

6.0 PRODUCTION ANALYSIS

This section discusses the actual and projected production of map updates, which are detailed in the previous sections, in the context of FEMA's national key performance indicators (KPIs) for Map Modernization. It analyzes progress against the KPIs based on actual and planned map production progress for FY04 and forecasted progress for FY05-FY10.

The KPIs emphasize improving and updating the Nation's flood maps and increasing state and local involvement in and ownership of those maps.

6.1 Map Modernization National KPIs

The four KPIs for Map Modernization, as described in Section 1, Introduction, emphasize both improving and updating the Nation's flood maps and increasing the level of state and local involvement in and ownership of those maps. Meeting these KPIs will help FEMA meet its overall objective to increase the safety for the United States by providing accurate flood risk data in GIS format. The four KPIs are as follows:

1. KPI 1 (percentage of population with digital GIS flood data available online): This KPI is based on the percentage of the national population that has digital flood data available online. Because the NFIP and Map Modernization are organized around community participation, this goal is measured in terms of communities mapped to date. A community's population can be counted when they receive preliminary maps based on FEMA's DFIRM standards.
2. KPI 2 (percentage of population with adopted maps that meet quality standards): This KPI is based on the percentage of the national population with adopted GIS maps. Because the NFIP and Map Modernization are organized around community participation, this goal is measured based on communities mapped to date. A community's population can be counted only when they have adopted effective DFIRMs. KPI 2 lags behind KPI 1 primarily because of the time it takes to make the maps effective. This KPI is primarily an indicator of product quality and of the success of the FEMA outreach program.
3. KPI 3 (percentage of effort leveraged): This KPI is based on the percentage of effort leveraged. It is measured by the dollars contributed by local and State partners divided by the dollars allocated by FEMA. Leverage can include CTP dollars spent on Map Modernization and/or CTP dollars given to FEMA. Leverage also can include in-kind services such as providing topographic data, field surveys, engineering analyses, and GIS efforts, translated to dollars contributed. Note that the KPI target is 20 percent for all years. FEMA is strongly encouraging CTPs to contribute 20 percent of the required costs of their projects. KPI 3 also accounts for contributions by other Federal agencies that support Map Modernization projects.

4. KPI 4 (percentage of funds to CTPs): KPI 4 is based on the percentage of funds to CTPs. The percentage of funds is based on the dollars allocated to CTPs divided by the dollars appropriated for Map Modernization. This KPI measures the percentage of the total fiscal year funding appropriated for CTPs to encourage their involvement in preparing and maintaining their flood map products.

The specific annual targets for each of these KPIs are again listed in table 6-1. The targets begin in FY04, the first year of full funding, although progress to date includes activities funded in FY03. Some regional statistics may exceed these KPIs and others may fall short, but all regional statistics will roll up to the national KPIs.

Table 6-1. Map Modernization National KPIs

KPI	FY04	FY05	FY06	FY07	FY08	FY09
KPI 1: Population with digital GIS flood data available online	20%	50%	65%	75%	85%	97%
KPI 2: Population with adopted maps that meet quality standards	10%	20%	35%	50%	70%	90%
KPI 3: Percent of effort leveraged	20%	20%	20%	20%	20%	20%
KPI 4: Appropriated funds sent to CTPs	20%	25%	33% ¹	33% ¹	33% ¹	33% ¹

Note: KPI 1 and KPI 2 are cumulative; KPI 3 and KPI 4 are annual

* Targets for FY06–FY09 depend on the ability to develop local and state capability. There are significant assumptions in KPI 4, and FEMA is examining strategies to increase the target numbers.

6.2 Analysis of Progress Through FY04

Section 4, FY04 Production Report, summarizes FEMA’s progress in terms of map production through FY04. This section compares that data with FEMA’s FY04 KPIs. Table 6-2 lists FEMA’s target and actual results for the four KPIs through FY04, based on data available through November 5, 2004.

Table 6-2. KPI Targets and Results Through FY04

Key Performance Indicator	Target	Result
KPI 1: Population with digital GIS flood data available online	20%	17%
KPI 2: Population with adopted maps that meet quality standards	10%	8%
KPI 3: Percent of effort leveraged	20%	36%
KPI 4: Appropriated funds sent to CTPs	20%	38%

As shown for KPI 1 and 2, FEMA covered 17 percent of the population with digital GIS flood data online, and 8 percent of the population were covered by adopted maps by the end of FY04; however, FEMA did not meet KPI 1 or 2. FEMA exceeded KPIs 3 and 4 by the end of FY04.

FEMA is committed to successful implementation of Map Modernization. FEMA has made significant accomplishments in providing updated digital GIS flood data for nearly one fifth of the population of the United States. This accomplishment will immediately help protect people and property from flood devastation by providing a reliable picture of flood risk to promote sound floodplain management practices and support an actuarially sound flood insurance program with fair and equitable flood insurance rates.

As stated in this plan, the availability of updated, reliable flood hazard data and maps, and adoption and use by participating NFIP communities, is fundamental to the success of Map Modernization. Therefore, FEMA set high targets for performance for Map Modernization KPIs 1 and 2 FEMA through FY09. These high expectations reinforce the importance of the program and achieving the goals. It is important to note that these targets were established prior to the development of a five-year mapping plan. For a program of this size, scope, and complexity, some variation from the targets is expected. The numbers indicate the plan may be on the aggressive side, although achievable over 5 years. Future adjustments to the targets may be necessary as more data becomes available. FEMA welcomes input on how these KPIs could be refined to fully measure the utility of flood hazard data and maps for all NFIP mitigation efforts.

The following subsections present FEMA's estimates of achievement based on data as of November 5, 2004. Figures show the projected performance by fiscal year, based on the plan presented in Appendix A, as a percentage of the KPI established by FEMA's National Office.

6.2.1 KPI 1: Population with Digital GIS Flood Data Available Online

Table 6-3 presents progress, by Region, toward meeting KPI 1 targets for FY04 (calculated cumulatively). The table lists the number of counties with preliminary maps, the projected percent of the nation's population covered by these maps (calculated by community), and the total of the nation's population covered by the preliminary maps (calculated by community). In addition to the population covered by the countywide maps, the table also includes population with updated GIS flood data at the community level, because some studies were initiated prior to FY04 but completed in FY04 were completed for communities but not the entire county. As of the end of FY04, FEMA provided digital GIS flood data available online for 17 percent of the population.

Table 6-3. KPI 1: Population with Digital GIS Flood Data Available Online Through FY04 (November 5, 2004)

Region	Counties With Preliminary Maps	Population Total with Preliminary Maps	Percent of Population with Preliminary Maps
1	6	1,220,647	9%
2	4	5,498,662	18%
3	36	6,349,259	23%
4	70	10,829,495	20%
5	11	3,193,870	6%
6	8	6,085,722	18%
7	37	1,373,724	11%
8	23	1,468,971	16%
9	8	12,285,585	29%
10	4	1,111,607	10%
Total	207	49,417,542	17%

Figure 6-1 also presents progress toward KPI 1 graphically.

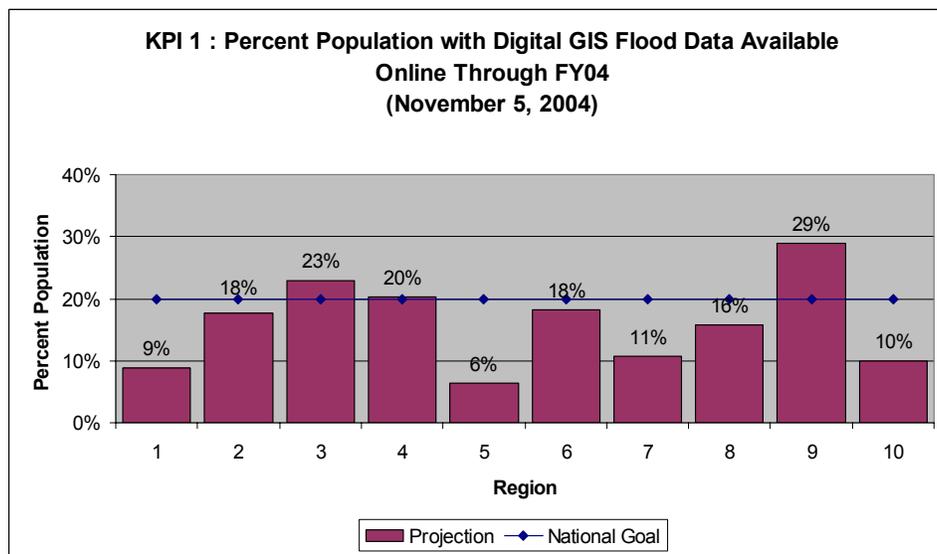


Figure 6-1. KPI 1: Percent of Population with Digital GIS Flood Data Available Online Through FY04 (November 5, 2004)

6.2.2 KPI 2: Population with Adopted Maps That Meet Quality Standards

Table 6-4 presents the Regions’ projected progress, by Region, toward meeting KPI 2 targets in FY04 (calculated cumulatively). The table lists the number of adopted maps, the projected percent of the nation’s population covered by these maps (calculated by community), and the total population of the nation covered by the adopted maps (calculated by community). In addition to the population covered by the countywide maps, the table also includes population with adopted maps at the community level, because maps are adopted by communities, not counties. According to data as of November 5, 2004, 8 percent of the population had adopted modernized maps.

A note on adoption; Since maps are generally not adopted by counties, but by smaller jurisdictions, it is not meaningful to compare the number of counties with preliminary maps with the number of counties with adopted maps. It also takes time after a map is preliminary before it is adopted, so a lag is expected. Therefore, in addition to measuring communities with adopted maps, FEMA measures the number of communities that participate in the NFIP that adopt the maps.

In FY04, FEMA issued 561 Letters of Final Determination. This means that 561 individual participating communities were required to review and possibly update their local floodplain management ordinance to ensure it meets the minimum criteria of the NFIP, as well as, adopt the new or revised Flood Insurance Rate Maps and Flood Insurance Study. Out of the 561 communities, FEMA suspended only 20 of those communities for “failure to adopt” the maps by the FIRM effective date. This means that, for the FY04, 96% of communities receiving a new or revised study and participating in the NFIP have adopted the maps. Future production rates (i.e., the issuance of LFDs) are expected to increase dramatically as Map Modernization is implemented over the next 5 years.

Table 6-4. KPI 2: Population with Adopted Maps Through FY04 (November 5, 2004)

Region	Counties With Adopted Maps	Population Total with Adopted Maps	Percent of Population with Adopted Maps
1	0	618,925	4%
2	1	309,893	1%
3	28	4,543,011	16%
4	35	6,663,515	13%
5	2	1,126,312	2%
6	4	1,278,831	4%
7	15	289,124	2%
8	11	614,114	7%
9	4	5,338,386	13%
10	4	1,103,189	10%
Total	104	21,885,300	8%

Figure 6-2 presents progress toward KPI 2 graphically.

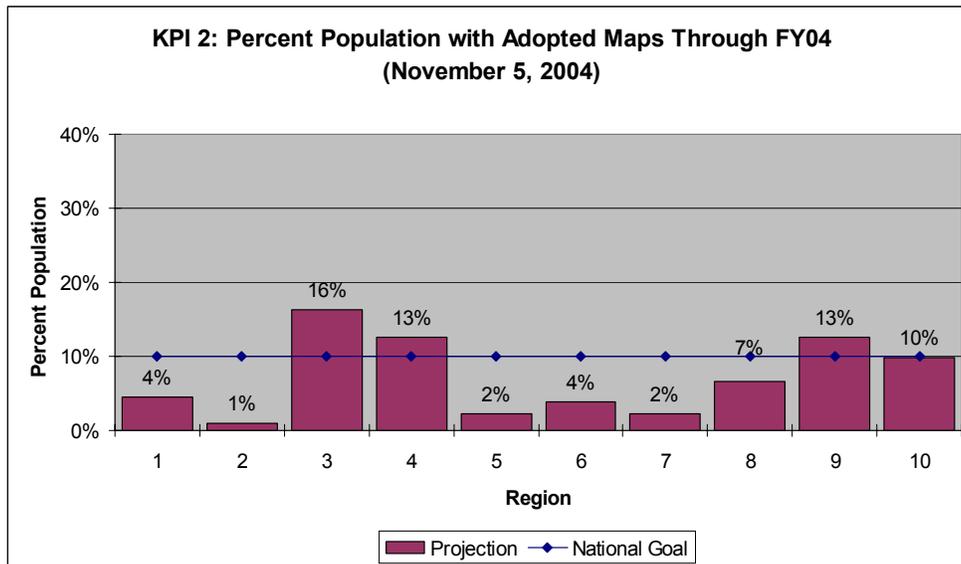


Figure 6-2. KPI 2: Percent of Population with Adopted Maps Through FY04 (November 5, 2004)

6.2.3 KPI 3: Effort Leveraged

Table 6-5 presents FEMA’s progress toward meeting KPI 3 targets in FY04 (calculated annually). FEMA’s Regional Offices reported that dollars leveraged from local, non-FEMA sources for Map Modernization in FY04 substantially exceed the target level of 20 percent, with 36 percent of the effort leveraged from other partners.

FEMA’s significant progress in leveraging effort from partners may be attributed to several factors. Many of the counties funded in FY04 include CTPs and other partners who have resources to contribute to the program. High profile mapping programs including the State of North Carolina; Harris County, Texas; and others have contributed millions of dollars to producing modernized maps. It is worth noting that many of the areas funded to date include counties with high population; and some of these high population counties have greater resources available to them to contribute. As a result, FEMA anticipates it will be easier to leverage resources from partners in the beginning of the program, and FEMA expects that leveraged resources will be higher in the first few years.

Table 6-5. KPI 3: Effort Leveraged In FY04 (November 5, 2004)

Region	Counties With Effort Leveraged from Partners	Total Effort (in Thousands of Dollars) Leveraged from Partners	Percent of Effort Leveraged from Partners
1	5	\$307	7%
2	7	\$2,469	21%
3	27	\$7,282	43%
4	48	\$20,315	36%
5	50	\$11,137	47%
6	24	\$13,981	44%
7	10	\$8,142	52%
8	3	\$364	6%
9	12	\$1,070	9%
10	6	\$1,133	20%
Total	192	\$66,200	36%

Figure 6-3 presents this information graphically.

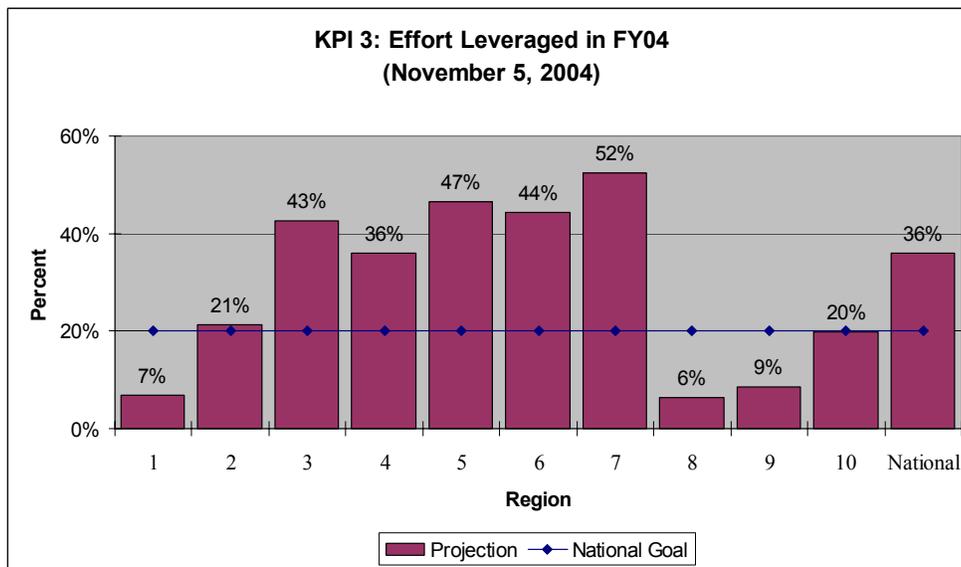


Figure 6-3. Percent of Effort Leveraged In FY04 (November 5, 2004)

6.2.4 KPI 4: Appropriated Funds Sent to CTPs

Table 6-6 presents FEMA’s progress toward meeting targets in FY04 for KPI 4 (also calculated cumulatively), funding given to CTPs by FEMA. FEMA’s Regional Offices reported that leveraged dollars for Map Modernization through FY04 total 38 percent, which substantially exceeds the target level of 20 percent.

Many states have joined FEMA’s CTP program recently and contributed dollars, services, and other resources to making maps. FEMA currently has 191 CTPs (as of November 2004) and has sent \$44

million in funding directly through the CTPs, approximately 38 percent of the map production funding available.

Table 6-6. KPI 4: Appropriated Funds Sent to CTPs In FY04 (November 5, 2004)

Region	Counties With Funds Sent to CTPs	Total Funds (in Thousands of Dollars) Sent to CTPs	Percent of Funds Sent to CTPs
1	4	\$390	9%
2	2	\$2,000	22%
3	26	\$4,318	44%
4	107	\$29,781	83%
5	41	\$5,456	43%
6	6	\$1,235	7%
7	10	\$907	12%
8	0	\$0	0%
9	2	\$137	1%
10	8	\$700	15%
Total	206	\$44,923	38%

Figure 6-4 presents this information graphically.

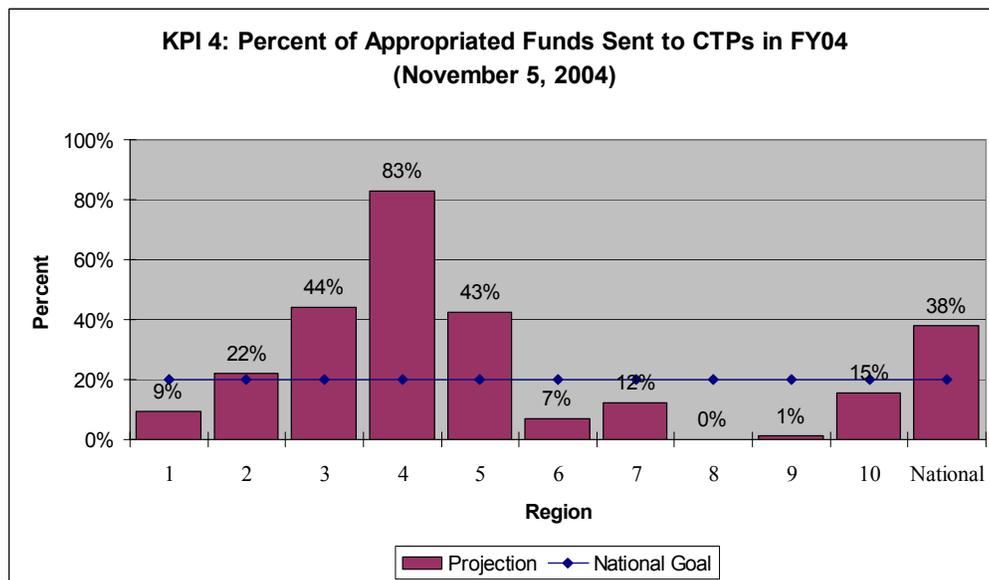


Figure 6-4. Percent of Appropriated Funds Sent to CTPs In FY04 (November 5, 2004)

6.3 Analysis of KPIs for FY05 through FY10

FEMA currently anticipates meeting the KPIs for future fiscal years. While the current sequencing shows that FEMA may not meet the targets for KPIs 1 and 2 for FY05, FEMA believes they are still achievable. Scoping has not yet been completed for FY05, dollars have not yet been contracted, and FEMA does not yet have an accurate picture of potential leveraged resources, which may increase the total production in FY05. FEMA is also investigating studies that may be

accelerated and is taking action to minimize potential delays to the production and adoption processes. In addition, some of the management reserve (see section 3) will be made available and will contribute to meeting the targets.

6.3.1 KPI 1: Population with Digital GIS Flood Data Available Online

Figure 6-5 indicates that according to the plan, GIS flood data will be available for 40 percent of the population by the end of FY05. This number represents more than a 100 percent increase over the population provided updated GIS flood data by the end of FY04. FEMA believes the target of 50 percent for KPI 1 is still achievable for FY05. FEMA anticipates that 100 percent of NFIP communities will have preliminary maps by FY10.

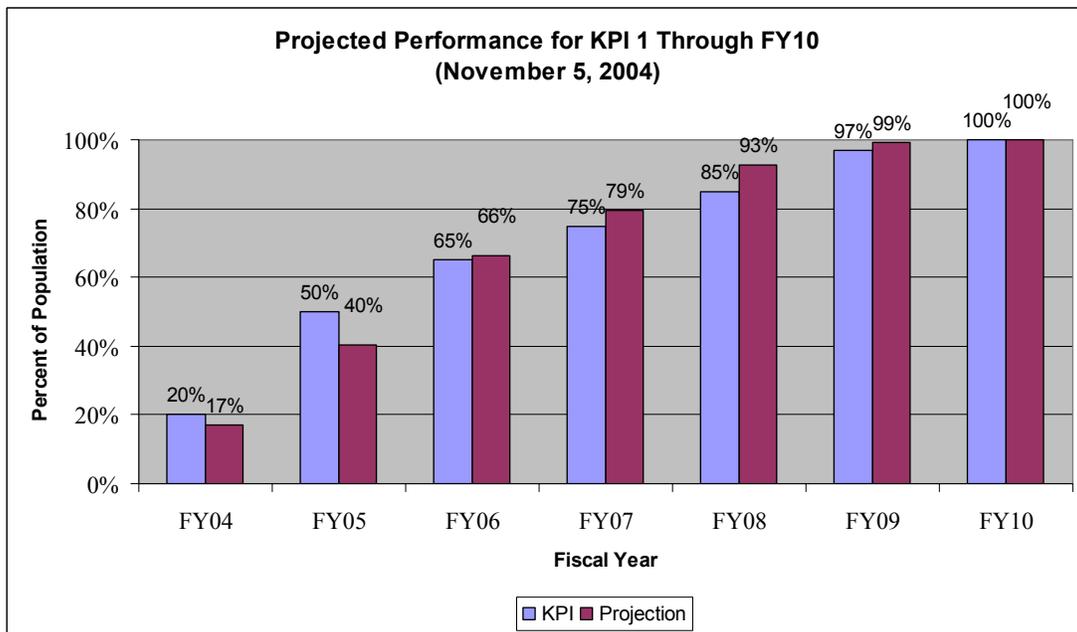


Figure 6-5. Projected Performance for KPI 1 through FY10

6.3.2 KPI 2: Population with Adopted Maps that Meet Quality Standards

Figure 6-6 indicates that according to the plan, adopted maps will be available for 16 percent of the population. This number represents a 100 percent increase over the population with adopted by the end of FY04. FEMA believes the target of 20 percent is still achievable for FY05. FEMA anticipates that 100 percent of NFIP communities will have adopted maps by FY10.

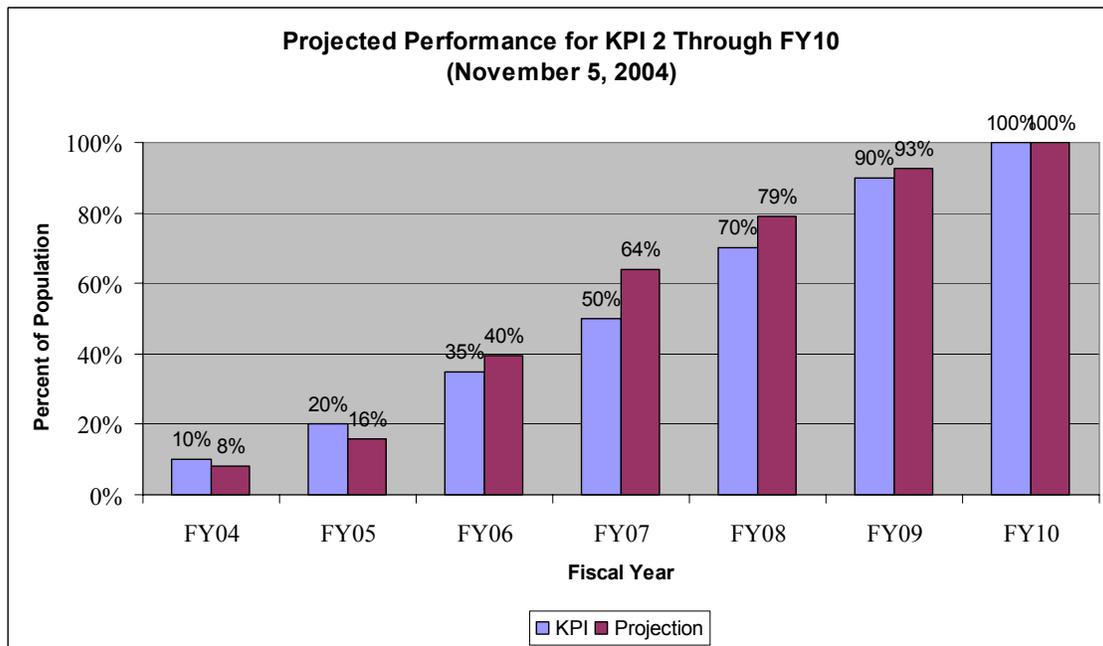


Figure 6-6. Projected Performance for KPI 2 through FY10

6.3.3 KPI 3: Effort Leveraged and KPI 4: Appropriated Funds Sent to CTPs

As of the publication date of this document, FY05 studies have not yet begun and data is not yet available to predict the levels of participation and leveraging of data and/or funds from CTPs and other potential mapping partners for FY05-FY09. FEMA is currently re-evaluating how to calculate contributions leveraged from partners. FEMA plans to project performance for KPIs 3 and 4 for FY05 in the Draft FY05-FY09 MHIP planned for release in Spring 2005.

One of the factors critical to the success of Map Modernization is the involvement of CTPs and other mapping partners. KPIs 3 and 4 measure the effectiveness of the effort in terms of leveraging funding and involvement. The level of involvement of CTPs has greatly increased as Map Modernization and associated funding has been developed; however, the level of CTP participation must increase significantly in order to meet FEMA’s goal of transferring the ownership of maps and data to the states and local partners.

6.3.4 Overall Progress Through FY10

Table 6-7 shows the current projections toward meeting the targets for all KPIs, based on the current sequencing data. Based on these projections, FEMA may not meet the targets for KPIs 1 and 2 for FY05, although FEMA believes they are still achievable. FEMA expects to meet the targets for KPIs 1 and 2 in FY06-FY09. Currently, it appears that FEMA will meet targets for the KPIs by the end of the program, if not in FY05, but this assumes that nearly 100 percent of the

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studies will proceed as scheduled as data becomes available. FEMA will address the likelihood of schedule problems for studies in plan updates.

Table 6-7. Comparison of KPIs and Projected Performance

KPI	FY04		FY05		FY06		FY07		FY08		FY09	
	KPI	Proj.										
KPI 1: Population w/ digital GIS flood data available online	20%	17%	50%	40%	65%	66%	75%	79%	85%	93%	97%	99%
KPI 2: Population with adopted maps that meet quality standards	10%	8%	20%	16%	35%	40%	50%	64%	70%	79%	90%	93%
KPI 3: Effort Leveraged	20%	36%	20%	N/A								
KPI 4: Appropriated funds sent to CTPs	20%	38%	25%	N/A	35%	N/A	45%	N/A	50%	N/A	60%	N/A

Note: KPI 1 and KPI 2 are cumulative; KPI 3 and KPI 4 are annual

* Note: Targets for FY06–FY09 depend on the ability to develop local and state capability. There are significant assumptions in KPI 4, and FEMA is examining strategies to increase the target numbers.