5.0 FY06-FY10 Production Forecast

This section presents the FY06-FY10 production forecast, which uses the sequencing data compiled by FEMA Regional Offices. On a regular basis, FEMA reviews and updates data at the regional level and compiles and evaluates it at the national level.

5.1 Process Used to Develop FY06-FY10 Planned Activities

The process used to sequence the FY06-FY10 planned activities is continuous. FEMA determines when to study a county and the amount of funds to allocate by:

- Determining the allocation of the national budget available to each Region
- Obtaining stakeholder input on local and State needs
- Evaluating and balancing national requirements with local and State requirements and determining the amount of Federal funding for each study

Section 3, Distribution of Funds to the Regions, discusses FEMA's approach to allocating the national budget to the Regions.

Appendix A provides a detailed listing by county for all map production activities scheduled to be initiated through FY08 and begins to reflect the Mid-Course Adjustment. The appendix lists which counties are scheduled for map production by Region and year, which year production is planned, and the funding FEMA anticipates allocating to each county for map updates. This funding is only for the map production cost (scoping to effective maps). As a result of the Mid-Course Adjustment, in some cases, a county is scheduled to not receive a flood map update with anticipated FEMA flood mapping funding through FY08. The selection of these counties was based on the national flood risk assessment, mapping priorities identified by States, and level of participation in the flood map update process. This reduction in scope enables FEMA to provide enhanced quality flood mapping for those areas at greatest flood risk. States may choose to incorporate changes to their mapping priorities in their business plans.

The following subsections provide an analysis of the projected sequencing, starting with FY06 then looking forward to FY07-FY10. Section 6, KPI Performance, details FEMA's progress in relation to FEMA's Key Performance Indicators for Flood Map Modernization.

5.2 FY06 Planned Activities

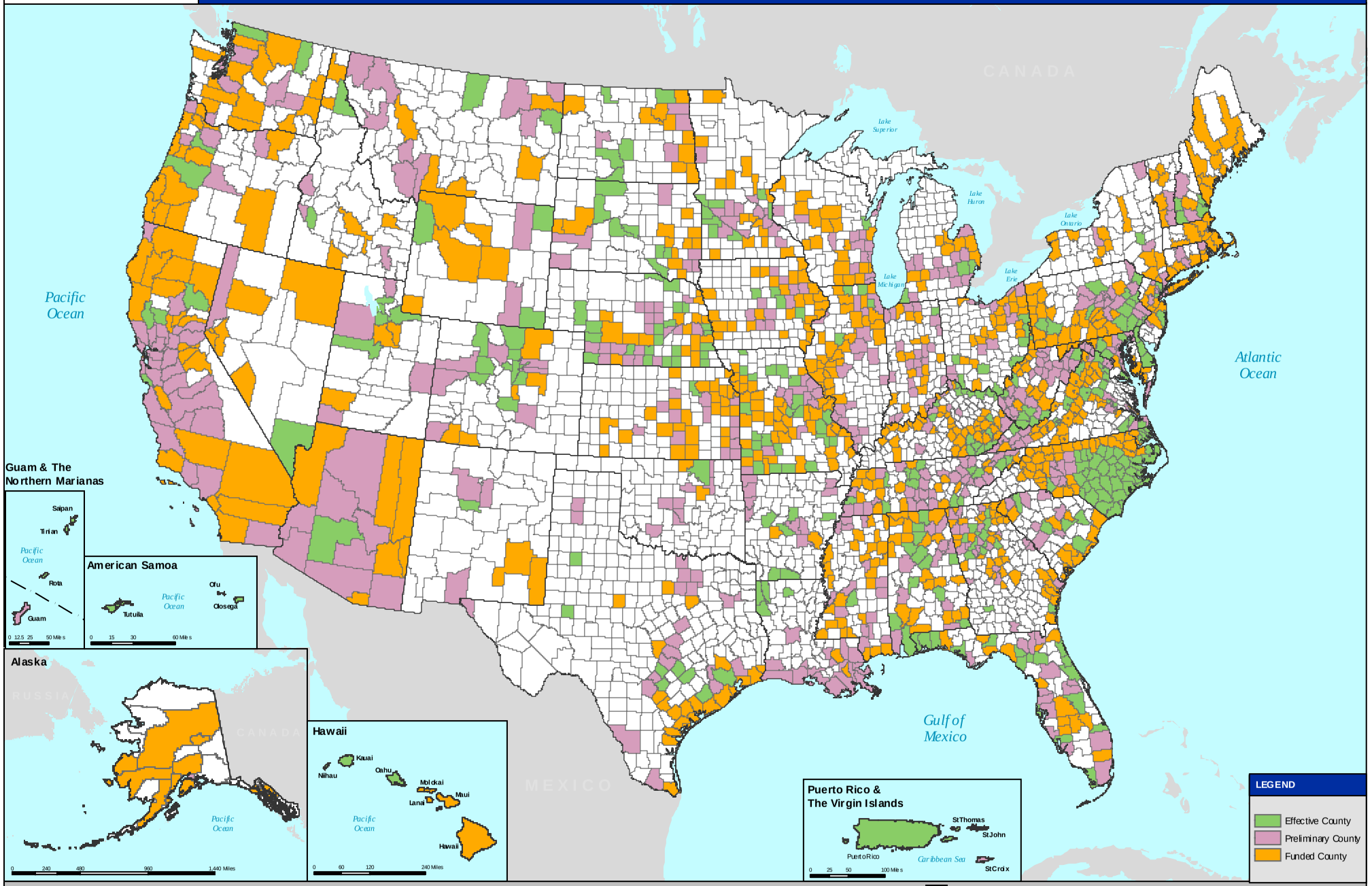
Table 5-1 shows, by Region, the number of countywide studies in FY06 FEMA anticipates funding, counties for which FEMA plans to issue preliminary maps, and counties with maps scheduled to become effective. Map 5-1 shows the nationwide projections for funding, preliminary issuance, and effective dates through FY06.

Table 5-1. Projected Mapping Activities by Region for FY06 (As of August 2006)

Region	Counties First Funded	Counties Preliminary	Counties Effective
1	22	3	3
2	11	6	3
3	78	67	14
4	128	93	60
5	124	85	21
6	72	60	14
7	81	52	21
8	44	26	17
9	58	15	3
10	35	15	2
Total	**653**	**422**	**158**

Map 5-1. Progress of Mapping Activities Through FY06

As of August 2006



5.3 FY07–FY10 Planned Activities

Tables 5-2 through 5-6 show the number of countywide studies projected to be first funded, issued as preliminary, and issued as effective, by year and by Region for FY07-FY10.

Table 5-2. Projected Mapping Activities by Region for FY07 (As of August 2006)

Region	Counties First Funded	Counties Preliminary	Counties Effective
1	31	15	6
2	23	12	14
3	61	45	67
4	164	170	110
5	143	96	88
6	115	28	60
7	37	5	51
8	66	28	32
9	75	34	3
10	46	15	16
Total	**761**	**448**	**447**

Table 5-3. Projected Mapping Activities by Region for FY08 (As of August 2006)

Region	Counties First Funded	Counties Preliminary	Counties Effective
1	23	17	13
2	28	31	12
3	113	45	45
4	166	160	170
5	165	139	96
6	170	90	28
7	44	42	6
8	49	67	28
9	57	2	27
10	44	22	15
Total	**859**	**615**	**440**

Table 5-4. Projected Mapping Activities by Region for FY09 (As of August 2006)

Region	Counties Preliminary	Counties Effective
1	1	11
2	22	31
3	47	45
4	171	160
5	160	139
6	170	89
7	40	42
8	41	89
9	7	11
10	41	22
Total	**700**	**639**

Table 5-5. Projected Mapping Activities by Region for FY10 (As of August 2006)

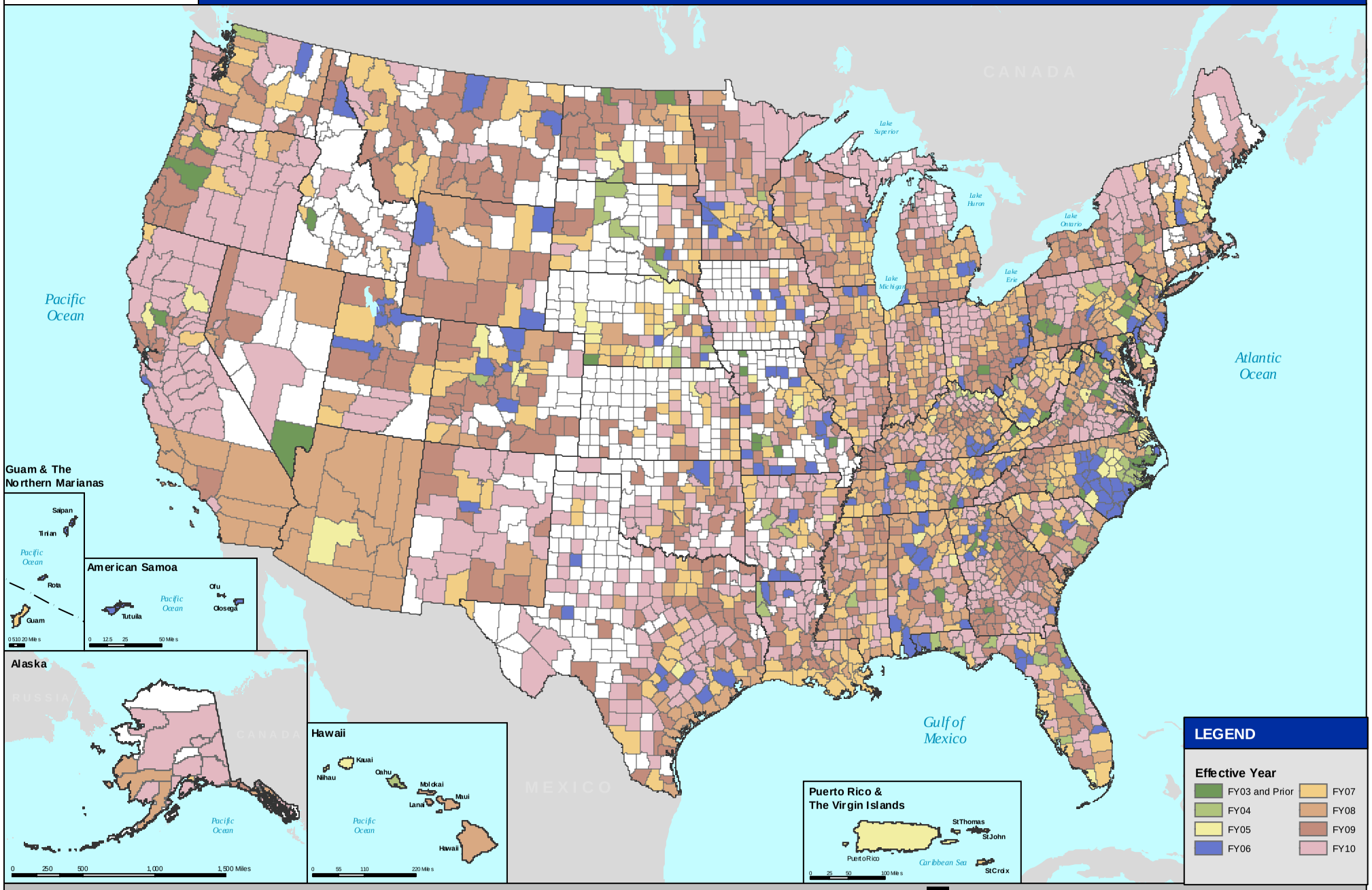
Region	Counties Preliminary	Counties Effective
1	0	10
2	0	22
3	26	47
4	7	178
5	0	160
6	0	171
7	17	40
8	0	19
9	0	11
10	0	41
Total	**50**	**699**

Map 5-2 presents, by fiscal year, the counties for which FEMA anticipates studies will become effective. In addition, appendix B presents a set of maps that show, by year, when county maps are scheduled to become effective (maps B-1 to B-5).

FEMA

Map 5-2. Effective Year of Counties

As of August 2006



5.4 Comparison of Planned Activities with Business Plans

As described in section 2, Stakeholder Input, nearly all States, territories, and water management districts in Florida submitted business plans to FEMA in FY04, documenting their plans for Flood Map Modernization. Just over half submitted revised business plans or amendments in FY05. Again in 2006, just over half of the States and other FEMA jurisdictions submitted revised plans.

The State business plan guidance provided by FEMA requests an outline of how the State/locality will develop and maintain the capability and capacity for managing Flood Map Modernization efforts. As State business plans are developed, States may take into account the current sequencing data to help identify counties that should be studied. In addition, FEMA tries to incorporate the State business plans to the greatest extent possible in the current sequencing. Although FEMA does not direct States to constrain their plans within a specific budget, FEMA does request that States identify how local and State resources could be provided to address gaps in Federal funding for their desired Flood Map Modernization efforts. Although these desired efforts do not include producing flood maps, examples of what these efforts may include are:

- Digital Flood Insurance Rate Map maintenance management
- Quality standards
- Levee strategy
- Outreach
- Map Adoption

In addition to the State business plans, FEMA creates a "snapshot" of every submitted plan. These "snapshots" briefly summarize the business plans and are a useful tool for NFIP State Coordinators or appropriate personnel to help mitigate flood hazard activities. Another way to help mitigate flood hazard activities is through best practices funding. If States include best practices for floodplain management in their business plans, the Flood Map Modernization Management Support Program may provide additional funding to these States to help innovative ideas come to fruition.

The FY07 State business plan guidance was distributed to the Regions in the summer of 2006 and incorporated the Mid-Course Adjustment for the first time. States were asked to update their plans according to the new goals of Flood Map Modernization. As Flood Map Modernization progresses, FEMA will continue to work with the States to refine sequencing.

5.5 Production Sequence

The production sequence can be evaluated by considering several different distributions of the studies. Subsections 5.5.1, 5.5.2, and 5.5.3 present a comparison based on risk, funding amount, and funding year, respectively.

5.5.1 Distribution by Risk

Flood Map Modernization production priorities can be driven by risk, as stated by the FY03 funding distribution factors. This sequencing is described in section 3, Distribution of Funds to the Regions. To evaluate distribution by risk, all counties in the Nation were sequenced by risk and divided into deciles, with the top 10 percent of at-risk counties placed in the first decile and the last 10 percent of at-risk counties placed in the last decile.

Table 5-6 shows the number of counties in each decile that are projected to be first funded during each fiscal year. It also shows that, generally, counties with the highest risk (the lower decile counties) are being studied in the early years of Flood Map Modernization. This information helps balance mapping activities to coincide with regional business plans and goals, and nationwide sequencing.

Table 5-6. Number of Counties Nationwide per Decile First Funded per Fiscal Year (As of August 2006)

Decile	FY03 and Prior	FY04	FY05	FY06	FY07	FY08	Total
1	152	79	48	15	14	7	315
2	90	73	64	35	38	10	310
3	62	62	49	42	71	22	308
4	32	49	39	56	90	38	304
5	22	25	45	46	74	89	301
6	29	14	23	61	58	108	293
7	26	21	16	46	65	111	285
8	16	14	13	31	48	117	239
9	21	10	11	19	51	69	181
10	13	10	18	2	16	33	92
Total	**463**	**357**	**326**	**353**	**525**	**604**	**2,628**

5.5.2 Distribution by Funding Amount

To evaluate distribution by funding amount, the sequencing of the studies is sorted by the amount of Federal funding available for each county map update, the basis of a range of dollars, and compared to the population percentage. FEMA Regional Offices estimated funding required for each county study through local and State knowledge of study needs and experience in performing flood insurance studies.

Table 5-7 shows that the projected cost for approximately 37 percent of the studies, covering 18 percent of the population is $100,000 or less apiece (this includes areas that will not be studied). Table 5-7 also shows that approximately 15 percent of the studies, comprising about 50 percent of the population, each will receive funding greater than $400,000. Figure 5-1 shows the number of counties per funding range. Figure 5-2 shows the percent of population per funding range.

Table 5-7. Number of Counties within Given Funding Range (As of August 2006)

Range (in $1000s)	County Distribution	Percent of Distribution	Percent of Population
$0 - $100	1152	37%	18%
$100 - $200	911	29%	13%
$200 - $400	610	19%	19%
$400 - $600	232	7%	13%
$600 - $800	112	4%	10%
$800 - $1000	58	2%	7%
> $1000	71	2%	20%
Total	**3,146**	**100%**	**100%**

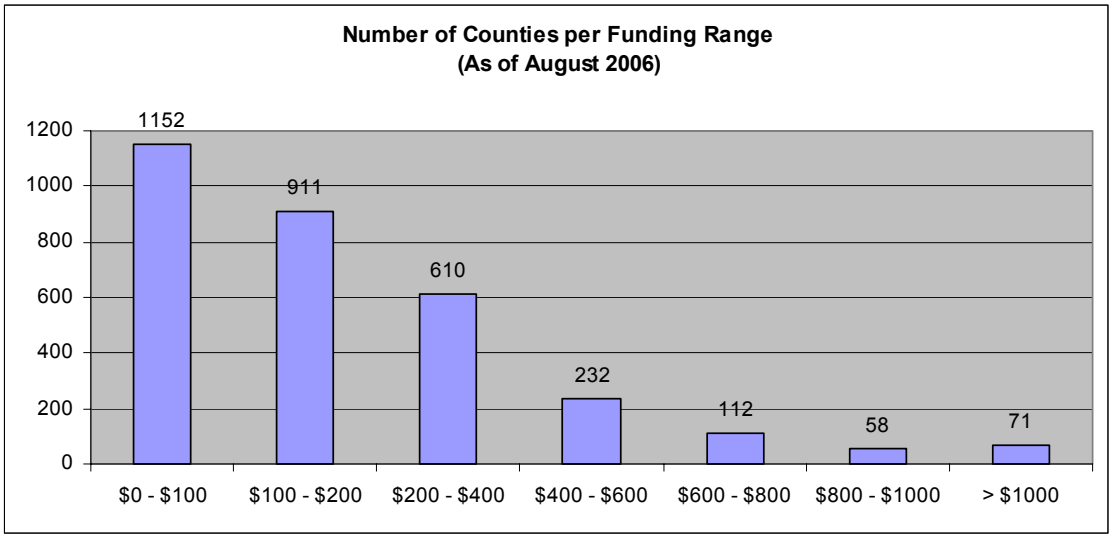


Figure 5-1. Number of Counties per Funding Range

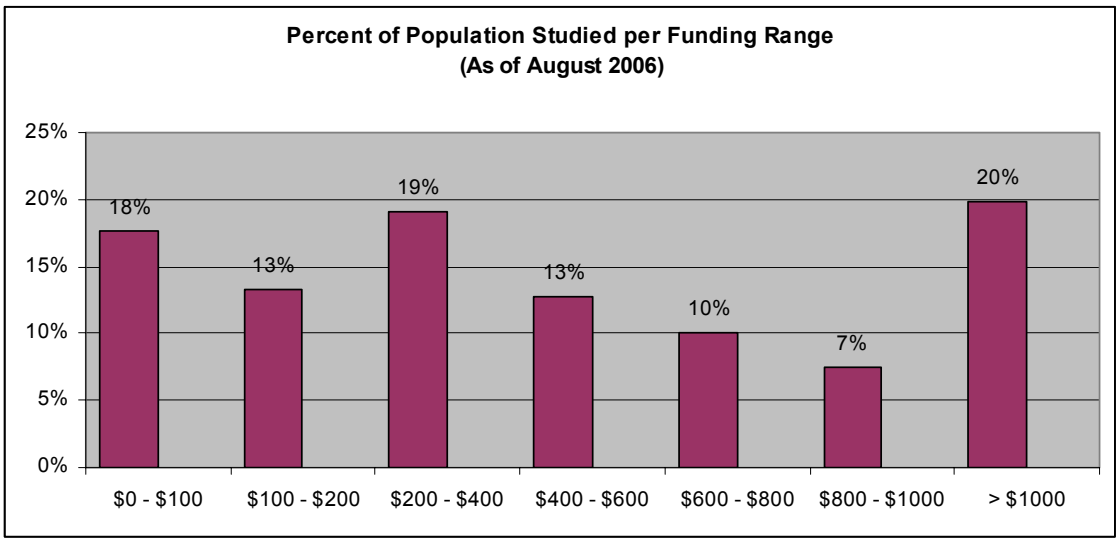


Figure 5-2. Percent of Population Studied per Funding Range

5.5.3 Distribution by Funding Year

Figure 5-3 shows the average funding per county for each year of the plan.

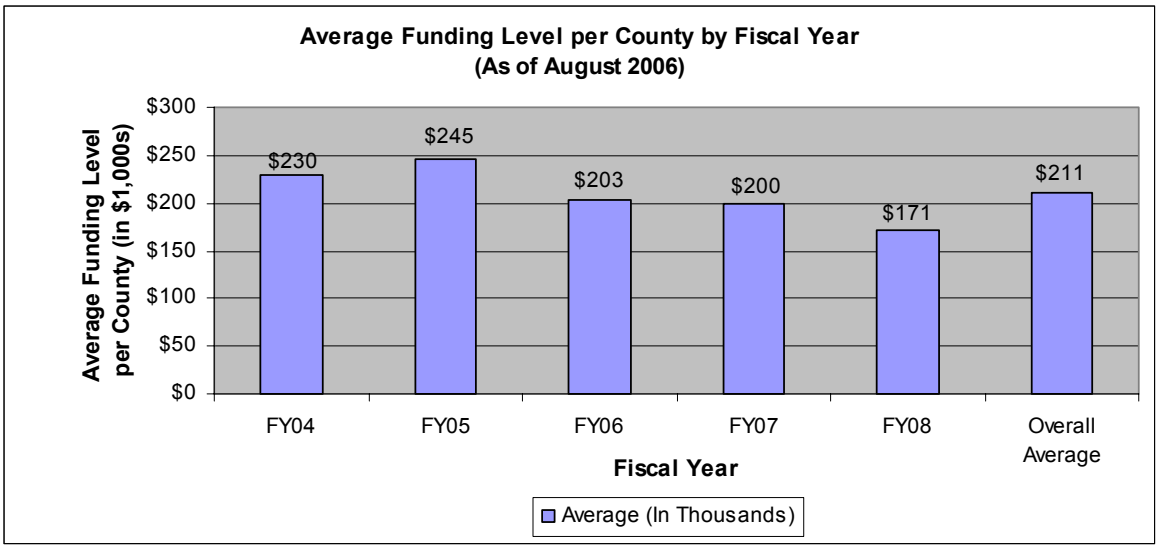


Figure 5-3. Average Funding Level per County by Fiscal Year

5.6 Analysis of Coastal Counties

Coastal counties often have a higher risk of flooding than non-coastal areas, due to the rapid and violent nature of flood hazards from storm and wave action. A total of 352 counties in the United States (excluding the U.S. Territories) have shoreline exposure to the Atlantic Ocean, the Gulf of Mexico, the Pacific Ocean, or the Great Lakes. All of these counties are subject to coastal flooding from storm surges that cause a high tide, or stillwater, elevation during the base (1-percent-annual-chance) flood event, with additional flood hazard exposure caused by wave effects (wave setup, runup, and overtopping) and, in many cases, beach and dune coastal erosion processes. The areas of coastal high flood hazards established by the 1-percent stillwater elevation are designated as AE Zones and those areas with additional water velocity hazards caused by wave action are designated as VE Zones. Coastal counties also may have primary frontal dunes located along the shoreline that would make them subject to additional mapping criteria that require the VE Zone to extend to the inland limit of the primary frontal dune.

In this regard, these coastal counties have unique flood hazards. Therefore, it is appropriate to consider this set of 352 coastal counties separately from those with exposure only to riverine flooding caused by the runoff of precipitation. If a coastal flood restudy of storm surge establishes new stillwater elevations, then all shorelines of those coastal counties would be affected and subject to revisions and updates. However, along the shorelines of inland water bodies of coastal counties that are sheltered from direct wind and wave action no additional detailed analyses of wave effects or erosion would likely be required.

Approximately 85 additional counties that are adjacent to and inland of the 352 counties located directly on open coastlines may also be considered coastal counties because they have shoreline exposure to major inland bays, such as the Chesapeake Bay, with direct connection to the open ocean. In general, these counties are within close proximity (within 25 miles) to a principal flood source or have the possibility of a connection to a river or bay subject to coastal flooding from the 1-percent stillwater elevation. On the basis of a preliminary review of effective flood hazard information, 22 of the 85 adjacent inland counties have confirmed coastal flooding from the 1-percent stillwater elevation included in the flood study and 13 have unknown influence by coastal flooding.

Of the 22 identified adjacent inland counties, six have Base Flood Elevations (BFEs) associated with the 1-percent stillwater elevation in the published flood data for the coastal base flood event, as well as an additional risk component from the influence of wave effects and coastal erosion processes. In the other 16 counties, coastal flooding during the base flood event is a result of tidally-influenced backwater flooding effects along a river or inland bay with a direct connection to a principal flood source along the open ocean. These counties probably would not be subject to direct wave effects or coastal erosion processes at the time of the coastal base flood event.

The 13 adjacent inland counties with unknown influence have no published flood data available for review online. For the purposes of this plan, FEMA assumed that it probably would not be subject to any influence by coastal flooding during the coastal base flood event. FEMA will need to review the potential influence of coastal flood hazards for these and the remaining 50 inland coastal counties in more detail as the appropriate coastal flooding sources are restudied and remapped.

Figure 5-4 shows the number of coastal counties planned or projected to be funded, issued in preliminary form, and effective by fiscal year. This includes the 352 coastal counties and 35 of the 85 inland coastal counties. Figure 5-4 shows that most coastal counties are distributed relatively equally from FY04-FY08 with all being funded by FY08.

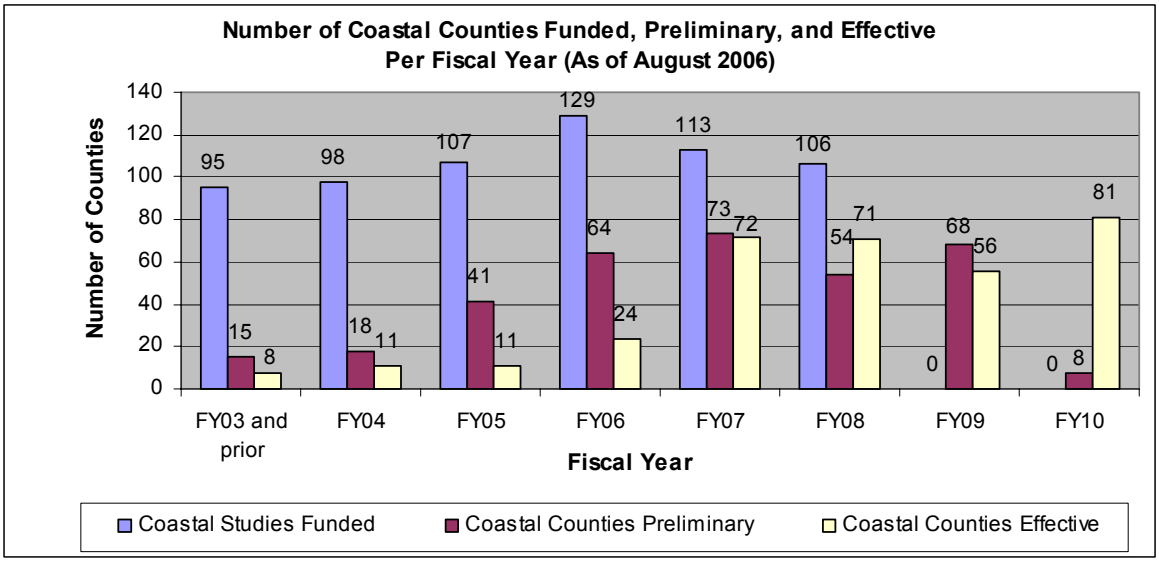


Figure 5-4. Number of Coastal Counties Funded, Preliminary, and Effective per Fiscal Year

5.7 Potential Risks to Map Production Schedule

Appendix A of this MHIP outlines FEMA's planned map production schedule. FEMA recognizes, however, that certain factors exist that could potentially affect this schedule. FEMA maintains a risk management inventory, in which potential risks – as well as possible ways to mitigate them – are cataloged and described. The following are some of these potential risks that may affect the planned map production schedule:

- **Recognition of levee system protection on Flood Insurance Rate Maps (FIRMs) –** Approximately one-quarter of all counties being mapped under Flood Map Modernization show levees on their existing FIRMs and therefore, the recognition of those levees on FIRMs will need to be addressed within the mapping process. FEMA will only recognize those levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards. Code of Federal Regulations 44 (44 CFR) Section 65.10 describes the information needed to recognize whether a levee system provides protection from the base flood event. The required information must be supplied to FEMA by the community or other party seeking recognition of the levee system. To acquire FEMA's recognition that a levee system protects an area against the base flood event, a community or levee owner must supply FEMA with such data as certification and design criteria (including information on freeboard, closures, embankment protection, embankment and foundation stability, settlement, interior drainage, etc.), and operation and maintenance plans.
- **Coordination and timeframe of community review of updated FIRMs –** To facilitate community adoption of updated FIRMs, coordination of an adequate review and comment period with all impacted communities is necessary to provide due process. This

coordination can be impacted by community ordinance or state law that requires the community to adopt the maps under strict guidelines or at a given time of year (e.g., annual meeting). When a community or other interested party files an appeal of its proposed BFEs, FEMA or the mapping partner must review the data to determine if they are technically or scientifically correct. This appeals process is important to develop the most accurate maps possible. Data provided during this process can assist in this endeavor. However, this can result in delays to the map production schedule.

- **New mapping partners –** Mapping partners who are new to Flood Map Modernization may not be familiar with the complete map production process and workflow. The time required to coordinate and provide additional assistance and outreach to impacted communities and new flood mapping partners may impact projected timeframes for map update completion.
- **Natural disasters –** In the event of a natural disaster, FEMA staff supporting the Flood Map Modernization effort may be tasked to provide support to areas impacted by natural disasters.
- **Funding –** The planned map production schedule is based on planned funding for Flood Map Modernization. Changes to planned funding amounts could impact the schedule for flood map production.