

**Illinois Department of Natural Resources**  
*and*  
**Federal Emergency Management Agency,**  
**Cooperating Technical Partners**



**Mapping Activity Statement No. IDNR04-3**

**Digital Flood Insurance Rate Map Production and Development of Updated Flood Data, Kane County, Illinois**

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated May 3, 2004, between the State of Illinois (through its Department of Natural Resources, hereafter IDNR) and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement (MAS) IDNR04-03 is as follows.

**SECTION 1—OBJECTIVE AND SCOPE**

The objective of the Flood Map Project documented in this MAS is to prepare a Digital Flood Insurance Rate Map (DFIRM) base map and draft standard DFIRM database and updates for the FIS text for Kane County, Illinois, meeting current standards. The DFIRM will be produced in the FEMA countywide format. Existing GIS data and study needs for the community will be researched, obtained, organized, and provided in accordance with Activity 1. This product will be in NGVD 1929 as the local topography is registered to that datum. Scoping will be necessary to determine the final scope of work for this project.

The Mapping Partners involved in this project will develop new updated flood hazard data, as summarized in the table below.

**Table 1-1. Flooding Sources and Limits**

<b>Flooding Source</b>	<b>Reach Downstream Limit (feet)</b>	<b>Reach Upstream Limit (feet)</b>	<b>Redelineation Using Effective Flood Profiles and Updated Topographic Data</b>
7th Ave Creek	0	10500	X
7th Ave Trib	0	1290	X
Blackberry Creek	47000	173000	X
Blackberry Creek Trib A	0	11600	X
Blackberry Creek Trib B	0	26800	X
Blackberry Creek Trib C	0	16000	X
Blackberry Creek Trib D	0	11900	X
Blackberry Creek Trib E	0	7200	X
Blackberry Creek Trib F	0	8000	X

**Table 1-1. Flooding Sources and Limits (Cont'd)**

<b>Flooding Source</b>	<b>Reach Downstream Limit (feet)</b>	<b>Reach Upstream Limit (feet)</b>	<b>Redelineation Using Effective Flood Profiles and Updated Topographic Data</b>
Blackberry Creek Trib G	0	9400	X
Blackberry Creek Trib H	0	8700	X
Bowes Creek	0	31100	X
Bowes Creek Trib	0	2530	X
Brewster Creek	0	4400	X
Carpenter Creek	0	2000	X
Eakin Creek	0	3480	X
Ferson Creek	0	75750	X
Fitchie Creek	0	26300	X
Four Winds Way	0	3620	X
Fox River	238000	431300	X
Fox River East Channel	253000	259000	X
Fox R. Trib	8750	22900	X
Fox R. Trib East Br	0	2540	X
Geneva Creek	0	4100	X
Hampshire Creek	15700	35200	X
Hampshire Creek Trib	0	8448	X
Hampshire Creek Trib 1	0	7392	X
Hampshire Creek Trib 2	0	5900	X
Hampshire Creek Trib 3	0	1300	X
Hampshire Creek Trib 4	180	740	X
Indian Creek	0	28200	X
Indian Creek Trib B	0	4300	X
Jelkes Cerek	0	20300	X

**Table 1-1. Flooding Sources and Limits (Cont'd)**

<b>Flooding Source</b>	<b>Reach Downstream Limit (feet)</b>	<b>Reach Upstream Limit (feet)</b>	<b>Redelineation Using Effective Flood Profiles and Updated Topographic Data</b>
Mahoney Creek	0	12350	X
Main Street Ditch	0	3300	X
McKee Road Trib	0	16000	X
Mill Creek	0	72100	X
Mill Creek Trib 2	0	2500	X
North Arm Brewster Creek	0	500	X
Norton Creek	0	18750	X
Norton Creek Trib	0	500	X
Otter Creek	0	29750	X
Otter Creek Trib	0	14000	X
Pingree Creek	0	14500	X
Poplar Creek	0	5000	X
Sandy Creek	0	18000	X
Selmarten Creek	0	4700	X
Sleepy Creek	0	12600	X
South Tributary	0	680	X
State Street Creek	0	4500	X
State Street Creek Trib	0	1650	X
Stoney Creek	0	27500	X
Tyler Creek	0	71500	X
Union Ditch No. 2	0	1600	X
Waubensee Creek	26000	38000	X
Welch Brook	15500	19600	X
Welch Creek	1550	5500	X
Welch Creek Trib. No. 1	2000	5500	X

This Flood Map Project will be completed by the following

- IDNR
  - Kane County
- FEMA Region V
- Baker Corporation, under contract to FEMA as National Service Provider (NSP)

IDNR shall notify FEMA and the NSP by e-mail of all meetings with community officials at least one week prior to the meeting (with as much notice as possible). FEMA and/or the NSP may or may not attend the community meetings

The activities for this Flood Map Project, including required Quality Assurance/Quality Control (QA/QC) reviews, and the Mapping Partners that will complete them are summarized in the table 1-2 below. The sections of this MAS that follow the table below describe the specific activities, responsible Mapping Partner(s), FEMA standards that must be met, and resultant map components.

Table 1-2

Activities	CTP	NSP	FEMA
Activity 1 – Scoping	X	X	X
Activity 2 - Outreach	X	X	
Activity 10A – Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	X		
Activity 12 – Base Map Acquisition	X		
Activity 13 – DFIRM Production (Non-Revised Areas)	X		
Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	X		
Activity 14 – DFIRM Production (Merge Revised and Non-Revised Information)	X		
Activity 14A – Application of DFIRM Graphic and Database Specifications	X		

FEMA has developed tools to assist in the development of the flood hazard data studies and the Digital Flood Insurance Rate Maps (DFIRMs) if the CTP wishes to use them. FEMA will, through the NSP, provide all CTPs access to and training in these tools. The tools available at this time include WISE software and the DFIRM production tools. The use of these tools will improve the Map Modernization and efficiency of all mapping partners.

If the CTP chooses not to use these production tools, then the CTP will be required to submit intermediate project data at major milestones in each Mapping Project in accordance with data capture standards. Submitting data in these standards will aid in more efficient quality control reviews, data storage, archiving, and for future study updates.

The Data Capture Standard submittals will be required at the following study milestones:

Project Scoping (as specified)

Base Map Acquisition

DFIRM Mapping

QA/QC review activities may be performed by CTPs or the NSP at the discretion of FEMA. Please note the NSP will also be performing periodic audits and overall study/project management to ensure study quality.

FEMA will be providing download/upload capability for intermediate data submittals through the Management Information Portal (MIP). Data submittals uploaded via the MIP will include the same data required prior to the existence of the MIP.

### Activity 1 – Scoping

**Responsible Mapping Partner:** IDNR, NSP, FEMA

**Scope:** This task involves collecting data from a variety of sources including community surveys, other Federal and State Agencies, NFIP State Coordinators, Community Assistance Visits (CAV's) and FEMA archives. IDNR will evaluate the effective FIS report and FIRM maps to see if it needs to be updated. Lists of mapping needs will be obtained from the MNUSS database, community surveys and CAV's if available. Data collection will include obtaining the best available base map materials (corporate limits, roads, etc) along with stream centerline files.

In cooperation with the FEMA Region, a Project Management Team will be established consisting of the IDNR, FEMA's regional engineer, Kane County, and other appropriate officials. The Project Management Team will be responsible for coordinating the activities of this project and completing all tasks identified in this Statement of Work.

Preliminary Research Activities can be separated into two categories—researching effective information and researching available data for the Flood Map Project. The following tasks shall be completed to research effective information: inventory the FEMA archives for effective FIRM panels, FBFM panels, FIS reports, and other flood hazard data or existing study data; summarize the information in the MNUSS database; summarize contiguous community agreement checks; review CAV and CAC files; and develop an overview of the results of the research. FEMA and/or the NSP will provide the CTP with the current digital DFIRM data, copies of LOMRs adopted since the map effective date and information from the MNUSS database. IDNR will collect information from CAV and CAC files.

IDNR will co-ordinate, set-up, and hold the Scoping Meeting. This includes identifying a time, place, and all participants. The purpose of this meeting is to present the current information to the local officials (state, county and municipal) and coordinate on prioritization and identification of study areas. IDNR shall be responsible for compiling the necessary information for the meeting. These items may include: FIS and FIRM for affected communities; USGS quads for the study area; best available community base map(s); effective FIRM summary; Available Data Inventory; Scoping Map; Scoping Meeting Agenda/Minutes form; Aerial photos/topographic mapping if available; existing drainage studies or other H&H data; Community master plan(s)/Drainage Master Plan(s); Zoning Maps; Street Maps; As-built plans; and Floodplain Ordinance(s).

The project management team shall review the initial mapping needs list, review the research findings, and make selections of proposed methods for obtaining/producing flood data. Any additions or changes to the needs list shall be discussed with all members. All needs shall also be prioritized. In general, highest priority shall be given to the following areas: areas of dense existing or anticipated development, including areas where new road crossings have been constructed over stream(s); areas affected by flood-control structures and/or channelization; areas where natural physical changes in the floodplain have been significant (due to subsidence or extreme erosion, for example); areas that were studied by approximate methods and unmapped areas, especially those with development pressure; areas where the community has experienced flooding outside mapped floodplains, with severe damage to buildings and/or infrastructure; areas where mapped flood hazards do not match those shown on contiguous FIRMs (unless those FIRMs are not considered to be accurate); and areas where flood data (BFEs, floodplains, and regulatory floodways) are likely to be changed the most by a restudy.

The purpose of the tasks described in this MAS is to develop digital flood data and populate the DFIRM draft standard database. However, based on the discussion of mapping needs, IDNR and FEMA Project Officer may consider additional refinements to the base map or flood hazard data that can be incorporated into the digital data within the scope of the project. The following issues will be discussed and refined: Review of Proposed Paneling Scheme, Review and Refinement of Base and Topographic Map Source, and Finalization of Map Production and Database Options.

**Standards:** All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** The Final Scoping Report shall be delivered in accordance with the schedule outlined in Section 6 for this Activity.

## Activity 2 – Outreach

**Responsible Mapping Partner:** IDNR, NSP

**Scope:** The outreach activities for a Flood Map Project can best be understood as a process that begins during the Project Scoping phase and continues through the Map Production and Post-preliminary phases. A regulatory overview of required activities is followed by a description of tools that can be used in working with stakeholders to keep them informed and to solicit their input.

The overarching goal for conducting outreach is to create a climate of understanding and ownership of the mapping process at the State and local levels. Well-planned outreach activities can reduce political stress, confrontation in the media, and public controversy, which can arise from lack of information, misunderstanding, or misinformation. These outreach activities also can assist FEMA and other members of the Project Team in responding to congressional inquiries.

By proactively reaching out to all key stakeholders as early in the Flood Map Project as possible, the maps can be used to their full potential. The likelihood of appeals may also be reduced or eliminated. Specific activities shall include, but are not limited to -

- ✓ Establishing two-way communication to address the needs of, inform and obtain feedback from, the stakeholders;
- ✓ Ensuring compliance with due process requirements;
- ✓ Interacting with technical representatives to ensure production of accurate and up-to-date maps;

- ✓ Enhancing ownership by communities
- ✓ Tracking, monitoring, and evaluating outreach activities and adjusting efforts according to ongoing feedback and evolving project needs.

All communication with local governments will be done in accordance with Title 44 Code of Federal Regulations Part 66.

**Standards:** All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** Upon Completion of Outreach and Coordination the Contractor shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 6 for this Activity:

- A report detailing outreach and coordination activities

Backup or supplemental information used in writing this report

### **Activity 10A - Floodplain Mapping (Redelineation of Detailed Floodplain Boundaries Using Updated Topographic Data)**

**Responsible Mapping Partner:** IDNR

**Scope:** IDNR shall delineate the 1- and 0.2-percent-annual-chance floodplain boundaries and the regulatory floodway boundaries (if required) for the flooding sources listed earlier in this MAS. IDNR shall use the topographic data acquired under Activity 1 to delineate the floodplain and regulatory floodway boundaries as appropriate on a digital work map. There are 200 miles of studied streams (Flood Insurance Study for Kane County, 2002). Stream centerline lengths for these studied streams will be computed from the digital data acquired under Activity 12 and compared lengths shown on the current FIS profiles. Stream lengths that vary more than 5% from the lengths shown on the FIS profile or 5 percent of the map scale whichever is greater will be reported to the NSP and FEMA for resolution. It is assumed that as the base map acquired under Activity 12 is merely an update of the base map used to create the AutoCAD DFIRM, flood theme information should already be in good agreement with road and railroad crossings.

If the new topographic data do not reflect the same hydraulic characteristics as in effective study, IDNR shall evaluate the topographic data to determine if changes are significant enough to invalidate the floodplain boundary and regulatory floodway boundary redelineations. If so, IDNR shall contact the FEMA Regional Project Officer identified in Section 2 of this MAS with a recommendation. In addition, IDNR shall address all concerns or questions regarding Activity 10A that are raised by NSP during the QA/QC review.

The floodplain redelineations will be performed using two-foot interval topography provided by Kane County and companion ortho- photography. These digital datasets shall be used for the purpose of redelineating the current floodplain and floodway boundaries for studied streams listed in Table 1.1. The topographic data is based on aerial photos, all from Spring of 2001 and is in NAVD1929 U.S. Survey Feet. The Horizontal Datum is State Plane - Illinois East (U.S. Survey Feet), NAD 83. The topographic data and companion photography are a revenue source for Kane County and may not be redistributed by others. IDNR may use the data upon signing a Memorandum of Understanding, agreeing not to

redistribute these two layers. The topographic data and orthophotos from spring 2003 aerials photography will not be transferred to the MIP. Kane County will provide vector base map data layers (stream, road centerline, municipal boundaries) that will be used for the DFIRM and these can be distributed.

**Standards:** All work under Activity 10A shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** Upon completion of floodplain mapping for 5 miles of studied streams, IDNR shall conduct a QA/QC review.

In accordance with the TSDN format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, IDNR shall as requested, make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- One set of paper work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, and all applicable topographic map features;
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM;
- Any backup or supplemental information used in the mapping required for the QA/QC review; and
- An explanation for the use of existing topography for the studied reaches, if appropriate.

### Activity 12 - Base Map Acquisition

**Responsible Mapping Partner:** IDNR

**Scope:** Activity 12 consists of obtaining the digital base map. Kane County will provide vector base map layers for street centerlines, railroads, and municipal boundaries, and stream centerlines for the project. IDNR will review the data and conduct activities as follows:

- Obtain digital files (raster or vector) of the base map.
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge.
- Certify that the digital data meets the minimum standards and specifications that FEMA requires for DFIRM production.
- Populate the DFIRM database with the information required by FEMA.

**Standards:** All work under Activity 12 shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, IDNR shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Written certification that the digital data meet the minimum standards and specifications and
- Documentation that FEMA can use the digital base map.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/firm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/firm_gsam.pdf).

### Activity 13 – DFIRM Production (Non-Revised Areas)

**Responsible Mapping Partner:** IDNR

**Scope:** For all flooding sources except those segments for which updated flood data will be developed under Activities 1 through 11, IDNR shall convert the information shown on the effective FIRM and Flood Boundary Floodway Map (FBFM) panels for all incorporated and unincorporated areas of Kane County, Illinois, to digital format in conformance with FEMA DFIRM specifications. IDNR shall use the base map acquired under Activity 12 for the conversion. IDNR shall prepare 97 DFIRM panels, 4 at 1:24,000 scale, 27 at 1:12,000 scale, 66 at 1:6000 scale as indicated on the attached map. IDNR also shall incorporate (as scale permits) the results of LOMCs issued by FEMA since the date of the current effective FIRM through September 30, 2004 for each affected community. Attached is FEMA's List of Current Flood Insurance Study Data as provided by FEMA, June 2004.

AutoCAD DFIRM digital data (files in DGN format) have been prepared for Kane County by others. The Flood Insurance Study (FIS) for Kane County (December 20, 2002, page 5) states that planimetric base map information was provided by the Kane County Development Department. These files were compiled from 1985 and 1998 aerial photos for use at scales of 1"=100' and 1"=400'. Kane County Development Department will provide an updated version of these files for the current mapping effort. Stream centerlines from the AutoCAD data will be adjusted to the base map at the panel scale, however it is assumed that as the base map that will be provided by Kane County is an update of the base map used to create the AutoCAD DFIRM, flood theme information should already agree with base map features.

The Kane County FIS further states that the coordinate system used for the digital FIRM was Universal Transverse Mercator (UTM) North American Datum of 1927 (NAD27), Clark 1988 spheroid. The updated version of the transportation layer, streamlines, municipal boundaries and the digital flood theme data will be converted to NAD83 and imported to Arc-GIS geodatabase format and the draft standard database will be attributed to meet current standards. Also, IDNR shall address all comments and questions regarding Activity 13 that are raised by the NSP during the QA/QC review.

**Standards:** All work under Activity 13 shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** Upon completion of three DFIRM panels, IDNR shall conduct a QA/QC review. In accordance with the TSDN format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, IDNR shall if requested, make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital work maps showing the original streamline and floodplain boundaries as well as the modified data with base map background.
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM, including a check that the road and floodplain relationship is maintained for all non-revised areas.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/firm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/firm_gsam.pdf).

### Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)

**Responsible Mapping Partner:** IDNR

**Scope:** IDNR shall review the DFIRM panels submitted by IDNR under Activity 13 to ensure that the new DFIRM panels accurately represent the information shown on the effective FIRMs and FBFMs for the area mapped. An individual other than those performing the work will be performing the independent QA/QC. This work shall include, at a minimum, checking the following:

- Cross sections were properly located and oriented as shown on the FIRM or FBFM.
- BFEs are properly located and agree with the BFEs shown on the FIRM.
- Regulatory floodway widths agree with the widths shown on the FIRM or FBFM.
- The 1 and 0.2-percent-annual-chance floodplain boundaries agree with the floodplain boundaries shown on the FIRM and the contour lines, other topographic information, and planimetric information shown on the DFIRM base.
- Flood insurance risk zone designations are indicated properly.
- Road and floodplain relationships are maintained for all unrevised areas.
- DFIRM mapping files meet the GIS file and database format requirements specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those requirements for content and attribution.
- Metadata files describing the DFIRM data include the required information.

**Standards:** All work under Activity 13A shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, IDNR shall, if requested, make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the QA/QC review; and
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/firm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/firm_gsam.pdf).

## **Activity 14 –DFIRM Production (Merging Revised and Non-Revised Information)**

**Responsible Mapping Partner:** IDNR

**Scope:** Upon completion of the floodplain mapping activities for the revised areas (Activities 10A) and the DFIRM production for non-revised areas (Activity 13), IDNR shall merge the digital floodplain data into a single, updated DFIRM. This work is to include tie-in of flood hazard information for areas that were not studied as part of the Flood Map Project documented in this MAS. IDNR shall coordinate with FEMA as necessary, to resolve any potential tie-in issues.

**Standards:** All work under Activity 14 shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, IDNR shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;

- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;

One complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and

- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [www.fema.gov/pdf/fhm/firm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/firm_gsam.pdf).

## **Activity 14A – DFIRM Production (DFIRM Graphics and Database Specifications)**

**Responsible Mapping Partner:** IDNR

**Scope:** IDNR shall apply the final FEMA DFIRM graphic and database specifications to the DFIRM files produced under Activity 14. This work shall include adding all required annotation, line pattern, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user). IDNR shall coordinate with those Mapping Partners responsible for Activities 10A, 13, and 14, as necessary, to resolve any problems that are identified during Activity 14A.

**Standards:** All work under Activity 14A shall be performed in accordance with the standards specified in Section 5 of this MAS.

**Deliverables:** In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, IDNR shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- One complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.
- DFIRM Database or Intermediate Data Delivery consistent with the Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners

These submittals may coincide with the submittals outlined in Activity 14. Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **SECTION 2—TECHNICAL AND ADMINISTRATIVE SUPPORT DATA SUBMITTAL**

The Project Team members for this Flood Map Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below.

All supporting documentation for the activities in this Mapping Activity Statement shall be submitted in the TSDN format in accordance with Appendix M of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners*, dated April 2003. Appendix M is available for viewing or download on the FEMA Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf). Table 2-1 indicates the sections of the TSDN that apply to each mapping activity.

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the responsible Mapping Partner shall complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR is to describe the issue and propose possible resolutions. (For additional information on SPRs, refer to Appendix M, Subsection M.2.1.1 of *Guidelines and Specifications for Flood Hazard Mapping Partners*.)

**Table 2-1. Mapping Activities and Applicable TSDN Sections**

TSDN Section	Mapping Activities					
	1	2	10A	12	13, 13A	14,14A
General Documentation						
Special Problem Reports	X	X	X	X	X	X
Telephone Conversation Reports	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X
Engineering Analyses						
Hydrologic Analyses			X			
Hydraulic Analyses			X			
Key to Cross-Section Labeling			X			
Key to Transect Labeling			X			
Draft FIS Report						
Mapping Information	X	X	X	X	X	X
Miscellaneous Reference Information	X	X	X	X	X	X

**SECTION 3—PERIOD OF PERFORMANCE**

The mapping activities outlined in this MAS will begin on September 1, 2004, and will be completed no later than September 30, 2005.

## SECTION 4—FUNDING/LEVERAGE

FEMA is providing funding, in the amount of \_\_\_\_\_ for the completion of this Flood Map Project. During the scoping process, additional needs may be identified. Activities associated with any additional needs would be performed based on availability of additional funds. The CTP Leverage listed in Table 4-1 below includes in-kind services and blue book values for acquired information (i.e. base map data, hydrologic and hydraulic analyses, etc.). More detailed leverage information will be determined during the detailed scoping process and reported back to FEMA at that time.

Table 4-1

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**Notes:**

- 1) Estimated value of IDNR staff time,
- 2) Kane County maintains a Web site where GIS data may be accessed, currently provides digital flood theme data converted from the AutoCAD files, 3) 522 square miles of 2-foot contours value \$1,450 per scale mile, 522 x \$1450 = \$756,900, 4) 97 panels with vector base maps at 1:6000 scale or better, value \$430 panel, 97 x \$430 = \$41,710

FEMA funds identified above are available to be used for the following activities:

ACTIVITIES	FUNDABLE?
Activity 1 – Scoping	Yes, up to 10% of total cost
Activity 2 - Outreach	Yes, up to 10% of total cost
Activity 3 – Field Surveys and Reconnaissance	Yes
Activity 4 – Topographic Data Development	No, unless approval given during scoping phase by Regional PO
Activity 5 – Independent QA/QC Review of Topographic Data	No
Activity 6 –Hydrologic Analyses	Yes
Activity 6A –Coastal Flood Hazard Analyses	Yes
Activity 7–Independent QA/QC Review of Hydrologic Analyses	Yes
Activity 7A–Independent QA/QC Review of Coastal Hazard Analyses	Yes
Activity 8 – Hydraulic Analyses	Yes
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	Yes
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Yes
Activity 10A – Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Yes
Activity 10B – Floodplain Mapping (Refinement or Creation of Zone A)	Yes
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Yes
Activity 12 – Base Map Acquisition	No
Activity 13 – DFIRM Production (Non-Revised Areas)	Yes
Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Yes
Activity 14 – DFIRM Production (Merge Revised and Non-Revised Information)	Yes
Activity 14A – Application of DFIRM Graphic and Database Specifications	Yes
Activity 14A – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications	Yes
Activity 15 – Preliminary DFIRM and FIS Report Distribution	Yes
Activity 16 – Post-Preliminary Processing	Yes

## **SECTION 5—STANDARDS**

The standards relevant to this Mapping Activity Statement are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* to be referenced for each mapping activity are summarized in Table 5-2. These Guidelines are available for viewing or download from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/fhm/dl\\_cgs.shtm](http://www.fema.gov/fhm/dl_cgs.shtm).

Table S-1. Applicable Standards for Project Activities

Applicable Standards	Activities						
	1	2	10A	12	13, 13A	14, 14A	
<i>Guidelines and Specifications for Flood Hazard Mapping Partners</i> , April 2003	X	X	X	X	X	X	
American Congress on Surveying and Mapping Procedures	X						
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-510), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X						
Engineer Manual 1110-1-1000, <i>Photogrammetric Mapping</i> (USACE), July 1, 2002	X						
Engineer Manual 1110-2-1003, <i>Hydrographic Surveys</i> (USACE), January 1, 2002	X						
"Numerical Models Accepted by FEMA for NFIP Usage," Updated April 2003	X						
<i>Content Standard for Digital Geospatial Metadata</i> (Federal Geographic Data Committee), 1998	X	X	X	X	X	X	
<i>Document Control Procedures Manual</i> , December 2000	X	X					
<i>44 Code of Federal Regulations Part 66 and 67</i>		X					

**Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications**

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
1	Scoping	Appendix I and N, Scoping Report document attached in Appendix A to this Mapping Activity Statement
2	Outreach	44 Code of Federal Regulations Part 66 and 67
10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.3) Appendix C, Section C.6 (specifically Subsection C.6.1.3) Appendices K, L, M and N
12	Base Map Acquisition and Preparation	Volume 1, Section 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsections 1.4.3.1 and 1.4.3.2) Appendix A, Section A.1 (specifically Subsection A.1.1)
13	DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2, 1.4.2.3, and 1.4.3.2) Appendices K, L, M and N
14	DFIRM Production (Merging Revised and Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K, L, M and N

## SECTION 6—SCHEDULE

The activities documented in this MAS shall be completed in accordance with the project schedule below. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

ACTIVITIES	RESPONSIBLE PARTNER(S)	START DATE	DATE DUE
Activity 1 – Scoping	IDNR, NSP, FEMA	9/01/2004	12/31/2004
Activity 2 - Outreach	IDNR, NSP, Kane County	9/01/2004	9/30/2005
Activity 10A – Floodplain Mapping (Redelineation Using Effective Flood Profiles)	IDNR	10/01/2004	7/31/2005
Activity 12 – Base Map Acquisition	IDNR	10/01/2004	01/31/2005
Activity 13 – DFIRM Production (Non-Revised Areas)	IDNR	10/01/2004	6/30/2005
Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	IDNR	7/01/2005	7/31/2005
Activity 14 – DFIRM Production (Merge Revised and Non-Revised Information)	IDNR	8/01/2005	8/31/2005
Activity 14A – Application of DFIRM Graphic and Database Specifications	IDNR	9/01/2005	12/30/2005

## SECTION 7—CERTIFICATIONS

### 7.1 Floodplain Mapping, DFIRM Production and Application of FEMA Graphics and Database Specifications (Activities 10, 10A 10B, 11, 13, 14, and 14A)

The DFIRM metadata files shall include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.

### 7.2 Base Map Acquisition and Preparation (Activity 12)

- A community official or responsible party shall provide written certification that the digital data meet FEMA minimum standards and specifications.
- The responsible Mapping Partner shall provide documentation that the digital base map can be used by FEMA. Please note that uploading base map data to the MIP does not constitute agreement that the digital base map can be used by FEMA. Documentation that the digital base map can be used by FEMA will still be required.

Certifications must be made at the time the intermediate data is submitted. For example, if hydrologic data is submitted, certification will be required at the time it is submitted.

## **SECTION 8—TECHNICAL ASSISTANCE AND RESOURCES**

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected as part of the Mapping Needs Assessment Process from Joshua Smith at the NSP, who may be contacted by telephone at 312 575 3931 or by facsimile at 312 707 8804.

General technical and programmatic information, such as FEMA 265 and the Quick-2 computer program, can be downloaded from the FEMA Web site ([www.fema.gov/fhm/](http://www.fema.gov/fhm/)). Specific technical and programmatic support may be provided through the NSP; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this MAS.

Project Team members also may consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and GIS-based engineering and modeling training.

## **SECTION 9—CONTRACTORS**

IDNR shall ensure that the procurement for all contractors, if any are used for this Flood Map Project complies with the requirements of 44 CFR 13.36.

## **SECTION 10-REPORTING**

### **FINANCIAL REPORTING:**

Because funding has been provided to the Illinois Department of Natural Resources (IDNR) by FEMA, financial reporting requirements for the IDNR will be in accordance with Articles V and VI of the Articles of Agreement.

### **STATUS REPORTING:**

IDNR shall use Earned Value Management System (EVMS) concepts in reporting on status of the project defined by the activities of this Mapping Activity Statement. The EVMS data shall be entered into the web-based Monitoring of Contracted Studies (MICS) or a similar project database module expected to replace MICS at FEMA's new Management Information Portal (MIP) by March 2005. The FEMA Project Officer shall be responsible for providing an EVMS Project Summary Report back to IDNR every 30 days based on a routine export and summary analysis of MICS entries. A report shall also be provided to the FEMA Assistance Officer. The Assistance officer will waive the written quarterly status reports (reference 44 CFR Part 13.40, *Monitoring and Reporting Program Performance*) after evaluation of the timely submittal of the required information by IDNR. However, this shall not affect the financial reporting requirements (reference 44 CFR Part 13.41, *Financial Reporting*).

EVMS baseline data, consisting of start date, end date and all budgeted federal and non-federal resources, shall establish the basis for tracking percent complete and funds expended to date on the project. IDNR shall work with the FEMA Project Officer at the beginning of the project to establish acceptable sub-project tasking for which percent complete and actual cost shall be tracked against baseline data. In general, these tasks shall be derived from major activities enumerated in the table provided at Section 6 of this statement. The tasking will be entered with sufficient resolution to allow project managers the ability to determine which tasks carry the potential for significant cost or schedule variances. Percent complete

and actual cost shall be updated with a minimum frequency of 30 days if the project is active. The comment section provided at each MICS task entry should be used as necessary to assist in reporting project status.

Subject to Project Management Team decisions, the IDNR Project Manager may also be responsible for coordinating the production of project status report or "Report to Stakeholders" document. Ideally, this document would be published quarterly and distributed through a web-based posting. Otherwise, FEMA and its NSP contractor may request to meet with IDNR on a routine basis (up to bi-weekly if needed) to review the progress of the project. These meetings will alternate between FEMA's Regional Office, the IDNR office and conference calls as necessary.

## **SECTION 11—PROJECT COORDINATION**

Throughout the project, all members of the Project Team will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities shall include:

Meetings, teleconferences, and videoconferences with FEMA and other Project Team members on or about October 1 (General organization/scoping Cook County), November 1 (Review Cook scoping/Cook work plan), December 1, 2004 (Status of work), February 1 (Status of work), and May 2 (Status of work);

Telephone conversations with FEMA and other Project Team members on a monthly basis and an ad hoc basis, as required;

Updates to the ICS, Mapping Needs Update Support System database, and other FEMA status information systems in accordance with requirements in Volumes 1 and 3 of Guidelines and Specifications for Flood Hazard Mapping Partners; and

E-mail, facsimile transmissions, and letters, as required.

## **SECTION 12—POINTS OF CONTACT**

The CTP Project Manager is Paul Mauer, P.E., or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. Paul Mauer will also serve as IDNR Project Engineer for execution of this MAS. The FEMA contacts are: Ken Hinterlong, Project Officer, and Lee Traeger, Technical Monitor. The NSP representative for this MAS is Mark Hoskins, PE, Technical Manager for the NSP Regional Management Center located in Chicago.

Each party has caused this Mapping Activity Statement to be executed by its duly authorized representative.

Terry Fennell  
Terry Fennell, Chief  
Hazard Identification and Risk Assessment Branch  
Federal Emergency Management Agency, Region V

Sept. 2, 2004  
Date

Joel Brunsvold  
~~State of Illinois~~ Joel Brunsvold, Director  
~~Office of Water Resources~~  
Illinois Department of Natural Resources

9/9/2004  
Date

Sujata Banerjee  
Sujata Banerjee  
Business Manager, NSP/RMC5 (Baker Corporation)

October 15, 2004  
Date

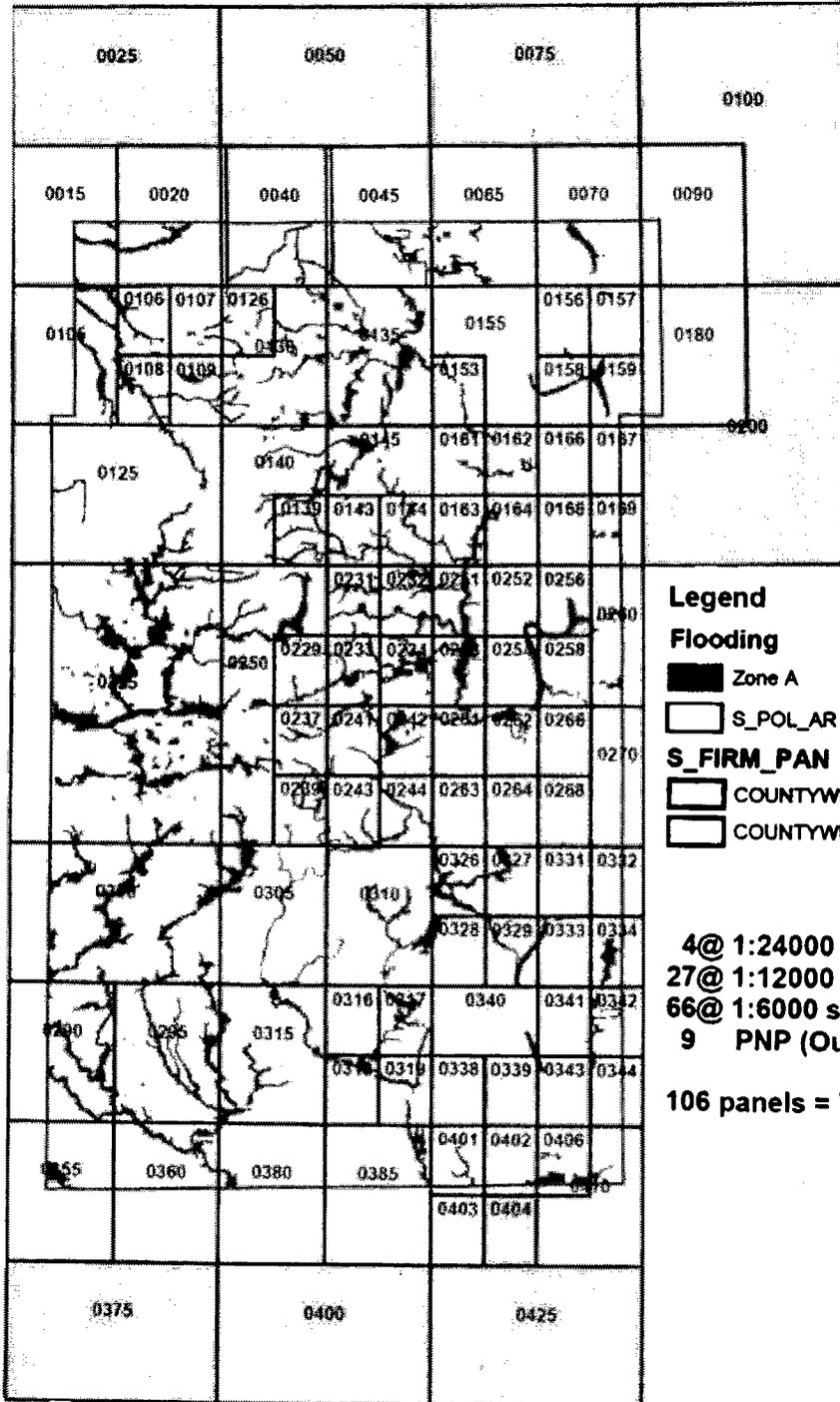
**Attachments**  
**Mapping Activity Statement IDNR04-3, Kane County, Illinois**

**Draft panel layout**

**Disclaimer statement from CADD DFIRM Data CD**

**List of LOMCs**

# Kane County, IL



### Legend

#### Flooding

■ Zone A

□ S\_POL\_AR

#### S\_FIRM\_PAN

□ COUNTYWIDE, NOT PRINTED

□ COUNTYWIDE, PANEL PRINTED

4@ 1:24000 scale

27@ 1:12000 scale

66@ 1:6000 scale

9 PNP (Outside study area)

106 panels = Total



## README.TXT

### INTRODUCTION TO THIS DISC

The information on this Compact Disc (CD-ROM) was produced by Dewberry and Davis, Inc. and contains flood data information for Kane County, Illinois. MicroStation CAD software was used to create the data. (\*.DGN) The map units are meters, the projection is UTM zone 16, and the datum is NAD 27.

The included files constitute a Digital Flood Insurance Rate Map (DFIRM). These are the effective FIRM panels, they do not include Letters of Map Revisions (LOMRs) or any other possible map changes. PBS&J has made no modifications to this data. For the level structure of the MicroStation design files see the FEMA 37 "Guidelines and Specifications for Study Contractors", (figure A7-3). This table can be found on the CD-ROM as a MS Word document called A7-3.DOC. (Spatial extent coexistent with USGS 7.5 minute topographic quadrangles) The grid.dgn file contains the panel layout for the FIRM panels.

These data are not GIS data and do not meet all of the current FEMA standards. These data are the same as the data that were utilized to produce the hard copy effective FIRMs. Please note, the details of the file structure have not been rigorously checked. As a result, it is possible that some features may be located on incorrect levels, polygons may not close, features may overlap with one another, and/or there may be other technical issues with the data that do not affect the appearance of the printed map, but could impact the utility of the data in a digital format. As a result, these data should be used with caution. They are suited primarily to hard copy production of flood maps and not for other computer based applications of the data.

The limitations of the spatial accuracy of these data make them unsuitable for legal flood hazard determinations.

These data will incorporate mapable LOMRs issued by FEMA until about six months prior to the effective date shown on each panel. Subsequent LOMRs may have been issued that are not reflected on the FIRM.

MicroStation CAD software is required to view this data

MicroStation is a copyright of Bentley Systems, Inc  
MS Word is a copyright of Microsoft, Inc

#### Contact Information:

Keith High ,PBS&J, Inc.; [kbhigh@pbsi.com](mailto:kbhigh@pbsi.com); 1-800-697-7275 ; (Fax) 301-210-4156

LOMC documents provided from FEMA database, June 2004

ST CODE	COMM CODE	ST	COMMNAME	COUNTY	CASE_NUM	REQ_RECVD	DETERMDATE
17	0320	IL	"AURORA, CITY OF"	KANE COUNTY	00-05-195P	4/4/2000	3/13/2001
17	0320	IL	"AURORA, CITY OF"	KANE COUNTY	03-05-1671P	1/30/2003	11/27/2003
17	0320	IL	"AURORA, CITY OF"	KANE COUNTY	03-05-3991P	8/7/2003	2/3/2004
17	0320	IL	"AURORA, CITY OF"	KANE COUNTY	04-05-2895P	5/5/2004	
17	0321	IL	"BATAVIA, CITY OF"	KANE COUNTY	01-05-1675P	2/24/2001	10/6/2001
17	0321	IL	"BATAVIA, CITY OF"	KANE COUNTY	02-05-2628P	5/1/2002	8/30/2002
17	0321	IL	"BATAVIA, CITY OF"	KANE COUNTY	03-05-0540P	12/30/2002	4/18/2003
17	0321	IL	"BATAVIA, CITY OF"	KANE COUNTY	04-05-0773P	12/1/2003	3/30/2004
17	0322	IL	"CARPENTERSVILLE, VILLAGE OF"	KANE COUNTY	04-05-0771P	12/3/2003	4/13/2004
17	1026	IL	"ELBURN, VILLAGE OF"	KANE COUNTY	02-05-2244P	4/11/2002	8/14/2002
17	0087	IL	"ELGIN, CITY OF"	KANE COUNTY	03-05-3985P	7/8/2003	12/15/2003
17	0087	IL	"ELGIN, CITY OF"	KANE COUNTY	03-05-3998P	8/22/2003	12/9/2003
17	0325	IL	"GENEVA, CITY OF"	KANE COUNTY	00-05-003P	10/4/1999	11/13/2000
17	0325	IL	"GENEVA, CITY OF"	KANE COUNTY	00-05-083P	12/20/1999	6/21/2000
17	0325	IL	"GENEVA, CITY OF"	KANE COUNTY	00-05-377P	9/20/2000	12/28/2000
17	0325	IL	"GENEVA, CITY OF"	KANE COUNTY	02-05-447P	11/5/2001	6/12/2002
17	0325	IL	"GENEVA, CITY OF"	KANE COUNTY	03-05-1473P	2/5/2003	7/30/2003
17	0326	IL	"GILBERTS, VILLAGE OF"	KANE COUNTY	03-05-1837P	3/5/2003	9/29/2003

17	0480	IL	"HUNTLEY, VILLAGE OF"	KANE COUNTY	00-05-061P	11/29/1999	6/15/2000
17	0480	IL	"HUNTLEY, VILLAGE OF"	KANE COUNTY	02-05-1146P	12/28/2001	4/26/2002
17	0480	IL	"HUNTLEY, VILLAGE OF"	KANE COUNTY	02-05-3084P	6/17/2002	10/7/2002
17	0480	IL	"HUNTLEY, VILLAGE OF"	KANE COUNTY	03-05-3382P	5/29/2003	11/12/2003
17	0896	IL	KANE COUNTY *	KANE COUNTY	00-05-027P	11/1/1999	8/12/2000
17	0896	IL	KANE COUNTY *	KANE COUNTY	00-05-157P	2/22/2000	6/29/2000
17	0896	IL	KANE COUNTY *	KANE COUNTY	01-05-2373P	5/21/2001	12/18/2001
17	0896	IL	KANE COUNTY *	KANE COUNTY	01-05-2947P	7/26/2001	1/7/2002
17	0896	IL	KANE COUNTY *	KANE COUNTY	01-05-2948P	7/27/2001	12/6/2001
17	0896	IL	KANE COUNTY *	KANE COUNTY	02-05-1036P	12/26/2001	4/30/2002
17	0896	IL	KANE COUNTY *	KANE COUNTY	02-05-2627P	4/11/2002	12/31/2002
17	0896	IL	KANE COUNTY *	KANE COUNTY	02-05-3575P	7/2/2002	10/16/2002
17	0896	IL	KANE COUNTY *	KANE COUNTY	02-05-3913P	8/20/2002	12/31/2002
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-0540P	12/30/2002	4/18/2003
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-1471P	1/30/2003	11/27/2003
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-1837P	3/5/2003	9/29/2003
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-2559P	3/28/2003	7/21/2003
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-3385P	6/2/2003	6/14/2004
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-3985P	7/8/2003	12/15/2003
17	0896	IL	KANE COUNTY *	KANE COUNTY	03-05-3994P	8/15/2003	6/24/2004

17	0896	IL	KANE COUNTY *	KANE COUNTY	04-05-2899P	5/11/2004	
17	1018	IL	"MAPLE PARK, VILLAGE OF"	KANE COUNTY	03-05-3994P	8/15/2003	6/24/2004
17	0328	IL	"MONTGOMERY, VILLAGE OF"	KANE COUNTY	02-05-1696P	2/14/2002	6/4/2002
17	0328	IL	"MONTGOMERY, VILLAGE OF"	KANE COUNTY	02-05-3915P	8/22/2002	11/22/2002
17	0328	IL	"MONTGOMERY, VILLAGE OF"	KANE COUNTY	02-05-697P	12/11/2001	1/4/2002
17	0328	IL	"MONTGOMERY, VILLAGE OF"	KANE COUNTY	04-05-0087P	10/16/2003	
17	0331	IL	"SLEEPY HOLLOW, VILLAGE OF"	KANE COUNTY	02-05-3595P	7/11/2002	8/1/2002
17	0332	IL	"SOUTH ELGIN, VILLAGE OF"	KANE COUNTY	00-05-047P	11/19/1999	1/10/2001
17	0332	IL	"SOUTH ELGIN, VILLAGE OF"	KANE COUNTY	03-05-1474P	3/21/2003	4/17/2003
17	0332	IL	"SOUTH ELGIN, VILLAGE OF"	KANE COUNTY	03-05-2554P	3/21/2003	3/24/2003
17	0330	IL	"ST. CHARLES, CITY OF"	KANE COUNTY	02-05-2627P	4/11/2002	12/31/2002
17	0335	IL	"WEST DUNDEE, VILLAGE OF"	KANE COUNTY	02-05-3595P	7/11/2002	8/1/2002