

GRADD Hazard Mitigation Council

May 3, 2010 – Meeting Materials

GRADD Region Hazard Profile Worksheet					
Hazard	Magnitude	Frequency	Location	Impact	Hazard Risk Index Rating
Flooding	1 -25 Year Event 26 - 100 Year Event > 100 Year Event	High Moderate Low	Large Large Large	Limited Critical Catastrophic	1
Tornadoes	F0 F1 F2 F3 F4 F5	Very High High Moderate Moderate Low Very Low	Small Small Moderate Moderate Large Large	Limited Limited Critical Catastrophic Catastrophic Catastrophic	1
Severe Thunderstorms	Severe	Very High	Moderate	Critical	1
Severe Winter Storms	Severe	High	Large	Critical	2
Excessive Heat / Drought	Mild Moderate Severe	Moderate Moderate Low	Large Large Large	Limited Critical Catastrophic	2
Earthquakes	VI VII VIII	Moderate Low Low	Large Large Large	Limited Critical Catastrophic	1
Subsidence	Low	Low	Small	Limited	2
Dams / Levees					
Landslides					

Hazard Risk Index

Magnitude – The Fujita Scale served as the primary measure of tornado magnitude, while the Modified Mercalli Intensity Scale was used to measure the magnitude of earthquakes. For all other hazard types, a more general consideration of severity was used with a focus on maximum potential severity as appropriate.

Frequency – The annual probability of an event determines the frequency based on the following scale:

Very High	70 – 100 percent annual probability
High	40 – 70 percent annual probability
Moderate	10 – 40 percent annual probability
Low	1 – 10 percent annual probability
Very Low	Less than 1 percent annual probability

Location – Analysis of location is based on the extent of the GRADD area affected by the particular hazard according to the following scale:

Large	More than 50 percent of the GRADD area affected
Moderate	10 – 50 percent of the GRADD area affected
Low	Less than 10 percent of the GRADD area affected

Impact – The severity of the impact of a hazard is assessed based upon the following scale

Catastrophic	The possibility of multiple deaths and injuries More than 50 percent of the property damaged or destroyed Shutdown of facilities for possibly 30 days or more Possibility of relocation of critical facilities
Critical	The possibility of multiple injuries More than 25 percent of the property damaged or destroyed Shutdown of facilities for more than one week a week or more Possibility of relocation of critical facilities
Limited	Only minor injuries More than 10 percent of the property damaged or destroyed Shutdown of facilities for more than one day
Minor	Few injuries Minor property damage Minimal disruption to quality of life Temporary shutdown of facilities

GRADD Hazard Risk Levels

Location	Earthquake	Flood	Tornado	Severe Thunderstorm	Severe Winter Storm	Excessive Heat / Drought	Subsidence	Dams / Levees	Landslides
Daviess County	1	1	1	1	2	2	2		
Owensboro	1	1	1	1	2	2	3		
Whitesville	2	3	1	1	2	2	3		
Hancock County	3	1	1	1	2	2	3		
Hawesville	3	1	1	1	2	2	3		
Lewisport	3	1	1	1	2	2	3		
Henderson County	1	1	1	1	2	2	1		
Corydon	2	2	1	1	2	2	3		
Henderson	1	1	1	1	2	2	1		
Robards	2	3	1	1	2	2	3		
McLean County	2	1	1	1	2	2	3		
Calhoun	2	1	1	1	2	2	3		
Island	2	1	1	1	2	2	3		
Livermore	2	1	1	1	2	2	2		
Sacramento	2	2	1	1	2	2	3		
Ohio County	3	1	1	1	2	2	1		
Beaver Dam	2	1	1	1	2	2	3		
Centertown	3	3	1	1	2	2	2		
Fordsville	3	1	1	1	2	2	3		
Hartford	2	1	1	1	2	2	3		
McHenry	3	1	1	1	2	2	3		
Rockport	3	1	1	1	2	2	1		
Union County	1	1	1	1	2	2	1		
Morganfield	1	2	1	1	2	2	2		
Sturgis	1	1	1	1	2	2	1		
Uniontown	1	1	1	1	2	2	2		
Waverly	1	3	1	1	2	2	1		
Webster County	1	1	1	1	2	2	1		
Clay	1	1	1	1	2	2	1		
Dixon	1	2	1	1	2	2	3		
Providence	1	2	1	1	2	2	1		
Sebree	1	1	1	1	2	2	2		
Slaughters	1	1	1	1	2	2	3		
Wheatcroft	1	1	1	1	2	2	1		

High Risk

Moderate Risk

Low Risk

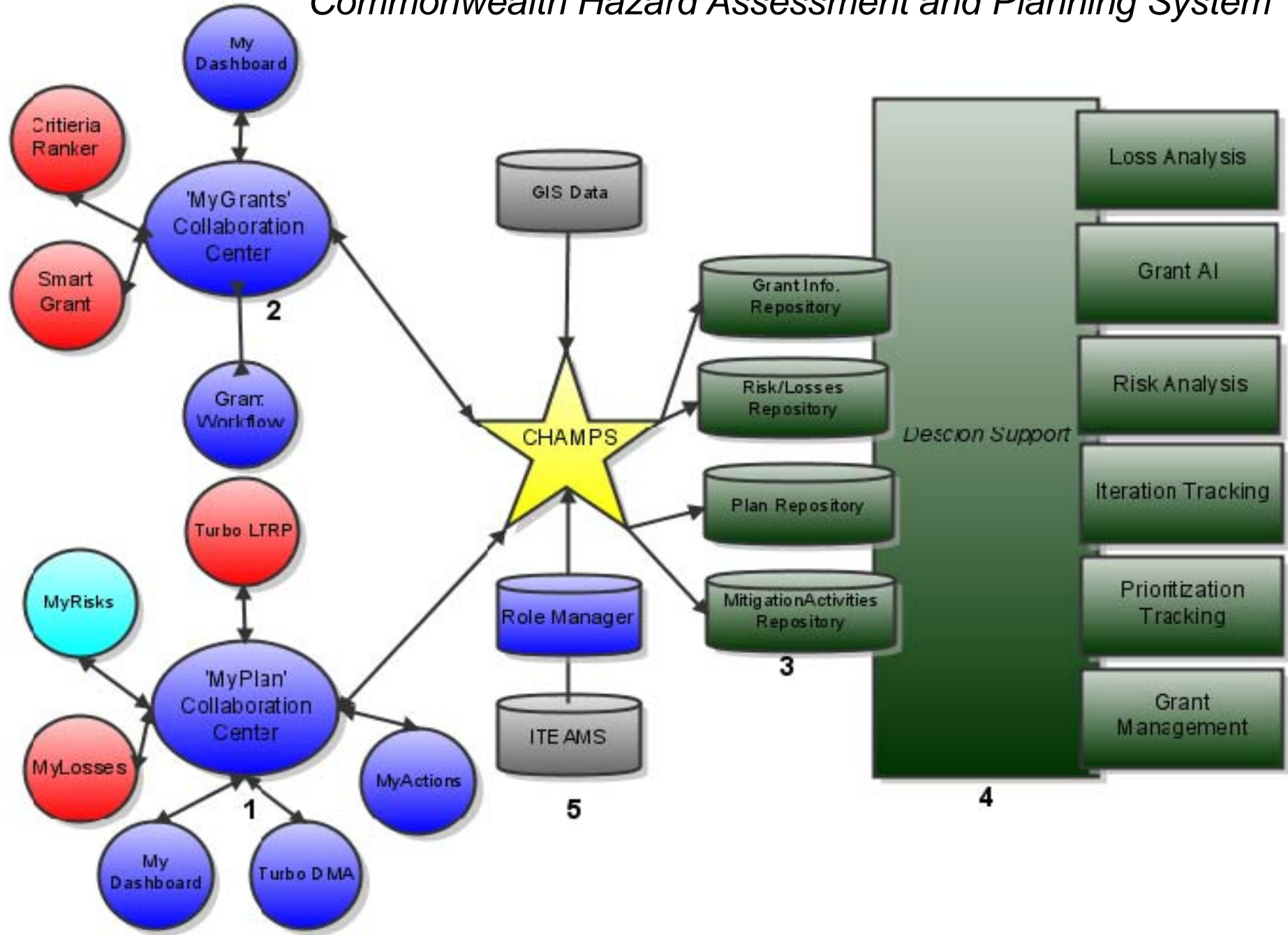
GRADD Hazard Mitigation Plan

Goals, Objectives, and Actions

- Goal 1: Promote Public Health and Safety
- Objective 1.1: Secure public health and safety through efforts to increase public awareness of local and regional hazards.
- Action 1.1.1: Educate the public on dangers that natural hazards pose in the GRADD region.
- Action 1.1.2: Advise the public on taking personal responsibility for their safety and property protection.
- Action 1.1.3: Facilitate public contributions to the community with the organization of volunteer opportunities and events.
- Action 1.1.4: Provide public officials with information regarding hazard mitigation grants, programs, and actions that the community can take to improve public health and safety.
- Goal 2: Protect people and property
- Objective 2.1: Pursue mitigation activities that ultimately defend and fortify vulnerable populations and properties in the Green River Region.
- Action 2.1.1: Reevaluate and enforce established building codes.
- Action 2.1.2: Develop land use planning for all jurisdictions.
- Action 2.1.3: Encourage participation in the National Flood Insurance Program.
- Action 2.1.4: Maintain lifeline utilities.
- Action 2.1.5: Enhance emergency services through increased training and improved communications.
- Action 2.1.6: Improve the system of community warning devices.
- Action 2.1.7: Limit development in particularly hazardous areas unless proper mitigation strategies are in place and enforced.
- Goal 3: Improve the quality of life.
- Objective 3.1: Support community development efforts while maintaining a strong awareness of the need for hazard mitigation.

- Action 3.1.1: Promote long-range planning.
- Action 3.1.2: Minimize development in floodplains and other well-known hazardous areas unless proper mitigation measures are in place and enforced.
- Goal 4: Use public funds effectively.
- Objective 4.1: Develop cost effective hazard mitigation projects that will reduce vulnerabilities and strengthen local communities and the region.
- Action 4.1.1: Utilize FEMA cost/benefit analysis to select and prioritize mitigation projects.
- Action 4.1.2: Promote interagency and inter-local cooperation.
- Action 4.1.3: Pursue all avenues of potential funding including hazard mitigation grant programs.

Commonwealth Hazard Assessment and Planning System



GRADD Hazard Mitigation Council

May 3, 2010

Subcommittees Update and Work Session

Hazard Risk Levels

The Subcommittees discussed the Hazard Profile Worksheet and decided to keep all risk levels the same as they appeared in the original GRADD Hazard Mitigation Plan. They agreed that GRADD staff should develop the risk levels for the new hazards (dams/levees and landslides) and present those before the full Council when ready.

A copy of the worksheet is included with the meeting materials.

The Subcommittees also discussed the Hazard Risk Index, which outlines the components used in the analysis of hazards. This section of the plan essentially explains how magnitude, frequency, location, and impact are analyzed to generate the overall risk level for a hazard. After reviewing this, the Subcommittees proposed some revisions to the Hazard Risk Index section specifically outlining the “Impact” analysis.

A copy of the Hazard Risk Index, with proposed changes highlighted, is included with the meeting materials.

Hazard Risk Index (Revisions)

Impact – The severity of the impact is based on the following scale

From the Original Plan

Catastrophic

The possibility of multiple deaths and injuries

More than 50 percent of the property damaged or destroyed

Shutdown of facilities for 30 days or more

Proposed Revision

Catastrophic

The possibility of multiple deaths and injuries

More than 50 percent of the property damaged or destroyed

Shutdown of facilities for **possibly 30 days or more**

Possibility of relocation of critical facilities

Hazard Risk Index (Revisions)

Impact – The severity of the impact is based on the following scale

From the Original Plan

Critical

The possibility of multiple injuries

More than 25 percent of the property damaged or destroyed

Shutdown of facilities for more than one week

Proposed Revisions

Critical

The possibility of multiple injuries

More than 25 percent of the property damaged or destroyed

Shutdown of facilities for **a week or more**

Possibility of relocation of critical facilities

Mitigation Strategy: Goals, Objectives, and Actions

The Subcommittees reviewed the Objectives and Actions from the original GRADD Hazard Mitigation Plan. These correspond with the Goals from the original GRADD Hazard Mitigation Plan, which the Council decided to keep without revisions during the February meeting.

The Subcommittees did not propose any revisions to the Objectives and Actions.

A copy of the Goals, Objectives, and Actions is included in the meeting materials for review.

Mitigation Strategy

The Mitigation Strategy is a critical part of the plan in which communities outline priority mitigation projects. For the original GRADD Hazard Mitigation Plan, the Subcommittees developed a project rating and prioritization system for these projects.

Projects are assessed based on three implementation categories:

- *Effectiveness in reducing risks to life and property**
- *Relative ease of implementation**
- *Costs/Benefits of the actions**

Scores range from 1 (“low/difficult”) to 5 (“high/easy”).

The three scores added together yield the “Overall Priority.”

11 – 15	High Priority
6 – 10	Medium Priority
1 – 5	Low Priority

Mitigation Strategy (Proposed Changes)

During recent community meetings, participants discussed the format of the Mitigation Strategy. In particular, they discussed the “Estimated Timetable” for projects.

The original GRADD Hazard Mitigation Plan uses the following timetable for projects:

Short Term < 1 year

Long Term > 1 year

Mitigation Strategy (Proposed Changes)

Participants recommend revising the original timetable to include a Medium Term and a stipulation that Long Term projects do not extend beyond 5 to 7 years.

Short Term	< 1 year
Medium Term	1 – 5 years
Long Term	5 – 7 years

Another potential timetable option:

Short Term	0 – 2 years
Medium Term	3 – 10 years
Long Term	11 – 20 years

***The timetable above is the one KIA utilizes for water and sewer projects.**

Mitigation Strategy – GRADD

Each community developed a mitigation strategy for the original plan, and all communities are now in the process of revising and adding projects. Similarly, GRADD included a strategy in the plan. The following are regional projects listed in the GRADD Mitigation Strategy in the original GRADD Hazard Mitigation Plan:

***Develop Geographic Information System (GIS) data on critical and essential facilities.**

Responsible Party: GRADD GIS Staff Timetable: Long Term

Effect on Risk: 3 Ease of Implementation: 4 Cost/Benefit: 4 Overall: 11

***Facilitate future meetings with the GRADD Hazard Mitigation Council.**

Responsible Party: GRADD Planning Staff Timetable: Long Term

Effect on Risk: 2 Ease of Implementation: 5 Cost/Benefit: 3 Overall: 10

Mitigation Strategy – GRADD

GRADD Mitigation Projects Continued

***Create floodplain maps for communities that do not have existing Q3 floodplain data from FEMA**

Responsible Party: GRADD GIS Staff Timetable: Long Term

Effect on Risk: 3 Ease of Implementation: 3 Cost/Benefit: 3 Overall: 9

***Create and maintain a Hazard Mitigation page on the GRADD website**

Responsible Party: GRADD Technical Support Staff Timetable: Long Term

Effect on Risk: 2 Ease of Implementation: 4 Cost/Benefit: 3 Overall: 9

Project Completed/Ongoing

Mitigation Strategy – GRADD

GRADD Mitigation Projects Continued

***Encourage all jurisdictions to participate in the National Flood Insurance Program**

Responsible Party: GRADD Planning Staff Timetable: Long Term

Effect on Risk: 1 Ease of Implementation: 3 Cost/Benefit: 3 Overall: 7

****Which regional projects (if any) should be removed from the strategy?**

****Which projects should be added to the strategy?**

Plan Maintenance

Procedures for Plan Monitoring, Evaluation, and Updates

As outlined in the original GRADD Hazard Mitigation Plan

- **County EMA Directors are tasked with conducting quarterly meetings in their counties to address the plan as it relates to their respective jurisdictions.**
- **The GRADD Hazard Mitigation Council will be responsible for proposing and pursuing any updates deemed necessary during the five-year approval period.**
- **The Council was to meet every October to assess the plan's utility and to prepare a report for presentation to the GRADD Board of Directors.**
- **Evaluation of:**
 - **The Planning Process: to take place during the first meeting following FEMA approval to assess the process and how it worked**
 - **The Effectiveness of Mitigation Actions: to occur during semiannual meetings as a method of determining the projects that have been completed and how useful they were in response to hazard events**
 - **Declared Disasters: to occur during the first meeting following a declared disaster so that the Council can determine whether or not projects in the plan need to be added and/or updated**

Plan Maintenance

Procedures continued

- **The Council Chair and East and West Subcommittee Chairs are tasked with leading the process for the five-year plan update. GRADD staff will be available for the update process.**
- **The level of GRADD's involvement with the maintenance process is explained as being contingent upon securing funds (funding for the five-year plan update in particular).**
- **The Council will meet in October and April every year.**

For East and West Subcommittee Consideration

- **Which portions (if not all) of the Plan Maintenance Procedures should the Subcommittees consider for modifications?**
- **Are there any recommendations for potential changes to this section?**
- **What additions to the Plan Maintenance section might increase the utility of the GRADD Hazard Mitigation Plan moving forward?**