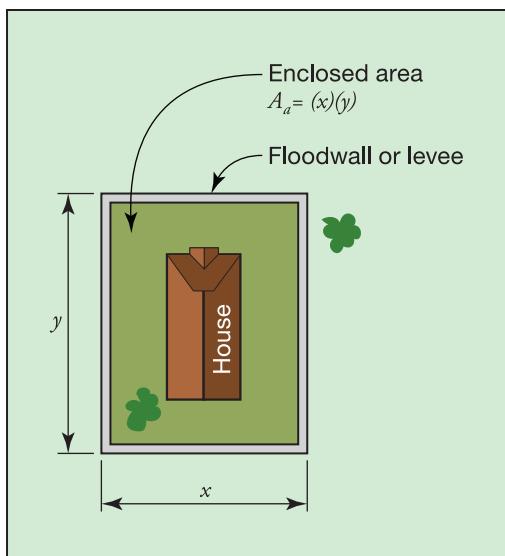
The rational equation  $Q = ci_r A$  is used to compute the amount of precipitation runoff from small areas. It is generally not applicable to drainage areas greater than 10 acres in size.



##### NOTE

The residential terrain runoff coefficient,  $c$ , is used to model the runoff characteristics of various land uses. Use the value for the predominant land use within a specific area or develop a weighted average for areas with multiple land uses. The most common coefficients are 0.70 for residential areas, 0.90, for commercial areas, and 0.40 for undeveloped land.

Figure 4-14. Rectangular area enclosed by a floodwall or levee



#### EQUATION 4-12: RUNOFF QUANTITY IN AN ENCLOSED AREA

$$Q_a = 0.01ci_r A_a \quad (\text{Eq. 4-12})$$

where:

$Q_a$  = runoff from the enclosed area (gpm)

0.01 = factor converting the answer to gpm

$c$  = residential terrain runoff coefficient of 0.7

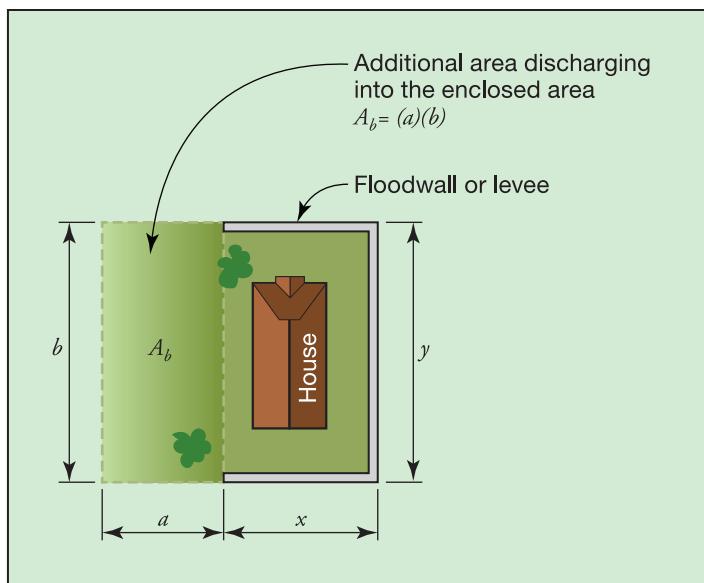
$i_r$  = intensity of rainfall (in./hr)

$A_a$  = is the area enclosed by the floodwall or levee ( $\text{ft}^2$ )

#### NOTE

When determining the minimum discharge size for pumps within enclosed areas, the designer should consider the impacts of lag time between storms that control the gravity flow mechanism (i.e., inside and outside the enclosed area) and the storage capacity within the enclosed area after the gravity discharge system closes. If the designer is not familiar with storm lag time and the computation of storage within an enclosed area, an experienced hydrologist or hydraulic engineer should be consulted.

In some cases, a levee or floodwall may extend only partially around the property and tie into higher ground (see Figure 4-15). For such cases, the amount of precipitation that can flow downhill as runoff into the protected area,  $A_a$ , must be included. To calculate this value, the additional area of land,  $A_b$ , that can discharge water into the enclosure should be estimated. This value is then multiplied by the previously determined rainfall intensity,  $i_r$ , by the most suitable terrain coefficient, and by 0.01. See Equation 4-13.



**Figure 4-15.**  
Rectangular area partially enclosed by a floodwall or levee



**EQUATION 4-13:  
RUNOFF QUANTITY FROM HIGHER GROUND INTO A PARTIALLY ENCLOSED AREA**

$$Q_b = 0.01ci_rA_b \quad (\text{Eq. 4-13})$$

where:

$Q_b$  = runoff from additional contributing area (gpm)

0.01 = factor converting the answer to gpm

$c$  = most suitable terrain runoff coefficient

$i_r$  = is the intensity of rainfall (in./hr)

$A_b$  = area discharging to the area partially enclosed by the floodwall or levee ( $\text{ft}^2$ )

Seepage flow rates from the levee or floodwall,  $Q_c$ , must also be estimated. In general, unless the seepage rate is calculated by a qualified soils engineer, a value of 2 gpm for every 300 feet of levee or 1 gpm for every 300 feet of floodwall should be assumed during base 100-year-flood conditions. See Equation 4-14.

**EQUATION 4-14: SEEPAGE FLOW RATE THROUGH A FLOODWALL OR LEVEE**

$$Q_c = sr(l) \quad (\text{Eq. 4-14})$$

where:

$Q_c$  = seepage rate through the floodwall/levee (gpm)

$sr$  = seepage rate (gpm) per foot of floodwall/levee

$l$  = length of the floodwall/levee (ft)

The values for inflow within the enclosed area, runoff from uphill areas draining into the enclosure, and seepage through the floodwall/levee should be added together to obtain the minimum discharge size,  $Q_{sp}$ , in gpm for the pump. See Equation 4-15.

**EQUATION 4-15: MINIMUM DISCHARGE FOR PUMP INSTALLATION**

$$Q_{sp} = Q_a + Q_b + Q_c \quad (\text{Eq. 4-15})$$

where:

$Q_{sp}$  = minimum discharge for pump installation (gpm)

$Q_a$  = discharge from an enclosed area (from Equation 4-14) (gpm)

$Q_b$  = discharge from higher ground to partially enclosed area (from Equation 4-15) (gpm)

$Q_c$  = discharge from seepage through a floodwall or levee (from Equation 4-16) (gpm)

Important considerations in determining the minimum discharge size of a pump include storage available within the enclosed area and the lag time between storms that impact the enclosed area and the area to which the enclosed area drains. Pumps will continue to operate during flooding events (assuming power is constant or backup power is available), but gravity drains will close once the floodwater elevation outside of the enclosed area exceeds the elevation of the drain pipe/flap gate. Therefore, the critical design issue is to determine runoff and seepage that occurs once the flap gate closes. Typical design solutions incorporate a freeboard of several inches or more to safely control the 10-year flood event.

Figure 4-16 can be used to calculate the minimum discharge for pump installations.

Interior Drainage Computation Worksheet	
Owner Name: _____	Prepared By: _____
Address: _____	Date: _____
Property Location: _____	
<b>Constants</b>	
0.01 = factor converting the answer to gpm	
<b>Variables</b>	
$A_a$ = is the area enclosed by the floodwall or levee (ft <sup>2</sup> )	
$A_b$ = area discharging to the area partially enclosed by the floodwall or levee (ft <sup>2</sup> )	
$c$ = residential terrain runoff coefficient of 0.7	
$i_r$ = intensity of rainfall (in./hr)	
$sr$ = seepage rate (gpm) per foot of floodwall/levee	
$l$ = length of the floodwall/levee (ft)	
<b>Summary of Loads</b>	
$Q_{sp}$ =	
$Q_a$ =	
$Q_b$ =	
$Q_c$ =	
<b>Runoff Quantity in an Enclosed Area (see Equation 4-12)</b>	
$Q_a = 0.01ci_rA_a$	
<b>Runoff Quantity From Higher Ground into a Partially Enclosed Area (see Equation 4-13)</b>	
$Q_b = 0.01ci_rA_b$	
<b>Seepage Flow Rate Through a Levee or Floodwall (see Equation 4-14)</b>	
$Q_c = sr(l)$	
<b>Minimum Discharge for Pump Installation (see Equation 4-15)</b>	
$Q_{sp} = Q_a + Q_b + Q_c$	

Figure 4-16. Interior Drainage Computation Worksheet

#### 4.1.3.1 Closed Basin Lakes

Two types of lakes pose special hazards to adjacent development: lakes with no outlets, such as the Great Salt Lake and the Salton Sea (California); and lakes with inadequate or elevated outlets, such as the Great Lakes and many glacial lakes. These two types are referred to as “closed basin lakes.” Closed basin lakes are subject to very large fluctuations in elevation and can retain persistent high water levels.

Closed basin lakes occur in almost every part of the United States for a variety of reasons: lakes in the northern tier of States and Alaska were scoured out by glaciers; lakes with no outlets (playas) formed in the west due to tectonic action; oxbow lakes along the Mississippi and other large rivers formed as a result of channel migration; and sinkhole lakes form in areas with large limestone deposits at or near the surface where there is adequate surface water and rainfall to dissolve the limestone (Karst topography).

Determination of the flood elevations for closed basin lakes follows generally accepted hydrological methods, which incorporate statistical data, historical high water mark determinations, stage-frequency analysis, topographical analysis, water balance analysis, and combinations of these methods. The flood-prone area around a closed basin lake is referred to in affected DFIRM panels as an Area of Special Consideration (ASC). The ASC may include the 1- and 0.2-percent-annual-chance floodplains and additional areas to account for the continuous and often uncertain fluctuations in the water-surface elevation due to the closed-basin lake phenomenon. The ASC is an area subject to flooding, but the percent chance of being flooded in any given year is not defined.



#### CROSS REFERENCE

More information on closed basin lakes, alluvial fan, and movable bed stream hazards can be obtained from the *National Flood Insurance Program Community Rating System, Special Hazards Supplement to the CRS Coordinator's Manual* (FEMA, 2006b).

#### 4.1.4 Movable Bed Streams

Erosion and sedimentation are factors in the delineation and regulation of almost all riverine floodplains. In many rivers and streams, these processes are relatively predictable and steady. In other streams, sedimentation and erosion are continual processes, often having a larger impact on the extent of flooding and flood damages than the peak flow.

Extreme cases of sedimentation and erosion are a result of both natural and engineered processes. They frequently occur in the arid west, where relatively recent tectonic activity has left steep slopes, rainfall and streamflow are infrequent, and recent and rapid development has disturbed the natural processes of sediment production and transport.

Movable bed streams include streams where erosion (degradation of the streambed), sedimentation (aggradation of the streambed), or channel migration cause a change in the topography of the stream sufficient to change the flood elevation or the delineation of the floodplain or floodway. Analysis of movable bed streams generally includes a study of the sources of sediment, changes in those sources, and the impact of sediment transport through the floodplain.

#### 4.1.5 Analysis of Non-Flood-Related Hazards

While floods continue to be a major hazard to homes nationwide, they are not the only natural hazard that causes damage to residential buildings. Parts of the United States are subject to high winds that can accompany thunderstorms, hurricanes, tornadoes, and frontal passages. In addition, many regions are threatened by earthquake fault areas, land subsidence, and fire and snow hazards (Figure 4-17).

Retrofitting measures can be designed to modify structures to reduce the chance of damage from wind and other non-flood-related hazards. Fortunately, strengthening a home to resist earthquake damage can also increase its ability to withstand wind damage and flood-related impact and velocity forces.

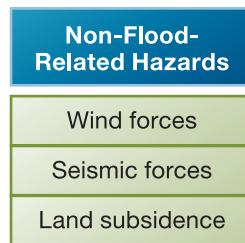


Figure 4-17.  
Non-flood-related  
natural hazards

#### 4.1.6 Wind Forces

High winds impose significant forces on a home and the structural elements of its foundation. Damage potential is increased when the wind forces occur in combination with flood forces, often in coastal areas. In addition, as a structure is elevated to minimize the effects of flood forces, the wind loads on the elevated structure may be increased, depending on the amount of elevation and the structure's exposure to wind forces.

Wind forces exert pressure on structural components such as walls, roofs, connections, and foundations. Therefore, wind loads should be considered in the design process at the same time as hydrostatic, hydrodynamic, impact, and building dead and live loads, and loads from other natural hazards such as earthquakes.

A detailed discussion for computation of wind forces is beyond the scope of this publication. However, FEMA P-55, *Coastal Construction Manual*, (FEMA, 2011) provides details on the basic parameters for determining wind loads:

- basic wind speed (see ASCE 7 or IRC wind speed map,  $V$ );
- wind directionality factor,  $K_d$  (see ASCE 7);
- building exposure category, B, C, or D (see ASCE 7);
- topographic factor,  $K_{zt}$  (see ASCE 7);
- gust effect factor, typically 0.85 (see ASCE 7);
- enclosure classification, open, partially enclosed, or enclosed (see ASCE 7); and
- internal pressure coefficient,  $GC_{pi}$  (see ASCE 7).

When wind interacts with a building, both positive and negative pressures simultaneously occur (see Figure 4-18). To prevent wind induced building failure, buildings must have sufficient strength to resist the applied loads from these pressures. As previously mentioned, the magnitude of pressure is a function of several primary factors: exposure, basic wind speed, topography, building height, building shape, and internal



#### NOTE

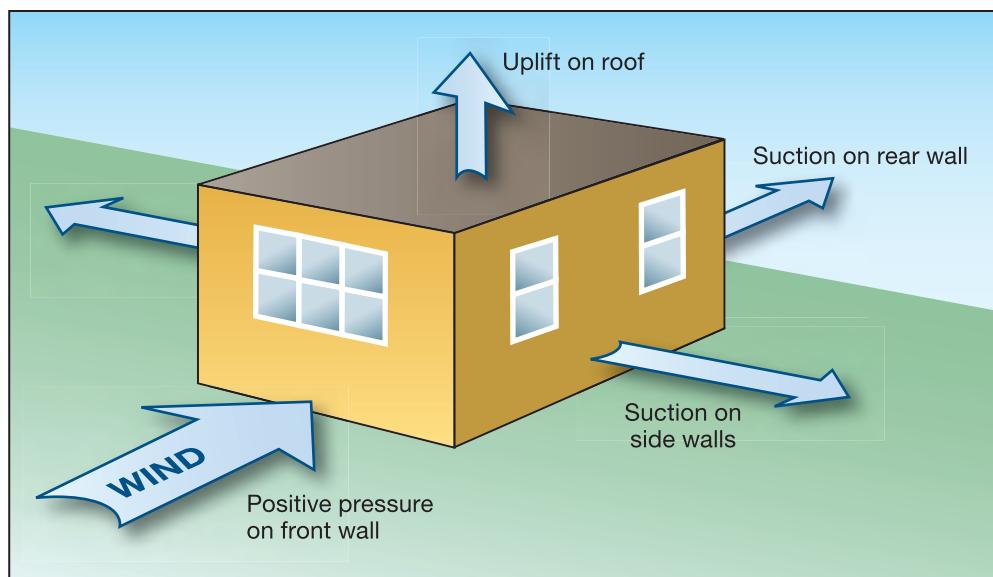
The designer must be aware that retrofitting actions may trigger a threat from multiple natural hazards and be prepared to address these issues.



#### CROSS REFERENCE

Refer to FEMA P-55, *Coastal Construction Manual* (FEMA, 2011), and ASCE 7 for a detailed discussion of wind forces.

Figure 4-18.  
Wind-induced  
pressures on a  
building



pressure classification. Once these parameters are defined, the engineer can determine the design pressures, and apply these pressures to the appropriate tributary area for the element or connection to be analyzed.

The concept of wind producing significant forces on a structure is based on the velocity difference of a medium (air) striking an obstruction (the structure). Wind speeds vary, depending on the location within the United States and the frequency with which these loads occur. ASCE 7 and the IRC provide basic wind speed maps showing these wind velocities and frequencies. The design velocity for a particular site can be determined from these maps. If the local code enforced is the IRC, the designer should refer to the IRC wind speed maps (Figures 4-19 A and B). If no local code is in force, the designer should refer to ASCE 7, *Minimum Design Loads for Buildings and Other Structures*.

FEMA has completed several building performance assessments following Hurricanes, including Andrew (1992), Iniki (1992), Opal (1995), Fran (1996), Georges (1998), Ivan (2004), Charley (2004), Katrina (2005), and Ike (2008). FEMA assessed the structural performance of residential building systems damaged by hurricane winds; provided findings and recommendations for enhancing building performance under hurricane wind conditions; and addressed building materials, code compliance, plan review, construction techniques, quality of construction, and construction inspection issues.



### CROSS REFERENCE

Copies of the building performance assessment reports can be obtained from the FEMA library:  
<http://www.fema.gov/library>

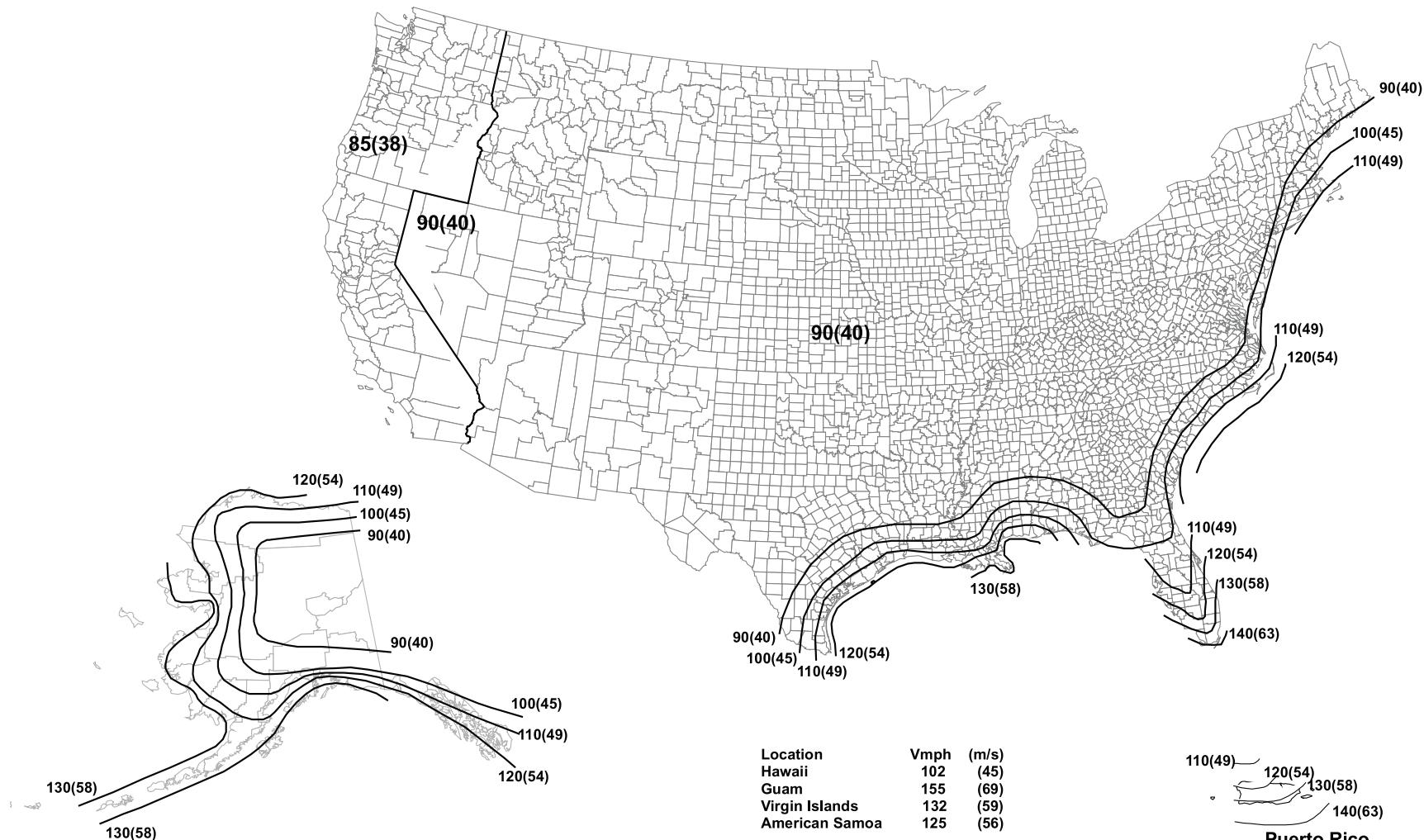
FEMA 488, *Hurricane Charley in Florida – Observations, Recommendations, and Technical Guidance*, 2005

FEMA 489, *Hurricane Ivan in Alabama and Florida – Observations, Recommendations, and Technical Guidance*, 2005

FEMA 549, *Hurricane Katrina in the Gulf Coast – Building Performance Observations, Recommendations, and Technical Guidance*, 2006

FEMA P-757, *Hurricane Ike in Texas and Louisiana – Building Performance Observations, Recommendations, and Technical Guidance*, 2009

FEMA P-765, *Midwest Floods of 2008 in Iowa and Wisconsin – Building Performance Observations, Recommendations, and Technical Guidance*, 2009

**Notes:**

1. Values are nominal design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10 m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

**Figure 4-19A. Basic wind speed map**

SOURCE: IRC, USED WITH PERMISSION

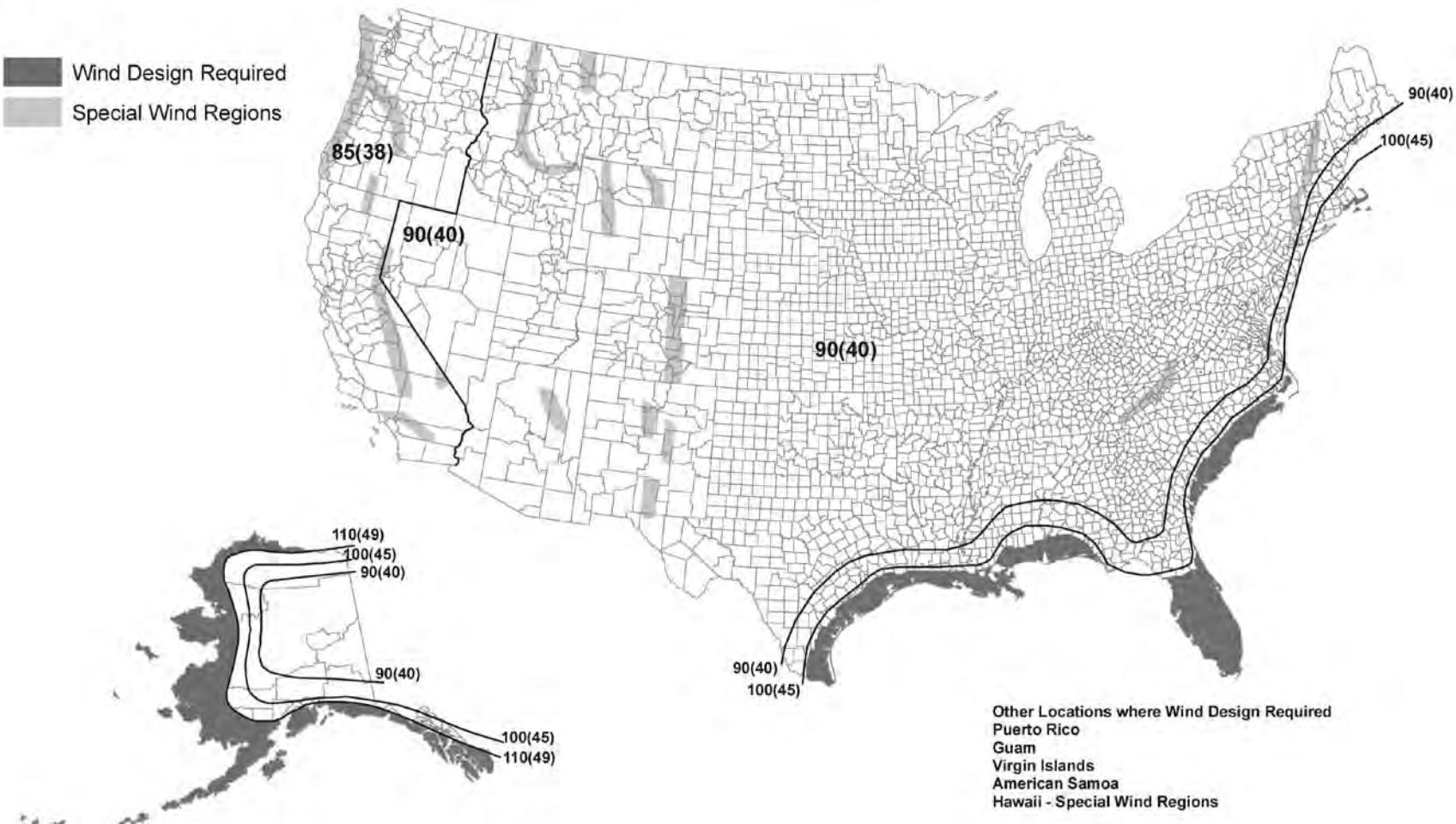


Figure 4-19B. Regions where wind design is required

SOURCE: IRC, USED WITH PERMISSION

These reports present detailed engineering discussions of building failure modes along with successful building performance guidance supplemented with design sketches. Please refer to these documents for specific engineering recommendations.

#### 4.1.7 Seismic Forces

Seismic forces on a home and the structural elements of a foundation can be significant. Seismic forces may also trigger additional hazards such as landslides and soil liquefaction, which can increase the damage potential on a home. These forces act on structural components such as walls, roofs, connections, and foundations. Similar to wind forces, seismic forces should be considered in the design process at the same time as hydrostatic, hydrodynamic, impact, and building dead and live loads, and loads from other natural hazards such as hurricanes. Requirements for seismic design are normally available in locally adopted building codes. Requirements in ASCE 7 and model building codes such as the IBC are often the basis of seismic requirements contained in locally adopted building codes.

Figures 4-20 and 4-21 illustrate steps of a seismic design process that includes estimating seismic loads and determining the ability of existing structural components to withstand these loads.

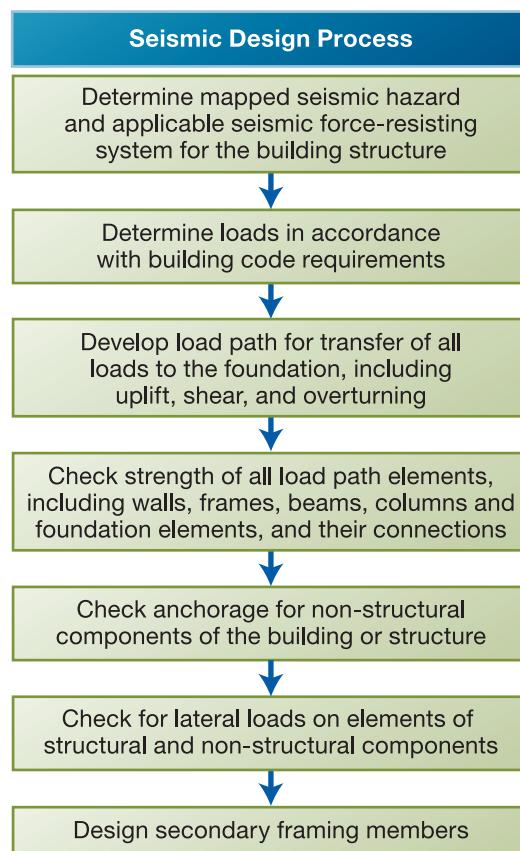


Figure 4-20.  
Seismic design process

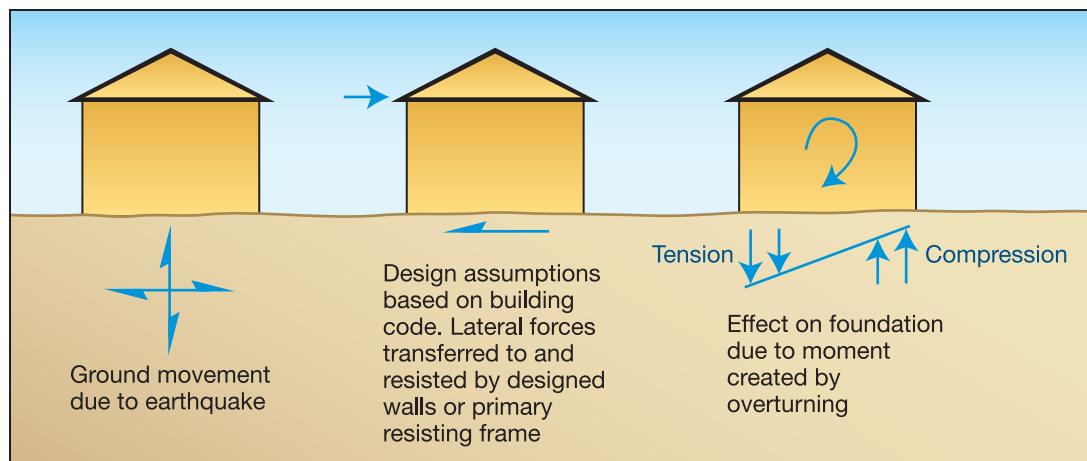


Figure 4-21. Seismic design causes and effects

When making repairs to a flood-damaged home or considering retrofitting structures to minimize the impact of future flooding events, there are certain practical steps that can be taken at the same time to reduce the chance of damage from other hazards. Earthquake protection steps can be divided into two categories: steps that deal with the building structure itself, and steps that can be taken with other non-structural parts of the building and its contents.

#### 4.1.8 Combining Forces

Flood-related and non-flood-related forces need to be evaluated using applicable load combinations. Analysis of load combinations is covered in detail in Chapter 5 and ASCE 7.

#### 4.1.9 Protection of the Structure

For protection of the building structure, the most important step is making sure the home is properly designed and constructed for seismic events. This includes proper design of the foundation and anchoring to the foundation. An engineered design will generally be required when the foundation of the house is raised above the BFE and the foundation is being considered to ensure the entire structure can withstand seismic forces.



#### CROSS REFERENCE

If provisions of the local code do not address seismic loads or if a local code is not adopted for use, the designer should refer to the ASCE 7, *Minimum Design Loads for Buildings and Other Structures* or requirements of the International Building Code.



#### CROSS REFERENCE

Refer to Section 5.2 for a detailed discussion of load combination scenarios and design methods.



#### CROSS REFERENCE

Additional information concerning the determination of flood-related forces is available in the flood design load criteria incorporated in Section 5 of ASCE 7, *Minimum Design Loads for Buildings and Other Structures*, and ASCE 24, *Flood Resistant Design and Construction*.

Key portions of masonry block foundations usually require strengthening by installing reinforcing bars in the blocks and then filling them with concrete grout. FEMA has developed a sample plan for strengthening a masonry block foundation wall. This type of work can be complicated and normally requires the expertise of a design professional such as an engineer or architect.

FEMA's *Technical Information on Elevating Substantially Damaged Residential Buildings in the Midwest* (1993d) provides procedures for determining seismic forces and recommendations for seismic retrofitting of a wood-frame structure. For more information on protecting a structure from seismic hazards, contact the appropriate FEMA Regional Office's Mitigation Division.



#### CROSS REFERENCE

The additional cost for seismic strengthening was estimated by FEMA (during the Midwest Floods of 1993) to range from 17-23 percent of the base repair cost for elevating a 1,000-square foot wood-frame structure on masonry foundation walls. FEMA prepared a methodology to estimate the costs of seismic retrofit projects described in FEMA 156, *Typical Costs for Seismic Rehabilitation of Existing Buildings* (FEMA, 1994).

### 4.1.10 Protection of Non-Structural Building Components and Building Contents

For non-structural building components and contents, earthquake protection usually involves simpler activities that homeowners can undertake themselves. These include anchoring and bracing of fixtures, appliances (e.g., hot water heaters and furnaces), chimneys, tanks, cabinets, shelves, and other items that may tip over or become damaged when subjected to earthquake ground shaking.

### 4.1.11 Land Subsidence



#### CROSS REFERENCE

Subsidence of the land surface affects flooding and flood damages. It occurs in more than 17,000 square miles in 45 States and an area roughly the size of New Hampshire and Vermont combined. In 1991, the National Research Council estimated that annual costs in the United States from flooding and structural damage caused by land subsidence exceeded \$125 million. Because the causes of subsidence vary, selected mitigation techniques are required in different situations.

Subsidence may result in sudden, catastrophic collapses of the land surface or in a slow lowering of the land surface. In either case, it can cause increased hazards to structures and infrastructure. In some cases, the causes of subsidence can be controlled.

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Subsidence is typically a function of withdrawal of fluids or gases, the existence of organic soils, or other geotechnical factors; it requires an extensive engineering/geotechnical analysis. While NFIP regulations do not specifically address land subsidence, communities that develop mapping and regulatory standards addressing these hazards may receive flood insurance premium credits through the NFIP CRS. The designer should determine if a local community has mapped or enacted an ordinance covering this special hazard.

## 4.2 Geotechnical Considerations

Soil properties during conditions of flooding are important factors in the design of any surface intended to resist flood loads. These properties include:

- saturated soil forces (see Section 4.1.1.5);
- allowable bearing capacity;
- potential for scour;
- frost zone location;
- permeability; and
- shrink-swell potential.



### CROSS REFERENCE

Specific information on landslides and other geotechnical-related natural hazards can be found at <http://landslides.usgs.gov/>.

The computation of lateral soil forces and determination of soil bearing capacity are critical in the design of foundations. These forces plus the frost zone location and potential scour play an important role in determining the type of foundation to use. Likewise, the permeability and compactibility of soils are key factors in selecting borrow materials for backfill or levee construction.

Site investigations for soils include surface and subsurface investigations. Surface investigations can identify evidence of landslides, areas affected by erosion or scour, and accessibility for equipment needed for subsurface testing and construction. Surface investigations can also help identify the suitability or unsuitability of particular foundation styles based on the past performance of existing structures. Subsurface exploration provides invaluable data on soils at and below grade. The data are both qualitative (e.g., soil classification) and quantitative (e.g., bearing capacity). Although some aspects of subsurface exploration are discussed here, subsurface exploration is too complicated and site-dependent to be covered fully in one document. Consulting with geotechnical engineers familiar with the site is strongly recommended.

If unsure of local soil conditions, obtain a copy of the U.S. Department of Agriculture, NRCS *Soil Survey* of the general area. This survey provides valuable information needed to conduct a preliminary evaluation of the soil properties, including:

- type, location, and description of soil types;
- use and management of the soil types; and
- engineering and physical properties, including plasticity indexes, permeability, shrink/swell potential, erosion factors, potential for frost action, and other information.



### NOTE

The physical properties of soil are critical to the design, suitability, and overall stability of floodproofing measures. Therefore, the designer should consult a geotechnical engineer if the soil properties at a site do not support the use of the chosen retrofitting method. A geotechnical engineer should also be consulted for any information that cannot be obtained from the *Soil Survey* or the local office of the NRCS.

This information can be compiled using Figure 4-22 to enable the designer to determine the suitability of the specific soil type to support the various retrofitting methods. It is important to note that, while the soil properties may not be optimum for specific retrofitting methods, facilities can often be designed to overcome soil deficiencies.

Geotechnical Considerations Decision Matrix								
Considerations	Floodproofing Measures							
								
<b>Lateral Soil Pressure</b>								
High								
Moderate								
Low								
<b>Bearing Capacity</b>								
High								
Moderate								
Low								
<b>Potential for Scour</b>								
High								
Moderate								
Low								
<b>Shrink/ Swell Potential</b>								
High								
Moderate								
Low								
<b>Potential Frost Action</b>								
High								
Moderate								
Low								
<b>Permeability</b>								
High								
Moderate								
Low								

Instructions: This matrix is designed to help the designer identify situations where soil conditions are unsuitable when applied to certain retrofitting measures, therefore eliminating infeasible measures. It is not intended to select the most suitable alternative. Instructions for use of this matrix follow:

1. Circle the appropriate description for each of the soil properties.
2. Use the NRCS *Soil Survey*, information from this and other reference books, and engineering judgment to determine which methods are Suitable (S) / Not Suitable (NS) for each soil property. Enter S or NS in each box.
3. Review the completed matrix and eliminate any retrofitting measures that are clearly unsuitable for the existing soil conditions.

Figure 4-22. Geotechnical Considerations Decision Matrix

The following sections begin a discussion of the various soil properties, providing the information necessary to fill out the Geotechnical Considerations Decision Matrix (Figure 4-22) and to understand the relationship between these soil properties and retrofitting measures.

## 4.2.1 Allowable Bearing Capacity

The weight of the structure, along with the weight of backfilled soil (if present), creates a vertical pressure under the footing that must be resisted by the soil. The term “allowable bearing pressure” refers to the maximum unit load that can be placed on a soil deposit without causing excessive deformation, shear failure, or consolidation of the underlying soil.

Bearing capacity has a direct effect on the design of shallow foundations. Soils with lower bearing capacities require proportionately larger foundations to effectively distribute gravity loads to the supporting soils. For deep foundations, like piles, bearing capacity has less effect on the ability of the foundation to support gravity loads because most of the resistance to gravity loads is developed by shear forces along the pile.

Bearing capacity is generally measured in pounds per square foot ( $\text{lb}/\text{ft}^2$ ) and occasionally in tons per square foot. Soil bearing capacity typically ranges from 1,000  $\text{lb}/\text{ft}^2$  (relatively weak soils) to more than 10,000  $\text{lb}/\text{ft}^2$  (bedrock). The allowable bearing capacity is the ultimate bearing capacity divided by an appropriate factor of safety. The factor of safety depends on whether the soils have been tested. Soil-bearing-capacity testing will result in detailed soil characteristics producing a reasonable and accurate factor of safety. An appropriate factor of safety between 2 and 3 should be used if soil testing has not been completed. See Equation 4-16.

Table 4-8 presents estimated allowable bearing capacities for various soil types to be used for preliminary sizing of footings only. The actual allowable soil bearing capacity should be determined by a soils engineer. Most local building codes specify an allowable bearing capacity to be utilized in design if the soil properties have not been specifically determined.



### CROSS REFERENCE

An approach developed by FEMA during the elevation of substantially damaged homes in Florida and the Midwest is to reuse the existing footings, if allowed by code. Refer to FEMA 347, *Above the Flood: Elevating Your Floodprone House* (FEMA, 2000a) for details on elevation of structures.



### EQUATION 4-16: ALLOWABLE BEARING CAPACITY

$$Q_{BC} = \frac{Q_u}{FS} \quad (\text{Eq. 4-16})$$

where:

$Q_{BC}$  = allowable bearing capacity ( $\text{lb}/\text{ft}^2$ )

$Q_u$  = ultimate bearing capacity ( $\text{lb}/\text{ft}^2$ )

$FS$  = factor of safety (as prescribed by code)

Table 4-8. Typical Allowable Bearing Capacity by Soil Type Shown in Table 4-4

Soil Type (Symbol)	Allowable Bearing Capacity (lb/ft <sup>2</sup> )
Clay, Soft (CL, CH)	600 to 1,200
Clay, Firm (CL, CH)	1,500 to 2,500
Clay, Stiff (CL, CH)	3,000 to 4,500
Loose Sand, Wet (SP, SW, SM)	800 to 1,600
Firm Sand, Wet (SP, SW, SM, SC)	1,600 to 3,500
Gravel (GW, GP, GM, GC)	2,700 to 3,000

Once the allowable bearing capacity is determined by the soils engineer or a conservative estimate prescribed by code is made, the designer can determine the capacity of the existing foundation to support the expected loads. Depending on the outcome of that evaluation, the designer may need to supplement the existing footing to support the expected loading condition (i.e., keep the actual bearing pressure below the allowable bearing pressure of the soil) as a result of the retrofitting project.

The ability of soils to bear loads, usually expressed as shearing resistance, is a function of many complex factors, including some that are site-specific. A very significant factor affecting shearing resistance is the presence and movement of water within the soil. Under conditions of submergence, some shearing resistance may decrease due to the buoyancy effect of the interstitial water or, in the case of cohesive soils, to physical or chemical changes brought about in clay minerals.

While there are many possible site-specific effects of saturation on soil types, some classes of soil can be identified that have generally low shearing resistances under most conditions of saturation. These include:

- fine, silty sands of low density that in some localities may suddenly compact when loaded or shaken, resulting in a phenomenon known as liquefaction;
- sand or fine gravel, in which the hydraulic pressure of upward-moving water within the soil equals the weight of the soil, causing the soil to lose its shear strength and become “quicksand,” which will not support loads at the surface; and
- soils below the water table that have lower bearing capacity than the same soils above the water table.

Other types of saturated soils may also have low shearing resistances under loads, depending on numerous site-specific factors such as slope, hydraulic head, gradient stratigraphic relationships, internal structures, and density. Generally, the soils noted above should not be considered suitable for structural support or backfill for retrofitting and, when they are known to be present, a soils engineer should be consulted for site-specific solutions.



#### NOTE

Certain types of soil – loose sands and soft clays (SP, SW, SM, SC, CL, CH) exhibit very poor bearing capacities when saturated; therefore, foundation, floodwall, and levee applications in those conditions would not be feasible without special treatment.



#### WARNING

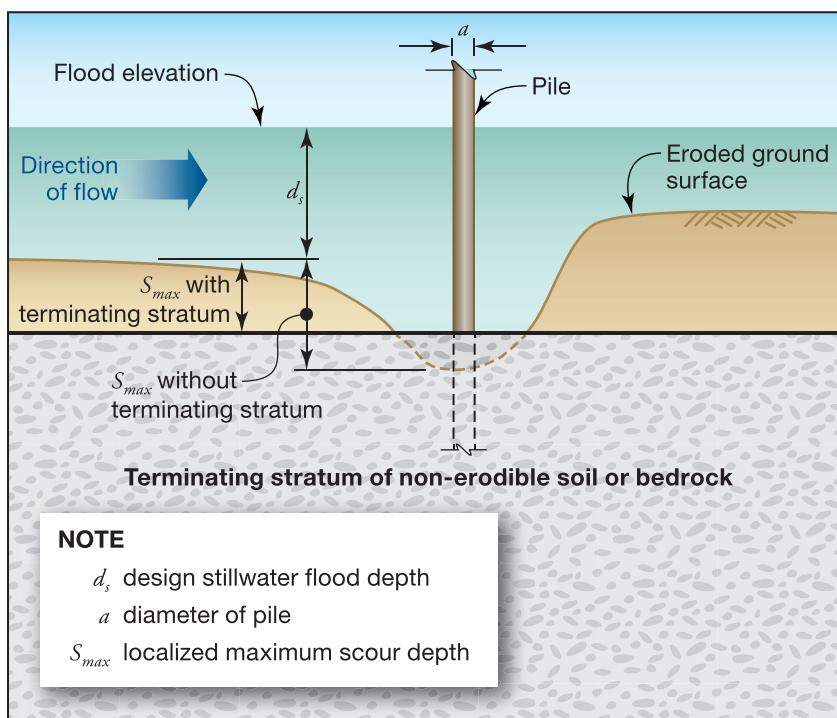
Attempts to construct water- or saturated soil-retaining/resisting structures without a thorough understanding of soil mechanics and analysis of on-site soils can result in expensive mistakes and project failure.

### 4.2.2 Scour Potential

Erosion of fill embankments, levees, or berms depends on the velocity, flow direction, and duration of exposure. Scour is localized erosion caused by the entrainment of soil or sediment around flow obstructions, often resulting from flow acceleration and changing flow patterns due to flow constriction. Where flow impinging on a structure is affected by diversion and constriction due to nearby structures or other obstructions, flow conditions estimated for the calculation of depths of scour should be evaluated by a qualified engineer.

The effects of flood loads on buildings can be exacerbated by flood-induced erosion and localized scour and by long-term erosion, all of which can lower the ground surface around foundation elements and cause the loss of load-bearing capacity and loss of resistance to lateral and uplift loads. This can render structural retrofitting and resistive designs ineffective, possibly resulting in failure. Figures 4-23 and 4-24 illustrate scour at open foundation systems and ground level buildings.

**Figure 4-23. Localized scour at piers, posts, and piles**



Maximum potential scour is critical in designing an elevated foundation system to ensure that failure during and after flooding does not occur due to any loss in bearing capacity or anchoring resistance around the piers, posts, or piles. If a pier, post, or pile was not designed to withstand a maximum potential scour, and was exposed to scour from a flood event, the column will be subjected to loading in a condition it was not designed for, which may result in a failure of the foundation. If a pier, post, or pile were to have 4 feet of scour around its base, and the structural element was designed to have a depth of 5 feet, the point of fixity (depth into the ground where foundation is assumed fixed against rotation) would decrease significantly, and the flood depth at the column would increase significantly.

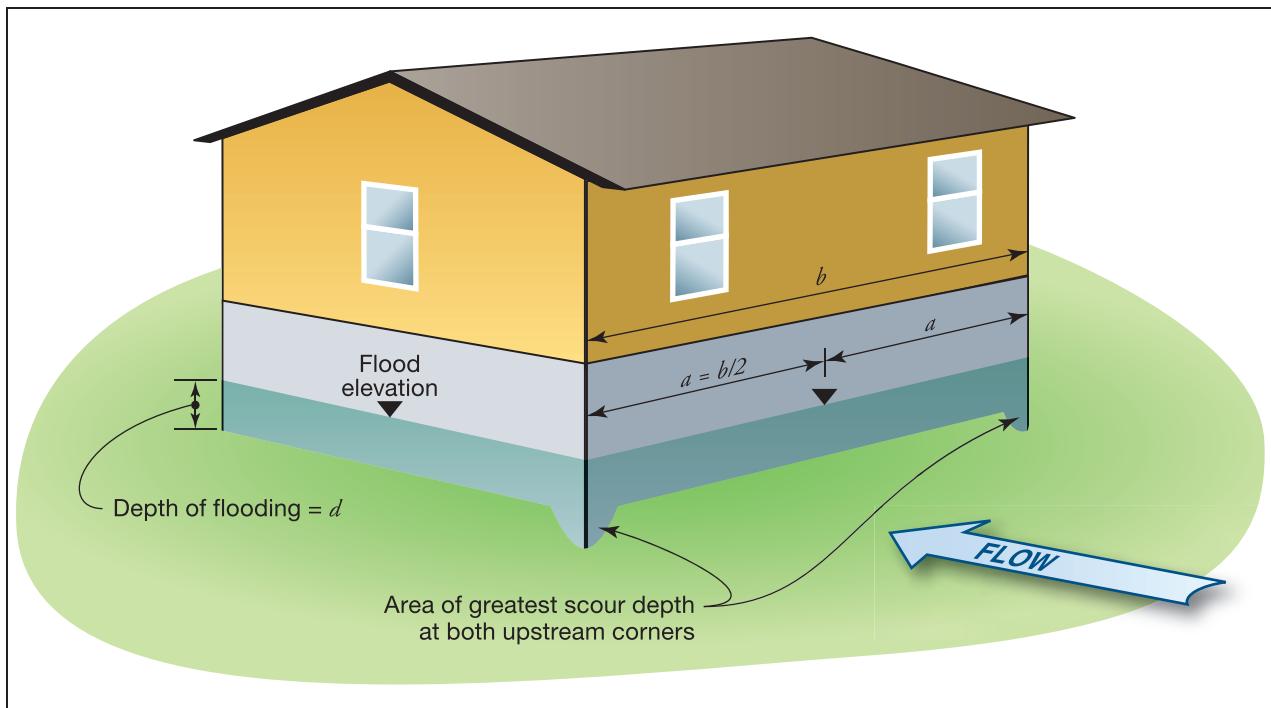


Figure 4-24. Scour action on a ground level building

The potential for foundation scour is a complex problem. Granular and other consolidated soils in which the individual particles are not cemented to one another are subject to scour, erosion, and transport by the force of moving water. The greater the velocity or turbulence of the moving water, the greater the scour potential. Soils that contain sufficient proportions of clay to be described as compact are more resistant to scour than the same grain sizes without clay as an intergranular bond. Likewise, soils with angular particle shapes tend to lock in place and resist scour forces.



#### NOTE

Resistance to scouring increases with clay content and/or the introduction of bonding agents, which help bond the internal particles of a soil together.

Shallow foundations in areas subject to flood velocity flow may be subject to scour and appropriate safeguards should be undertaken. These safeguards may include the use of different, more erosion-resistant soils, deeper foundations, surface armoring of the foundation and adjacent areas, and the use of piles or other foundations that present less of an obstruction to floodwater.

The calculation for estimating maximum potential scour depth at an elevated or ground-level foundation member (Equation 4-19) is based upon the foundation (or foundation member) shape and width, as well as the water velocity and depth, and type of soil.

Where elevation on fill is the primary retrofitting measure, embankments must be protected against erosion and scour. Scour at the embankment toe may be calculated as shown in Equation 4-17.



### EQUATION 4-17: MAXIMUM POTENTIAL SCOUR AT EMBANKMENT TOE

$$S_{max} = d \left[ 1.1 \left( \frac{a}{d} \right)^{0.4} \left( \frac{V}{(gd)^{0.5}} \right)^{0.33} \right] \quad (\text{Eq. 4-17})$$

where:

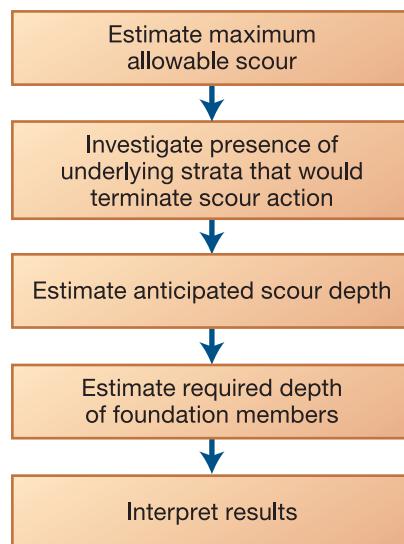
- $S_{max}$  = maximum potential depth of scour hole (ft)
- $d$  = depth of flow upstream of structure (ft)
- $a$  = diameter of pier, post, or pile or half the frontal length of the blockage (ft)
- $V$  = velocity of flow approaching the structure (ft/sec)
- $g$  = acceleration of gravity (equal to 32.2 ft/sec)

#### NOTE

The factor “ $a$ ” in Equation 4-17 is the diameter of an open foundation member or half of the width of the solid foundation perpendicular to flood flow.

The maximum potential scour depth predicted by the following equation represents a maximum depth that could be achieved if the soil material were of a nature that could be displaced by the water’s action. However, in many cases, a stronger underlying stratum will terminate the scour at a more shallow elevation. Figure 4-25 illustrates the process of determining the potential scour depth affecting a foundation system.

**Figure 4-25. Process for estimating potential scour depth**



#### WARNING

The scour information presented is the best available; however, there is not a general consensus within the scientific community that these scour equations are valid. Research continues into this area.

**Step 1:** Estimate maximum allowable scour. The scour depth at square and circular pier, post, and pile foundation members can be calculated as shown in Equation 4-18.

**EQUATION 4-18: LOCALIZED SCOUR AROUND VERTICAL PILE**

$$S_{max} = 2.2a$$

(Eq. 4-18)

where:

$S_{max}$  = maximum potential depth of scour hole (ft)

$a$  = diameter of a round foundation element, or the maximum diagonal cross section dimension for a rectangular element (ft)

**NOTE**

Equation 4-18 can also be used to approximate local scour beneath grade beams – set “ $a$ ” equal to the depth (vertical thickness) of the grade beam.

Localized scour around vertical walls and enclosed areas (e.g., typical Zone A construction) can be greater than that around vertical piles and should be calculated as shown in Equation 4-19.

**NOTE**

Scour depths estimated with Equation 4-19 can be unrealistically high for coastal areas and should be capped at 10 feet of localized scour.

**EQUATION 4-19: LOCALIZED SCOUR AROUND VERTICAL ENCLOSURE**

$$S_{max} = d_s \left[ 2.2 \left( \frac{a}{d_s} \right)^{0.65} \left( \frac{V}{(gd_s)^{0.5}} \right)^{0.43} \right] K \quad (\text{Eq. 4-19})$$

where:

$S_{max}$  = maximum potential depth of scour hole (ft)

$d_s$  = design stillwater flood depth upstream of the structure (ft)

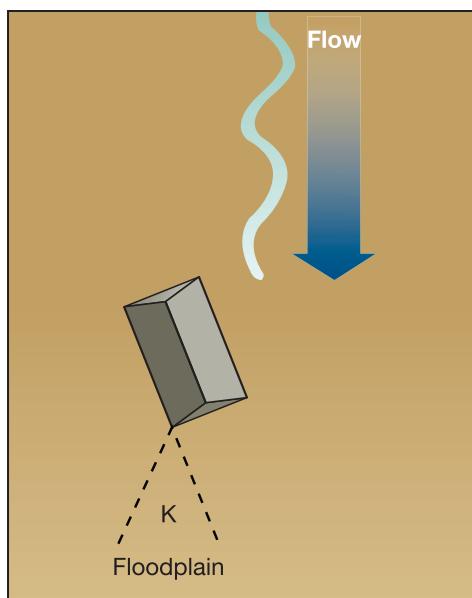
$a$  = diameter of a round foundation element, or the maximum diagonal cross section dimension for a rectangular element (ft)

$V$  = velocity of flow approaching the structure (ft/sec)

$g$  = acceleration of gravity (equal to 32.2 ft/sec<sup>2</sup>)

$K$  = factor applied for flow angle of attack (see Figure 4-26)

Figure 4-26.  
Flow Angle of Attack



The above scour equation applies to average soil conditions (2,000–3,000 lb/ft<sup>2</sup> bearing capacity). Average soil conditions would include gravels (GW, GP, GM, and GC), sands (SW, SP, SM, and SC), and silts and clays (ML, CL, MH, and CH). For loose sand and hard clay, the maximum scour values may be increased and decreased, respectively, to reflect their lower and higher bearing capacities. However, the assistance of a soils engineer should always be sought when making this adjustment, computing scour depths, and/or designing foundations subject to scour effects.

If a wall or foundation member is oriented at an angle to the direction of flow, a multiplying factor,  $K$ , can be applied to the scour depth to account for the resulting increase in scour as presented in Table 4-9.

Table 4-9. Scour Factor for Flow Angle of Attack,  $K$

Angle of Attack	Length to Width Ratio of Structural Member in Flow			
	4	8	12	16
0	1	1	1	1
15	1.15	2	2.5	3
30	2	2.5	3.5	4.5
45	2.5	3.5	4.5	5
60	2.5	3.5	4.5	6

**Step 2:** Investigate underlying soil strata. Once the maximum potential scour depth has been established, the designer should investigate the underlying soil strata at the site to determine if the underlying soil is of sufficient strength to terminate scour activities. Information from the NRCS *Soil Survey* may be used to make this assessment (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>).



**NOTE**

The U.S. Department of Transportation recommends a factor of safety of 1.5 for predicting building scour depth.

Figure 4-27 illustrates a scour-terminating stratum. If an underlying terminating stratum does not exist at the site, the maximum potential scour estimate will become the anticipated scour depth. However, if an underlying terminating stratum exists, the maximum potential scour depth will be modified to reflect this condition, as shown in Step 3.

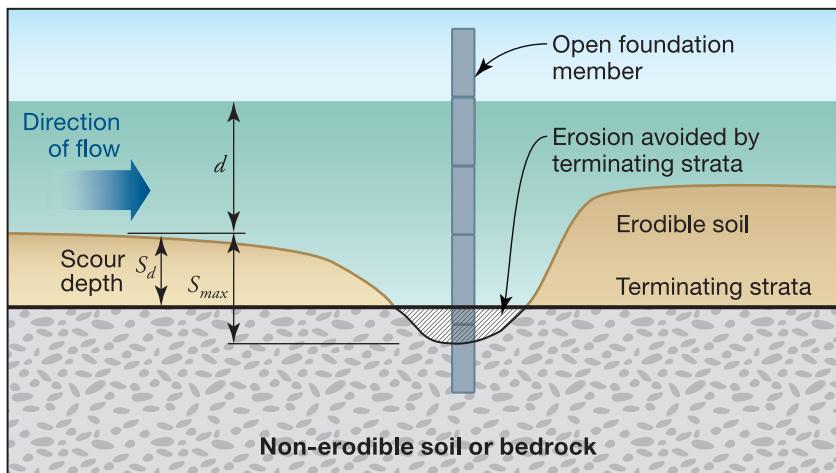


Figure 4-27.  
Terminating stratum

**Step 3:** Estimate anticipated scour depth. Based on the results of Step 2, the designer will determine the anticipated scour depth to be used in determining the depth to which the foundation element must be placed to resist scour effects. If a terminating stratum exists, the expected scour would stop at the depth at which this stratum starts, and the distance from this point to the surface is considered to be the potential scour depth, ( $S_d$ ). If no terminating stratum exists, the maximum potential scour ( $S_{max}$ ) computed earlier becomes the  $S_d$ .

**Step 4:** Estimate required depth of foundation members. Scour will increase the height above grade of the vertical member, since the grade level would be lowered due to erosion and scour (see Figure 4-28). As this occurs, the depth of burial ( $D_b$ ) of the vertical foundation member also decreases an identical distance. This can result in a foundation failure because the loss of supporting soils would change the assumed conditions

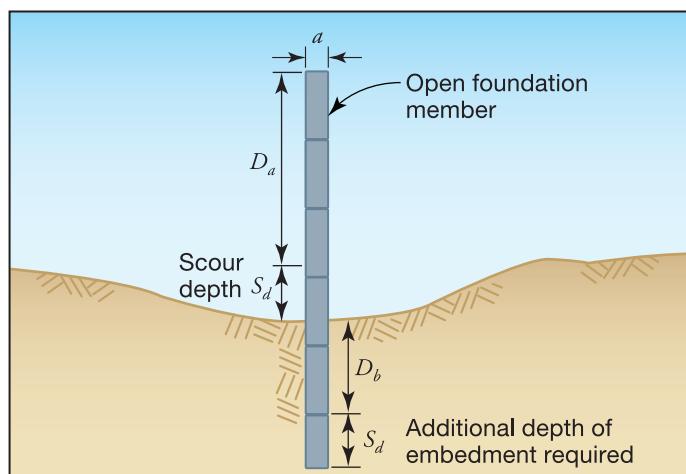


Figure 4-28.  
Additional embedment for foundation member

under which the elevated foundation system was designed. To account for this, the vertical foundation member depth used for the purpose of determining an acceptable design must be increased by the amount of  $S_d$ .

**Step 5:** Interpret results. Foundations, footings, and any supporting members should be protected at least to the anticipated scour depth. If the structural member cannot be buried deeper than the anticipated scour depth, the member should be protected from scour by placing rip-rap (or other erosion-resistant material) around the member, or by diverting flow around the foundation member with grading modification or construction of an independent barrier (floodwall or levee). For situations in which the anticipated scour depth is minimal, the designer should use engineering judgment to determine the required protective measures. Whenever the designer is unsure of the appropriate action, a qualified geotechnical engineer should be consulted.



#### CROSS REFERENCE

Local building codes generally specify the depth of the zone of maximum frost penetration. In the absence of guidance in the local building code, refer to the NWS or the NRCS *Soil Survey*.

#### 4.2.2.1 Frost Zone Considerations

Because certain soils under specific conditions expand upon freezing, the retrofitting designer must consider the frost heave impact in the design of shallow foundations. When frost-susceptible soils are in contact with moisture and subjected to freezing temperatures, they can imbibe water and undergo very large expansions (both horizontally and vertically). Such heave or expansion exerts forces strong enough to move and/or crack adjacent structures (foundations, footings, etc.). The thawing of frozen soil usually proceeds from the top downward. The melted water cannot drain into the frozen subsoil, and thus becomes trapped, possibly weakening the soil. Normally, footing movements caused by frost action can be avoided by placing part of a foundation below the zone of maximum frost penetration.

#### 4.2.2.2 Permeability

A principal concern for the construction of retrofitting measures such as floodwalls and levees are the properties of the proposed fill material and/or underlying soils. These properties will have an impact on stability and will determine the need for seepage and other drainage control measures.

Since most retrofitting projects are constructed using locally available materials, it is possible that homogenous and impermeable materials will not be available to construct embankments and/or backfill floodwalls and foundations. Therefore, it is essential that the designer determine the physical properties of the underlying and borrowed soils.

Where compacted soils are highly permeable (i.e., sandy soils), significant seepage through an embankment and under a floodwall foundation can occur. Various soil types and their permeabilities are provided in Table 4-10.



#### NOTE

While impervious cutoffs such as compacted impervious core, sheet pile metal curtains, or cementitious grout curtains can be designed to reduce or eliminate seepage, their costs are beyond the financial capabilities of most homeowners. However, several lower-cost measures to control seepage include pervious trenches, pressure relief wells, drainage blankets, and drainage toes.

Table 4-10. Typical Values of Coefficient of Permeability  $K$  for Soils

Soil Type and Description	Symbol	Typical Coefficient of Permeability (ft/day)
Well-graded clean gravels, gravel-sand mixtures	GW	75
Poorly graded clean gravels, gravel-sand-silt	GP	180
Silty gravels, poorly graded gravel-sand-silt	GM	$1.5 \times 10^{-3}$
Clayey gravels, poorly graded gravel-sand-clay	GC	$1.5 \times 10^{-4}$
Well-graded clean sands, gravelly sands	SW	4.0
Poorly graded clean sands, sand-gravel mix	SP	4.0
Silty sands, poorly graded sand-silt mix	SM	$2.0 \times 10^{-2}$
Sand-silt clay mix with slightly plastic fines	SM-SC	$3.0 \times 10^{-3}$
Clayey sands, poorly graded sand-clay mix	SC	$7.5 \times 10^{-4}$
Inorganic silts and clayey silts	ML	$1.5 \times 10^{-3}$
Mixture of inorganic silt and clay	ML-CL	$3.0 \times 10^{-4}$
Inorganic clays of low to medium plasticity	CL	$1.5 \times 10^{-4}$
Organic silt and silt-clays, low plasticity	OL	Quite Variable
Inorganic clayey silts, elastic silts	MH	$1.5 \times 10^{-4}$
Inorganic clays of high plasticity	CH	$1.5 \times 10^{-2}$
Organic clays and silty clays	OH	Quite Variable

1 cm/sec = 24,680 ft/day = 2 ft/min 1 ft/year =  $1 \times 10^{-6}$  cm/sec

The coefficient of permeability provides an estimate of ability of a specific soil to transmit seepage. It can be used (Equation 4-20) to make a rough approximation of the amount of foundation underseepage. Equation 4-20 may be used in lieu of Equation 4-14 for large levee/floodwall applications when the coefficient of permeability for the specific site soil is known.



#### EQUATION 4-20: VOLUME OF SEEPAGE

$$Q = ki_{hg}A \quad (\text{Eq. 4-20})$$

where:

$Q$  = the discharge in a given unit of time (ft<sup>3</sup>/unit of time)

$k$  = coefficient of permeability for the soil foundation (ft/unit of time)

$i_{hg}$  = hydraulic gradient ( $h/L$ ) which is the difference in head between two points divided by the length of path between two points

$A$  = gross area of the foundation through which flow takes place (ft<sup>2</sup>)



#### WARNING

It is very important that the designer keep the units in this equation consistent. The results of Equation 4-20 depend on the homogeneity of the foundation and the accuracy of the coefficient of permeability. The results should be considered as an indication only of the order of magnitude of seepage through a foundation.

#### 4.2.2.3 Shrink-Swell Potential



##### NOTE

Soils that exhibit severe shrinking-swell characteristics include clays and clay mixtures such as Soil Types CH, CL, ML-CL, SC, and MH.

As mentioned earlier in this chapter, due to the continual shrink and swell of expansive soil backfills and the variation of their water content, the stability and elevation of these soils and overlaying soil layers may vary considerably. These characteristics make the use of these soils in engineering/construction applications imprudent. The NRCS *Soil Survey* for a specific area offers guidance on the shrink-swell potential of each soil group in the area as well as guidance on the suitability of their use in a variety of applications, including engineering, construction, and water retention activities. Table 4-10 provides typical values for the coefficient of permeability (K) for soils. If the designer is unsure of the type or nature of soil at the specific site, a qualified soils engineer should be contacted for assistance.

The physical soil parameters at the retrofitting and potential borrow sites are an important design consideration. Homeowners and designers should clearly understand that the advice of a professional soils engineer is vital when planning retrofitting measures that are not ideal for the physical soil parameters at a given site.

Chapter 5 provides guidance on how to apply the anticipated loads and calculate load combinations developed in this chapter to the existing site/structure. Examples for calculating flood loads, other anticipated loads, and load combinations can be found in Appendix C.

**TOWN OF LYONS**  
**FLOOD PLAIN DEVELOPMENT PERMIT CHECKLIST**

A Property Address: \_\_\_\_\_

B Application Date:

B1	Returned to Application for More Information:	_____
B2	Updates Received:	_____
B3	Returned to Application for More Information:	_____
B4	Updates Received:	_____
B5	Returned to Application for More Information:	_____
B6	Updates Received:	_____
B7	Complete Application Received:	_____

C Completed Flood Plain Development Application? \_\_\_\_\_

D Is this a single application for all proposed work? \_\_\_\_\_  
 If no, how many are anticipated: \_\_\_\_\_

E Is this home substantially damaged or not?

E1	Will the applicant appeal this determination?	_____
E2	If a phased application, will the total value exceed 50%?	_____

F Project Schedule \_\_\_\_\_

G Properly completed elevation Certificate from Licensed Land Surveyor \_\_\_\_\_

H Narrative of Proposal \_\_\_\_\_

I Cost Estimate for Proposed Work

I1	Contractors estimate?	_____
I2	Insurance proof of loss?	_____
I3	Owner provided?	_____
I4	If volunteer labor or donations included, Town will need to augment cost estimate to get complete value	_____

J Site Plan \_\_\_\_\_

- J1 Maximum Size 24"x36 and to scale (5, 10, 20)
- J2 Project address and lot/block number, north arrow
- J3 Name of design firm and contact information
- J4 Property lines with bearings and distances and easements
- J5 Existing and proposed building (may be two plans)
- J6 Dimensions of building(s) and setbacks to property lines
- J7 Location of existing and proposed utility services
- J8 Location of existing and proposed driveways, patios, decks and walks
- J9 Flood plain designation (ie' Zone X) and limits of flood plain/way
- J10 Existing and proposed contours and spot elevations with grade

**TOWN OF LYONS**  
**FLOOD PLAIN DEVELOPMENT PERMIT CHECKLIST**

**A** Property Address: \_\_\_\_\_

changes, 1' maximum interval

J11 Locations of existing and proposed fences or retaining walls

J12 Location of existign and proposed large landscape features

**K** Engineering and Architecture Plans \_\_\_\_\_

K1 Foundation plans including cross sections at all representative locations, graphical and numeric depiction of flood elevations, show all flood vents, backfill elevations, calculations, ASCE-24

K2 Elevated deck plans including plans for steps and ASCE-24 certification, including cross sections showing limits of flood protection materials, methods to secure decks without damaging

K3 Plans for patio covers, deck covers, carports and other items projected from home on elevations of all building sides with base flood elevations

**L** Engineering Study (no rise) for proposal \_\_\_\_\_

L1 Effective FIRM and Flood Insurance Study

L2 Topographic Maps

L3 Construction Drawings

L4 Hydrologic Models (HEC-1, HEC-2, HEC-HMS)

L5 Hydraulic Models (HEC-RAS)

L6 Annotated FIRM

L7 Narrative With References

L8 Certification by a Professional Engineer

**M** Is there a CLOMR/LOMR going to be needed: \_\_\_\_\_

**N** Is there an existing flood plain development permit: \_\_\_\_\_

# TOWN OF LYONS

## ADMINISTRATIVE DIRECTIVE NO. 2015-3

### Guidance Document for Re-Building in the Flood Way – Pre FIRM Homes

EFFECTIVE DATE: October 20, 2015 *VS*

#### I. AUTHORITY

Article 18-13 of Lyons Municipal Code; Divisions 1 – 3 (Flood Damage Prevention)

#### II. SCOPE

Town of Lyons property owners who are re-building within the regulatory flood way of the Town of Lyons and have pre-FIRM constructed homes: The following guidance applies to projects that are located within a regulatory floodway or in a floodplain with BFEs where a floodway has not been defined, and therefore, may require a no-rise analysis, CLOMR or LOMR.

#### III. PURPOSE

Each case must be analyzed based on its own particular situation. While there may be some similarities, there will also be some differences as the determination is made on the "system" and not necessarily the individual situation.

A system is the cross section of the flood plain. Situations that could affect the system include:

1. Changes to the flood plain cross section including avulsion, narrowing and deposit of materials
2. Post-FIRM changes not properly permitted
3. Post-flood activities resulting in non-approved construction and fill through the flood plain cross section

#### IV. DIRECTIVE

If it's determined that the system is a candidate to be restored to effective conditions, then the following steps will be necessary if the applicants will want to re-build:

1. A detailed improvement survey plat must be completed of the pre-flood structure extents. This data must be collected by a licensed qualified land surveyor in the State of Colorado. The LSP will determine the extent of the structure. As part of getting this survey, collect topographical data to determine the extent of other elements of improvements such as finish grades at foundations, flood vents and other flood plain improvements. Additional data may also be required depending on the individual location and proposal.
2. Restoration work must be within the extents of the LSP mapped structure. For the purposes of this analysis, the structure is the fully enclosed area of the home by walls. Patios or steps may only be considered if they remained during the flood and any new improvements overlapping patios or steps may only be done so to the vertical elevation

of the patios or steps and not above. In other words, if your pre-flood stairs were two risers high, then you could only replace to two-high within the extents of the pre-flood system.

3. The re-construction must meet the applicable sections of the Town of Lyons Flood Damage Prevention Code. A flood plain development permit will be required. The applicants are strongly encouraged to seek out qualified experienced professional consultant help to navigate this process. Obtaining this assistance will help you successfully move through the process in a more timely manner and will help you understand the merits and benefits of proper flood plain and flood way design. It will also be very important to discuss your proposal with your flood insurance provider, should you have flood insurance.
4. The applicant may need to work with the Town and other private property owners to help restore the system to effective conditions in the area of the project. This could include obtaining permission to remove post-flood sediment from upland areas and within the creek, removal of debris, or other possibilities.

## **V. ADDITIONAL GUIDELINES**

. The recommendations listed here-in are based on guidance from the State. The State guidance could be interpreted in several ways and has not been tested at the Federal level. Building on piers or a combination of piers and enclosed foundation will further reduce impacts of the structure and lessen the likelihood of any recourse or ramifications in the future.

- Post-FIRM additions and amendments will not be considered unless they were properly permitted, designed and constructed.
- Consider rebuilding homes on piers or partially re-build on piers and enclosed foundation.
- If you are most interested in protecting your personal liability and value of your improvements, then you would want to complete a hydraulic analysis and have an Engineer issue a no-rise meeting common standards of the industry. This document would provide you with the greatest and most full proof assurance that you have met the flood plain standards.
- 

The original FIRM map for the Town of Lyons is effective August 1, 1980