Rapid Observation of Vulnerability and Estimation of Risk (ROVER), Version 2, User Guide

FEMA P-154 ROVER 2 / September 2014
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ROVER is based on the 2002 edition of the FEMA 154 report, Rapid Visual Screening of Buildings for Potential Seismic Hazards, A Handbook and the 2005 edition of the ATC-20-1 Field Manual: Postearthquake Safety Evaluation of Buildings. These methodologies have changed over time and may change in the future. The user is advised to consult with ATC or FEMA on the latest editions of the applicable methodologies. The ROVER software is provided on an "as is" basis. FEMA and ATC have made a good faith effort to rid the program of software defects and bugs. However, FEMA and ATC are not obligated to provide any maintenance, support, updates, enhancements, or modifications. FEMA and ATC may not be held liable to any party for any direct, indirect, special, incidental or consequential damages, including lost profits or downtime arising out of the use of this software, its documentation, or data obtained through the use of this software. FEMA and ATC will also not be held liable for any information input into the system by the user. The user should consult their legal counsel for any restrictions or additional security required by their organization for the data they will be imputing into the ROVER software. By downloading, installing, or using this program, the user acknowledges and understands the purpose and limitations of this software.

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Cover Illustration:  Assessor using mobile device superimposed on photo of a building undergoing seismic retrofit.
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The Federal Emergency Management Agency’s mission is to support citizens and local responders to protect, prepare for, respond to, recover from, and mitigate against all hazards. Following this mission and for those citizens and communities exposed to high earthquake risks, FEMA’s National Earthquake Hazard Reduction Program has taken the responsibility in assisting communities to assess their at-risk building stocks and to plan for appropriate mitigation measures. This second version of the mobile software Rapid Observation of Vulnerabilities and Estimation of Risks (ROVER) is developed as an information technology-based tool for screening and inventory of seismically vulnerable buildings in a rapid and cost effective manner.

There are several significant improvements incorporated in this version of the ROVER software. It is now a world-wide-web-based server software completely independent of the operating systems used by today’s smartphones and mobile computers. Users can access the system through any information device running a web browser. The software has been tested through several projects for its applicability across all software platforms and improved user interface. An included utility program helps to import any user developed initial building information into the server for easier project planning. In addition, a RedROVER add-on program allows the inventory data to be exported to HAZUS.

FEMA and the project officer wish to express the gratitude to the members of the ROVER development team and the Project Review Panel for their persistent effort to improve the tool and dedicated professional services to support the users. We are also delighted and encouraged to see many of the communities have begun to take advantage of this tool to assess their earthquake risks and plan for mitigation actions.

Federal Emergency Management Agency

This User Guide provides an overview of the ROVER 2 software suite and its capabilities, as well as details on how to use the software, including guidance for installation of the software, management of the process for executing the procedures, and use of the software in the field by FEMA 154 screeners and ATC-20 inspectors.

ROVER 2 is entirely browser based. The software works on Android, iPhone, iPad or any mobile device with a browser, so there is no need to download an application (app) onto your phone or tablet. This means you must have an active data connection, but 3G and 4G coverage is increasingly common. Version 2 adds unlimited photo upload capability for both the FEMA 154 and ATC-20 modules. The software also automatically accommodates screen size, enables geolocation by street address, and allows the assignment of named screeners and inspectors to new or existing sites.

ATC is indebted to the broad range of individuals who contributed to the development of the ROVER 2 software suite and this User Guide. These individuals consisted of Keith A. Porter (Lead Technical Consultant), Sidney Hellman (Software Consultant), Jack Lakes (IT Consultant), and the following software developers: Scott Hunter, Lina Kohandoust, Hal Schechner, and Ron Bakerian. In addition, ATC is pleased to acknowledge the input and guidance provided by the Project Review Panel, which consisted of Jim Barnes, Ronald T. Eguchi, Melinda Gibson, John Price...
(ATC Board representative), Christine Theodoropoulos, Heidi Tremayne, and Barry Welliver.

ATC also gratefully acknowledges the input, support, and guidance provided by Mai (Mike) Tong (FEMA Project Monitor), the foresight of Cathleen Carlisle, who served as the FEMA Project Monitor during the initial development of ROVER, and the report production efforts of Amber Houchen.

The affiliations of all of the above cited individuals are provided in the list of Project Participants.

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# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>iii</td>
</tr>
<tr>
<td>Preface</td>
<td>v</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xi</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xv</td>
</tr>
</tbody>
</table>

## 1. Introducing the ROVER 2 Application Suite | 1-1

1.1 About this Guide | 1-1
1.1.1 Who Should Use this Guide? | 1-1
1.1.2 Additional Resources and Updates | 1-2

1.2 Benefits of the ROVER 2 Application Suite | 1-2
1.2.1 ROVER 2 in the Disaster Cycle | 1-2
1.2.2 Module Integration to Meet Your Needs | 1-3
1.2.3 ROVER 2 Server Benefits | 1-5
1.2.4 RedROVER (Importing to the HAZUS-MH Advanced Engineering Building Module (AEBM)) | 1-11
1.2.5 ShakeCast ROVER Edition | 1-12

1.3 Getting Started: The ROVER-Ready Process | 1-13
1.3.1 Do You Need ROVER 2? | 1-13
1.3.2 Being ROVER-Ready | 1-13
1.3.3 Optional Ways to Go Further | 1-15

1.4 Your Plan: The Big Picture | 1-15
1.4.1 Identify the Team | 1-16
1.4.2 Get Trained | 1-17
1.4.3 Compile the Project Plan | 1-17
1.4.4 Planning for Hardware and Software Needs | 1-18
1.4.5 Deploy and Validate ROVER 2 | 1-19
1.4.6 Rollout ROVER 2 | 1-20

1.5 FEMA 154 Second Edition URM Scoring Issues for Moderate- and Low-Seismicity Regions | 1-20

## 2. Deploying and Validating the ROVER 2 Application Suite | 2-1

2.1 Preparing for a ROVER 2 Application Suite Installation | 2-1
2.1.1 Platform Architecture | 2-1
2.1.2 Understanding Installation and Options | 2-3
2.1.3 Determining Which Installation Type to Use | 2-4

2.2 Installing in a Windows Environment | 2-4
2.2.1 ROVER 2 Server Installation | 2-5
2.2.2 RedROVER Installation | 2-10
2.2.3 ROVERLoad Installation | 2-11
2.2.4 ShakeCast ROVER Edition Installation | 2-11

2.3 Confirm Installation | 2-11
3. **ROVER 2 Management Activities** .................................................. 3-1
   3.1 How to Start and Login to the ROVER 2 Server ...................... 3-1
      3.1.1 Locate the ROVER 2 Start Server Program .................. 3-1
      3.1.2 Start the ROVER 2 Server ........................................... 3-1
      3.1.3 Login to the ROVER 2 Server ..................................... 3-2
      3.1.4 Stop the ROVER 2 Server ........................................... 3-3
   3.2 Creating and Managing Accounts............................................. 3-4
      3.2.1 Two Systems with Similar Account Management .............. 3-4
      3.2.2 Add New Screener (or Inspector) ............................... 3-5
      3.2.3 User Account Role Assignment ................................. 3-7
      3.2.4 View List of Currently Active Screeners or Inspectors ... 3-8
      3.2.5 Edit Any Active Screener or Inspector ......................... 3-8
   3.3 Site Maintenance: FEMA 154 (Pre-Earthquake) ...................... 3-9
      3.3.1 Add a New Site: FEMA 154 (Pre-Earthquake) .............. 3-10
      3.3.2 View List of Active Sites: FEMA 154 (Pre-Earthquake) ... 3-10
      3.3.3 Assigning a Site to a User: FEMA 154 (Pre-Earthquake) ... 3-11
      3.3.4 Deleting a Site: FEMA 154 (Pre-Earthquake) .............. 3-12
      3.3.5 Worksheet Activities: FEMA 154 (Pre-Earthquake) ......... 3-13
   3.4 Site Maintenance: ATC-20 (Post-Earthquake) ....................... 3-13
      3.4.1 Add a New Site: ATC-20 (Post-Earthquake) ............... 3-13
      3.4.2 View List of Active Sites: ATC-20 (Post-Earthquake) ... 3-14
      3.4.3 Assigning a Site to a User: ATC-20 (Post-Earthquake) ... 3-15
      3.4.4 Deleting a Site: ATC-20 (Post-Earthquake) .............. 3-16
      3.4.5 Evaluation Activities: ATC-20 (Post-Earthquake) ...... 3-16
   3.5 RedROVER Module ............................................................... 3-16
      3.5.1 Checking the Correctness of Building Data .................. 3-18
      3.5.2 Configuring Building Data for Export to HAZUS-MH ...... 3-18
      3.5.3 Preparing the HAZUS-MH AEBM Database .................... 3-21
      3.5.4 Importing Data into HAZUS-MH AEBM ....................... 3-23
   3.6 ShakeCast ROVER Edition Module ....................................... 3-24

4. **FEMA 154 (Pre-Earthquake) Screener Activities** ....................... 4-1
   4.1 The FEMA 154 (Pre-Earthquake) Module .............................. 4-1
      4.1.1 Logging In ............................................................ 4-1
      4.1.2 System Selection .................................................. 4-2
      4.1.3 Main Menu ................................................................ 4-2
      4.1.4 View List of Active Sites: FEMA 154 (Pre-Earthquake) ... 4-2
      4.1.5 Modify Site Data .................................................. 4-3
      4.1.6 Add, Edit and View Worksheet .................................. 4-4
      4.1.7 Special Worksheet Features .................................... 4-5
   4.2 Best Practices for Screeners................................................. 4-7

5. **ATC-20 (Post-Earthquake) Inspector Activities** ..................... 5-1
   5.1 The ATC-20 (Post-Earthquake) Module ................................ 5-1
      5.1.1 Logging In ............................................................ 5-1
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.2</td>
<td>System Selection</td>
<td>5-2</td>
</tr>
<tr>
<td>5.1.3</td>
<td>Main Menu</td>
<td>5-2</td>
</tr>
<tr>
<td>5.1.4</td>
<td>View List of Active Sites: ATC-20 (Post-Earthquake)</td>
<td>5-2</td>
</tr>
<tr>
<td>5.1.5</td>
<td>Modify Site Data</td>
<td>5-3</td>
</tr>
<tr>
<td>5.1.6</td>
<td>View an Existing FEMA 154 Worksheet</td>
<td>5-4</td>
</tr>
<tr>
<td>5.1.7</td>
<td>Add, Edit Rapid Evaluation</td>
<td>5-4</td>
</tr>
<tr>
<td>5.1.8</td>
<td>Add, Edit Detailed Evaluation</td>
<td>5-6</td>
</tr>
<tr>
<td>5.1.9</td>
<td>Special Evaluation Form Features</td>
<td>5-9</td>
</tr>
<tr>
<td>5.2</td>
<td>Best Practices for Inspectors</td>
<td>5-9</td>
</tr>
<tr>
<td>Appendix A</td>
<td>Differences between FEMA 154 and ROVER</td>
<td>A-1</td>
</tr>
<tr>
<td>A.1</td>
<td>Site hazard</td>
<td>A-1</td>
</tr>
<tr>
<td>A.2</td>
<td>Site Soil</td>
<td>A-1</td>
</tr>
<tr>
<td>A.3</td>
<td>Negative Scores</td>
<td>A-2</td>
</tr>
<tr>
<td>Appendix B</td>
<td>FEMA 154 URM Scoring Issues</td>
<td>B-1</td>
</tr>
<tr>
<td>Appendix C</td>
<td>ROVERLoad (Importing Building Data into ROVER 2)</td>
<td>C-1</td>
</tr>
<tr>
<td>C.1</td>
<td>Introduction</td>
<td>C-1</td>
</tr>
<tr>
<td>C.2</td>
<td>Installing Python Software</td>
<td>C-1</td>
</tr>
<tr>
<td>C.3</td>
<td>Creating the Data File</td>
<td>C-2</td>
</tr>
<tr>
<td>C.4</td>
<td>Saving the Data File and the Python Import Script</td>
<td>C-4</td>
</tr>
<tr>
<td>C.5</td>
<td>Obtaining the URL and Credentials for the ROVER 2 Server</td>
<td>C-5</td>
</tr>
<tr>
<td>C.6</td>
<td>Importing your Data, Case 1: Using ROVER 2 Server on a Personal Computer</td>
<td>C-5</td>
</tr>
<tr>
<td>C.7</td>
<td>Importing your Data, Case 2: Using ROVER 2 Server on a Windows Server or Hosted by a Service Provider</td>
<td>C-11</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>D-1</td>
</tr>
<tr>
<td>Project Participants</td>
<td></td>
<td>E-1</td>
</tr>
</tbody>
</table>