

A RESOLUTION ADOPTING THE 2010 UPDATE OF THE
ORANGE COUNTY HAZARD MITIGATION PLAN
Resolution No. 153/2009-10

WHEREAS, the President of the United States signed into law the Disaster Mitigation Act of 2000 (PL 106-390) in October 2000, amending the Robert T. Stafford Disaster Relief and Emergency Act of 1988, which among other provisions requires local governments to adopt a mitigation plan in order to be eligible for hazard mitigation funding; and

WHEREAS, the North Carolina General Assembly passed Senate Bill 300 in June of 2001 that among other provisions required local governments to approve a hazard mitigation plan before August 1, 2002 in order to receive state public assistance funds; and

WHEREAS, the Town of Carrboro, with Orange County and the Town of Hillsborough, developed and adopted an Orange County Hazard Mitigation Plan in May 2004; and

WHEREAS, Federal mitigation planning regulations require local mitigation plans to be updated and resubmitted to FEMA every five years in order to maintain eligibility for hazard mitigation assistance programs; and

WHEREAS, the North Carolina Division of Emergency Management has provided assistance in the process of updating local hazard mitigation plans; and

WHEREAS, the Planning Department of the Town of Carrboro, the Orange County Planning and Emergency Services Departments, and the Town of Hillsborough have worked closely together to complete a comprehensive review and evaluation of each section of the previously adopted Hazard Mitigation Plan and have updated the Plan as required by 44 CFR Part 201; and

WHEREAS, the draft plan has been reviewed and approved by the Federal Emergency Management Agency, pending adoption by each of the three local governments involved.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO:

Section 1. The Board reaffirms its commitment to local hazard mitigation planning as a logical means of protecting people and property from the potential, devastating effects of natural hazards.

Section 2. The Board hereby adopts the 2010 update of the Orange County Hazard Mitigation Plan.

Section 3. This resolution shall become effective upon adoption.

INSTRUCTIONS FOR USING THE PLAN REVIEW CROSSWALK FOR REVIEW OF LOCAL MITIGATION PLANS

Attached is a Plan Review Crosswalk based on the **Local Multi-Hazard Mitigation Planning Guidance**, published by FEMA in July, 2008. This Plan Review Crosswalk is consistent with the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (Stafford Act), as amended by Section 322 of the *Disaster Mitigation Act of 2000* (P.L. 106-390), the *National Flood Insurance Act of 1968*, as amended by the *National Flood Insurance Reform Act of 2004* (P.L. 108-264) and *44 Code of Federal Regulations (CFR) Part 201 – Mitigation Planning*, inclusive of all amendments through October 31, 2007.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, however, all elements apply. States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements. Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.:

Assessing Vulnerability: Overview				
Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.				
Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		<input type="checkbox"/>
B. Does the new or updated plan address the impact of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. Required Revisions: • Include a description of the impact of floods and earthquakes on the assets. Recommended Revisions: This information can be presented in terms of dollar value or percentages of damage.	<input type="checkbox"/>	
SUMMARY SCORE			<input type="checkbox"/>	

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted. Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a "Needs Improvement" score.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
1. Adoption by the Local Governing Body: §201.6(c)(5) OR	N/A	N/A
2. Multi-Jurisdictional Plan Adoption: §201.6(c)(5) AND	X	
3. Multi-Jurisdictional Planning Participation: §201.6(a)(3)		X
Planning Process	N	S
4. Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	X	
Risk Assessment	N	S
5. Identifying Hazards: §201.6(c)(2)(i)	X	
6. Profiling Hazards: §201.6(c)(2)(i)	X	
7. Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	X	
8. Assessing Vulnerability: Addressing Repetitive Loss Properties. §201.6(c)(2)(ii)		X
9. Assessing Vulnerability: Identifying Structures, Infrastructure, and Critical Facilities: §201.6(c)(2)(ii)(B)	X	
10. Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	X	
11. Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	X	
12. Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)	X	

*States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Mitigation Strategy

13. Local Hazard Mitigation Goals: §201.6(c)(3)(i)
14. Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)
15. Identification and Analysis of Mitigation Actions: NFIP Compliance. §201.6(c)(3)(ii)
16. Implementation of Mitigation Actions: §201.6(c)(3)(iii)
17. Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)

N	S
X	
X	
	X
X	
	X

Plan Maintenance Process

18. Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(ii)
19. Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)
20. Continued Public Involvement: §201.6(c)(4)(iii)

N	S
	X
X	
	X

Additional State Requirements*

Insert State Requirement
Insert State Requirement
Insert State Requirement

N	S

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED ☒

See Reviewer's Comments

PLAN APPROVED ☐

Local Mitigation Plan Review and Approval Status

Jurisdiction: <i>Orange County</i>	Title of Plan: <i>Orange County Hazard Mitigation Plan</i>	Date of Plan: <i>July 20, 2009</i>
Local Point of Contact: <i>Shannon Collins Berry</i>	Address: <i>306-F Revere Road P.O. Box 8181 Hillsborough, NC 27278</i>	
Title: <i>Special Projects Planner</i>		
Agency: <i>Orange County Planning and Inspections Department</i>		
Phone Number: <i>(919) 245-2589</i>	E-Mail: <u><i>sberry@co.orange.nc.us</i></u>	

State Reviewer: <i>Alyssa Young</i>	Title: <i>Hazard Mitigation Specialist</i>	Date: <i>August 14, 2009</i>
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FEMA Reviewer: <i>Joan Polete Bryant</i>	Title: <i>Hazard Mitigation Community Planner</i>	Date: <i>November 30, 2009</i>
<i>Brenda Stirrup (QC)</i>	<u><i>Planning Specialist</i></u>	<i>December 31, 2009</i>
Date Received in FEMA Region 4	<i>November 18, 2009</i>	
Plan Not Approved	<i>December 31, 2009</i>	
Plan Approved		
Date Approved		

The updated Plan contains references to DFIRM maps (See Page 51). Jurisdiction:	DFIRM		NFIP Status*			
	In Plan	NOT in Plan	Y	N	N/A	CRS Class
1. Orange County	X		X			
2. Town of Carrboro	X		X			
3. Town of Hillsborough	X		X			
4. [ATTACH PAGE(S) WITH ADDITIONAL JURISDICTIONS]						

* Notes: Y = Participating N = Not Participating N/A = Not Mapped

PREREQUISITE(S)

1. Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Has the local governing body adopted new or updated plan?	N/A	Plan update will be formally adopted by each partner jurisdiction following preliminary FEMA approval. This is an updated multi-jurisdictional Plan.	N/A	N/A
B. Is supporting documentation, such as a resolution, included?	N/A	Documentation/Resolution will be included if necessary following FEMA approval. This is an updated multi-jurisdictional Plan.	N/A	N/A
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	
			N/A	N/A

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2. Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the new or updated plan indicate the specific jurisdictions represented in the plan?	Section IIA, page 3 Page 3	This section mentions each of the three jurisdictions that are contained in the plan. The updated Plan indicates that Orange County and the towns of Carrboro and Hillsborough are represented in it.		X
B. For each jurisdiction, has the local governing body adopted the new or updated plan?	Appendix F	Plan update will be formally adopted by each partner jurisdiction following preliminary FEMA approval. None of the local governing bodies have adopted the updated Plan. REQUIRED: <ul style="list-style-type: none"> The Updated Plan must be adopted within one calendar year of FEMA's "approval pending adoption" of the Updated Plan. <i>For more information, see "Multi-Jurisdictional Plan Adoption", in the Local Multi-Hazard Mitigation Planning Guidance, Pages 19 – 20.</i> The plan update will be formally adopted by each partner jurisdiction following FEMA's "approval pending adoption". The resolutions and/or other documentation of approval(s) will be provided at that time.	X	
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?	Appendix F	Plan update will be formally adopted by each partner jurisdiction following preliminary FEMA approval. No supporting documentation is included in the updated Plan. REQUIRED REVISION: <ul style="list-style-type: none"> The Updated Plan shall include a copy of the resolution or other documentation of formal adoption of the Updated Plan within one calendar year. <i>For more information, see "Multi-Jurisdictional Plan Adoption", in the Local Multi-Hazard Mitigation Planning Guidance, Pages 19 – 20.</i> The plan update will be formally adopted by each partner jurisdiction following FEMA's "approval pending adoption". The resolutions and/or other documentation of approval(s) will be provided at that time.	X	

3. Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the new or updated plan describe how each jurisdiction participated in the plan's development?	Section II.B., p. 4 Page 2 Section II.B., p.3- 4	The plan update does a thorough job of describing the plan update process. The updated Plan indicates that representatives from each municipality evaluated their respective community capability assessments and made necessary revisions. The representatives also evaluated current conditions, , hazard occurrences and the mitigation goals included in the original Plan.		X
B. Does the updated plan identify all participating jurisdictions, including new, continuing, and the jurisdictions that no longer participate in the plan?	Section II.B., pp. 3- 4 Page 2	The plan clearly lays out all participating parties. The updated Plan indicates that the original plan and the updated plan incorporated the same jurisdictions of Orange County and the towns of Carrboro and Hillsborough.		X
SUMMARY SCORE				X

*denotes OCHM Team response to FEMA comments

PLANNING PROCESS: §201.6(b): *An open public involvement process is essential to the development of an effective plan.*

4. Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan provide a narrative description of the process followed to prepare the new or updated plan?	Section II.B., p. 4 Pages 2 - 5	The plan update includes the process and meetings that took place to prepare the update. The updated Plan indicates that the OCHM Team kicked off the update process the latter half of 2008. The OCHM Team met periodically to review and comment on the draft plan updates and to discuss possible modifications to methods, goals, and		X

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4. Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Location in the			SCORE	
		mitigation strategies. Collectively, the OCHM Team evaluated current conditions, hazard occurrences within Orange County since the original plan was adopted, and the mitigation goals included within that plan.		
B. Does the new or updated plan indicate who was involved in the current planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Section II.B., p. 4 Page 2	<p>The plan update outlines who was responsible for what during the update process.</p> <p>The updated Plan indicates that the Orange County Planning Department managed the plan update process, organizing meetings and coordinating agendas, updating plan data, and developing drafts of updated plan sections. Representatives from the participating municipalities evaluated their respective Community Capability Assessments and made revisions, as necessary.</p>		X
C. Does the new or updated plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Section II.B., p. 4-5 Page 3	<p>The plan update process was made known to the public on the Orange County Government website and contact information was made available in case public wanted to participate and the plan is available on the website.</p> <p>The updated Plan indicates that each jurisdiction maintains transparency in policy development and adoption and requires the opportunity for public involvement, including advisory boards, public hearings and community outreach. Once approved and adopted, the Hazard Mitigation Plan Update will be added to the County's website.</p>		X
D. Does the new or updated plan discuss the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Section II.C., p. 4-5 Page 3	<p>The plan update gives a narrative of included parties.</p> <p>The updated Plan contains an explanation that contact information for the Planning staff member involved in the development and adoption of the plan is provided to allow interested parties to comment on the plan or ask questions of staff. The plan has remained posted on their website continually since 2004.</p>		X

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4. Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Location in the			SCORE	
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	<p>Section II.B., p. 4</p> <p>Section II.B., p. 4-5; Appendix B; Appendix C; Appendix D</p>	<p>The planning process does address incorporation into existing plans, etc.</p> <p>The narrative description of the planning process within the updated Plan makes no reference to incorporation of existing plans, studies, reports, or technical information.</p> <p>There is an Appendix A that lists several documents; however, it appears to be from the original document and is labeled "2002".</p> <p>Appendix A includes maps associated with the plan update. The date was incorrectly noted and has been revised to reflect the correct date of 2009.</p> <p><u>REQUIRED REVISION:</u></p> <ul style="list-style-type: none"> The description of the planning process shall describe the review of any existing plans, studies, reports, and technical information, and how these are incorporated into the plan. <p>The plans, studies, reports and technical data reviewed and incorporated in the plan are noted throughout the document. However, in response to FEMA's comments, a document list was added to Section II.B of the plan update.</p> <p><i>For further information, please see "Documentation of the Planning Process" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 26 – 27.</i></p>	X	
F. Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process?	Section II.B., p. 4	<p>Small changes reflect changes in population and values since initial plan submission.</p> <p>There are general statements that the original plan was reviewed and revised. However, the updated Plan contains no documentation of how the planning team reviewed and analyzed each section of the original plan and whether each section was revised as part of the update process.</p>	X	

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4. Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Location in the			SCORE	
	Section II.B., p.3- 4	<p><u>REQUIRED REVISION:</u></p> <ul style="list-style-type: none"> The updated Plan shall describe the process used to review and analyze each section of the plan (i.e., Planning Process, Risk Assessment, Mitigation Strategy and Plan Maintenance. If the planning team finds that some sections of the plan warrant an update, and others do not, the process the team undertook to make that determination must be documented in the plan. <p>Additional text was added to Section II.B. providing a more detailed account of the process utilized by the OCHM for evaluating and revising (if deemed necessary) each section of the plan.</p> <p>For further information, please see "Documentation of the Planning Process" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 26 – 27.</p>		
			SUMMARY SCORE	X

*denotes OCHM Team response to FEMA comments

RISK ASSESSMENT: §201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

5. Identifying Hazards

Requirement §201.6(c)(2)(i): [The risk assessment **shall** include a] description of the type ... of all natural hazards that can affect the jurisdiction.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include a description of the types of all natural hazards that affect the jurisdiction?	Section III.A., pp. 5-28	<p>No changes to types and descriptions of natural hazards from original plan.</p> <p>The updated Plan initially lists the following hazards:</p>	X	

	<p>Pages 4 – 34</p> <p>Section III.A., pp. 7-29</p> <ul style="list-style-type: none"> - Hurricanes - Floods - Tornadoes - Droughts and Heat Waves - Nor'easters - Thunderstorms - Severe Winter Storms - Wildfires - Earthquakes - Tsunamis - Volcanoes - Landslides - Chemical Spills - River Basins Dam Failures - Plane Crashes <p>Subsequent references to the hazards do not consistently follow the above list of hazards. In the descriptive summaries of the hazards that follow, tsunamis and volcanoes are "not analyzed for potential impact" because there is no historical data; however, these are not dropped from the following tables and analysis summaries.</p> <p>Though not potential threats to Orange County, including the Towns of Carrboro and Hillsborough, the hazards listed were REQUIRED in the original Orange County Hazard Mitigation Plan. The OCHM Team recognizes the variations in the review of the plan and opts to include reference to the above noted hazards in the updated plan, clearly stating that certain hazards, while described, do not pose a threat to Orange County and do not require additional analysis.</p> <p>In subsequent tables and analysis summaries, tornadoes and Nor'easters are also classified as "unlikely", yet a history of tornadoes for Orange County is presented. Similarly, "Hail" and Tropical Cyclones are included in previous occurrences, yet those natural hazards are not among those identified for the jurisdictions.</p> <p>The plan has been revised to classify tornados as "possible" in the 'Orange County Hazard Identification and Analysis' Table on page 30. Per NOAA, "hail" occurs in conjunction with severe thunderstorms. As such, "hail" is not identified as a separate hazard, independent of severe thunderstorms. In</p>		
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addition, Tropical Cyclones are not identified as a separate hazard. Tropical Cyclone is another name for Atlantic Hurricane. Therefore, all references and analysis for Hurricanes apply to Tropical Cyclones, as well.

Descriptive summaries that follow the list include information on the United States, the state of North Carolina and Orange County, but rarely for the other two participating jurisdictions (Towns of Carrboro and Hillsborough).

The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update.

In addition to natural hazards, the Plan contains summaries on Manmade and Technical Hazards for Chemical Spills and Plane Crashes. The 44 CFR 201 requirements do not require inclusion of these for planning purposes.

The OCHM Team and the elected officials of the partner jurisdictions elected to include those hazards in their plan.

Further, River Basin Dam Failures is cited as a hazard; however, it is unclear whether the planning team intended this as a natural hazard or a manmade one.

The OCHM Team and the elected officials of the partner jurisdictions elected to include this hazard in their plan. A river basin dam failure may be caused by either natural or manmade events.

REQUIRED REVISION:

- The Plan Update needs to **consistently identify which natural hazards** that affect the participating jurisdictions are to be addressed in the Plan. If a described hazard is not to be further addressed in the Plan, the Plan must specifically identify such hazards for exclusion and explain why. **Hazards selected for inclusion in the updated Plan must be consistently addressed throughout the Plan and all of the risk assessment elements.**

Though not all potential threats to Orange County, including the Towns of Carrboro and Hillsborough, the hazards listed were

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		<p>required to be included in the original Orange County Hazard Mitigation Plan. The OCHM Team recognizes the variations in the review of the plan and opts to include reference to the above noted hazards in the updated plan, clearly stating that certain hazards, while described, do not pose a threat to Orange County and do not require additional analysis.</p> <p><i>For further information, please refer to "Identifying Hazards" in the Local Multi-hazard Mitigation Planning Guidance, July 2008, Requirement 201.6(c)(2)(i), ages 30-31.</i></p>		
<p>*denotes OCHM Team response to FEMA comments</p>			SUMMARY SCORE	

6. Profiling Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the risk assessment identify the location (i.e., geographic area affected) of each natural hazard addressed in the new or updated plan?	<p>Section III.A.3., p.29, attached maps</p> <p>Page 27</p>	<p>Maps attached to this plan show the locations of each natural hazard that are identified in this plan.</p> <p>The updated Plan contains the following regarding location:</p> <p><i>"All but two of the types of natural hazards most likely to affect Orange County (Severe Winter Storms, Thunderstorms and Tornadoes, Drought and Heat Waves, Flooding, and Landslides) have equal potential to occur anywhere within the county and its municipalities (i.e.: one area of the county is not more likely to be affected than another). Landslides are more likely to occur in the southeastern portion of the county due to the types of soils and topography prevalent in that geographic area. Flooding, while it can conceivably occur anywhere in the county, is more likely in floodplain areas."</i></p> <p>The natural hazards listed above do not correlate to the initial list presented by the committee. Tornadoes are included here, but classified as "unlikely" in a table that follows (See Page 27). Based on the best available data, including past occurrences, the OCHM Team determined the classification for Tornadoes should be changed from "unlikely" to "possible". The plan update was revised accordingly.</p> <p>Further, the risk assessment only identifies the location of</p>	X	

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		<p>spatially defined hazards (i.e., flooding, landslides) at the County level, and does not address location in the other participating jurisdictions.</p> <p>The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update.</p> <p>REQUIRED REVISION:</p> <ul style="list-style-type: none"> Once the community determines which hazards are potential risks, the Plan must identify the location of each natural hazard in each participating jurisdiction and address this in the narrative of the updated Plan. <p>Though not all potential threats to Orange County, including the Towns of Carrboro and Hillsborough, the hazards listed were required to be included in the original Orange County Hazard Mitigation Plan. The OCHM Team recognizes the variations in the review of the plan and opts to include reference to the above noted hazards in the updated plan, clearly stating that certain hazards, while described, do not pose a threat to Orange County and do not require additional analysis.</p> <p>In addition, the Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update.</p> <p><i>For further information, please refer to "Profiling Hazards" in the Local Multi-hazard Mitigation Planning Guidance, July 2008, Requirement 201.6(c)(2)(i), Pages 30-31.</i></p>		
B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the new or updated plan?	<p>Section III.A., p.29, tables</p> <p>Page 20</p>	<p>Changes were made to the table to address the possible extent of each hazard.</p> <p>The updated Plan's risk assessment identifies extent for only a few of the identified hazards (For example, hurricanes, tornadoes, earthquakes). "Extent" addresses the question "How bad can it be?" This can be done through the use of</p>	X	

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	<p>Section III.A., p.30, tables</p>	<p>scientific scales, such as was done with the Saffir-Simpson Scale for Hurricane and Fujita Scale for Tornadoes. It can be expressed through quantitative measurement, such as wind speed, acres burned, flood depth, temperature, and fire danger rating. Extent can also be expressed in terms such as High/Medium/Low or Major/Moderate/Minimal as long as the plan clearly defines any such classification.</p> <p>The updated Plan does not consistently identify or describe all natural hazards to be addressed in the Plan. Therefore, the updated Plan does not adequately address extent or magnitude/severity.</p> <p>Further, the risk assessment only identifies the extent of any identified hazards at the County level, and does not address extent for the other participating jurisdictions.</p> <p>The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County, each just over four square miles. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update.</p> <p><u>REQUIRED REVISIONS:</u></p> <ul style="list-style-type: none"> • The updated Plan must indicate the range of magnitude or severity that could be experienced for each identified hazard. • Once all hazards to be addressed in the Plan are consistently identified (Element 5A), the Plan must identify the extent of each natural hazard addressed in the updated Plan. <p>The two tables on page 30 of the update, entitled 'Measurement of Types of Hazard Impacts' and 'Orange County Hazard Identification and Analysis', address the extent of the hazards listed in the plan.</p> <p>Though not all potential threats to Orange County, including the Towns of Carrboro and Hillsborough, the hazards listed were required to be included in the original Orange County Hazard Mitigation Plan. The OCHM Team recognizes the variations in the review of the plan and opts to include reference to the above noted hazards in the updated plan, clearly stating that</p>		
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		<p>certain hazards, while described, do not pose a threat to Orange County and do not require additional analysis.</p> <p><i>For more information, please refer to "Profiling Hazards" in the Local Multi-hazard Mitigation Planning Guidance, July 2008, Pages 32-35. See also Matrix A at the end of the Guide, following the sample crosswalk.</i></p>		
C. Does the plan provide information on previous occurrences of each hazard addressed in the new or updated plan?	<p>Section III.A.5., p.31-36</p> <p>Section III.A.5., p.31-37</p>	<p>Changes were made to the table to reflect previous occurrences of each hazard.</p> <p>The updated Plan provides information about previous occurrences for selected natural hazards, including "Hail" which had not been previously identified as a hazard. The Plan does not consistently identify or describe all natural hazards to be addressed in the Plan or which ones were specifically determined to be considered for mitigation strategies. Though not all potential threats to Orange County, including the Towns of Carrboro and Hillsborough, the hazards listed were required to be included in the original Orange County Hazard Mitigation Plan. The OCHM Team recognizes the variations in the review of the plan and opts to include reference to the above noted hazards in the updated plan, clearly stating that certain hazards, while described, do not pose a threat to Orange County and do not require additional analysis. Additionally, per NOAA, "hail" occurs in conjunction with severe thunderstorms. As such, "hail" is not identified as a separate hazard, independent of severe thunderstorms. In addition, Tropical Cyclones are not identified as a separate hazard. Tropical Cyclone is another name for Atlantic Hurricane. Therefore, all references to Tropical Cyclone within the update fall within the descriptions and analysis for hurricanes.</p> <p>Further, the risk assessment only identifies the previous occurrences of any identified hazards at the County level, and does not address previous occurrences for the other participating jurisdictions.</p> <p>The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County, each just over four square miles. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved</p>	X	

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		<p>Orange County Hazard Mitigation Plan and this update.</p> <p><u>REQUIRED REVISION:</u></p> <ul style="list-style-type: none"> Once all hazards to be addressed in the Plan are clearly identified (Element 5A), the Plan must identify the previous occurrences of each natural hazard addressed in the updated Plan. If a hazard has no previous occurrences, that should be noted. <p><i>For more information, please refer to "Profiling Hazards" in the Local Multi-hazard Mitigation Planning Guidance, July 2008, Pages 32-35.</i></p>		
<p>D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the new or updated plan?</p>	<p>Section III.A.4., p.29-30</p> <p>Pages 26 - 28</p>	<p>Slight modifications here to reflect the probability of future events.</p> <p>The updated Plan includes the probability of future events for each hazard addressed in it. A table defines the categories ranging from "Highly Likely" to "Unlikely". However, there is inconsistency in that tornadoes are categorized as "Unlikely" in the table, but there are historical events within the past history summaries.</p> <p>Based on the best available data, including past occurrences, the OCHM Team determined the classification for Tornadoes should be changed from "unlikely" to "possible". The plan update was revised accordingly.</p> <p>Further, the risk assessment only identifies the probability of future events of any identified hazards at the County level, and does not address the probability of future events for the other participating jurisdictions.</p> <p>The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County, each just over four square miles. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update.</p> <p><u>REQUIRED REVISION:</u></p> <ul style="list-style-type: none"> Once all hazards to be addressed in the Plan are consistently identified (Element 5A), the Plan must identify the probability of future events of each natural 	X	8-16

		hazard addressed in the updated Plan for each participating jurisdiction of the updated Plan. <i>For more information, please refer to "Profiling Hazards" in the Local Multi-hazard Mitigation Planning Guidance, July 2008, Pages 32-35.</i>		
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	

7. Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S

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<p>A. Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?</p>	<p>Section III.B.1., pp.38-42</p> <p>Pages 34 - 40</p>	<p>There are slight changes to building values in the Hazard Vulnerability Table in the plan update.</p> <p>The updated Plan includes an overall summary description of each jurisdiction's (including the individual towns) vulnerability to each hazard. Typical building structure costs are presented as well as the total building-only values of structures within the participating jurisdictions.</p> <p><u>Recommended Revisions:</u></p> <ul style="list-style-type: none"> • The table used to demonstrate vulnerability for the participating jurisdictions can be effectively utilized in other parts of the plan document. • If the final list of identified hazards does not include all the ones shown in the table and/or adds other hazards, the table should be revised. 	<p>X</p>	<p></p>
<p>B. Does the new or updated plan address the impact of each hazard on the jurisdiction?</p>	<p>Section III.B., pp.36-42</p> <p>Section III.B., pp.37-43</p>	<p>Changes were made to update land values over the last five years.</p> <p>The updated Plan addresses the impact of most of the hazards; however, without a final list of identified hazards (Element 5A), it is difficult to assess whether all hazards have been included in the impact assessment.</p> <p>Further, the risk assessment only identifies the impact of the identified hazards at the County level, and does not address the impact for the other participating jurisdictions.</p> <p>The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County, each just over four square miles. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update.</p> <p><u>REQUIRED REVISION:</u></p> <ul style="list-style-type: none"> • The vulnerability overview shall also include a general description of the hazard's impact to the vulnerable structures. <p>The plan update includes descriptions of the values of properties located in Orange County and its' jurisdictions partnering on the Hazard Mitigation Plan Update. In addition,</p>	<p>X</p>	<p>8-18</p>

		the update provides the values of all structures located either partially or wholly within the Special Flood Hazard Areas county-wide. The plan notes the current values and potential replacement costs for structures located in Orange County, including the Town of Carrboro and the Town of Hillsborough. For more information, please refer to "Addressing Vulnerability: Overview" in the Local Multi-hazard Mitigation Planning Guidance, July 2008, Pages 36 – 38.		
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*denotes OCHM Team response to FEMA comments

SUMMARY SCORE

X

8. Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): [The risk assessment] **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of repetitive loss properties located in the identified hazard areas?	Section IV.B., p.48 Page 43	Note: This requirement becomes effective for all local plans approved after October 1, 2008. There are no repetitive loss properties within the jurisdictions that are party to this plan. The updated Plan contains information that indicates that there are no repetitive loss properties within any of the participating jurisdictions.		X
SUMMARY SCORE				X

*denotes OCHM Team response to FEMA comments

9. Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?	Section III.B., pp.37-42 Appendix A	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. Values were updated to reflect best available data The updated Plan contains a brief narrative on existing emergency facilities located in the identified hazard areas.	X	

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		<p>However, types and numbers of other critical facilities such as residential, commercial, etc. are not included in the description.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> - Future updates to the Plan should describe vulnerability in terms of the types and numbers of existing buildings, infrastructure and critical facilities located in the identified hazard area. <p>See maps in Appendix A. For more information, see "Assessing Vulnerability: Identifying Structures" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 42-44.</p>		
<p>B. Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?</p>	<p>Section III.B., pp.37-43</p> <p>Appendix A</p>	<p>Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.</p> <p>Information was updated to reflect current data</p> <p>The updated Plan contains a brief narrative on existing emergency facilities located in the identified hazard areas. However, types and numbers of future critical facilities such as residential, commercial, etc. are not included in the description.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> - Future updates to the Plan should describe vulnerability in terms of the types and numbers of future buildings, infrastructure and critical facilities located in the identified hazard area. <p>See maps in Appendix A For more information, see "Assessing Vulnerability: Identifying Structures" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 42-44.</p>	X	
<p>*denotes OCHM Team response to FEMA comments</p> <p>10. Assessing Vulnerability: Estimating Potential Losses</p> <p>Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate</p>			SUMMARY SCORE	X

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S

<p>A. Does the new or updated plan estimate potential dollar losses to vulnerable structures?</p>	<p>Section III.B., p.37-39</p>	<p>Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.</p> <p>Slight changes were made to reflect updated values since the initial plan was done.</p> <p>The updated Plan contains a brief narrative on the potential dollar losses for existing emergency facilities located in the identified hazard areas. However, potential dollar losses of types and numbers of other critical facilities such as residential, commercial, etc. are not included in the description.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> - Future updates to the Plan should describe vulnerability in terms of the potential dollar losses for types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard area. <p>The plan update provides the potential dollar losses for all structures in unincorporated Orange County and the Towns of Carrboro and Hillsborough. In addition, the analysis is further broken down to provide the value of all structures, either partially or wholly located in the special flood hazard areas County-wide, including the Towns of Carrboro and Hillsborough.</p> <p><i>For more information, see "Assessing Vulnerability: Identifying Structures" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 42-44.</i></p>	<p>X</p>	
<p>B. Does the new or updated plan describe the methodology used to prepare the estimate?</p>	<p>Section III.B., p.37-38</p>	<p>Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.</p> <p>Same methodology was used as was used to develop the plan and was clearly described.</p> <p>The updated Plan contains a brief narrative on the methodology used to prepare estimates for existing emergency facilities located in the identified hazard areas. However, the methodology used for types and numbers of other critical facilities such as residential, commercial, etc. are not included in the description.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> - Future updates to the Plan should describe vulnerability in 	<p>X</p>	<p>8-21</p>

		<p>terms of the methodology used to prepare estimates for types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard area.</p> <p>As stated previously, the OCHM team utilized the same methodology with the update as used previously. Per 'Assessing Vulnerability: Estimating Potential Losses' in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Page 45, "The plan should describe any new methodology if the approach for determining the losses has changed since the previous plan approval."</p> <p>For more information, see "Assessing Vulnerability: Identifying Structures" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 42-44.</p>		
			SUMMARY SCORE	X

*denotes OCHM Team response to FEMA comments

11. Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): [The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe land uses and development trends?	Section III.B.3., p.43; Appendix A	<p>Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.</p> <p>Maps were updated based on best available data</p> <p>The updated Plan goes into extensive detail of land use and development for Orange County, but not for the other two participating jurisdictions.</p> <p>Recommended Revision:</p> <ul style="list-style-type: none"> Future updates to the Plan should include a description of land uses and development trends for all participating jurisdictions. <p>Additional text was added to Section III.B.3. to clarify the development trends in Orange County, including the Town of Carrboro and the Town of Hillsborough. Also, see maps in Appendix A.</p> <p>For more information, see "Assessing Vulnerability: Analyzing Development Trends" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 47-49.</p>	X	

*denotes OCHM Team response to FEMA comments

SUMMARY SCORE

X

12. Multi-Jurisdictional Risk Assessment Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	Section III, pp.5-43	<p>Changes made to values based on best available data.</p> <p>The risk assessment of the updated Plan is done at an Orange County level and does not make a distinction for any of the participating jurisdictions.</p> <p>REQUIRED REVISION:</p> <ul style="list-style-type: none"> For multi-jurisdictional plans, the risk assessment must assess each jurisdiction's risks where they vary from the risks facing the entire planning area. <p>The Town of Carrboro and the Town of Hillsborough are relatively small jurisdictions within Orange County, each just over four square miles. As noted throughout the plan update, potential hazards have an equal likelihood of occurring within the unincorporated areas of Orange County or the two jurisdictions partnering with the County on the approved Orange County Hazard Mitigation Plan and this update, unless otherwise noted in the plan.</p> <p><i>For more information, see "Multi-Jurisdictional Risk Assessment" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 50 -51.</i></p>	X	
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	
			X	

MITIGATION STRATEGY: §201.6(c)(3): *The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

13. Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?	Section IV.A., p.47-48 Page 41 Section II.B, p.3-5	<p>This section lays out clear community mitigation goals in order to reduce long-term vulnerabilities to hazards.</p> <p>The updated Plan includes a description of the following seven goals:</p> <ol style="list-style-type: none"> 1. To reduce loss of human life. 2. To protect property and minimize damage. 3. To increase public awareness of risk and mitigation activities. 4. To minimize damage to public facilities, utilities, infrastructure. 5. To adopt local ordinances and plans that assist hazard mitigation planning. 6. To ensure that NFIP maps are available to property buyers so they may determine if property is located in or near a floodplain. 7. Decrease the community's vulnerability to future disasters. <p>However, these are the same goals as the original Plan and this is the language surrounding the goals is the same as the original Plan.</p> <p><u>REQUIRED REVISION:</u></p> <ul style="list-style-type: none"> • Updates to the Plan must document that goals were re-evaluated and that they were determined to remain valid and effective. <p>As noted in Section II.B. – The Planning Process: Plan Update Process (pages 3-5), "Collectively, the OCHM Team evaluated current conditions, hazard occurrences within Orange County since the original plan was adopted, and the mitigation goals included within that plan. The team determined the risk</p>	X	

18-24

		assessment previously adopted was still applicable to the County and participative municipalities and changes were not necessary. In addition, the previously developed goals were determined to remain valid." Per 'Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, page 53', "it is not necessary to change goals from the previous plan if they remain valid; however, the plan must document that goals were re-evaluated and that they were determined to remain valid and effective." For more information, see "Local Hazard Mitigation Goals" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 53 – 55.		
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	X

14. Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?	Appendix B; Appendix C; Appendix D Section IV.B., p. 45-48	Modifications reflect changes in policies and ordinances Although the updated Plan identifies several policies, practices, programs, regulations and activities for each participating jurisdiction, with the exception of flooding, it is unclear for which identified hazards these are targeted. <u>REQUIRED REVISIONS:</u> <ul style="list-style-type: none"> The updated Plan must identify and analyze a comprehensive range of specific mitigation actions and projects (as opposed to policies, programs and regulations) for <u>each</u> identified hazard. Once the hazards have been consistently and clearly identified, the specific hazard must be associated with the relevant mitigation action and/or project. See Section IV.B., p. 45-48 – In addition to the policies and regulations in place in all of the jurisdictions party to this Hazard Mitigation Plan Update, the plan does identify specific mitigation actions for the identified hazards classified as "Moderate" or "High". For more information, see "Identification an Analysis of	X	

8-25

		<i>Mitigation Actions" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 56-60.</i>		
B Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?	Appendix B; Appendix C; Appendix D Section IV.B., p. 45-48	<p>Modifications reflect changes in policies and ordinances</p> <p>Although the updated Plan identifies several policies, practices, programs, regulations and activities for each participating jurisdiction, with the exception of flooding, it is unclear for which identified hazards these are targeted. Additionally, actions and projects for new buildings and infrastructure are not distinguishable.</p> <p><u>REQUIRED REVISIONS:</u></p> <ul style="list-style-type: none"> • The updated Plan must identify and analyze a comprehensive range of specific mitigation actions and projects (as opposed to policies, programs and regulations) for each identified hazard. • Once the hazards have been consistently and clearly identified, the specific hazard must be associated with the relevant mitigation action and/or project. • Actions and projects intended for new buildings and infrastructure must be clearly presented. <p>See Section IV.B., p. 45-48 – In addition to the policies and regulations in place in all of the jurisdictions party to this Hazard Mitigation Plan Update, the plan does identify specific mitigation actions for the identified hazards classified as "Moderate" or "High". In addition, a number of the mitigation strategies noted in the plan specifically address future buildings and infrastructure, such as building regulations and erosion controls.</p> <p><i>For more information, see "Identification an Analysis of Mitigation Actions" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 56-60.</i></p>	X	
C. Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?	Appendix B; Appendix C; Appendix D Section IV.B.,pp.45-48	<p>Modifications reflect changes in policies and ordinances</p> <p>Although the updated Plan identifies several policies, practices, programs, regulations and activities for each participating jurisdiction, with the exception of flooding, it is unclear for which identified hazards these are targeted. Additionally, actions and projects for new buildings and infrastructure are not distinguishable.</p>	X	

B-24

		<p><u>REQUIRED REVISIONS:</u></p> <ul style="list-style-type: none"> • The updated Plan must identify and analyze a comprehensive range of specific mitigation actions and projects (as opposed to policies, programs and regulations) for each identified hazard. • Once the hazards have been consistently and clearly identified, the specific hazard must be associated with the relevant mitigation action and/or project. • Actions and projects intended for existing buildings and infrastructure must be clearly presented. <p>See Section IV.B., p. 45-48 – In addition to the policies and regulations in place in all of the jurisdictions party to this Hazard Mitigation Plan Update, the plan does identify specific mitigation actions for the identified hazards classified as "Moderate" or "High". In addition, a number of the mitigation strategies noted in the plan specifically address existing buildings and infrastructure, such as acquisition programs for structures within special flood hazard areas.</p> <p><i>For more information, see "Identification an Analysis of Mitigation Actions" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 56-60.</i></p>		
<p>*denotes OCHM Team response to FEMA comments</p>			<p>SUMMARY SCORE</p> <p>X</p>	

15. Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance

Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe the jurisdiction (s) participation in the NFIP?	Section IV.B., p.48 Page 43	Note: This requirement becomes effective for all local mitigation plans approved after October 1, 2008. Modifications due to reformatting The updated Plan indicates that Orange County and the towns of Carrboro and Hillsborough all participate in FEMA's National Flood Insurance Program (NFIP).		X
B. Does the mitigation strategy identify, analyze and prioritize actions related to continued compliance with the NFIP?	Section IV.B., p.49; Appendix B, pp.66-70; Appendix C, pp.75-104; Appendix D, pp.106-107 Pages 49, 66-70	Note: This requirement becomes effective for all local mitigation plans approved after October 1, 2008. Text was added outlining the specific actions undertaken to ensure continued compliance with the National Flood Insurance Program. The mitigation strategy of the updated Plan contains actions related to continued compliance with the NFIP, including numerous flood mapping projects and map maintenance.		X
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	
				X

16. Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)	Section IV.B., p.48 Page 42	This section clearly sets out what criteria were used to prioritize the hazard mitigation strategies with a discussion as to how these were chosen. The updated Plan indicates that the Hazard Mitigation Team used the following criteria for prioritization of hazard mitigation strategies:		X

2-28

		cost-benefit review results of Hazard Identification Analysis results of Vulnerability Assessment results of Community Capability Assessment effectiveness in meeting hazard mitigation goals and comprehensive plan goals		
B. Does the new or updated mitigation strategy address how the actions will be implemented and administered, including the responsible department, existing and potential resources and the timeframe to complete each action?	Section IV.C. pp.54-59 Section IV.B., p. 45-48 Section IV.C., 52 Appendix D	Changes reflect current status of Action Items The actions included in the mitigation strategy of the updated Plan include the responsible party and the implementation timeline. However, potential funding sources are not cited. In addition, not all included hazards have identifiable action items within the mitigation strategy. REQUIRED REVISION: <ul style="list-style-type: none"> This section of the updated Plan shall include how actions will be implemented and administered, including the department or agency responsible for carrying out the actions, the potential funding sources, and the implementation timeline. See Section IV.B., p. 45-48— In addition to the Action Items for each jurisdiction included in the Hazard Mitigation Plan Update, the plan does identify other specific mitigation actions for the identified hazards classified as "Moderate" or "High". Responsible agencies and those providing assistance are also noted. Section IV.C. and Appendix D reference potential funding sources. <i>For more information, see "Implementation of Mitigation Actions" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 63 -64.</i>	X	
C. Does the new or updated prioritization process include an emphasis on the use of a cost-benefit review to maximize benefits?	Section IV.B., p.48 Page 42	Cost benefit review is the number 1 criteria for prioritizing mitigation strategies. The updated Plan indicates that cost-benefit review was given emphasis due to its possible use in environmental reviews for HMGP, FMA and other federal hazard mitigation projects.		X
D. Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for	Section IV.C. pp.54-59	Changes reflect current status of Action Items	N/A	N/A

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progress, and if activities are unchanged (<i>i.e.</i> , deferred), does the updated plan describe why no changes occurred?		This is an update for a multi-jurisdictional Plan.		
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	N/A N/A

17. Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A Does the new or updated plan include identifiable action items for each jurisdiction requesting FEMA approval of the plan?	Section IV.C., pp.54-59 Pages 48 - 53	Changes reflect current status of Action Items Even though most of the action items pertain to only one hazard (flooding), all of the action items identified in the updated Plan are listed according to each participating jurisdiction. Recommended Revision: • Any new action items added to the updated Plan should be also identifiable for each participating jurisdiction. <i>For more information, see "Multi-Jurisdictional Mitigation Actions" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Pages 65 -66.</i>		X
B. Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (<i>i.e.</i> , deferred), does the updated plan describe why no changes occurred?	Section IV.C., pp.54-59 Pages 48 - 53	Changes reflect current status of Action Items A comment section has been added to the updated Plan to identify the completed, deleted, and/or deferred mitigation actions as a benchmark for progress.		X
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	X

PLAN MAINTENANCE PROCESS

18. Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Location in the	SCORE
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Element	Plan (section or annex and page #)	Reviewer's Comments	N	S
A. Does the new or updated plan describe the method and schedule for monitoring the plan, including the responsible department?	Section V, p.61 Page 54	Plan identifies responsible department for monitoring plan updates. The updated Plan includes a description of how Orange County's Planning Director will take the lead in ensuring that an on-going process of monitoring the Hazard Mitigation Plan occurs. The Planning Director will be responsible for tracking progress as implementation occurs and submitting an annual report to the Hazard Mitigation Team prior to the annual meeting.		X
B. Does the new or updated plan describe the method and schedule for evaluating the plan, including how, when and by whom (i.e. the responsible department)?	Section V, p.61 Page 54	Yes, the plan describes a schedule for evaluating the plan. The updated Plan contains a description of how the OCHM Team will meet when the Orange County Planning Director deems necessary to evaluate and prepare a report of the status of the mitigation progress. The report will include: a review of the goals, accomplishments, and revisions, discussions on why any goals are not met, why projects may be behind schedule, recommendations for new projects and review new disasters that may have occurred.		X
C. Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle?	Section V, p.61 Page 55	The plan describes how the updating will happen every five years. The updated Plan contains a description that a formal update of the plan will be completed every 5 years. Orange County's Planning Director will be responsible for convening the OCHM Team to undertake the formal update. The formal update will include an analysis of changes in development within the county and the participating municipalities and an analysis of any changes in vulnerability to natural hazards and appropriate mitigation strategies that can be enacted to address vulnerabilities.		X
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	
				X

19. Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan identify other local planning mechanisms available for incorporating the mitigation requirements of the mitigation plan?	Section IV.C., pp.50-54; Appendix B; Appendix C; Appendix D; Appendix E Page 54	Modifications reflect changes in ordinances and policies The updated Plan identifies the following other local planning mechanisms: - Comprehensive plan; - Land use plan; - Capital improvements plan; - Emergency management plan		X
B. Does the new or updated plan include a process by which the local government will incorporate the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?	Section IV.C., pp.50-54; Appendix B; Appendix C; Appendix D; Appendix E Page 54	Modifications reflect changes in ordinances and policies The updated Plan includes an explanation that the local planner will provide a copy of the hazard mitigation plan to each respective advisory committee member. The local planner will recommend the advisory committee members to ensure that all goals and strategies of new and updated local planning documents are consistent with the hazard mitigation plan.		X
C. Does the updated plan explain how the local government incorporated the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?	Section IV.C., pp.50-54; Appendix B; Appendix C; Appendix D; Appendix E	Modifications reflect changes in ordinances and policies The updated Plan does not contain an identifiable explanation of how the local government incorporated the mitigation strategy and other information contained in the plan into other planning mechanisms. REQUIRED REVISION: • The updated Plan must explain how the local government incorporated the mitigation plan into other planning mechanisms, when appropriate, as a demonstration of progress in local mitigation efforts. As noted throughout the plan update, Orange County, the Town of Carrboro and the Town of Hillsborough	X	

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		have incorporated mitigation strategies identified into rules and regulations impacting development, conservation and construction in all the jurisdictions party to the plan. <i>For more information, see "Incorporating into Existing Planning Mechanisms" in the Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, Page 72.</i>		
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	X

Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Section II.C., pp.4-5; Section V, p.61 Page 54	Section II.C. was added to address ongoing public involvement following adoption of the original plan The updated Plan includes an explanation that public comments will be solicited via the local government websites, on which the Hazard Mitigation Plan will be posted, and via a public notice published in the relevant newspaper(s).		X
*denotes OCHM Team response to FEMA comments			SUMMARY SCORE	X

U.S. Department of Homeland Security
FEMA Region IV
3003 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

March 16, 2010

Mr. Doug Hoell, Director
North Carolina Division Emergency Management
4713 Mail Service Center
Raleigh, North Carolina 27699

Attention: Mr. Chris Crew
State Hazard Mitigation Officer

Reference: Orange County Multi-jurisdictional Hazard Mitigation Plan

Dear Mr. Hoell:

This is to confirm that we have completed a Federal/State review of the draft Orange County Multi-jurisdictional Mitigation Plan for compliance with the Federal Hazard Mitigation Planning standards contained in 44 CFR 201.6(b)-(d). Based on our review and comments, Orange County developed and submitted all the necessary revisions. Our staff has reviewed and approved these revisions.

We have determined the revised Orange County Multi-jurisdictional Mitigation Plan is now compliant with Federal standards, subject to formal community adoption. Upon submittal of a copy of all participating jurisdictions documentation of the adoption resolutions to our office, we will issue formal approval of the Orange County Multi-jurisdictional Hazard Mitigation Plan. Please have Orange County submit an electronic final copy of their Plan, without draft notations.

For further information, please do not hesitate to contact MaryMargaret Jackson, of the Hazard Mitigation Assistance Branch, at (770) 220-5234, or Linda L. Byers of my staff, at (770) 220-5498.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert E. Lowe", is written over a horizontal line.

Robert E. Lowe, Chief
Risk Analysis Branch
Mitigation Division