

## MINUTES OF THE 55<sup>th</sup> MEETING

### Milwaukee County Automated Mapping and Land Information System Steering Committee

DATE: April 8, 2003  
TIME: 9:00 a.m.  
PLACE: Milwaukee County Courthouse  
901 N. 9th Street  
Room 203-P  
Milwaukee, WI

#### Members Present

Kurt W. Bauer, Chairman	Milwaukee County Surveyor
John M. Bennett	City Engineer, City of Franklin, representing the Intergovernmental Coordination Council of Milwaukee County
Gregory G. High (representing Thomas D. Kenney)	Director, Architectural and Engineering Services, Milwaukee County Department of Public Works
John LaFave	Register of Deeds, Milwaukee County
Thomas F. Lewandowski	Fiscal and Management Analyst, Milwaukee County Department of Administrative Services
David S. Misun	Facilities Information Supervisor, Milwaukee Metropolitan Sewerage District
Nancy A. Olson	GIS Manager, City of Milwaukee
John C. Place	Manager, Maps and Records, WE Energies
William C. Shaw	Manager, Geographic Information Systems Mapping, WE Energies

#### Members Absent

Dextra Hadnot	Director, External Affairs, SBC
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#### Guests and Staff Present

Kathleen A. Bach	GIS Technician, Register of Deeds Office, Milwaukee County
Wendy J. Bradshaw	SEWRPC Secretary
Jeffrey T. Fortin	Planning and Zoning Administrator, City of Glendale
Marcia G. Lindholm	Central Drafting and Records Manager, Infrastructure Service Division, City of Milwaukee
Reinhard B. Meihnsner	Consultant, Spatial Data Solutions, Inc.
Thomas D. Patterson	MCAMLIS Project Manager
Thomas J. Tym	Head, Technology Services Department, Ruekert-Mielke, Inc.
Kevin R. White	GIS Supervisor, Department of Public Works, Milwaukee County

## **ROLL CALL**

The fifty-fifth meeting of the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee was called to order by Chairman Bauer at 9:00 A.M. Roll call was taken by circulating an attendance signature sheet, and a quorum was declared present.

## **MINUTES**

### **Approval of Minutes of the 54<sup>th</sup> Steering Committee Meeting Held on January 28, 2003**

Chairman Bauer noted that copies of the minutes of the fifty-fourth meeting of the Steering Committee held on January 28, 2003, had been distributed to all members of the Committee for review prior to the meeting, and asked that the Committee consider those minutes. He noted that a revised copy of page 26 of the third scheduled report on the MCAMLIS pilot study investigating the use of Internet technology was attached to the minutes to be considered. He noted that, in accordance with past practice, the format indicated changes made to this page by strikeouts and underlines in response to the Committee's review of a revised draft of the report, the original preliminary draft having been considered by the Committee at the meeting held on December 2, 2002, and the revised draft having been considered at the meeting of January 28, 2003. He noted that in acting to approve the minutes concerned, the Committee would be acting to approve the revised page and the final version of the third report.

There being no further questions, comments, or corrections, on a motion by Mr. Misun, seconded by Mr. LaFave, and carried unanimously, the minutes of the meeting of December 3, 2002, were approved as published.

## **SPECIAL ORDER OF BUSINESS**

### **Report of the MCAMLIS Nominating Committee**

Chairman Bauer noted that, in accordance with the directive of the Committee given at its meeting held on January 28, 2003, he had appointed Mr. Bennett as a Nominating Committee of one and requested Mr. Bennett to bring his nominations for the positions of Chairman and Vice Chairman in calendar year 2003 to the Committee for consideration and action at this meeting. He noted that a copy of Mr. Bennett's report, in the form of a letter dated February 11, 2003, had been provided to all members of the Committee for review prior to the meeting (copy of letter attached to these minutes) and asked that the Committee consider and act upon Mr. Bennett's nominations.

On a motion by Mr. Bennett, seconded by Ms. Olson, and carried unanimously, Dr. Bauer was reelected to the position of Chairman, and Mr. LaFave was elected to the position of Vice Chairman of the Committee for calendar year 2003.

## **OLD BUSINESS**

### **Consideration of the Fourth of Four Scheduled Reports on the MCAMLIS Land and Utility Information System Internet Prototype Study**

Chairman Bauer noted that the Committee had, at its meeting of January 28, 2003, considered a preliminary draft of the fourth and final scheduled report on the MCAMLIS pilot study investigating the use of Internet technology as prepared by the firm of Ruckert-Mielke, Inc., the consulting firm retained by the Regional Planning Commission on behalf of the Steering Committee to conduct the MCAMLIS Land and Utility Information System Internet Prototype Study. He noted that the Committee had acted to make certain changes in the text of the draft report. Importantly, the Committee had acted to direct that the

draft report be expanded to include all of the substantive conclusions and recommendations set forth in the previous three reports and to provide, as may be appropriate, additional details with respect to implementation of each of the recommendations, as well as providing estimates of attendant costs.

Chairman Bauer noted that Mr. High was to provide the management staff and consultant with a copy of the third report in which information, conclusions, and recommendations that the County Department of Public Works believed should be included in the fourth report were highlighted. The consultant and management staff were then to redraft the fourth report and resubmit it to the Committee for consideration at its next meeting. Chairman Bauer noted that Mr. High had, indeed, provided to the consultant and management staff an annotated copy of the third report as requested by the Committee.

Chairman Bauer noted further that a copy of the revised draft of the fourth report had been provided to all members of the Committee for review prior to the meeting.

Chairman Bauer noted that Mr. Tym, of the firm of Ruckert-Mielke, Inc., was present to present the revised draft of the fourth report and asked Mr. Tym to lead a page-by-page review of the fourth report with the Committee. The following comments and suggested changes to the report were made by consensus in the course of the review:

With respect to the first numbered finding set forth on page 2 of the draft report, Mr. Shaw indicated that while he agreed that no compelling need exists to structure on an areawide basis an integrated set of MCAMLIS land base and public and private utility system data, he believed that there would be benefits to such an integration at the local municipal level. He suggested, and the Committee concurred, that the text concerning this finding be expanded to indicate such potential benefit, including in such benefits the potential ease of transfer of data between the local municipality and the private utilities operating in those municipalities.

[Secretary's Note: The text set forth under the first numbered finding of the study as set forth on page 2 of the draft report has been expanded by adding the following sentences:

"Such integration may be expected to have benefits at the local level, including benefits related to the ready transfer of utility information between interested parties. Such integration, however, should be the responsibility of the local municipalities and not of the MCAMLIS program, and can best be achieved through the development of local municipal public works management information systems based upon the MCAMLIS land base data."

It should be noted that, as requested at the Steering Committee meeting, this additional text has been reviewed with and concurred in by Mr. Shaw.]

In reviewing the third numbered finding set forth beginning on page 2 of the draft report, Mr. Tym called the Committee's attention to the specific recommendation that use of the MCAMLIS copyright and attendant license agreement procedures be discontinued. Chairman Bauer stated that it was important for the Committee to understand the significance of this recommendation. He further stated that if the Committee were to approve this report as revised at this meeting, he would suggest that the Steering Committee consider this issue as a specific agenda item at a future meeting. Implementing this recommendation, he stated, would represent a major change in the way the Steering Committee has

conducted business over the past decade. Historically, he said, the private utilities and the Milwaukee County Register of Deeds have opposed discontinuing the copyright and license agreements, and this issue should be thought through carefully and discussed by the Committee. Chairman Bauer suggested, and the Committee concurred, that the project staff be directed to prepare a memorandum on this issue for Committee consideration at a future meeting.

With respect to the last sentence in the second paragraph of the eighth numbered finding set forth on page 5 of the draft report, Ms. Olson suggested, and the Committee concurred, that the sentence be changed to read as follows: "In addition, the City of Milwaukee will maintain a similar set of real property boundary line maps prepared to City specifications."

In answer to a question by Mr. Shaw, Mr. Patterson replied that the specifications governing the City of Milwaukee property boundary line maps--with the exception of some differences in map annotation--differed from the specifications governing the MCAMLIS cadastral maps in only one major respect; namely, the City maps include, in some cases, the record bearings of selected property boundary lines. Chairman Bauer noted that such bearings were not included on the MCAMLIS maps in that the bearings concerned would not be related to the State Plane Coordinate System grid north, which provided the orientation for the transformed and recompiled City maps as well as for the MCAMLIS maps. He noted that historically such bearings were usually based upon an arbitrary assumed meridian, although in some cases, if very old, upon compass bearings. The use of such bearings on maps compiled upon a State Plane Coordinate grid, he said, can only be conflicting and confusing.

In response to a question by Mr. Bennett, Chairman Bauer indicated that an orderly procedure following adoption of the report would be for the Steering Committee to consider each recommended action in the report for implementation as a specific agenda item to be considered at a future Committee meeting. In this way the findings and recommendations of the report would provide the intended guidance to the development of the MCAMLIS work program over time. Given the complexity of the work elements required by some of the recommendations, good practice would require that a staff memorandum be prepared for each such element setting forth the objective of the work element, the procedures to be used in its completion, whether or not the work is to be done by the staff or by consultants, a time schedule and attendant costs. Each of such memoranda should be reviewed and approved by the Steering Committee.

Mr. Shaw indicated agreement with the procedure outlined by Chairman Bauer, but observed that it would be important that the preparation of staff memoranda and the consideration of the memoranda by the Steering Committee be done within the context of the approved final report.

Mr. Bennett expressed concern about the timing of the work, indicating that the City of Franklin needed very much to receive cadastral map updates on a transactional basis and that the institution of procedures to provide updates in this manner should receive the highest priority. Ms. Olson disagreed, indicating that many communities, including the City of Milwaukee, did not need, and were not interested in receiving, map updates in such format. Ms. Olson indicated further that the MCAMLIS strategic plan presently included a number of important work elements, some of which may indeed take priority over the provision of either seamless maps or transactional map updates within the County. She noted that the financial and staff resources available to the Steering Committee were limited and providing a priority for one work element could only really be done at the expense of the priorities for other elements.

Mr. Tym observed that an efficient procedure for the provision of cadastral map updates on a transactional basis would be facilitated by the completion first of a seamless map format within the County. He observed further that the provision of map updates on a transactional basis would present a

challenge in any case because no common mapping platform is in use within the County. Therefore, an efficient process might provide for the flow of information from MCAMLIS to the individual municipalities with the individual municipalities actually performing the map updates.

Chairman Bauer observed that based upon the discussion, it would appear that the staff should, at the next meeting, present to the Steering Committee a memorandum revising the current MCAMLIS strategic plan, as will be necessary upon adoption of the report under consideration, recommending an order of priority for the work elements in that plan with due consideration to the work elements required to prepare a seamless map or maps for the County and for the provision of cadastral map updates on a transactional basis.

After further discussion, the Committee concurred in the suggestion that the staff present to the Steering Committee for consideration a revised strategic plan, and based upon that revised plan, prepare staff memoranda for implementation of the highest priority work elements, including among those, the preparation of a seamless map or maps and the provision of cadastral map update information on a transaction basis within the County.

There being no further questions or comments, on a motion by Mr. Bennett, seconded by Mr. Lewandowski, and carried unanimously, report number four--the final report to be prepared under the Land and Utility Information System Internet Prototype Study--was approved as revised (copy of final report attached to these minutes.)

**Report on Proposed Meeting Between the Milwaukee County Register of Deeds and the City of Milwaukee Assessor to Consider Elimination of Duplicative Work Between the County and City Staffs**

Chairman Bauer noted that at the meeting of January 28, 2003, reference had been made to a Committee request made at the meeting of December 3, 2002, that Ms. Olson arrange a meeting between the Milwaukee County Register of Deeds and the City of Milwaukee Assessor to consider the elimination of work duplication between the County and City staffs. It was agreed that the meeting should still be pursued.

Ms. Olson indicated that she had discussed the desired meeting with Ms. Mary P. Reavey, City of Milwaukee Tax Commissioner, and Ms. Reavey had indicated that there had been some discussions between the two offices concerned. Mr. LaFave indicated that he had not been involved in any such discussions with Ms. Reavey, but perhaps there had been some discussions between Ms. Reavey and his predecessor in office. Ms. Olson indicated that Ms. Reavey was agreeable to further discussions between the two offices with, however, emphasis on the faster provision of data from the County to the City.

After some further brief discussion, it was agreed that Ms. Olson would continue to try to arrange a meeting between the County Register of Deeds and the City Tax Commissioner. Chairman Bauer noted that the original purpose for the meeting was to discuss the reduction or elimination of duplication of work between the two agencies concerned and not, at least solely, the provision of data by the County to the City.

**Report on Subcommittee Appointed to Consider Transfer of Project Management from the Regional Planning Commission Staff to the Milwaukee County Department of Public Works Staff**

Chairman Bauer noted that all Committee members had, at the meeting of October 8, 2002, received a copy of a letter dated September 26, 2002, from Mr. Thomas D. Kenney, Acting Director of the Milwaukee County Department of Public Works, asking that the Steering Committee consider the transfer

of certain MCAMLIS project management responsibilities from the Regional Planning Commission staff to the Milwaukee County Department of Public Works staff. The Committee had, at that meeting, acted to table the letter request pending further consideration by the County interests concerned.

Chairman Bauer further noted that, acting in response to the Committee's direction given at the meeting of December 3, 2002, he had, as Chairman, acted to appoint a subcommittee consisting of the Milwaukee County Register of Deeds, representatives of the County Departments of Administrative Services and Public Works, and the Executive Director of the Regional Planning Commission, who was to convene the subcommittee to consider the requested transfer of management responsibilities.

He noted that the subcommittee apparently had not met to date presumably because the issue had been resolved internally within the County. He asked the County representatives present to report on the issue.

Mr. Lewandowski reported that this issue had been considered internally within the County and that the County Executive had determined that the present MCAMLIS project management arrangements should, for the present, remain unchanged. He noted that the Steering Committee's contract for management services, which extended through the end of the year 2004, provides for termination upon due notice of the present arrangement should the County find such change to be desirable. Mr. Lewandowski noted that Mr. Greg T. Reiman, Executive Assistant to the County Executive, who was present, was expected to observe the work of the Steering Committee on behalf of the County Executive's office and the management issue may be revisited at some future date on the motion of the County Executive.

#### **Request for Publication of a MCAMLIS Newsletter**

Chairman Bauer noted that Mr. Bennett had, prior to the meeting of December 3, 2002, contacted project staff to request that the Committee consider the publication of a MCAMLIS newsletter. He noted that Mr. Bennett could not attend the December 3, 2002, meeting and, therefore, the request had been held over for consideration at the January 28, 2003, meeting, which Mr. Bennett also could not attend. Chairman Bauer noted that the Committee, in considering this request at the January 28, 2003 meeting, had acted to hold the matter of a newsletter in abeyance until the issue concerning how project management responsibilities are to be met in the future was resolved.

Chairman Bauer noted that apparently the issue of project management had been resolved, at least for the time being. He, therefore suggested, and the Committee concurred, that project management staff be asked to prepare a staff memorandum concerning the request for a MCAMLIS newsletter for consideration by the Committee at its next meeting. The memorandum should set forth the need for the newsletter; present alternative media for the distribution of the newsletter; that is, published versus electronic; and consider the frequency of issuance; generally set forth the kinds of information to be provided; and estimate the cost.

## **REPORTS**

#### **Report by Commission Staff on the Status of Conversion of MCAMLIS Digital Map File Database to ESRI ArcInfo Format**

Mr. Patterson reported that the Steering Committee had at its meeting of July 10, 2001, approved a project for the translation of the MCAMLIS digital map files from the Genamap and Intergraph DGN formats to the ESRI ArcInfo format. The work was to result in the translation of all MCAMLIS digital topographic maps and the majority of MCAMLIS digital cadastral maps into ESRI ArcInfo format. With respect to the cadastral mapping work, the work was to include the City of Milwaukee cadastral maps prepared to

MCAMLIS standards in the Phase 1 through Phase 5 transformation project areas, and in the three project areas for which the City staff recompiled maps.

Mr. Patterson noted that he had reported to the Committee at its meeting held on January 28, 2003, that all of the MCAMLIS digital topographic map files had been converted to ESRI ArcInfo format. Mr. Patterson reported further that all members of the Steering Committee had received a copy of a map showing the status of the conversion of the MCAMLIS digital cadastral map files to the ESRI ArcInfo format (copy of map attached to these minutes). Mr. Patterson noted that, as shown on the map, all of the available MCAMLIS cadastral maps within the City of Milwaukee had now been converted to the ESRI ArcInfo format. He noted further that the cadastral maps covering the 18 suburban areas of the County had long since been converted to the ESRI ArcInfo format. Finally, Mr. Patterson noted that the cadastral maps covering the remainder of the City of Milwaukee were to be completed in ESRI ArcInfo format by project staff as the map transformations are completed by the City staff. In conclusion, Mr. Patterson said that all of the work authorized by the Steering Committee with respect to this project had now been completed and that no further progress reports would be provided to the Committee with respect to the project at future meetings.

In answer to a question by Mr. Bennett, Chairman Bauer referred to the status map dated February 24, 2003, and indicated that MCAMLIS digital cadastral maps were available in both ESRI and ArcInfo formats for all of the 18 suburban units of government within the County and for the areas shaded in green within the City of Milwaukee.

Mr. Shaw requested that the files for the converted topographic and cadastral maps be provided by the staff to WE Energies in both of the new formats. He asked further that as the City of Milwaukee completes the transformation of additional City cadastral maps to MCAMLIS standards for the remaining areas of the City, copies also be provided by the MCAMLIS staff to WE Energies in the two new formats. There being no further questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting.

#### **Report by City of Milwaukee Staff on the Status of Milwaukee Cadastral Map Transformation Projects**

Chairman Bauer noted that all members of the Steering Committee had received a copy of a current status report on the City of Milwaukee cadastral map transformation projects for review prior to the meeting. Chairman Bauer asked Ms. Olson to review the report with the Committee.

Ms. Olson then reviewed the status report with the Committee.

In answer to a question by Mr. Shaw, Ms. Olson indicated that the Phase 1, Phase 4, and Phase 5 were completed since the last work progress report provided to the Committee, and that work had been essentially completed on Phase 6.

In answer to a question by Mr. LaFave, Ms. Olson indicated that there were, indeed, small areas on the periphery of the City where the one-quarter section maps were located in both the City of Milwaukee and another community that were not included in the City of Milwaukee map recompilation and map transformation projects. The cadastral maps for those areas had been previously completed by the Regional Planning Commission.

In answer to a question by Mr. Bennett, Mr. Patterson indicated that the estimated completion date of the project for all of the City of Milwaukee was 2005.

There being no further questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting (copy of report attached to these minutes).

**Report by Milwaukee County Register of Deeds Staff on MCAMLIS Cadastral Map and Street Address File Maintenance Operations**

Chairman Bauer noted that all Committee members had received copies of maps showing the status of the Milwaukee County cadastral map and street address file maintenance as of March 14, 2003, for review prior to the meeting. He then asked Ms. Kathleen A. Bach, GIS Technician, Milwaukee County Register of Deeds office, to report on the status of the work concerned.

Ms. Bach briefed the Committee on the status of the work utilizing two status maps; one relating to the street address database, and one to the cadastral map file.

In answer to a question by Mr. Bennett, Ms. Bach indicated that the tax key numbers were assigned by staff of the County Register of Deeds office and provided to her for integration into the cadastral map files.

In answer to a question by Mr. Shaw, Ms. Bach indicated that the City of West Allis originally maintained its own cadastral maps, which largely, but not entirely, met MCAMLIS standards and that she engaged in making such minor changes on the maps as required to bring those maps into full compliance with MCAMLIS standards. The differences, she said, related to such things as, for example, the position of text and the typography.

Chairman Bauer noted that as Ms. Bach had noted, originally the City of West Allis intended to maintain its own cadastral maps and to do so to MCAMLIS standards. It was now agreed that MCAMLIS would maintain the cadastral maps for the City of West Allis as well as for the other 17 suburban units of government within the County. He noted further that the City of Milwaukee had indicated that the City would not maintain the maps which the City had, and was in the process of, preparing to MCAMLIS standards, but would instead maintain its own set of property boundary line maps. He noted that, therefore, the burden of maintaining the MCAMLIS cadastral maps covering the City of Milwaukee would fall upon the County Register of Deeds office and upon Ms. Bach. He indicated that, given this increased work load on Ms. Bach, it may be necessary for the Steering Committee to consider the need to provide additional resources to the County Register of Deeds office for cadastral map maintenance purposes.

Mr. Shaw indicated that the County Register of Deeds office should initiate the maintenance of the MCAMLIS cadastral maps covering the City of Milwaukee as soon as possible or the maps may be expected to otherwise become rapidly out of date.

There being no questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting (copy of work status maps attached to these minutes).

**Report by Project Staff on Completion of the WLIP Annual Status Report**

Chairman Bauer noted that all Committee members had received a copy of the year 2002 Wisconsin Land Information Program (WLIP) annual status report for Milwaukee County. He noted that the preparation and filing of this report annually was required by the Wisconsin Land Information Board to maintain

eligibility for the receipt of State grants under the Wisconsin Land Information Program. Chairman Bauer then asked Mr. Patterson to review the report with the Committee.

Mr. Patterson then reviewed the report with the Committee.

There being no further questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting (copy of report attached to these minutes).

**Report by Project Staff on the Status of Milwaukee County's WLIP 2002 Grant Award Applications**

Mr. Patterson reported that the Milwaukee County calendar year 2002 contribution-based grant applications were filed on February 14, 2003, with the Wisconsin Office of Land Information Services and the applications were subsequently approved.

Mr. Patterson noted that the contribution-based grant awards covered the following projects, as had been approved by the Steering Committee at the meetings of December 3, 2002, and January 28, 2003:

1. An additional map transformation project in the City of Milwaukee in the area identified as Project Area 8; and
2. Two additional map transformation projects in the City of Milwaukee that complete what is identified as Project Area 9.

Mr. Patterson further noted that these two project areas were delineated on a map provided to Committee members for review prior to the meeting. With the funding for Project Areas 8 and 9 now secured and the work to soon begin, this will leave a single six-square mile area identified on the map as Project Area 10 to be completed under the City of Milwaukee map transformation project.

There being no questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting (copy of map attached to these minutes).

**Report by Project Staff on Status of License Agreements**

Chairman Bauer noted that all members of the Steering Committee had received a copy of a table setting forth all of the license agreements entered into from January 1, 2003, through March 31, 2003, for review prior to the meeting.

There being no questions or comments on the report, it was the consensus that the report be placed on file via the minutes of the meeting (copy of table setting forth executed license agreements attached to these minutes).

**Report by Milwaukee County Staff on Status of MCAMLIS Cash Flow**

Chairman Bauer noted that all Committee members had received a copy of a table summarizing the status of the MCAMLIS project cash flow as of February 28, 2003, for review prior to the meeting. He then asked Mr. Lewandowski to review the report with the Committee.

There being no questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting (copy of table setting forth the cash flow status as of February 28, 2003, attached to these minutes).

## NEW BUSINESS

### **Report by Project Staff on Survey Control Information Incorporation into MCAMLIS Digital and Hardcopy Maps**

Chairman Bauer noted that all members of the Steering Committee had, in accordance with the commitment made at the January 28, 2003, meeting received a copy of a staff report describing the manner in which revised survey control information is incorporated by the project management staff into MCAMLIS survey control records and MCAMLIS digital and hardcopy maps. He asked Mr. Patterson to review the report with the Committee.

Mr. Patterson then reviewed the report with the Committee. During this review, Mr. Patterson called the Committee's attention to two typographical errors in the text of the report. Mr. Patterson stated that these errors would be corrected and that a corrected copy of the report would be attached to the meeting minutes.

There being no further questions or comments on the report, it was the consensus of the Committee that the report be placed on file via the minutes of the meeting (corrected copy of the report attached to these minutes).

## CORRESPONDENCE

### **Request by Milwaukee County Register of Deeds for Discussion of the Special Projects \$1 Retained Document Filing Fee and Potential Ways the Fee Could Be Utilized**

Chairman Bauer reported that the project management staff was in receipt of an electronic mail communication from the Milwaukee County Register of Deeds requesting that the Steering Committee discuss the special projects \$1 retained document filing fee and potential ways in which the fee could be used.

[Secretary's Note: In order to provide a context for the Committee deliberations concerning this agenda item, the following summary of the legal framework for the financial status of the special projects \$1 retained document filing fee is provided:

Section 59.72(5)(b)3 of the *Wisconsin Statutes* provided for the imposition of an additional \$1 document filing fee on documents presented to the County Register of Deeds for recording, the receipts to be retained by the County and used to promote specific objectives set forth in the enabling legislation.

The retention of the fee became effective on September 1, 2001, and the fee will remain in effect through August 31, 2003, unless extended by legislative action. The Governor's proposed budget would extend the "sunset" date for an additional two years, or to August 31, 2005. As of February 28, 2003, a total of about \$327,000 had been collected through this fee, of which about \$13,000 was expended for a large format scanner to be used in the Milwaukee County Register of Deeds office, the expenditure having been approved by the Steering Committee at its meeting on January 24, 2002. The Steering Committee, at its meeting of June 25, 2002, also approved the expenditure of about \$30,000 for the scanning of current card-based Federal tax lien records and for their organization into a computer accessible database to be maintained by the County Register of Deeds office.

The State guidelines require that the collected fees be expended for such projects as making property tax assessment information available via the Internet; on the assembly and provision of data via the Internet on current and forecast demand for residential, commercial, and industrial lands, including data on existing numbers and types of housing units, type of housing occupancy, condition of housing stock, pertinent demographic and economic data, and data on developable land; and on the assembly and provision of data via the Internet on affordable and special needs housing, including market rents and subsidization and housing sales information. Eligible expenditures include computer hardware and software, staff services, and consultant contracts.]

Mr. LaFave noted that, in his position as the Milwaukee County Register of Deeds, he has a responsibility to try to increase the operational efficiency of the Register of Deeds office and to better serve the public. He noted that fiscal analysis has indicated that the receipts from the special project \$1 retained document recording fee concerned, as of the end of February 2003, totaled \$327,000, of which \$43,000 has been either expended or committed, leaving \$284,000 for use in accordance with the Statutory guidelines. He noted that if the Governor's budget is adopted and the sunset date for the collection of the special projects \$1 retained document recording fee is extended for an additional two years, at current collection rates, an additional \$400,000 may be expected to be added to these receipts.

He noted that the adopted strategic plan envisions the proposal of projects utilizing these receipts and further implies that the responsibility for such proposals be the responsibility of the County Register of Deeds, as the County Land Information Officer. Accordingly, he would propose two new projects for funding out of the retained fees concerned.

The first project, he said, would provide for the electronic recording of mortgage satisfactions on a demonstration basis. Such recording is already being provided in Racine and Washington Counties. Mr. LaFave indicated that he had been in contact with the InGeo Company, which provides a software program known as "Quick Start" for the electronic recording of mortgage satisfactions. He indicated that the firm had offered to make this software program available to his office on a trial basis for a period of up to 12 months at no cost. At the end of that trial period, a decision could then be made as to whether to continue use of the InGeo Company software, integrating the electronic recording of mortgage satisfactions into the overall operation of the Register of Deeds office or whether to seek other software from other vendors.

Mr. LaFave noted that the one year trial project would, however, require the County to acquire stand-alone hardware for the operation of the InGeo software program. Such hardware and operating system software is estimated to cost about \$18,500. The proposed expenditure would be in accordance with the envisioned uses of the special purpose \$1 retained document recording fee concerned.

In response to a question by Mr. Shaw, Mr. LaFave indicated that fully integrating the electronic recording of mortgage satisfactions into the Register of Deeds computerized office operations is estimated to have a capital cost of approximately \$115,000 and a maintenance cost of about \$3,000 per month. He indicated further that if the Office is able to upgrade the general software programs used by the Office, it may be possible to reduce the capital cost involved to about \$57,000.

A lengthy discussion ensued upon the conclusion of which it was moved by Mr. LaFave, seconded by Ms. Olson, and carried unanimously to authorize the Register of Deeds to expend up to \$20,000 from the special purpose \$1 retained document recording fee receipts to provide the hardware and operating system software required to use the InGeo Company system to provide for the electronic recording of the satisfaction of mortgages. The software would be used for a period of about one year to demonstrate the efficiency and effectiveness of the InGeo system. At the end of the trial period, a decision would then be made as to whether or not to integrate that system into the overall operations of the Register of Deeds office or to seek other hardware and software alternatives.

[Secretary's Note: Mr. LaFave asked that the Steering Committee provide to him a letter documenting the Steering Committee's action authorizing the expenditure of up to \$20,000 for the acquisition for the hardware and software necessary to operate the InGeo Company "Quick Start" program. As requested, Mr. LaFave was provided with a letter authorizing the expenditure concerned. A copy of the letter is attached to these minutes.]

Mr. LaFave then indicated that he wished to propose a second project utilizing the funds accrued through the special projects \$1.00 retained document recording fee. He noted that there was an urgent need to upgrade the software program used in the general operation of the Register of Deeds office. He noted that the current software is a product of the Fidlar Company and is known as Docutrack. The update would not only provide increased efficiency in the operation of the current computer-assisted functions of the Office, but would permit additional functions, such as document imaging and tax payment recording, to be carried out in a computerized manner with Internet access. He noted that he was currently investigating various vendors that might be retained to carry out the system improvement. Mr. LaFave indicated that a preliminary estimate of the capital and maintenance costs of an improved automated system for his office totaled about \$480,000, which cost would be incurred over a five year period and which cost would include maintenance fees. He noted further that his office was currently incurring system maintenance costs of about \$36,000 per year which, over a five-year period, would total about \$180,000. These maintenance costs would offset the total cost of the improved system, bringing that total cost to about \$300,000 over five years. He indicated that he would like authorization to utilize the special projects \$1 retained document recording fee to cover all or part of this cost.

Mr. Lewandowski noted that the cost of the proposed computer system upgrading should be eligible for funding under the County's capital improvement budget and suggested that Mr. LaFave approach the County Information Management and Systems Department for the necessary funding. Mr. LaFave responded that he had done so and had been advised to utilize MCAMLIS funding for a part or all of the necessary cost.

Mr. Lewandowski then suggested that Mr. LaFave work with a budget analyst to negotiate funding for a capital improvement project that would be funded by a combination of MCAMLIS fees and general tax levy monies. A lengthy discussion ensued in which the Chairman noted that the requested funding was apparently consistent with the statutorily envisioned uses of the special projects \$1.00 retained document recording fee and suggested that the Steering Committee could make up to at least \$240,000 available to the Register of Deeds for the proposed computer system improvement

Mr. Patterson cautioned that the revenues from the special projects \$1.00 retained document recording fee had been commingled with receipts from the \$4.00 retained document recording fee intended to be used for the creation of a parcel based land information system within Milwaukee County. He indicated further that the receipts are, however, "tracked"--that is, accounted for, separately. Chairman Bauer

expressed surprise indicating that the State law was clear that the special projects \$1.00 retained document recording fee cannot be used for any purposes other than those envisioned in the statute imposing the fee. He indicated further that, in his opinion, it was unlikely that any further special projects would be found for the use of the revenues that was more important than the suggested project. Consequently, he said, the timing of the need for the monies to improve the Register of Deeds office computer hardware and software system might be critical. Mr. Lewandowski indicated that he wasn't opposed to the proposed project and believed it to be a needed and legitimate one. He indicated he was, however, concerned that not all of the special projects \$1.00 retained document recording fee be expended for the project and that some of the revenues concerned be conserved for other uses.

After some further discussion, on a motion by Mr. Lewandowski, seconded by Mr. High, and carried unanimously, the Milwaukee County Register of Deeds was authorized to pursue an improvement project for the computerized system used in the general operation of the Register of Deeds office; and to that end, to enter into negotiations with the appropriate officials of the Milwaukee County Department of Administration to arrive at an equitable funding arrangement that utilizes both the special projects \$1.00 retained document recording fee funds and capital improvement funding; and that the County Register of Deeds was authorized to utilize up to \$240,000 of the special project funds for this purpose.

[Secretary's Note: Mr. LaFave asked that the Steering Committee provide to him a letter documenting the Steering Committee's action authorizing the pursuit of an improvement project for the computerized system used in the general operation of the Register of Deeds office, to enter into negotiations with the appropriate officials of the Milwaukee County Department of Administration to arrive at an equitable funding arrangement that utilizes both the special projects \$1.00 retained document recording fee funds and capital improvement funding, and to utilize up to \$240,000 of the special projects \$1.00 retained document recording fee funds for this purpose. As requested, Mr. LaFave was provided with a letter authorizing him to pursue and negotiate up to \$240,000 the system concerned. A copy of the letter is attached to these minutes.]

#### **DATE, TIME, AND PLACE OF NEXT MEETING**

Chairman Bauer then asked the Committee to consider the date, time, and place for the next Committee meeting. Chairman Bauer noted that the Committee had directed the staff to provide for consideration at its next meeting a number of staff memorandums. The first of these memorandums, he noted, was to deal with a revision of the program strategic plan, recommending a priority order for the implementation of the various work projects included in that plan. The plan would, moreover, have to be expanded to include a project for the provision of cadastral map updates on a transactional basis and to include the two special projects requested by the Register of Deeds and approved for inclusion in the program at today's meeting. Three additional memorandums were requested; one on the creation of seamless MCAMLIS cadastral map or maps for Milwaukee County; another for the provision of cadastral map updates on a transactional basis; and, if time permitted, a memorandum on the copyright and licensing agreement procedure. After some brief discussion, it was determined that the next meeting of the Steering Committee should be scheduled to be held on June 10, 2003, at 9:00 A.M., in Room 203-P.

#### **ADJOURNMENT**

There being no further business to come before the Steering Committee, on a motion by Mr. Bennett, seconded by Mr. Misun, and carried unanimously, the meeting adjourned at 11:40 A.M.

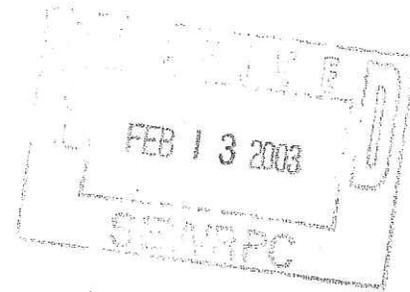
Respectfully submitted,  
Thomas D. Patterson  
MCAMLIS Project Manager

#81205 v1 - MCAMLIS MIN 55TH MTG 4/8/03  
KWB/TDP/wb



February 11, 2003

Mr. Thomas Patterson, Project Manager  
Southeastern Wisconsin Regional Planning Commission  
916 N. East Ave, P.O. Box 1607  
Waukesha, WI 53187-1607



RE: MCAMLIS

Dear Mr. Patterson:

Please be advised that the nominating committee of one – myself – after holding a number of meetings and giving extensive thought has developed a list of candidates for the MCAMLIS Steering Committee as follows:

Chairperson – Dr. Kurt W. Bauer

Vice-Chairperson – Mr. John LaFave

Please submit the above names at the April 8, 2003 Steering Committee Meeting. Both candidates have agreed to serve for the one year term.

Yours very truly,

John M. Bennett, P.E.  
City Engineer

JMB/db

C: Dr. Kurt W. Bauer  
John LaFave

**MCAMLIS  
LAND AND UTILITY INFORMATION  
SYSTEM INTERNET PROTOTYPE  
Report No. 4**

**Prepared by: Ruekert & Mielke, Inc.  
For: Milwaukee County Automated  
Mapping and Land Information  
System (MCAMLIS) Steering Committee**

**Approved by the MCAMLIS Steering Committee  
On April 8, 2003**

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**MCAMLIS  
LAND AND UTILITY INFORMATION SYSTEM  
INTERNET PROTOTYPE  
REPORT NO. 4  
"EXECUTIVE SUMMARY"**

**INTRODUCTION**

This is the final report setting forth the findings and recommendations of a pilot study of the feasibility of implementing an Internet-based land and utility information system under the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) program. This report completes the project outlined in the prospectus approved by the MCAMLIS Steering Committee at its meeting held on August 29, 2000.

As proposed and outlined in the Prospectus, this Report will do the following:

1. Document the need and potential benefits for establishing a process to easily access and exchange current land and utility information;
2. Specify the scope and content of the work to be undertaken;
3. Recommend the most cost-effective method for establishing, organizing, and accomplishing the required work; and
4. Provide sufficient cost data to permit the development of an estimated budget and initiate a prototype of the desired system.

More specifically, this report is also intended to provide information that will permit the MCAMLIS Steering Committee to determine the best means for:

5. Providing ready Internet-based access to the MCAMLIS database;
6. Exchanging and viewing utility information;
7. Providing timely and cost effective distribution of the MCAMLIS land base maintenance activities;
8. Providing transactional changes to the MCAMLIS parcel-based land information system; and
9. Providing for the spatial merging or layering of municipal and utility infrastructure data.

All of the efforts associated with this project were conducted with interaction and input from the Technical Advisory Committee (TAC). A list of the TAC members is provided in Appendix 1. The recommendations provided in this report are based on the research, development and installation of the Internet prototype web application and feedback provided by the TAC.

### 1. Document The Need And Potential Benefits For Establishing A Process To Easily Access And Exchange Current Land And Utility Information.

No evidence was found in the study that a compelling need exists to structure, on an areawide basis, an integrated set of traditional MCAMLIS land base data with public and private utility system data. While individual units of government may desire to achieve such integration, that objective can best be achieved on a case-by-case basis.

Such integration may be expected to have benefits at the local level, including benefits related to the ready transfer of utility information between interested parties. Such integration, however, should be the responsibility of the local municipalities and not of the MCAMLIS program, and can best be achieved through the development of local municipal public works management information systems based upon the MCAMLIS land base data.

### 2. Specify The Scope And Content Of The Work To Be Undertaken.

Although a compelling need was not found to develop an integrated land base and utility system database, the following are considerations that should be addressed if such a system was to be developed in the future:

#### Application Software

Based on the prevalent use of ESRI software by most of the local municipalities, and the fact that the Internet prototype web application was developed with ESRI ArcIMS and met the needs expressed by the Technical Advisory Committee, the Land Information web application should continue to be developed using ESRI ArcIMS. Since ESRI has released a version upgrade (4.0) since the initial development of the web application, the web site should be upgraded. Ruekert / Mielke has completed other web application upgrades from ArcIMS version 3.1 and the cost is estimated to range from \$1,500 to \$2,000.

#### Database Updates

Since the Prototype Internet Web Application was a pilot project and included only a sampling of the available digital files, final implementation will require updating the database tables with a record for the available digital files. Assuming local municipalities can provide a single digital file for the sanitary sewer, storm sewer, and water distribution facilities, the cost to update the web application is estimated to be between \$2,500 and \$3,500.

### 3. Recommend The Most Cost-Effective Method For Establishing, Organizing, And Accomplishing The Required Work.

#### Hosting Services

The data and web application could be hosted either by a web hosting service provider or by Milwaukee County. Physical location of the site is not critical. The study recommends that the hardware and software to be purchased by MCAMLIS and the development work is already complete. Any updates or modifications required would be extra cost in addition to the cost of hosting the application. If the data and web application were to be hosted initially

by a web hosting service provider, and should Milwaukee County decide to assume responsibility for the maintenance and hosting in the future, the web application could be simply removed from the web hosting service provider. The cost to remove and re-install the web application is estimated at approximately \$1,500.

Community Access

Since the Land Information System web application can be accessed via an Internet browser, the requirements for local communities to access, search and download the available digital data would be minimal. The following is a list of the requirements:

1. Internet Connection - 768 kbps (minimum)
2. Microsoft Internet Explorer 5.x or later or Netscape Communicator 4.75 or later
3. GIS software capable of reading ESRI ArcInfo coverages, geodatabases or shape files

Of the municipalities that responded to the questionnaire survey undertaken as a part of the study, the Village of Hales Corners was the only municipality that did not have Internet access. However, the Village does have plans to obtain Internet access in the near future.

MCAMLIS License Agreement

It is recommended that use of the MCAMLIS copyright and attendant license agreement procedures be discontinued.

4. Provide Sufficient Cost Data To Permit The Development Of An Estimated Budget And Initiate A Prototype Of The Desired System.

In the event a web application is developed, the following tasks should be completed as part of a full-scale implementation effort of the Land Information System web application:

Task		Cost Estimate
1.	Convert the digital U.S.P.L.S.S. one-quarter section cadastral map files to larger municipal tiled areas.	\$ 40,000 - \$ 45,000
2.	Convert the digital U.S.P.L.S.S. one-quarter section topographic map files to larger municipal tiled areas.	\$ 35,000 - \$ 40,000
3.	Develop an automated maintenance conversion tool for the creation of municipal tiled areas.	\$ 3,000 - \$ 5,000
4.	Incorporate a geodatabase design for the maintenance of the digital cadastral maps	\$ 6,000 - \$ 8,000
5.	Incorporate a transactional update process	\$ 20,000 - \$ 30,000
6.	Update existing ArcIMS 3.1 web application to ArcIMS 4.0	\$ 1,500 - \$ 2,000
<b>Total cost estimate for all recommendations:</b>		<b>\$105,000 - \$130,000</b>

Since most survey respondents indicated an interest in obtaining seamless cadastral and topographic maps for their communities, Items 1 and 2 should be completed as a separate project.

## Local Web Hosting Service

The following is a list of required services and estimated costs for web hosting services:

<b>Required Services</b>	<b>Cost</b>
Data Storage and Web Hosting: (includes hardware, software licenses, yearly software maintenance fees)	\$600 - \$900 per month
Data Maintenance: (includes appending or replacing available data sets)	\$200 - \$400 per update
Additional Web Page or ArcIMS Development	\$40 - \$85 per hour
<b>Total Monthly Data Storage and Web Hosting Fees</b>	<b>\$800 - \$1,300</b>

Additional expenses for web page or ArcIMS development, software maintenance and upgrades, or data conversion may be required in the event MCAMLIS desires to modify the existing web application.

### 5. Providing Easy Access to the MCAMLIS Data Base.

Since its inception, the MCAMLIS land base data has been developed, stored, and disseminated on the basis of U. S. Public Land Survey one-quarter sections. In order to facilitate the use of this data by the constituent municipalities and by Milwaukee County, it is proposed that the MCAMLIS land base data be stored and disseminated in a seamless fashion on the basis of "tiles" to be defined for each municipality and for Milwaukee County. It is feasible to create a seamless system of mapping that recognizes the overlapping nature of each community's geographic area of concern and interest. It is recommended that the MCAMLIS Steering Committee authorize the project management staff to develop a project that would address the seamless mapping needs and present that project to the Committee for its consideration.

### 6. Exchanging And Viewing Utility Information

Growing security-related concerns relative to the use and dissemination of utility system data render any areawide, web-based distribution of such data infeasible. Rather, both public and private utilities now desire to strictly license the use and distribution of utility system data with appropriate security safeguards. Moreover, efficiency and effectiveness as well as security concerns tend to favor making utility system data available on an "as needed," project-by-project basis. Consequently, each unit of government will need to deal individually with each utility provider to ascertain the conditions under which utility system data would be made available for their use. It is expected that licensing procedures will govern the conditions of such use. Given this and the previous finding, there is no direct role for MCAMLIS with regard to the matter of full integration of land base and utility system data.

### 7. Providing Timely And Cost Effective Distribution Of Land Maintenance Activities

The MCAMLIS land base data consists of three components: topographic mapping, cadastral mapping, and street addressing. Presently, updates to this information are transmitted to Milwaukee County, its constituent municipalities, and licensed users on an on-request basis via

the medium of compact disks. The internet prototype study demonstrated that it would be feasible to use internet technology to distribute such information. It is recommended, however, that the delivery of updated information through web technology be made the responsibility of the County and not MCAMLIS. Moreover, any determination to deliver data using web technology should await further decisions regarding the role which Milwaukee County is to assume in terms of MCAMLIS program administration.

#### 8. Providing Transactional Changes To The Land Information System.

One of the enhancements to the MCAMLIS cadastral mapping data program involves the identification to the constituent municipalities of updates to cadastral maps. By modifying the cadastral mapping updating protocol now in place, it is feasible to deliver to each municipality in Milwaukee County, not only an updated cadastral map for that community's "tile," but also to embed in the database information that allows the end user to identify all additions, deletions, and modifications to existing parcel polygons. It is recommended that the MCAMLIS Steering Committee authorize the project management staff to develop a follow-up project that would provide the Milwaukee County Register of Deeds with the software and procedures required to systemically accommodate the need for transactional update information with respect to cadastral maps for the municipalities and MCAMLIS program participants within the County.

Under this recommendation, MCAMLIS would maintain current the MCAMLIS topographic and cadastral maps for the entire County, including the area within the City of Milwaukee. In addition, the City of Milwaukee will maintain a similar set of real property boundary line maps prepared to City specifications.

#### 9. Providing For The Spatial Merging Or Layering Of Municipal And Utility Infrastructure.

As noted above, We Energies and the City of Milwaukee have, for security reasons, already indicated a concern regarding the deployment of digital utility information over the Internet. Although some members of the Technical Advisory Committee indicated a desire to obtain as much of the available digital utility information through the internet prototype web application, the lack of a standard data format would seriously impact the amount of time spent converting and merging the available utility infrastructure files into a common base map. Additionally, since We Energies indicated that they may provide complete data sets through requests made directly by interested parties, it seems impractical to include partial datasets from We Energies, or any other municipality or agency, in the web application that would otherwise provide full datasets through a direct request.

Instead, potential users, after obtaining the available utility infrastructure files directly from the data provider, would be responsible for merging the digital files into their own systems. Although this increases the amount of time and effort for the local users, the probability that a universal, standard data format could be developed and agreed upon by all local users is highly unlikely. Hence, the merging of municipal and utility infrastructure information is not recommended.

## CONCLUSION

The study has successfully demonstrated the ability to develop an Internet web application for the collection and distribution of digital map products. The study also identified numerous tasks that should be completed in order to facilitate and simplify the maintenance and updated process associated with the digital cadastral maps. The next step requires the approval of the MCAMLIS Steering Committee of these recommendations and the coordination and implementation of the necessary efforts.

**APPENDIX 1:**  
**TECHNICAL ADVISORY COMMITTEE MEMBERS**

<b>ORGANIZATION</b>	<b>MEMBER</b>
Ameritech Services, Inc.....	Ricky Wicklund, Telecommunications Specialist
Village of Brown Deer .....	James Buske, GIS Technician
City of Milwaukee .....	Nancy Olson, Manager, GIS, City of Milwaukee
Milwaukee County .....	Kevin Bruhn, Infrastructure Coordinator
Milwaukee County .....	Kevin White, GIS Supervisor
Milwaukee County .....	Kathy Bach, GIS Technician
Milwaukee Metropolitan Sewerage District .....	David Misun, Asset Evaluation Supervisor
Southeastern Wisconsin Regional Planning Commission.....	Thomas Patterson, MCAMLIS Project Manager
City of West Allis.....	Patrick Walker, GIS Coordinator
Wisconsin Gas.....	Ed Hohl, Information Consultant
Wisconsin Electric.....	Tim Marquardt, Electric Mapping Supervisor
Wisconsin Electric.....	William Shaw, GIS Manager

## STATUS OF MCAMLIS MAPPING PROJECTS BEING CARRIED OUT BY CITY OF MILWAUKEE STAFF

The City of Milwaukee recompilation project is comprised of 40 U.S. Public Land Survey one-quarter section-based maps as delineated on the accompanying status map. These cadastral maps are being compiled to fit the MCAMLIS survey control system utilizing original land records and associated descriptions and documents. This work has been carried out by the staff of the City of Milwaukee, Infrastructure Service Division, Central Drafting and Records Office. As of November 30, 2001, all 40 of the quarter-section maps have been completed by the City of Milwaukee staff and have been accepted by the SEWRPC staff as of this date as being in compliance with those specifications.

The City of Milwaukee cadastral map transformation project (Phase 1) consists of 93 U.S. Public Land Survey one-quarter-section-based existing City of Milwaukee maps that are being refit to the MCAMLIS survey control system utilizing computer algorithms. These 93 one-quarter section maps are delineated on an accompanying status map. This work is being carried out by the staff of the City of Milwaukee, Department of Administration, Information and Technology Management Division. As of March 21, 2003, City of Milwaukee Geographic Information Systems staff have completed the transformation all 93 of these map sheets, all of which have been sent to SEWRPC staff for their review to determine compliance with MCAMLIS specifications and standards. Of the 93 map sheets submitted, 93 have been accepted by SEWRPC staff as meeting the relevant specifications. The agreement governing this project calls for work to be completed by October, 2002. This project was completed February 25, 2003.

The City of Milwaukee cadastral map transformation project (Phase 2) consists of 24 U.S. Public Land Survey one-quarter-section-based maps as delineated on an accompanying status map. All 24 of the map sheets have been accepted as being in compliance with the specifications in this project area. The agreement governing this project calls for work to be completed by June 2002. This project was completed February 14, 2002.

The City of Milwaukee cadastral map transformation project (Phase 3) also consists of 24 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. All 24 map sheets have been accepted as being in compliance with the specifications. The agreement governing this project calls for work to be completed by June 2002. This project was completed February 14, 2002.

The City of Milwaukee cadastral map transformation project (Phase 4) also consists of 24 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. All 24 map sheets have been accepted as being in compliance with the specifications. The agreement governing this project calls for work to be completed by December 2002. This project was completed February 15, 2003.

The City of Milwaukee cadastral map transformation project (Phase 5) also consists of 24 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. The agreement governing this project calls for work to be completed by December 2002. This project was completed January 3, 2003.

The City of Milwaukee cadastral map transformation project (Phase 6) consists of 26 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. As of March 21, 2003, 26 maps from this project area have been submitted to SEWRPC staff for review and accordingly, 20 maps sheets have been accepted as being in compliance with the specifications. The agreement governing this project calls for work to be completed by December 2003. There is currently no reason to expect that the project completion schedule will not be met.

# MCAMLIS Transformation Project Progress Map

## COMPLETED PHASES

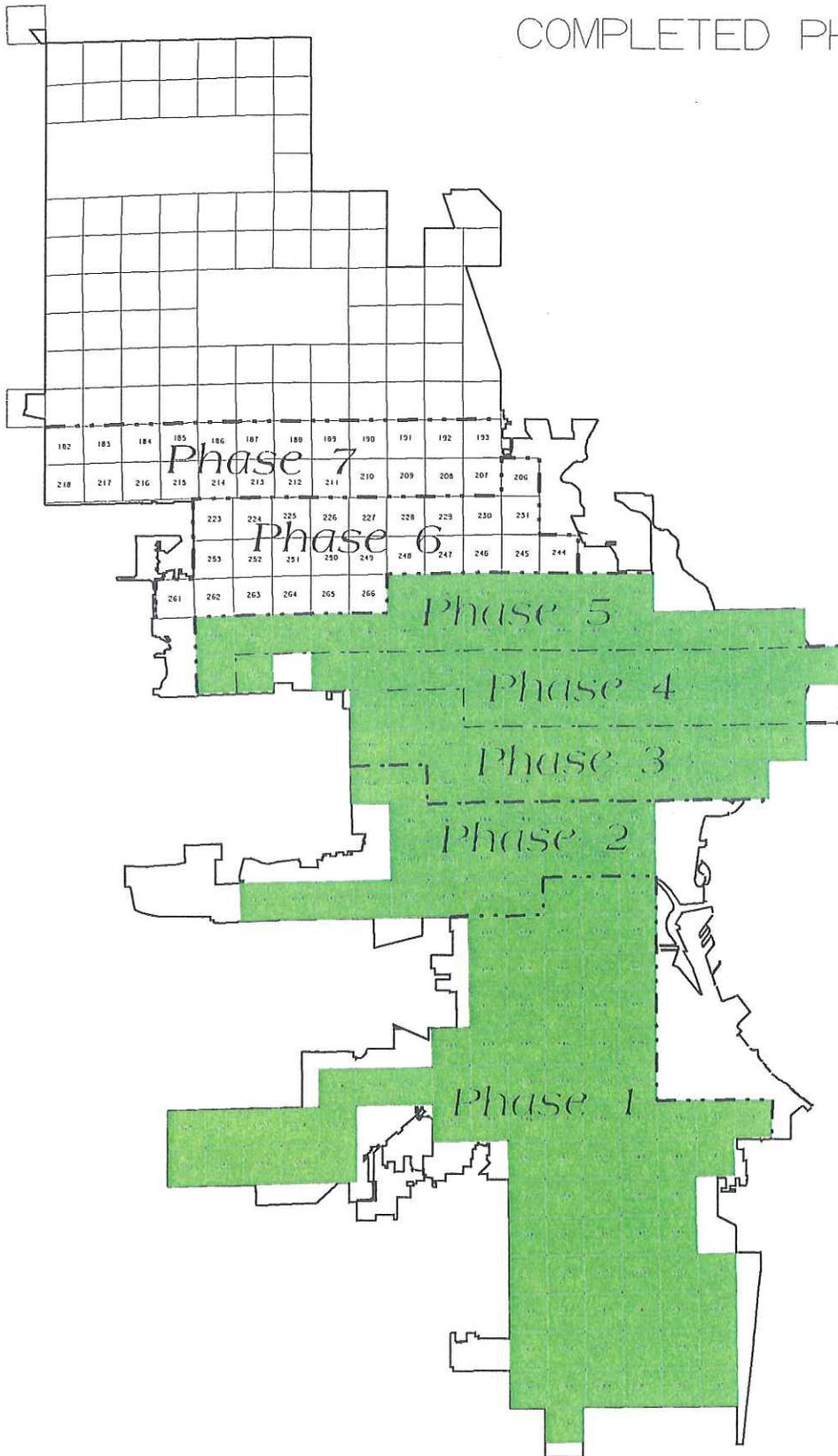
### Legend



Accepted

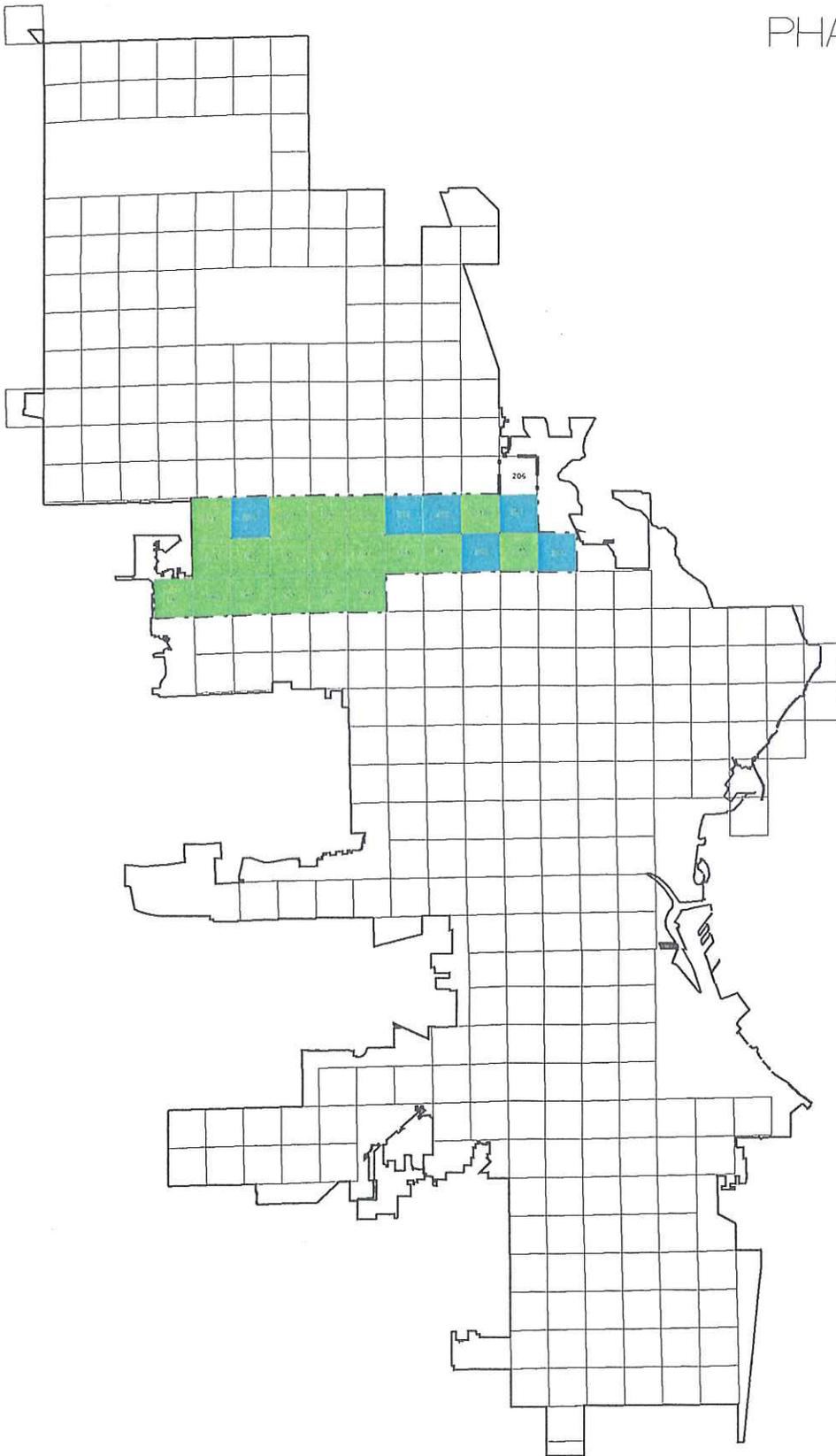


Contract Boundaries



# MCAMLIS Transformation Project Progress Map

## PHASE 6



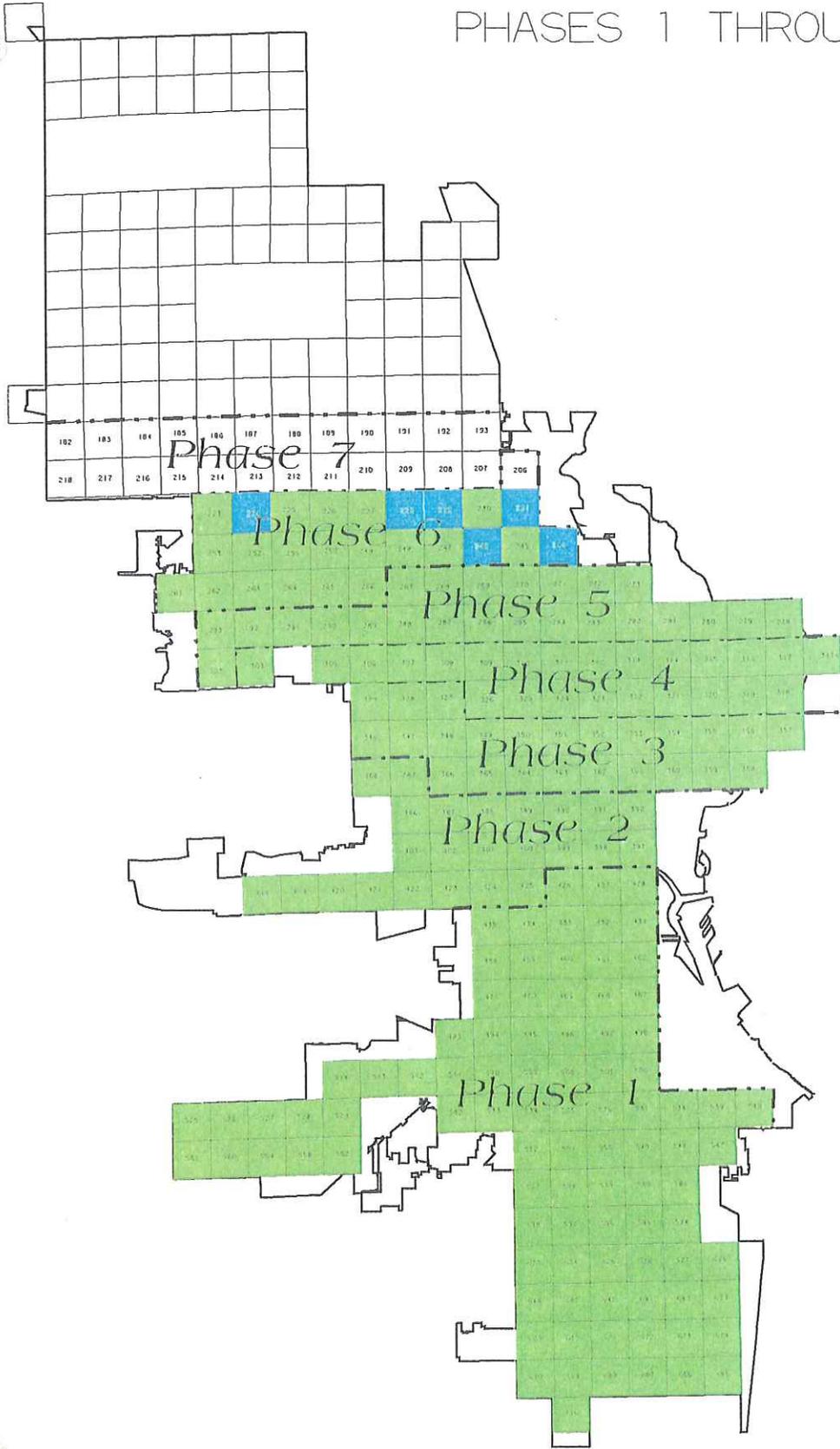
### Legend

-  Accepted (19)
-  Delivered (6)
-  In Progress (0)

----- Contract dated 03/01  
24 quarter sections  
Boundary

# MCAMLIS Transformation Project Progress Map

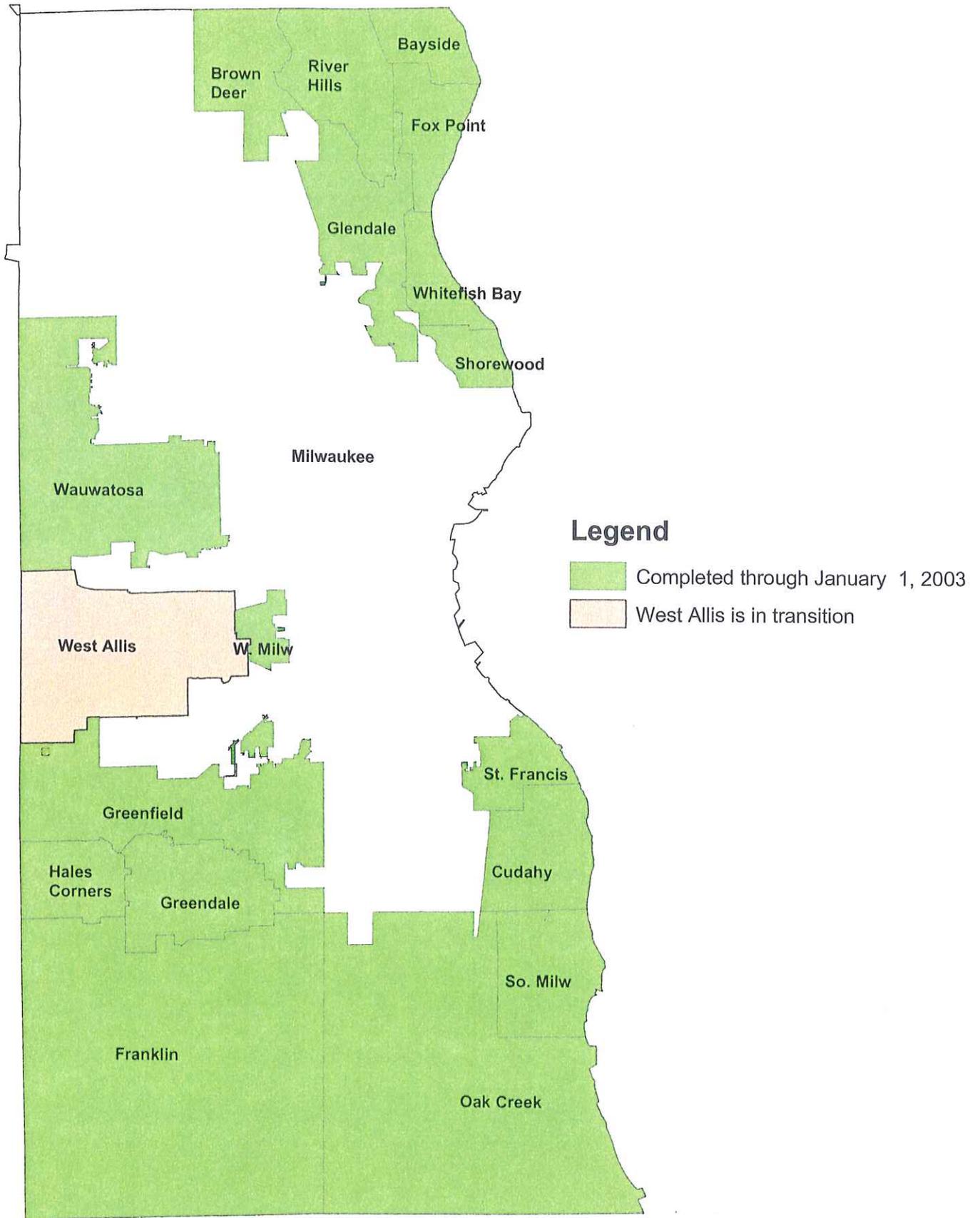
## PHASES 1 THROUGH 7



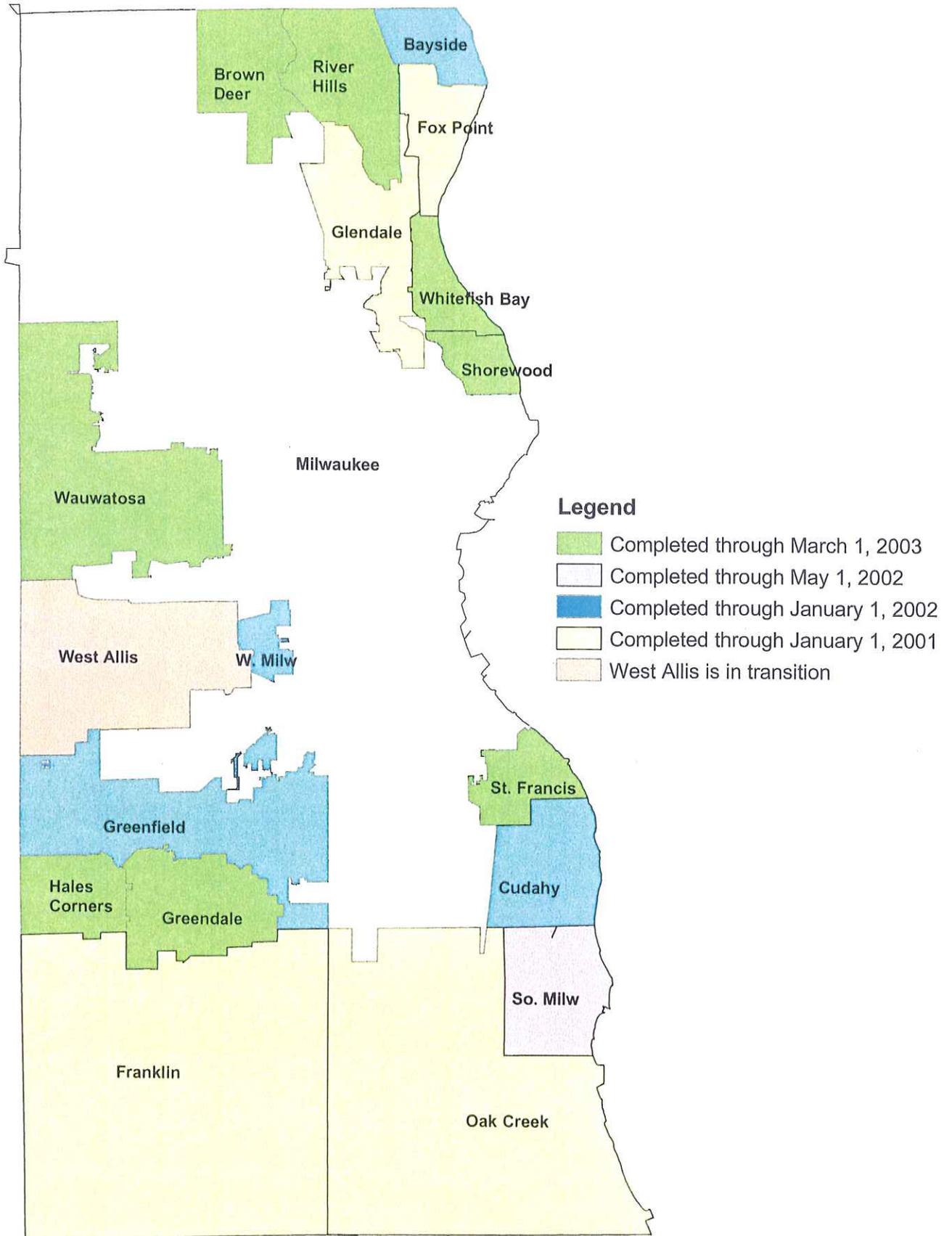
### Legend

- Accepted (209)
- Delivered (6)
- In Progress (0)
- Contract Boundaries

Milwaukee County Cadastral Status as of March 20, 2003



# Milwaukee County Address Status as of March 20, 2003



**WISCONSIN LAND INFORMATION PROGRAM**

**YEAR 2002 ANNUAL SURVEY**

**MILWAUKEE COUNTY**

Milwaukee county

### Section 1: Organizational Information

1. Who is the Land Information Officer in your county?

John La Fave

2. What is the telephone number of the LIO?

414-278-4021

3. What is the fax number of the LIO?

414-223-1257

4. What is the email of the LIO?

regdeeds@milwcnty.com

5. To whom does the LIO report?

Register of Deeds

6. Does your Land Information Office have a website?

Yes

No

7. If yes, what is the URL (website address)?

8. Does the Land Information Officer have other duties?

Yes

No

If yes, identify the percent of the job that is LIO related. 10 %

9. Including the land Information Officer, indicate the total number of full time equivalent staff positions allocated to Land Information Office activities.

3

10. Please provide: Name, Title, and Phone Number for each person who completed the survey

Name	Title	Phone
John La Fave	Register of Deeds	414-278-4021
Kurt W. Bauer	Milwaukee County Surveyor	262-547-6721
Kevin White	DPW GIS Supervisor	414-278-2176
Thomas Lewandowski	DOA Budget Analyst	414-278-5330
Thomas D. Patterson	MCAMLIS Project Manager	262-547-6721

11. Comments:

John La Fave was elected Milwaukee County Register of Deeds on November 5, 2002. His term of office began January 3, 2003 and includes serving in the position of Land Information Officer.

Milwaukee county

**Section 2: GIS Software**

1. Which of the following GIS software programs are used by your county?

Please check all that apply

<input checked="" type="checkbox"/>	AutoCad by Autodesk
<input checked="" type="checkbox"/>	AutoCad Map by Autodesk
<input checked="" type="checkbox"/>	Microstation by Bentley Systems
<input checked="" type="checkbox"/>	ArcInfo by ESRI
<input checked="" type="checkbox"/>	ArcView by ESRI
<input checked="" type="checkbox"/>	ArcCad by ESRI
<input type="checkbox"/>	Atlas GIS by ESRI
<input checked="" type="checkbox"/>	Map Objects IMS by ESRI
<input checked="" type="checkbox"/>	ARC IMS by ESRI
<input checked="" type="checkbox"/>	ARC SDE by ESRI
<input type="checkbox"/>	GenMap by Genasys II
<input type="checkbox"/>	FRAMME by Intergraph
<input type="checkbox"/>	MGE by Intergraph
<input type="checkbox"/>	GeoMedia by Intergraph
<input type="checkbox"/>	GeoMedia Professional by Intergraph
<input type="checkbox"/>	MapInfo
<input type="checkbox"/>	Smallworld
<input checked="" type="checkbox"/>	Other <i>please specify</i> GGM-Printrak

2. Which of the following database software systems are used by for your land records?

check all that apply

<input checked="" type="checkbox"/>	Oracle
<input checked="" type="checkbox"/>	Microsoft Access
<input checked="" type="checkbox"/>	Microsoft SQL
<input type="checkbox"/>	Informix
<input type="checkbox"/>	AS/400
<input type="checkbox"/>	FoxPro
<input type="checkbox"/>	Other <i>please specify</i>

3. Please indicate the primary vendor of GIS mapping software possessed by various county departments

County Office	Package 1	Package 2	Package 3	Other
Agricultural/ Extension	--Specify--	--Specify--	--Specify--	
Emergency Government	--Specify--	--Specify--	--Specify--	
Forestry	--Specify--	--Specify--	--Specify--	
Highways/ Transportation	Arclinfo	AutoCad	Microstation	Paver, Cartegraph
Information Services/	--Specify--	--Specify--	--Specify--	

Data Processing					
Land Conservation	--Specify--	--Specify--	--Specify--	--Specify--	
Land Information Office	ArcInfo	ArcView	ArcCad		
Parks and Recreation	ArcInfo	AutoCad	--Specify--		
Planning	--Specify--	--Specify--	--Specify--	--Specify--	
Public Health	--Specify--	--Specify--	--Specify--	--Specify--	
Public Works/ Infrastructure/ Solid Waste	ArcInfo	ArcView	AutoCad		
Real Property Lister	--Specify--	--Specify--	--Specify--	--Specify--	
Register of Deeds	ArcInfo	ArcView	ArcCad		
Sheriff	--Specify--	--Specify--	--Specify--	--Specify--	GGM Printrak
Surveyor	ArcInfo	ArcCad	Microstation		AutoCad
Treasurer	--Specify--	--Specify--	--Specify--	--Specify--	
Zoning	--Specify--	--Specify--	--Specify--	--Specify--	

Other, please specify Transit	ArcView	AutoCad	--Specify--	
Other, please specify County Board	ArcView	--Specify--	--Specify--	

**4. Identify metadata software used.**

Please check all that apply

<input checked="" type="checkbox"/> Arc Catalog
<input type="checkbox"/> Spatial Metadata Management Software (SMMS)
<input checked="" type="checkbox"/> Other please specify TKME

**5. Comments?**

Milwaukee county

**Section 3: Geodetic Control Networks**

The WLIP geographic reference frameworks foundational element includes geodetic control networks (e.g., horizontal and vertical networks), the Public Land Survey System (section corner remonumentation and coordinates), and geographic control data (e.g., features captured on planimetric and topographic base maps, and by aerial photography and digital orthophotography).

### Horizontal Geodetic Control Networks

In the early 1990's, the Wisconsin Department of Transportation (WisDOT), together with the National Geodetic Survey (NGS), developed a High Accuracy Reference Network (HARN) to provide primary horizontal control for Wisconsin.

1. Does your county have a horizontal geodetic control network that pre-dates or is not based on the Wisconsin HARN?
  - Yes
  - No
2. Has your county developed a densified horizontal control network using the Wisconsin HARN?
  - Yes
  - No, but our county plans to, *Skip to Question #5*
  - No, and there are no plans to, *Skip to Question #5*

3. If yes, were WLIP, FGCS, and/or WisDOT guidelines followed in the densification of the HARN?

Check all that apply.

<input type="checkbox"/>	Yes, WLIP Specifications and Guidelines to Support Densification of the Wisconsin High Accuracy Reference Network (HARN) Using Global Positioning System (GPS) Technology – June 1995 were used.
<input type="checkbox"/>	Yes, Federal Geodetic Control Subcommittee guidelines were used.
<input type="checkbox"/>	

<input type="checkbox"/>	Yes, WisDOT guidelines were used.
<input type="checkbox"/>	No, none of these guidelines were used.

4. If densification of the horizontal control network has been initiated, how much densification work has been completed within your county?

	Number of stations completed in your county	Additional stations needed or planned
HARN		
Primary Stations (1 part per million)		
Secondary Stations (2 parts per million)		
Tertiary Stations (4 parts per million)		
Tertiary Stations (10 parts per million)		

5. Were the horizontal control stations for your county blue booked (i.e. conform to the Input Formats and Specifications of the National Geodetic Survey Data Base of the Federal Geodetic Control Subcommittee) and submitted to the National Geodetic Survey for inclusion in their national database?

- Yes  
 No

**Vertical Geodetic Control Networks**

6. Has your county developed a densified vertical control network based on the National Spatial Reference System?

- Yes
- No, but our county plans to
- No, and there are no plans to

7. Comments?

Milwaukee county

### Section 4: Coordinate Data

1. What is the primary coordinate system used by your county for digital mapping/GIS?

State Plane Coordinates - South Zone

2. What is the primary horizontal datum used by your county for digital mapping/GIS?

North American Datum of 1927 (NAD27)

3. What is the primary vertical datum used by your county for digital mapping/GIS?

National Geodetic Vertical Datum of 1929 (NGVD 29)

4. Does your county have the ability to convert non-compliant data to the coordinate

system used by your county?

- Yes, we process it internally
- Yes, we contact it out
- No

5. Comments?

Milwaukee county

### Section 5: Public Land Survey System

1. Does your county have an active remonumentation program?

- Yes
- No
- Planned

2. How many PLSS corners (section, 1/4, meander) in your county have been remonumented meeting or exceeding 1970 Wisconsin statute requirements?

corners of  corners total.

3. When PLSS corners in your county are being remonumented or reestablished, are coordinates developed and tied to the geodetic control network?

- Yes
- No
- Planned

4. How many PLSS corners in your county have FGCC Third Order Class 1 coordinate values?

corners of  corners total.

5. Comments?

Milwaukee county

### Section 6: Digital Base Maps

A base map can be defined in several different ways. For the purposes of this survey, a base map consists of natural and human-made features (those that can be identified and mapped using photogrammetric or field methods) in a digital vector format (represented through points, lines, and polygons). Examples of base map features may include waterways and tree lines as representations of natural features and building outlines and street pavement edges as representations of human-made features. A list of base map features is included in Question #3. Image bases (including digital orthophotography) and digital elevation data (contours, spot elevations, digital elevation models, etc.) are addressed in later sections of this survey.

1. Has your county created or acquired a digital base map in vector format?

- Yes
- No, but my county intends to
- No, and there are no plans to

2. Which of the following features do you include as part of your digital base map?

Please check all that apply

Feature	Percent Complete	Plan to Complete?	Plan to Maintain or update?
<input checked="" type="checkbox"/> Building footprints	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Building Centroids	%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Address points	%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Surface hydrography	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Wetlands and swamps	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Street centerlines	%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Center of right-of-way	%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Street edge of pavement	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Railroads	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Driveways	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Parking lots	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Sidewalks	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Trees and wooded areas	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Utility poles and towers	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Fencelines	100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Municipal and County boundaries	%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

<input type="checkbox"/>	Other Please Specify:	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Other Please Specify:	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Which of the following best represents the compilation scale of digital base mapping maintained by your county?

- 1:1200 scale (1"=100') or larger scale
- 1:1201 to 1:2400 scale (1"=200')
- 1:2401 to 1:4800 scale (1"=400')
- 1:4801 to 1:9600 scale (1"=800')
- 1:9601 to 1:12,000 scale (1"=1000')
- 1:12,001 to 1:24,000 scale (1"=2000')
- Smaller scale than 1:24000 scale (1"=2000')

4. Have cities, villages, and towns in your county developed their own digital base maps?

- Yes
- No

If yes, please list the cities.

5. Comments?



Milwaukee county

## Section 7: Digital Elevation Data

### Digital Elevation Data

1. Has your county created or acquired digital elevation data?

- Yes
- No, but our county plans to, *Skip to Next Section*
- No, and there are no plans to, *Skip to Next Section*

2. If yes for Question #1, what is the format of the digital elevation data maintained by your county?

Please check all that apply

Format of Digital Elevation Data	Contour Interval	Resolution (grid cell size)	Vertical Accuracy (+/-)	Percent Complete
Contours	2'	N/A	1'	100 %
Other Elevations (e.g. spot elevations,	N/A	N/A	0.5'	100 %

mass points, and break lines)						
Terrain Matrices (e.g. raster array, such as the USGS DEM)	N/A					%
Triangulated Irregular Network (TIN)	N/A	N/A				%
Other, Please Specify:						%

3. Comments?

Milwaukee county

**Section 8: Image Base Maps**

**Image Bases**

1. Has your county created or acquired digital orthophotography?

- Yes
- No, but our county plans to, Skip to Question #4

No, and there are no plans to, *Skip to Question #5*

2. If yes to Question #1, how much of your county is complete?

100 %

Is it in your primary county coordinate system?

Yes  
 No

3. Does your county intend to acquire or update digital orthophotography?

Yes  
 No

If no, Please skip to Question 4

If yes, Please specify the resolution of the next update: 1'

and the year: 2005

4. Please provide information about the date, scale, and resolution of the digital orthophotography for the appropriate source(s):

Source	Date of photography	Scale of image product	Resolution of DOPs (grid cell size)	Color or Black and White
Digital Orthophoto Quarter Quadrangles by the U.S. Geological Survey			--Select Resolution--	--Specify Color--
County or County				

Consortium			--Select Resolution--	--Specify Color--
Regional Planning Commission	2000	1:2400	12 inch	Black and White
Other Please Specify			--Select Resolution--	--Specify Color--

5. Comments?

Milwaukee County

**Section 9: Parcels**

1. What is the current number of tax parcels in your county (please include woodland tax law lands, private forest croplands, managed forest lands, county forest crop, and tax-exempt parcels)?

265000

2. Has your county created or acquired digital parcel mapping?

- Yes
- No, but our county plans to
- No, and there are no plans to

3. What percentage of the total parcels in your county are in digital form, including cities, villages, and towns?

100 %

4. Have cities, villages, and towns in your county developed their own digital parcel mapping?

Yes

No

5. For the parcels you have mapped, what percentage were based on each or any of the following methods? Note, the percentage may total more than 100%.

Compilation Method	Percent Complete
Developed parcel boundary lines by digitizing existing paper/mylar/linen maps, but with no adjustment to a known geographic reference framework.	<input type="text"/> %
Developed parcel boundary lines by digitizing existing paper/mylar/linen maps and adjusting them to the best available PLSS coordinates	60 <input type="text"/> %
Created digital parcel boundary lines using coordinate geometry from property descriptions, but with no adjustment to a geographic reference framework.	<input type="text"/> %
Created digital parcel boundary lines using coordinate geometry from property descriptions into a geographic reference framework.	40 <input type="text"/> %
Digitized existing maps using orthophotos/aerial photography to adjust the boundaries.	<input type="text"/> %
Incorporated digital data (e.g. certified survey maps) from an outside	

source.			%
Other compilation method, Please Specify:			%

6. Digital parcel mapping for your county was:

- Completed by an outside vendor
- Completed "in-house" by county staff
- Combination  % by county

7. Digital parcel maps for your county are now maintained:

- Maintained by an outside vendor
- Maintained "in-house" by county staff
- Combination  % by county

8. Which of the following graphic features do you consider as part of your digital parcel mapping?

Check all that apply.

<input checked="" type="checkbox"/>	Deed/title boundaries (ownership parcels)
<input checked="" type="checkbox"/>	Parcel overlaps and gaps
<input checked="" type="checkbox"/>	Tax parcel boundaries
<input checked="" type="checkbox"/>	PLSS framework
<input checked="" type="checkbox"/>	Subdivision boundaries
<input checked="" type="checkbox"/>	Administrative/political boundaries
<input checked="" type="checkbox"/>	Road rights-of-way
<input checked="" type="checkbox"/>	Railroad rights-of-way
<input checked="" type="checkbox"/>	Easements

<input checked="" type="checkbox"/>	Meandered water bodies
<input checked="" type="checkbox"/>	All water bodies (streams, rivers, ponds, and lakes)
<input type="checkbox"/>	Building footprints
<input type="checkbox"/>	Building centroids
<input checked="" type="checkbox"/>	Text strings
<input type="checkbox"/>	Owner names
<input checked="" type="checkbox"/>	Hydrography
<input checked="" type="checkbox"/>	Bearings and distances
<input type="checkbox"/>	Other, please specify: <input type="text"/>

9. Does your county's digital parcel mapping have topology? (For the purpose of this survey, topology is defined as digital parcels structured as polygons with all lines ending at a node without under- or over-shoots.)

- Yes  
 No

10. Are digital parcels coded with unique parcel identification numbers?

- Yes  
 No

11. If yes, what standards are used for developing unique parcel identification numbers?

Check all that apply.

<input type="checkbox"/>	WLIB Parcel Identification Numbering System
<input checked="" type="checkbox"/>	Standard developed by county government
<input type="checkbox"/>	If not WLIB Standard, please describe or provide document name

[Empty rectangular box with a dotted border]

12. Can a linkage be made between digital parcel mapping and tax roll/assessment databases? (e.g., to support thematic mapping of attributes such as assessed value, assessment class, and ownership)
- Yes, such a linkage is simple
  - Yes, but on a project-by-project basis with some additional manipulation of digital parcel mapping and/or the tax roll/assessment database
  - No

13. Comments?

The City of Milwaukee maintains its own digital parcel mapping capability outside of the system developed in the balance of the County. The City's digital parcel maps are being integrated into the County system in a transition effort that will require about five years to complete.

Milwaukee county

**Section 10: Zoning**

1. Does your county have zoning

- Yes
- No

If no, skip the rest of this section.

2. Has your county created or acquired digital mapping of zoning boundaries?

- Yes
- No

If no, does your county intend to create or acquire digital mapping of zoning boundaries?

Yes

No

If no, skip the rest of this section.

3. Does your county have separate series of maps depicting the following zoning elements in digital form?

Please check all that apply and include the percent complete for the entire county.

Zoning Element	Percent Complete	Plan to complete?	Plan to maintain or update?
Shoreland zones	<input type="text" value="0"/> %	<input type="text" value="No"/>	<input type="text" value="No"/>
Wetland zones	<input type="text" value="100"/> %	<input type="text" value="N/A"/>	<input type="text" value="Yes"/>
Floodplain zones	<input type="text" value="80"/> %	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>
General ordinance zones (residential, commercial, industrial, agricultural, etc.)	<input type="text" value="0"/> %	<input type="text" value="No"/>	<input type="text" value="No"/>
Environmental corridors	<input type="text" value="100"/> %	<input type="text" value="N/A"/>	<input type="text" value="Yes"/>
Urban Service Areas	<input type="text" value="0"/> %	<input type="text" value="No"/>	<input type="text" value="No"/>
Steep Slopes	<input type="text" value="0"/> %	<input type="text" value="No"/>	<input type="text" value="No"/>
Other, please specify			

	%	No	No
--	---	----	----

4. Is general ordinance zoning (residential, commercial, industrial, etc.) administered on a countywide basis?

- Yes
- No

5. Does the county presently have the capability to integrate multiple types of zoning boundaries into a single comprehensive zoning map in a digital format?

- Yes, for county and municipal zoning
- Yes for county zoning only
- No

6. Comments?

Milwaukee County has no remaining unincorporated territory. All zoning is under the jurisdiction of the County's cities and villages. Some of these jurisdictions are planning to develop digital zoning maps.

Milwaukee county

### Section 11: Soils

#### Soils

The primary source of digital soils mapping in Wisconsin is the U.S. Department of

Agriculture, Natural Resources Conservation Service (NRCS). (NRCS was formerly known as the Soil Conservation Service). The Soil Survey Geographic Database (SSURGO) is the most detailed level of digital soil mapping done by NRCS. SSURGO digitizing duplicates the original soil survey maps. SSURGO is designed for use by landowners, townships, and county natural resource planning and management.

1. Has your county acquired digital soils data from the U.S. Department of Agriculture, Natural Resources Conservation Service?

- Yes
- No Skip to Question #3

2. If yes, has your county modified or refined NRCS digital soils data?

- Yes
- No

If yes, please briefly describe the modifications or refinements made.

3. Has your county acquired or developed digital soils data from another source?

(Note: This refers to the source of the digital data only; the original source material -- soil surveys -- may still be from NRCS)

- Yes
- No

If yes, please describe the source for digital soils other than NRCS.

Less than half of Milwaukee County is covered by an operational soil survey. Those areas covered utilize the digital soil survey created by the Southeastern Wisconsin Regional Planning Commission from SCS source material.

If yes, is it in a format consistent with the counties primary coordinate system?.

- Yes
- No

4. Comments?

[Empty text box for comments]

Milwaukee county

Section 12: Wetlands

The primary source of digital wetlands mapping in Wisconsin is the Wisconsin Wetlands Inventory (WWI). The custodian and sole distributor of digital WWI data is the Wisconsin Department of Natural Resources, Bureau of Fisheries Management and Habitat Restoration. WWI maps are the regulatory base for all state wetland protection programs.

1. Has your county acquired digital Wisconsin Wetlands Inventory data from the Wisconsin Department of Natural Resources?

- Yes
- No Skip to Question #4

If no, why not.

Milwaukee County utilizes the digital wetlands data compiled by the Southeastern Wisconsin Regional Planning Commission. These digital files were developed cooperatively with the Wisconsin DNR.

2. If yes, has your county modified or refined digital Wisconsin Wetlands Inventory data?

- Yes
- No

If yes, please briefly describe the modifications or refinements made.

3. Has your county acquired or developed digital wetlands data from another source?

- Yes
- No

If yes, please describe the source for digital wetlands other than WWI.

The Southeastern Wisconsin Regional Planning Commission.

4. Comments?

Milwaukee county

Section 13: Administrative Boundaries

1. Does your county have digital mapping of administrative boundaries?

- Yes
- No, but our county plans to.
- No, and there are no plans to.

2. Which of the following administrative boundaries are locally produced (excluding TIGER)?

Please check all that apply

Administrative Boundary	Source	Percent	Plan to Maintain	Consistent with

		Complete	Complete?	or update?	Parcel Mapping?
County Boundaries	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Minor civil divisions (cities, villages, and towns)	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sewerage districts	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Water supply districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Electric utility districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Gas utility districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Phone utility districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Cable television utility districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Legislative districts	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Voting ward boundaries	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tax increment financing districts	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
School districts	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lake districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Census geographies (tracts, block groups, blocks)	<input checked="" type="checkbox"/>	Local	<input type="checkbox"/> 100 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Native American reservations	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>
Agency administrative districts	<input checked="" type="checkbox"/>	--Source--	<input type="checkbox"/> %	<input type="checkbox"/>	<input type="checkbox"/>

Zip codes	<input checked="" type="checkbox"/>	Fed (TIGER)	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Public lands	<input type="checkbox"/>	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
911 / E911 Service areas	<input type="checkbox"/>	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, Please Specify:	<input type="checkbox"/>	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, Please Specify:	<input type="checkbox"/>	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Comments?

All district boundaries affected by the recent legislative redistricting process were revised during 2002 as the new boundary information became available.

Milwaukee county

**Section 14: Street Network System**

1. What type of street network mapping does the county have?

- Digital
- Hard Copy Only

None

2. If the county has digital and/or hardcopy street network mapping, how much of the county is complete?

Digital

Hard Copy

3. If the county does not currently have street network map in digital form, do you intend to create one?

Yes

No

N/A

**Format of Street Network Mapping**

4. Which of the following features do you include as part of your street network system?

Please check all that apply

Digital	Hardcopy	Features
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Street centerlines
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Street edge of pavement
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Street Rights-of-Way
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bridges
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Address ranges

<input type="checkbox"/>	<input type="checkbox"/>	Other, Please Specify: <input type="text"/>
--------------------------	--------------------------	---

5. How current is your street network data

Digital  1995

Hard Copy  1995

6. What are the methods used for compiling street network data?

Please check all that apply

Digital	Hardcopy	Compilation Method
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Compiled for the county using photogrammetric methods.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Digitized by or for the county from existing paper or mylar source.
<input type="checkbox"/>	<input type="checkbox"/>	Digitized by or for the county from orthophotos or aerial photography.
<input type="checkbox"/>	<input type="checkbox"/>	Modified from TIGER/Line files.
<input type="checkbox"/>	<input type="checkbox"/>	Created using coordinate geometry (COGO) software from an existing source.
<input type="checkbox"/>	<input type="checkbox"/>	Acquired from vendor (e.g. GDT, TeleAtlas, etc.)
<input type="checkbox"/>	<input type="checkbox"/>	Other, Please Specify: <input type="text"/>

Street Addressing

7. Does the digital street network system for the county include information on individual street addresses?

Yes

- No
- Planned

8. Does the digital street network system for the county include information on street address ranges?

- Yes
- No
- Planned

9. Is address information linked to digital mapping of the street centerline for the county?

- Yes
- No
- Planned

10. Is address information linked to digital mapping of buildings for the county?

- Yes
- No
- Planned

11. Does your county follow United States Postal Service addressing standards?

- Yes
- No

12. What type of addressing system is generally used by your county?

- Urban Addressing  
Numbers / Unit

/

eg. 100 / Block  
1000 / Mile

Other, Please Specify

13. Comments?

Milwaukee county

### Section 15: Land Use Mapping

1. What type of land use mapping does the county have?

Existing Land Use	Future Land Use
<input type="radio"/> Digital	<input type="radio"/> Digital
<input type="radio"/> Hard Copy Only	<input type="radio"/> Hard Copy Only
<input type="radio"/> None	<input type="radio"/> None

2. If the county has digital and/or hard copy land use mapping, how much of the county is complete?

Existing Land Use	Future Land Use
Digital	Digital
100 %	100 %
<input type="text"/>	<input type="text"/>

Hard Copy	100 %	Hard Copy	100 %
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3. If the county has digital and/or hard copy land use mapping, what time period does that mapping represent?

Existing Land Use	Future Land Use
Digital	Digital
Hard Copy	Hard Copy
1995 yr	2020 yr
1995 yr	2020 yr

4. If the county does not currently have land use mapping in digital form, do you intend to create it?

Existing Land Use	Future Land Use
<input type="radio"/> Yes	<input type="radio"/> Yes
<input type="radio"/> No	<input type="radio"/> No
<input type="radio"/> N/A	<input type="radio"/> N/A

5. What classification system do you use for land use mapping?

- Wisconsin Department of Revenue Land Use Classification System
- Land Use Based Classification Standards (American Planning Association)
- Standard Land Use Coding Manual (Federal Highway Administration and Department of Housing, 1965)
- Modified SLUCM
- Standard Industrial Code / North American Industrial Classification System (SIC/NAICS)

- Modified SIC/NAICS
  - USGS Land Use and Land Cover Classification System (Anderson et al., 1976)
  - SEWRPC Land Use Codes
  - County-created system
  - Other
- Other, Please specify:

**6. What is the source for digital land use mapping in the county?**

Please check all that apply

- Interpretation of aerial photography
- Field surveys
- Linkage of tax assessment class to digital parcel mapping
- Other, Please specify:

**7. Comments?**

Digital land use mapping for 2000 is currently under preparation utilizing digital orthophotography obtained during 2000.

Milwaukee county

**Section 16: Natural Resources**

**1. Does your county have digital mapping of natural resources?**

- Yes
- No, but my county intends to. *Skip to Next Section*
- No, and there are no plans to. *Skip to Next Section*

2. Which of the following natural resources are mapped in digital format?

Please check all that apply

Natural Resource	Source	Percent Complete	Plan to Complete?	Plan to Maintain or update?
Land cover	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>
Geology	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Watersheds	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hydrogeology	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Forests	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hydrography	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Endangered resources	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Impacts on the environment	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>
Other, please specify:	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>
Other, please specify:	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>

3. Comments?

Milwaukee county

**Section 17: Infrastructure and Facilities Management**

1. Does your county have digital mapping of infrastructure systems?

- Yes
- No, but my county intends to. *Skip to Next Section*
- No, and there are no plans to. *Skip to Next Section*

Please check all that apply

Facility	Source	Percent Complete	Plan to Complete?	Plan to Maintain or update?
Railroads	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>
Harbors	--Source--	%	<input type="checkbox"/>	<input type="checkbox"/>
Transit systems	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Airports	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Recreational trails	<input type="checkbox"/>	--Source--		<input type="checkbox"/>	
Natural gas network	<input checked="" type="checkbox"/>	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electric network	<input checked="" type="checkbox"/>	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sewer network	<input checked="" type="checkbox"/>	Local	50 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Water network	<input checked="" type="checkbox"/>	Local	50 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phone network	<input checked="" type="checkbox"/>	Local	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Telecommunications network	<input type="checkbox"/>	--Source--		<input type="checkbox"/>	<input type="checkbox"/>
Government facilities	<input checked="" type="checkbox"/>	Local	25 %	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other, please specify:	<input type="checkbox"/>	--Source--		<input type="checkbox"/>	<input type="checkbox"/>
Other, please specify:	<input type="checkbox"/>	--Source--		<input type="checkbox"/>	<input type="checkbox"/>

2. Comments?

Digital infrastructure systems for natural gas distribution, electric distribution, and telephone services have been developed by the private utilities concerned. Digital infrastructure systems for water distribution, sewerage, and government facilities are being developed by

Milwaukee county

## Section 18: Completion Time for Foundational Elements

1. Assuming the WLIB policy of completing as many of the foundational elements by the sunset date of August 31, 2003, when do you contemplate completing the following spatial data elements in digital form?

Activity	Expected Completion
Densification of horizontal control from (HARN)	Not planned
Densification of vertical control network	Already Complete
Remonumentation of PLSS section corners	Already Complete
Coordinate values on PLSS section corners	Already Complete
Digital base map in vector format	Already Complete
Image bases (digital orthophotography)	Already Complete
Vector elevation data (contours/spot elevations)	Already Complete
Raster elevation data (DEM)	Not planned
Parcels	Already Complete
Zoning	Complete after 2003
Soils	Already Complete
Wetlands	Complete after 2003
Administrative boundaries	Already Complete
Street centerlines	Already Complete
Street addresses	Already Complete

Land use mapping	Already Complete
Natural resources	Complete after 2003
Infrastructure and facilities management	Complete after 2003

**2. Comments?**

Milwaukee county

**Section 19: Data Integration**

1. Has the county acquired and/or combined digital spatial data from municipalities within the county to study a cross-jurisdictional issue?

- Yes
- No, but this is technically feasible
- No, data are not available or are incompatible

If yes, please briefly describe the most significant data integration project within the county, including data themes shared, successes, problems (technical and institutional), and lessons learned.

The county has implemented a temporary parcel layer with parcel outlines and ID's, a rights-of-way layer and a storm sewer layer. The biggest issue was creating a consistent format between the different software platforms (DGN, SHP, DWG) involved.

2. Has the county acquired and/or combined digital spatial data with adjacent counties to study a cross-jurisdictional issue?

- Yes
- No, but this is technically feasible
- No, data are not available or are incompatible

3. Comments?

Milwaukee county

### Section 20: Institutional Arrangements

1. Does your county have formal (written) or informal arrangements with other entities?

- Yes
- No

If no, please skip to next section.

2. Please list the institutional arrangements that exist for your county. Indicate which agencies participate and if the nature of the arrangement is formal (written) or informal (verbal) or are to be negotiated in the future.

Multi-Departmental/Single Governmental Unit	Nature of Arrangement
Cartographer	--Type of Arrangement--
Conservationist	--Type of Arrangement--
Data Processing Department	Formal
Emergency Government	Informal
Forest and Park Administration	Informal
Land Information Office	Formal
Planning and Zoning	--Type of Arrangement--
Real Property Lister	Informal
Register of Deeds	Formal
Sheriff	Informal
Solid Waste Department	--Type of Arrangement--
Surveyor	Formal

Transportation	Formal
Treasurer	--Type of Arrangement--
Zoning	--Type of Arrangement--
Other (Please specify)	--Type of Arrangement--

3. Indicate the number of formal (written) or informal (verbal) arrangements your county has with each of the following types of entities.

	Formal	Informal
Municipalities within the county	19	0
Municipalities outside the county	0	0
Other counties	6	0
Regional agencies	2	0
State agencies	5	0
Federal agencies	0	0
Private sector organizations	65	0

4. Copy and paste a sample arrangement into the text box below, if applicable.

5. Comments?

Milwaukee county

### Section 21: Communications, Education, and Training

1. Rate the following activities based on the amount of activity. Communications is the mechanism to disseminate information. Education and training is based on learning concepts and "hands-on" experience. Please rank the amount of activity from 1-5, where 5 indicates a high degree of activity.

Communications

Education and training

2. Does your county support any of the following activities?

Publishes a land information newsletter

Yes

No

Provides financial support to attend land information conferences

- Yes
- No

Sponsors land information conferences

- Yes
- No

Sponsors land information training seminars for staff members

- Yes
- No

Sponsors land information training seminars and short courses for professionals outside the county

- Yes
- No

Provides support for staff to obtain degrees in related fields

- Yes
- No

3. Comments?

Milwaukee county

## Section 22: Public Access

1. Does your county use any of the following means to provide public access to digital spatial data?

Please check all that apply

- Public access terminal
- Electronic kiosk
- Compact disc or other media
- Internet web site --- please specify URL
- Dial-up or FTP access please --- please specify IP Address
- Other --- please specify

2. If your county has a web site for public access, what functions are available?

- View spatial data
- View tabular data
- View static maps
- View static tables
- Make maps
- Query tabular data
- View GIS product catalog
- View Metadata
- Download data
- Order data

- View information policies
- Track land information events
- Other, --- please specify:

3. Does your county have plans to provide access to digital spatial data through the Wisconsin Land Information Clearinghouse (WISCLINC)?

- Yes
- No, but we plan to in the future
- No, we have no plans to because:

4. Does your county have plans to provide access to metadata about digital spatial data through the Wisconsin Land Information Clearinghouse (WISCLINC)?

- Yes
- No, but we plan to in the future
- No, we have no plans to because:

5. Has your county developed a formal information sharing policy that addresses issues such as pricing, copyright, privacy, liability, data sharing, etc.?

- Yes
- No, but we plan to in the future
- No, we have no plans to do so

6. Does your county utilize any of the following when providing digital spatial data to other government agencies?

Please check all that apply

- Copyright
- License agreement
- Restrictions on dissemination of data
- Charge for the cost of reproduction
- Charge in addition to the cost of reproduction
- Other restrictions -- please specify

7. Comments?

Milwaukee county

**Section 23: Modernization Stages**

Development of an automated land information system for a variety of users can be categorized into six different stages based upon the kinds of activities for which that system is being used. These six stages are listed in the question below. [Note: This question was originally asked as part of a 1996 survey in Wisconsin on evaluating the diffusion of Multipurpose Land Information Systems in local governments.]

1. Which of the following stages most accurately describes the current stage of land information system development by your local government organization or the

**one with which you work most closely?**

Please check all that apply

- no modernization activities**-- activities are limited to manual processes and there are currently no planned modernization efforts;
- system initiation stage** -- activities are directed toward establishing the prerequisites for such a system (e.g., database design, needs assessment, procurement);
- database development stage** --building databases to support land information management (e.g., geographic frameworks, resource boundaries, parcel map construction);
- recordkeeping stage** --existing data are used in routine queries and selective information retrieval (e.g., tax assessment, number of new building permits);
- analysis stage** --existing data enable the performing of complex queries (e.g., 911 emergency routing, land-fill siting);
- democratization stage** --existing data enable agency decision-makers and the public to conduct spatial analyses (e.g., alternative scenarios for future land and resource use or evaluation of social services).

**2. Comments?**

Milwaukee county

**Section 24: WLIP & Survey Questions**

1. What do you consider the most significant benefit to your county that has resulted, thus far, from the Wisconsin Land Information Program?

The creation of a dedicated funding mechanism for land records modernization activities.

2. In the last year, how would you rate the performance of the Wisconsin Land Information Board?

- Excellent
- Very good
- Good
- Fair
- Poor

Comments:

3. What are your impressions of the survey?

- The survey was too short and did not cover enough detail about county LIS activities.
- The survey was reasonable in length and covered county LIS activities in adequate detail.
- The survey was too long and covered county LIS activities in too much detail.

4. How many people were involved in completion of this survey?

5

People

(Please make sure that all persons who completed the survey are listed in Section 1, Question 10, thanks)

5. What was the total staff time devoted to completion of this survey?

16

Hours

6. Describe any specific benefits deriving from the county's land records modernization activities. Your responses will help demonstrate the effectiveness of the WLIP.

The program has allowed Milwaukee County to develop a uniform set of digital mapping layers across the entire county. The availability of these materials have permitted a number of County cities and villages to speed up their GIS implementation activities by making it

7. Estimate the annual investment of county fiscal resources above & beyond that amount directly attributable to WLIP Grants and retained fees.

On the order of \$300,000 to \$350,000 on an annual average basis.

Any additional comments on this section:

Milwaukee County

Section 25: Retained Fees

Retained Fees

The County is required to use \$1 of each \$5 fee retained to develop and maintain a computerized indexing of the county's land information records relating to housing, including the housing element of the county's land use plan under s. 66.1001(2)(b), Wis. Stats., in a manner that would allow for greater public access via the Internet. There were four categories of eligible activities specified in the guidelines:

- Property Assessment and Tax Information accessible via the Internet;
- Current Housing Supply and Forecasted Demand of Residential, Commercial, Industrial and other Lands;
- Affordable and Special Needs Housing Information;
- Housing Sales Information.

Eligible Expenditures of this \$1 retained fees to achieve the above would include:

- Computer Hardware;
- Computer Web-Enabled Software;

- Vendor Contracting;
- Metadata Development.

1. The total retained fees represented by the collection of the additional \$1 for the 2002 calendar year:?

230597

2. Indicate total retained fees of the additional \$1 for the 2002 calendar year which have been expended on these activities?

13090

3. Please briefly describe the activities that have led to the accessibility of property assessment, tax housing, and/ or sales information via the internet. This space accommodates 4- 5 Sentences.

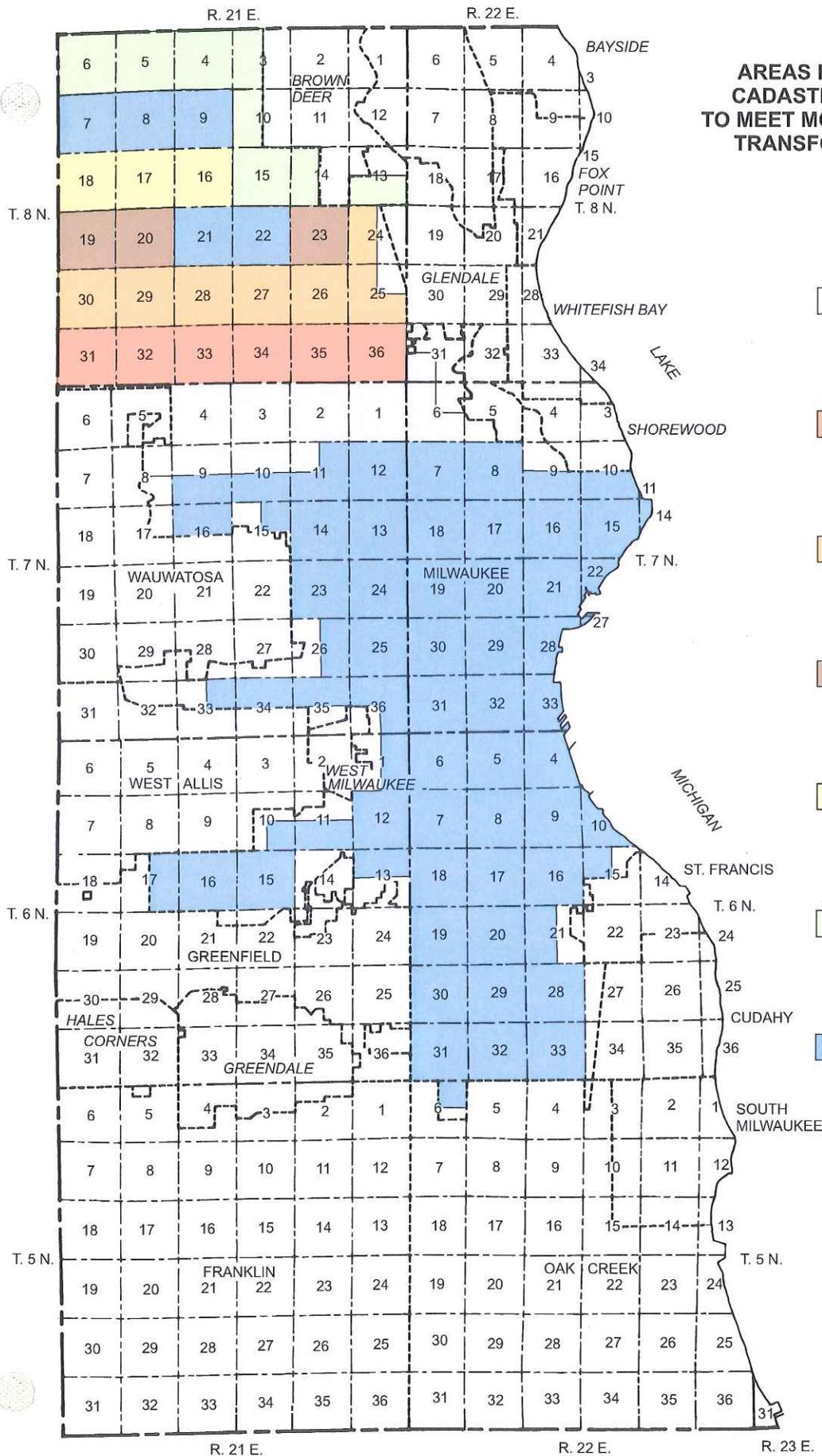
During 2002, Milwaukee County purchased a scanner for oversize documents such as plats of survey that are filed in the Register of Deeds Office. This will enable the County to make images of these documents available over the Internet as Internet capability is expanded in the

4. Please list all URLs (web site addresses) for those internet sites that demonstrate activity in the area of the providing property assessment, tax, housing and / or sales data accessible via the internet for your country.

Under development.

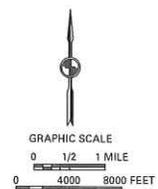
**Exhibit A**

**AREAS FOR WHICH CITY OF MILWAUKEE  
CADASTRAL MAPS ARE TO BE ADJUSTED  
TO MEET MCAMLIS STANDARDS BY COMPUTER  
TRANSFORMATION AND RECOMPILATION**



**LEGEND**

-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 6 (26)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 7 (24)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 8 (25)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 9A (12)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 9B (12)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 10 (24)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS MEETING MCAMLIS STANDARDS. COMPLETED PROJECTS (229)



March 25, 2003

**EXECUTED LICENSE AGREEMENTS**

Number of Executed Agreements		Licensee	Effective Date
Since 1995	For 2003	<b>2003</b>	
90.	1.	North Shore Fire Equipment	1/13/03
91.	2	Planning & Design Institute, Inc.	2/6/03
92.	3.	Nancy M. Aten	2/12/03

#58437 v1 - MCAMLIS-EXECUTED LIC. AGREEMNTS

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 Per 14-: 2/28/2003		TOTAL
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Beginning Period Reserve-January 1	0	283,340	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-141,197
Mid-Year Reserve Changes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Current Period Reserve	0	283,340	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-141,197
Recording Fees (\$4.00 Portion)	101,886	324,983	612,592	676,093	647,355	503,342	574,328	644,508	769,820	773,078	609,683	743,977	230,597	23,155	7,991,929
Recording Fees (\$1.00 Portion)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Grants	0	0	0	150,000	200,000	165,000	138,500	55,300	139,226	152,270	103,895	325,997	197,979	0	1,628,167
Private Utility Contributions	312,000	312,000	312,000	312,000	312,000	0	0	0	0	0	0	0	0	0	1,560,000
MMSD Contribution	0	0	0	50,000	50,000	50,000	50,000	50,000	50,000	50,000	170,000	0	0	0	520,000
Annual Revenue	413,886	636,983	924,592	1,188,093	1,209,355	718,342	762,828	749,808	959,046	975,348	883,578	1,142,942	1,346,588	115,427	12,026,816
TOTAL FUNDS AVAILABLE	413,886	920,323	1,420,514	1,761,142	1,504,485	1,778,755	2,073,474	2,024,667	2,041,364	2,101,100	1,992,266	1,707,402	1,530,340	-25,770	11,885,619
Additional Encumbrance	100,000	22,075	534,849	272,943	-900,864	112,067	308,902	367,776	361,580	386,754	586,545	737,559	577,619	637,619	4,105,424
Legal Fees	0	350	600	0	0	0	0	0	0	0	0	0	0	0	950
Systems Consulting (UGC)	0	128,638	0	0	0	0	0	0	0	0	0	0	0	0	128,638
USPLS Remonumentation	0	41,260	0	0	0	0	0	0	0	0	0	0	0	0	41,260
Horizontal/Vertical Control Surveys	0	144,443	0	0	0	0	0	0	0	0	0	0	0	0	144,443
Aerial Photos/Mapping	21,555	17,925	292,060	1,178,794	1,340,370	356,953	490,821	576,268	556,108	608,450	842,594	787,620	1,095,708	0	8,165,225
Project Facilitator	8,991	73,567	21,650	14,995	0	0	0	0	0	0	0	0	0	0	119,203
Conference	0	59	1,046	319	0	0	528	0	0	0	0	0	0	0	1,953
Project Conversion Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEWRPC Staff and Training	0	0	0	0	6,291	797	0	0	0	0	0	0	0	0	0
Computer Hardware/Software	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROD Materials Copied	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,088
Computer Maintenance	0	0	0	0	0	0	26	0	0	0	0	0	0	0	26
Computer/Office Supplies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rent and Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Database Maintenance and Updates	40	554	13	0	0	0	3	5	0	0	343	0	442	0	1,399
Contractual Crosscharges	0	-4,470	-2,752	-1,040	-1,724	-1,708	-1,664	-1,700	-2,116	-2,792	-1,676	-1,529	-2,232	-175	-25,578
Charges Paid By Other Departments	0	0	0	0	0	0	0	0	40	0	0	0	0	0	40
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual Expenditures	30,586	402,326	312,616	1,193,069	1,344,936	356,042	489,713	574,573	554,032	605,658	841,261	786,091	1,093,918	-175	8,584,647
TOTAL EXPS / ENCUMBRANCES	130,586	424,401	847,466	1,466,012	444,072	468,109	798,615	942,349	915,612	992,412	1,427,806	1,523,650	1,671,537	637,444	12,690,071
NET AVAIL FUNDS (END RESERVE)	283,300	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-663,214	-804,452

1. 1994 was the final year for this revenue source.  
2. \$50,000 will be paid each year through 2002, and \$20,000 in 2003.

# MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM

c/o Southeastern Wisconsin Regional Planning Commission

239 N1812 Rockwood Drive -- PO Box 1607 -- Waukesha, Wisconsin 53187-1607

Telephone (262) 547-6721

Fax (262) 547-1103

## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: MCAMLIS Project Staff

DATE: March 20, 2003

SUBJECT: **REVISED SURVEY CONTROL INFORMATION**

In accordance with the commitment made at the January 28, 2003, Steering Committee meeting, this Memorandum sets forth the procedure followed by project management staff for incorporation of revised survey control information into MCAMLIS survey control records and MCAMLIS digital and hardcopy topographic and cadastral maps.

Revised survey control information is first incorporated into MCAMLIS survey control records. These records consist of dossier sheets; control survey summary diagrams, both of which are "paper" records; and a digital "sequential access" file.

MCAMLIS digital and hardcopy maps are then revised by incorporation of the revised survey control information. Coordinate values and elevations are replaced with revised coordinates and elevations. The grid and ground distances and grid bearings are revised as necessary, and if the combined X and Y movement of the control point is sufficient, the section and quarter-section lines adjoining adjacent U.S. Public Land Survey monuments are also repositioned.

Generally, the symbols marking the positions of the monuments will not be physically moved on the maps and digital records unless the displacement exceeds 0.0125 inches at the plotted map scale of one inch equals 100 feet.

In spite of these procedures for incorporating revised survey control information, occasionally some of this information will not be incorporated as intended. These residual errors may be found by users of the products and, if brought to the attention of the SEWRPC staff, are corrected as may be necessary.

\* \* \*

#81381 v1 - REVISED SURVEY CONTROL INFO MEMO  
TDP/wb  
3/25/03 (revised 4/15/03)

C O P Y

MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM

c/o Southeastern Wisconsin Regional Planning Commission

W239 N1812 Rockwood Drive -- PO Box 1607 -- Waukesha, Wisconsin 53187-1607

Telephone (262) 547-6721

Fax (262) 547-1103

April 14, 2003

Mr. John LaFave  
Register of Deeds  
Milwaukee County Courthouse  
901 N. 9th Street, Room 103  
Milwaukee, WI 53233

Dear Mr. LaFave:

This is to certify that the Milwaukee County Automated Mapping and Land Information System Steering Committee, at its meeting held on April 8, 2003, acted unanimously to authorize you to proceed with the acquisition of the hardware and operating system software necessary to operate the InGeo Company software program known as "Quick Start" for an approximately one year trial period. The program concerned permits the electronic recording of mortgage satisfactions through the Internet.

The Committee action further authorizes you to spend up to \$20,000 for the hardware and associated software acquisition, the cost to be charged against the revenues collected through the special projects \$1.00 retained document recording fee.

We trust that this letter will permit you to proceed with the acquisition of the necessary hardware and software and installation of the desired software program.

Sincerely,

Thomas D. Patterson  
Project Manager and Secretary  
MCAMLIS Steering Committee

KWB/TDP/wb  
#82221 v1 - MCAMLIS LAFAVE LETTER

cc: Mr. Thomas Lewandowski, Fiscal and Budget Analyst  
Milwaukee County Department of Administrative Services

C O P Y

MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM

c/o Southeastern Wisconsin Regional Planning Commission  
239 N1812 Rockwood Drive -- PO Box 1607 -- Waukesha, Wisconsin 53187-1607

Telephone (262) 547-6721  
Fax (262) 547-1103

April 16, 2003

Mr. John LaFave  
Register of Deeds  
Land Information Officer  
Milwaukee County Courthouse  
901 N. 9th Street, Room 103  
Milwaukee, WI 53233

Dear Mr. LaFave:

This is to certify that the Milwaukee County Automated Mapping and Land Information System Steering Committee, at its meeting held on April 8, 2003, acted unanimously to authorize you to proceed to negotiate with the Milwaukee County Department of Administrative Services to arrive at a project for the improvement of the computerized system used in the general operation of the Register of Deeds office which would involve the use of an equitable combination of the special projects \$1.00 retained document recording fee enacted under Section 59.72(5)(b)3 and County capital improvements funding. The Committee action authorized you, as County Register of Deeds, to commit up to the amount of \$240,000 of special projects \$1.00 retained document recording fee revenues to the improvement project.

Sincerely,

Thomas D. Patterson  
Project Manager and Secretary  
MCAMLIS Steering Committee

KWB/TDP/wb

#82223 v1 - MCAMLIS LETTER 2-LAFAVE

cc: Mr. Thomas Lewandowski, Fiscal and Budget Analyst  
Milwaukee County Department of Administrative Services

MILWAUKEE COUNTY AUTOMATED MAPPING  
AND LAND INFORMATION SYSTEM

Fifty-Sixth Steering Committee Meeting

AGENDA

DATE: June 10, 2003  
TIME: 9:00 A.M.  
PLACE: Milwaukee County Courthouse  
901 N. Ninth Street  
Room 203-P  
Milwaukee, Wisconsin

Note different meeting room

I. Roll Call

II. Meeting Minutes

Consideration of minutes of the 55<sup>th</sup> Steering Committee meeting held on April 8, 2003 (copy of minutes enclosed).

III. Reports

✓ A. Report by project staff on the completion of the Lincoln Creek-Southbranch Creek topographic mapping project (copy of project area map enclosed). *place on file*

POF B. Report by project staff on the completion of the "MCAMLIS Land and Utility Information System Internet Prototype Study." *\$96,000 - Seamless map - Transactional - Locales resampled*

✓ C. Report by Commission staff on the reorganization of four active City of Milwaukee cadastral map transformation projects and the initiation of the transformation work in the Phase 10 project area (copy of memorandum enclosed).

POF D. Report by City of Milwaukee staff on the status of Milwaukee cadastral map transformation projects (copy of report and status maps enclosed).

✓ E. Report on transfer of maintenance responsibilities for City of Milwaukee cadastral maps compiled and transformed to MCAMLIS standards.

POF F. Report by Milwaukee County Register of Deeds staff on MCAMLIS street address file and cadastral map maintenance operations (copies of status maps enclosed).

POF G. Report by Commission staff on the status of the MCAMLIS Floodland Mapping Project (copy of memorandum to be provided prior to meeting).

H. Report by project staff on the filing of the last of four required project completion reports for Milwaukee County's WLIP 1999 Grant Award projects. *all project grants are completed and closed*

POF I. Report by project staff on the status of Milwaukee County's WLIP 2002 Grant Agreements. *3 awards are part of this WLIP - city of milw 8, 9, 1, 50 additional cadastral work being done*

*state grants will sunset in 8/2003*

*POF* J. License Agreements executed on behalf of the Utilities Subcommittee (copy of table of executed license agreements enclosed).

*POF* K. Report by Commission staff on several recent actions which will improve the MCAMLIS project 2003 cash flow and 2003 year end balance (copy of memorandum enclosed).

*POF* L. Status of MCAMLIS cash flow (copy of cash flow table enclosed).

IV. Old Business

- A. Report on proposed meeting between the Milwaukee County Register of Deeds and the City of Milwaukee Assessor to consider elimination of duplicative work tasks between the County and the City staffs. *continued effort to have a meeting*
- B. Consideration of a proposal for the publication of a MCAMLIS newsletter (copy of memorandum enclosed).

V. New Business

- layover* A. Consideration of an amendment to the Milwaukee County Land Records Modernization Plan (copy of proposed amendment to be provided prior to meeting).
  - B. Consideration of the updated and revised MCAMLIS Strategic Assessment (copy of memorandum to be provided prior to meeting).
  - C. Consideration of a proposal to transfer MCAMLIS one-quarter section based digital cadastral maps to a "seamless map" environment (copy of memorandum enclosed).
  - D. Consideration of a proposal for the development of a transactional map update capability for the MCAMLIS cadastral map layer (copy of memorandum enclosed).
  - E. Consideration of a proposal for the extension of the MCAMLIS street address database (copy of memorandum enclosed).
  - F. Review of the MCAMLIS digital map copyright and attendant License Agreement practices (copy of memorandum enclosed).
- layover to next meeting*

VI. Correspondence

VII. Date, time, and place of next meeting *7/15/03 9:00 AM*

VIII. Adjournment

Kurt W. Bauer  
Chairman

**RECEIVED**

JUN 03 2003

MILWAUKEE COUNTY  
DEPT. OF PUBLIC WORKS

**MEMORANDUM**

**TO:** MCAMLIS Steering Committee Members,  
Alternates, and Selected Interested Parties

**FROM:** MCAMLIS Project Staff

**DATE:** June 3, 2003

**SUBJECT:** JUNE 10, 2003, MCAMLIS STEERING COMMITTEE MEETING

Three additional documents that will be considered at the June 10, 2003, MCAMLIS Steering Committee meeting are enclosed herewith for your review prior to the meeting.

\* \* \* \* \*

TDP/wb

Enclosures

# SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607

TELEPHONE (262) 547-6721  
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Serving the Counties of:

KENOSHA  
MILWAUKEE  
OZAUKEE  
RACINE  
WALWORTH  
WASHINGTON  
WAUKESHA



## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: Commission Staff

DATE: May 5, 2003

SUBJECT: **SCHEDULING OF CITY OF MILWAUKEE CADASTRAL MAP TRANSFORMATION WORK—PHASE 10 PROJECT AREA**

*approved*

Beginning in 1999, the Steering Committee initiated a series of projects intended to integrate existing City of Milwaukee digital mapping into the survey control and digital mapping framework created by the MCAMLIS project. Actions taken by the Steering Committee at its meetings of December 3, 2002, and January 28, 2003, approved two additional projects of this type for the eighth and ninth phases of this activity, leaving only the Phase 10 project area yet to be initiated (see copy of map attached hereto as Exhibit A for the location of the Phase 10 project area). At the time these actions were taken, it was anticipated that the cadastral map transformation work in the Phase 10 project area would be programmed for completion during 2004 and 2005.

As these various map transformation projects have continued over the last four years, both the City of Milwaukee staff and the Regional Planning Commission staff involved have become more efficient and effective in carrying out these transformations and the review thereof such that as the Phase 1, Phase 4, Phase 5, and Phase 6 projects neared completion in late 2002 and early 2003, it became apparent that this increased efficiency and effectiveness would result in unexpended funds remaining at the completion of the work covering these phases.

One option for dealing with these unexpended amounts would be to cancel the encumbrances covering the unexpended funds and release the unexpended funds back to the MCAMLIS project account. This option was rejected by the Commission staff in view of the fact that work in the Phase 4, Phase 5, and Phase 6 project areas has been partially funded by Wisconsin Land Information Program (WLIP) grants. Unexpended funds remaining at the end of those projects would have to be returned on a pro-rata basis, both to the MCAMLIS project account and to the WLIP, thereby reducing anticipated 2003 revenue for the MCAMLIS project from the final payments on the WLIP grants concerned. Accordingly, and in consultation with WLIP staff, a different option for utilizing these unexpended funds has been implemented.

The unexpended amounts remaining are sufficient in their aggregate to fund the work remaining in the Phase 10 project area. The 24 one-quarter section based maps remaining in the Phase 10 project area have been divided into four equal groups of six maps each, each group of which will be completed as part of the existing agreements covering the Phase 1, Phase 4, Phase 5, and Phase 6 project areas.

To do this, a revised scope of work for the WLIP Grant Agreements covering the Phase 4, Phase 5, and Phase 6 project areas has been filed with the WLIP staff and extensions for time of completion for the Phase 4 and Phase 5 agreements have been requested from the WLIP staff and have been granted. The Phase 1 project area has received no partial funding through the WLIP grants-in-aid program; therefore, no involvement by WLIP staff is required to restructure the Agreements covering this phase.

Agreement addendums for the agreements between the City of Milwaukee, Information and Technology Management Division, and the Southeastern Wisconsin Regional Planning Commission have been executed for each of the four relevant project areas.

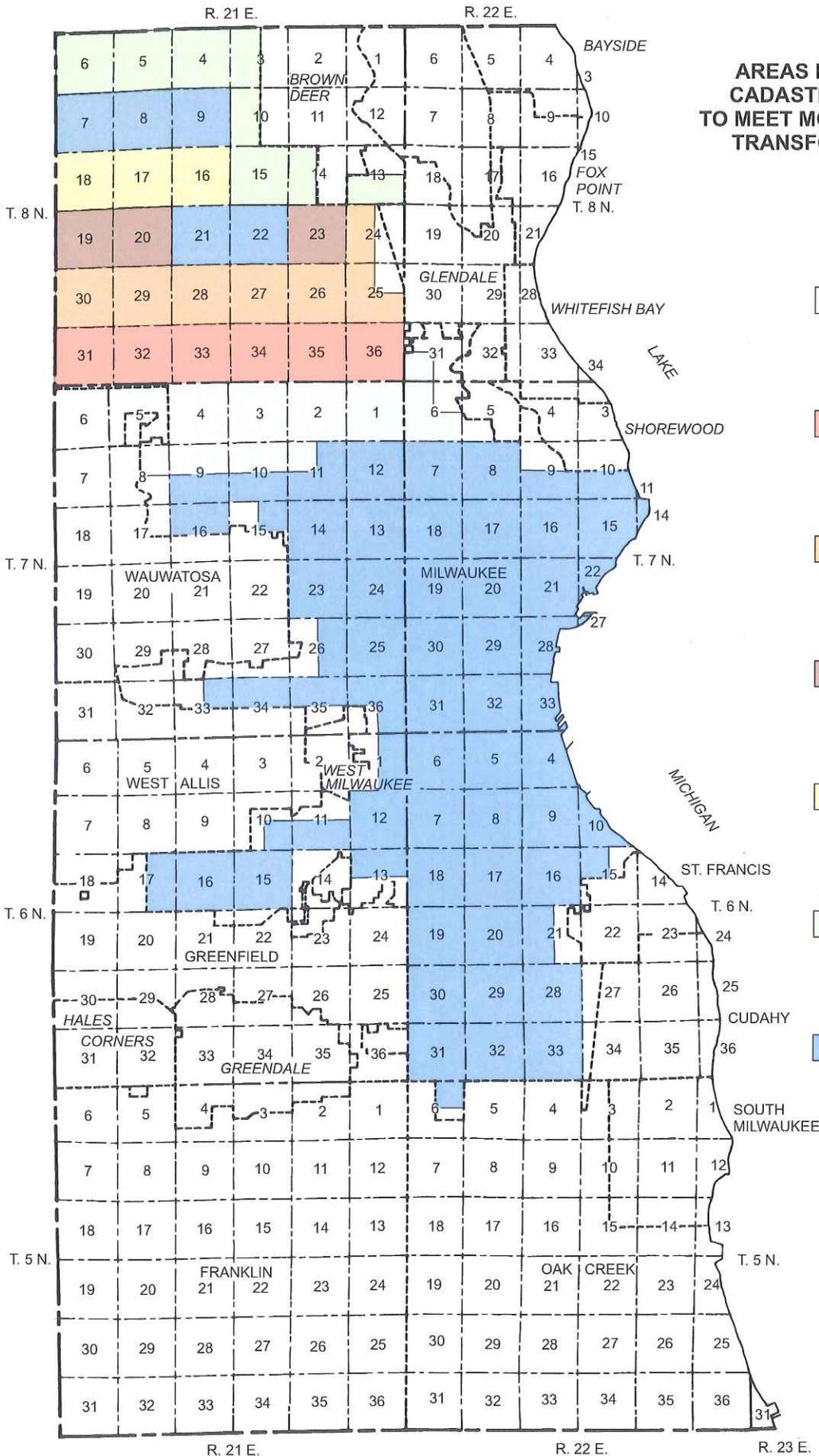
Attached hereto as Exhibits B, C, D, and E are four agreement addenda pertaining to the agreements between the MCAMLIS Steering Committee and the Southeastern Wisconsin Regional Planning Commission covering the four relevant projects areas. Execution of these agreement addenda is needed to formalize the work reorganization and to complete the arrangements worked out jointly between and among the Commission staff, the WLIP staff, and the City of Milwaukee staff. Therefore, Commission staff are requesting that the MCAMLIS Steering Committee approve the execution of these Agreement Addenda.

It should be noted that reorganizing the work in this manner eliminates an expenditure of approximately \$120,000 in MCAMLIS project funds in 1994 and 1995 to carry out the map transformation work in the Phase 10 project area. Accordingly, this amount will be available in those years for expenditure on other MCAMLIS projects.

\* \* \* \* \*

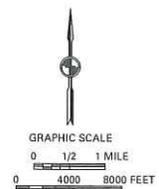
**Exhibit A**

**AREAS FOR WHICH CITY OF MILWAUKEE  
CADASTRAL MAPS ARE TO BE ADJUSTED  
TO MEET MCAMLIS STANDARDS BY COMPUTER  
TRANSFORMATION AND RECOMPILATION**



**LEGEND**

-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 6 (26)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 7 (24)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 8 (25)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 9A (12)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 9B (12)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS TO BE ADJUSTED BY COMPUTER TRANSFORMATION TO MEET MCAMLIS STANDARDS, PROJECT AREA 10 (24)
-  CITY OF MILWAUKEE U. S. PUBLIC LAND SURVEY ONE-QUARTER SECTION CADASTRAL MAPS MEETING MCAMLIS STANDARDS. COMPLETED PROJECTS (229)



March 25, 2003

Exhibit B

**ADDENDUM TO AGREEMENT**

**THIS ADDENDUM**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter "Commission"), and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter "Steering Committee"), is intended to modify that portion of the Agreement entered into on March 7, 2001, by and between the aforementioned parties, that is stated explicitly herein. The March 7, 2001, Agreement covers the preparation of MCAMLIS format cadastral maps in what is referred to in the MCAMLIS work program as the **Phase 4** project area. Those portions of the March 7, 2001, Agreement not explicitly referenced within the context of this Addendum shall remain in full force and effect as originally agreed upon.

Section II., Scope of Services, of the March 7, 2001, Agreement is hereby expanded to provide for the computer transformation of six additional City of Milwaukee quarter-section engineering base maps to meet MCAMLIS standards for cadastral maps. More specifically, the additional six maps will cover the following U.S. Public Land Survey one-quarter sections:

the northwest one-quarter, Section 14, Township 8 North, Range 21 East;  
the southwest one-quarter, Section 14, Township 8 North, Range 21 East;

the northeast one-quarter, Section 15, Township 8 North, Range 21 East;  
the northwest one-quarter, Section 15, Township 8 North, Range 21 East;  
the southwest one-quarter, Section 15, Township 8 North, Range 21 East; and  
the southeast one-quarter, Section 15, Township 8 North, Range 21 East.

Section V., Timing, of the March 7, 2001, Agreement is hereby replaced in its entirety as follows:

V. Timing

The work to be performed under this Agreement shall be completed no later than August 29, 2003.

**AUTHORIZATION**

The Steering Committee approved the execution of this Addendum to the March 7, 2001, Agreement by action taken at its regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum to the March 7, 2001, Agreement as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

**REVIEWED AS TO INDEMNIFICATION  
AND INSURANCE**

By \_\_\_\_\_  
William J. Domina  
Milwaukee County Corporation Counsel

By \_\_\_\_\_  
John R. Rath  
Milwaukee County Department of Risk Management

Exhibit C

**ADDENDUM TO AGREEMENT**

**THIS ADDENDUM**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter "Commission"), and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter "Steering Committee"), is intended to modify that portion of the Agreement entered into on March 7, 2001, by and between the aforementioned parties, that is stated explicitly herein. The March 7, 2001, Agreement covers the preparation of MCAMLIS format cadastral maps in what is referred to in the MCAMLIS work program as the **Phase 5** project area. Those portions of the March 7, 2001, Agreement not explicitly referenced within the context of this Addendum shall remain in full force and effect as originally agreed upon.

Section II., Scope of Services, of the March 7, 2001, Agreement is hereby expanded to provide for the computer transformation of six additional City of Milwaukee quarter-section engineering base maps to meet MCAMLIS standards for cadastral maps. More specifically, the additional six maps will cover the following U.S. Public Land Survey one-quarter sections:

the northwest one-quarter, Section 6, Township 8 North, Range 21 East;  
the southwest one-quarter, Section 6, Township 8 North, Range 21 East;

the northwest one-quarter section, Section 10, Township 8 North, Range 21 East;  
the southwest one-quarter section, Section 10, Township 8 North, Range 21 East;

the southwest one-quarter, Section 13, Township 8 North, Range 21 East; and  
the southeast one-quarter, Section 13, Township 8 North, Range 21 East.

Section V., Timing, of the March 7, 2001, Agreement is hereby replaced in its entirety as follows:

V. Timing

The work to be performed under this Agreement shall be completed no later than September 30, 2003.

**AUTHORIZATION**

The Steering Committee approved the execution of this Addendum to the March 7, 2001, Agreement by action taken at its regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum to the March 7, 2001, Agreement as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

**REVIEWED AS TO INDEMNIFICATION  
AND INSURANCE**

By \_\_\_\_\_  
William J. Domina  
Milwaukee County Corporation Counsel

By \_\_\_\_\_  
John R. Rath  
Milwaukee County Department of Risk Management

Exhibit D

**ADDENDUM TO AGREEMENT**

**THIS ADDENDUM**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter "Commission"), and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter "Steering Committee"), is intended to modify that portion of the Agreement entered into on March 6, 2002, by and between the aforementioned parties, that is stated explicitly herein. The March 6, 2002, Agreement covers the preparation of MCAMLIS format cadastral maps in what is referred to in the MCAMLIS work program as the **Phase 6** project area. Those portions of the March 6, 2002, Agreement not explicitly referenced within the context of this Addendum shall remain in full force and effect as originally agreed upon.

Section II., Scope of Services, of the March 6, 2002, Agreement is hereby expanded to provide for the computer transformation of six additional City of Milwaukee quarter-section engineering base maps to meet MCAMLIS standards for cadastral maps. More specifically, the additional six maps will cover the following U.S. Public Land Survey one-quarter sections:

the northwest one-quarter, Section 3, Township 8 North, Range 21 East;  
the southwest one-quarter, Section 3, Township 8 North, Range 21 East;

the northeast one-quarter section, Section 4, Township 8 North, Range 21 East;  
the northwest one-quarter section, Section 4, Township 8 North, Range 21 East;  
the southwest one-quarter section, Section 4, Township 8 North, Range 21 East; and  
the southeast one-quarter section, Section 4, Township 8 North, Range 21 East.

**AUTHORIZATION**

The Steering Committee approved the execution of this Addendum to the March 6, 2002, Agreement by action taken at its regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum to the March 6, 2002, Agreement as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

**REVIEWED AS TO INDEMNIFICATION  
AND INSURANCE**

By \_\_\_\_\_  
William J. Domina  
Milwaukee County Corporation Counsel

By \_\_\_\_\_  
John R. Rath  
Milwaukee County Department of Risk Management

Exhibit E

**ADDENDUM TO AGREEMENT**

**THIS ADDENDUM**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter "Commission"), and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter "Steering Committee"), is intended to modify that portion of the Agreement entered into on October 28, 1999, by and between the aforementioned parties, that is stated explicitly herein. The October 28, 1999, Agreement covers the preparation of MCAMLIS format cadastral maps in what is referred to in the MCAMLIS work program as the **Phase 1** project area. Those portions of the October 28, 1999, Agreement not explicitly referenced within the context of this Addendum shall remain in full force and effect as originally agreed upon.

Section 1., Scope of Services, of the October 28, 1999, Agreement is hereby expanded to provide for the computer transformation of six additional City of Milwaukee quarter-section engineering base maps to meet MCAMLIS standards for cadastral maps. More specifically, the additional six maps will cover the following U.S. Public Land Survey one-quarter sections:

the northeast one-quarter, Section 5, Township 8 North, Range 21 East;  
the northwest one-quarter, Section 5, Township 8 North, Range 21 East;  
the southwest one-quarter, Section 5, Township 8 North, Range 21 East;  
the northeast one-quarter, Section 5, Township 8 North, Range 21 East;

the northeast one-quarter, Section 6, Township 8 North, Range 21 East; and  
the southeast one-quarter, Section 6, Township 8 North, Range 21 East.

Section 4., Timing, of the October 28, 1999, Agreement is hereby replaced in its entirety as follows:

4. Timing

The work to be performed under this Agreement shall be completed no later than February 27, 2004.

**AUTHORIZATION**

The Steering Committee approved the execution of this Addendum to the October 28, 1999, Agreement by action taken at its regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum to the October 28, 1999, Agreement as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

**REVIEWED AS TO INDEMNIFICATION  
AND INSURANCE**

By \_\_\_\_\_  
William J. Domina  
Milwaukee County Corporation Counsel

By \_\_\_\_\_  
John R. Rath  
Milwaukee County Department of Risk Management

III (d)

RECEIVED  
MAY 20 2003

**STATUS OF MCAMLIS MAPPING PROJECTS  
BEING CARRIED OUT BY CITY OF MILWAUKEE STAFF**

The City of Milwaukee recompilation project is comprised of 40 U.S. Public Land Survey one-quarter section-based maps as delineated on the accompanying status map. These cadastral maps were compiled to fit the MCAMLIS survey control system utilizing original land records and associated descriptions and documents. This work has been carried out by the staff of the City of Milwaukee, Infrastructure Service Division, Central Drafting and Records Office. This project was completed November 30, 2001.

The City of Milwaukee cadastral map transformation project (Phase 1) consists of 93 U.S. Public Land Survey one-quarter-section-based existing City of Milwaukee maps that are being refit to the MCAMLIS survey control system utilizing computer algorithms. These 93 one-quarter section maps are delineated on an accompanying status map. This work is being carried out by the staff of the City of Milwaukee, Department of Administration, Information and Technology Management Division. All 93 of the map sheets have been accepted by SEWRPC staff as meeting the relevant specifications. The agreement governing this project calls for work to be completed by October, 2002. This project was completed February 25, 2003. On April 28, 2003 an addendum revised the project to include an additional 6 map sheets. This addendum calls for the work to be completed by December 31, 2003. As of May 15, 2003, City of Milwaukee GIS staff have completed 0 of these map sheets of which 0 have been accepted.

The City of Milwaukee cadastral map transformation project (Phase 2) consists of 24 U.S. Public Land Survey one-quarter-section-based maps as delineated on an accompanying status map. All 24 of the map sheets have been accepted as being in compliance with the specifications in this project area. The agreement governing this project calls for work to be completed by June 2002. This project was completed February 14, 2002.

The City of Milwaukee cadastral map transformation project (Phase 3) also consists of 24 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. All 24 map sheets have been accepted as being in compliance with the specifications. The agreement governing this project calls for work to be completed by June 2002. This project was completed February 14, 2002.

The City of Milwaukee cadastral map transformation project (Phase 4) also consists of 24 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. All 24 map sheets have been accepted as being in compliance with the specifications. The agreement governing this project calls for work to be completed by December 2002. This project was completed February 15, 2003. On April 23, 2003 an addendum revised the project to include an additional 6 map sheets. This addendum calls for the work to be completed by June 30, 2003. As of May 15, 2003, City of Milwaukee GIS staff have completed 0 of these map sheets of which 0 have been accepted.

The City of Milwaukee cadastral map transformation project (Phase 5) also consists of 24 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. The agreement governing this project calls for work to be completed by December 2002. This project was completed January 3, 2003. On April 25, 2003 an addendum revised the project to include an additional 6 map sheets. This addendum calls for the work to be completed by June 30, 2003. As of May 15, 2003, City of Milwaukee GIS staff have completed 0 of these map sheets of which 0 have been accepted.

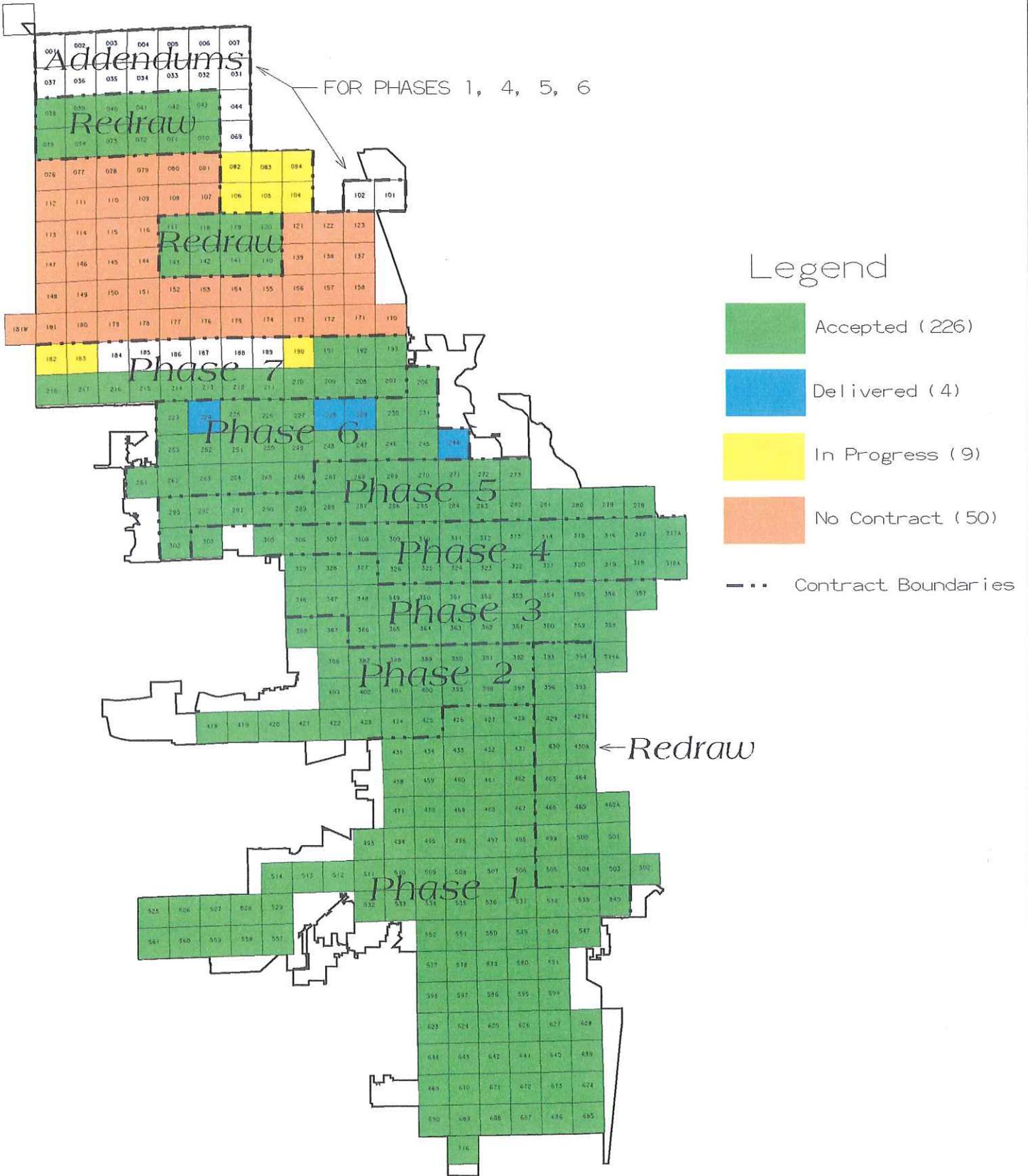
The City of Milwaukee cadastral map transformation project (Phase 6) consists of 26 U.S. Public Land Survey one-quarter-section-based maps again as delineated on an accompanying status map. As of May 15,

2003, 26 maps from this project area have been submitted to SEWRPC staff for review and accordingly, 20 maps sheets have been accepted as being in compliance with the specifications. The agreement governing this project calls for work to be completed by December 2003. There is currently no reason to expect that the project completion schedule will not be met. On April 30, 2003 an addendum revised the project to include an additional 6 map sheets. This addendum calls for the work to be completed by December 31, 2003. As of May 15, 2003, City of Milwaukee GIS staff have completed 0 of these map sheets of which 0 have been accepted.

\* \* \*

NAO/TDP/ame  
05-15-03  
#43453 v1 - status-mcamlis projects at c/milw staff

# MCAMLIS Transformation Project Progress Map



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5/31/2003	TOTAL
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	
Beginning Period Reserve-January 1	0	283,340	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-141,197
Mid-Year Reserve Changes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Current Period Reserve	0	283,340	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-141,197
Recording Fees (\$4.00 Portion)	101,886	324,983	612,592	676,093	647,355	503,342	574,328	644,508	769,820	773,078	609,683	743,977	230,597	918,012	8,377,027
Recording Fees (\$1.00 Portion)	0	0	0	0	0	0	0	0	0	0	0	72,988	119,858	119,858	423,423
State Grants	0	0	0	150,000	200,000	165,000	138,500	55,300	139,226	152,270	103,895	325,997	197,979	28,000	1,656,167
1 Private Utility Contributions	312,000	312,000	312,000	312,000	312,000	0	0	0	0	0	0	0	0	0	1,560,000
2 MIMSD Contribution	0	0	0	50,000	50,000	50,000	50,000	50,000	50,000	50,000	170,000	0	0	0	520,000
Annual Revenue	413,886	636,983	924,592	1,188,093	1,209,355	718,342	762,828	749,808	959,046	975,348	883,578	1,142,942	1,346,588	625,228	12,536,617
TOTAL FUNDS AVAILABLE	413,886	920,323	1,420,514	1,761,142	1,504,485	1,778,755	2,073,474	2,024,667	2,041,364	2,101,100	1,992,266	1,707,402	1,530,340	484,031	12,395,420
Additional Encumbrance	100,000	22,075	534,849	272,943	-900,864	112,067	308,902	367,776	361,580	386,754	586,545	737,559	577,619	735,652	4,203,457
Legal Fees	0	350	600	0	0	0	0	0	0	0	0	0	0	0	950
Systems Consulting (UGC)	0	128,638	0	0	0	0	0	0	0	0	0	0	0	0	128,638
USPLS Remonumentation	0	41,260	0	0	0	0	0	0	0	0	0	0	0	0	41,260
Horizontal/Vertical Control Surveys	0	144,443	0	0	0	0	0	0	0	0	0	0	0	0	144,443
Aerial Photos/Mapping	21,555	17,925	292,060	1,178,794	1,340,370	356,953	490,821	576,268	556,108	608,450	842,594	787,620	1,095,708	271,312	8,436,537
Project Facilitator	8,991	73,567	21,650	14,995	0	0	0	0	0	0	0	0	0	0	119,203
Conference	0	59	1,046	319	0	0	528	0	0	0	0	0	0	0	1,953
Project Conversion Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEWRPC Staff and Training	0	0	0	0	6,291	797	0	0	0	0	0	0	0	0	0
Computer Hardware/Software	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computer Hardware Copied	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computer Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computer/Office Supplies	0	0	0	0	0	0	26	0	0	0	0	0	0	0	26
Rent and Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Database Maintenance and Updates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contractual Crosscharges	40	554	13	0	0	0	3	5	0	0	343	0	442	0	1,399
Charges Paid By Other Departments	0	-4,470	-2,752	-1,040	-1,724	-1,708	-1,664	-1,700	-2,116	-2,792	-1,676	-1,529	-2,232	-715	-26,118
Miscellaneous	0	0	0	0	0	0	0	0	40	0	0	0	0	0	40
Annual Expenditures	30,566	407,326	312,616	1,193,069	1,344,936	356,042	489,713	574,573	554,032	605,658	841,261	786,091	1,093,918	270,597	8,855,419
TOTAL EXPS / ENCUMBRANCES	130,586	424,401	847,466	1,466,012	444,072	468,109	798,615	942,349	915,612	992,412	1,427,806	1,523,650	1,671,537	1,006,249	13,058,876
NET AVAIL FUNDS (END RESERVE)	283,300	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-522,218	-663,456

1. 1994 was the final year for this revenue source.

2. \$50,000 will be paid each year through 2002, and \$20,000 in 2003.

**EXECUTED LICENSE AGREEMENTS**

Number of Executed Agreements		Licensee	Effective Date
Since 1995	For 2003	2003	
90.	1.	North Shore Fire Department	1/13/03
91.	2	Planning & Design Institute, Inc.	2/6/03
92.	3.	Nancy M. Aten	2/12/03
93.	4.	Graef, Anhalt, Schloemer and Associates, Inc.	4/2/03
94.	5.	Sandridge Commercial Real Estate, LLC	4/25/03

#58437 v1 - MCAMLIS-EXECUTED LIC. AGREEMNTS

# SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607

TELEPHONE (262) 547-6721  
FAX (262) 547-1103

Serving the Counties of:

KENOSHA  
MILWAUKEE  
OZAUKEE  
RACINE  
WALWORTH  
WASHINGTON  
WAUKESHA



## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: Commission Staff

DATE: May 5, 2003

*approved.*

**SUBJECT: TRANSFER OF CITY OF MILWAUKEE RECOMPILED AND TRANSFORMED MCAMLIS FORMAT CADASTRAL MAPS TO THE MILWAUKEE COUNTY REGISTER OF DEEDS OFFICE FOR INTEGRATION INTO THE CONTINUOUS MAP UPDATE OPERATION**

At its meeting held on May 7, 2002, the Steering Committee directed project staff to investigate cadastral map maintenance issues relating to the MCAMLIS format cadastral maps available for portions of the City of Milwaukee and for all of the City of West Allis. Two interagency staff meetings were subsequently convened to discuss this issue--the first on June 12, 2002, and the second on November 15, 2002.

The June 12, 2002, interagency staff meeting was attended by representatives of the MCAMLIS project, the Milwaukee County Register of Deeds Office, the Milwaukee County Department of Public Works, the City of Milwaukee Infrastructure Services Division, the City of Milwaukee Information and Technology Management Division, and the City of West Allis Geographic Information Systems group. Discussion at this meeting determined that the MCAMLIS format cadastral maps for the City of West Allis could be most efficiently and effectively maintained by the Milwaukee County Register of Deeds Office. The discussion did not result in a decision about the most efficient and effective manner by which to maintain the transformed MCAMLIS format cadastral maps within the City of Milwaukee and it was determined that additional information needed to be secured.

By consensus reached at the Steering Committee meeting held on June 25, 2002, and based on the MCAMLIS project staff recommendation, the City of West Allis formatted cadastral maps were informally transferred to the Register of Deeds Office for integration into the cadastral map update operation.

The November 15, 2002, interagency staff meeting was attended by representatives of the MCAMLIS project, the Milwaukee County Register of Deeds Office, the Milwaukee County Department of Public Works, the City of Milwaukee Infrastructure Services Division, and the City of Milwaukee Information and Technology Management Division. Discussion at this meeting determined that the MCAMLIS format cadastral maps, as with the City of West Allis maps, could most likely be efficiently and effectively maintained by the Milwaukee County Register of Deeds Office.

At its meeting held on December 3, 2002, again upon the recommendation of the MCAMLIS project staff, the Steering Committee took formal action to transfer the City of Milwaukee recompiled and transformed cadastral maps to the Register of Deeds Office for integration into the continuous map update operation.

*include  
DPW  
in this  
activity*

In taking these actions, the Steering Committee acknowledged that the full impact of these transfers was as yet unknown and that it might be necessary based upon experience to increase the compensation presently provided to the Register of Deeds for this maintenance activity.

Attached hereto is an Agreement Addendum that amends the current Agreement between the MCAMLIS Steering Committee and the Southeastern Wisconsin Regional Planning Commission which will formalize the transfer of the City of Milwaukee and the City of West Allis maps into the continuous update operation. The Commission staff is requesting that the MCAMLIS Steering Committee approve execution of the attached Addendum. The Regional Planning Commission, in turn, will take steps to amend its Agreement with the Milwaukee County Register of Deeds to account for this change in the scope of work.

\* \* \* \* \*

#82680 v1 - MCAMLIS-C/WA,C/M MAINTENANCE

*- Patterson will set up meeting between DPW city & ROD  
for city files to be provided in proper format.*

## ADDENDUM TO AGREEMENT

**THIS ADDENDUM**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter "Commission"), and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter "Steering Committee"), is intended to modify that portion of the Agreement entered into on April 4, 2000, by and between the aforementioned parties, that is stated explicitly herein. Those portions of the April 4, 2000, Agreement not explicitly referenced within the context of this Addendum shall remain in full force and effect as originally agreed upon.

The third paragraph of Section 1., Scope of Services, of the April 4, 2000, Agreement which currently reads:

"The cadastral map maintenance work shall be carried out for a total of 600 U.S. Public Land Survey one-quarter sections as set forth on the map attached hereto as Exhibit A and made a part hereof by this reference. The street address maintenance work shall be carried out for all of Milwaukee County, except the City of Milwaukee."

is hereby replaced in its entirety as follows:

"The cadastral map maintenance work shall be carried out for the 600 U.S. Public Land Survey one-quarter section maps completed as part of the original MCAMLIS cadastral map compilation effort. Effective July 1, 2003, the 41 MCAMLIS format cadastral maps originally compiled by the City of West Allis will be added to this map maintenance effort. Also effective July 1, 2003, the 40 MCAMLIS format cadastral maps recompiled by the City of Milwaukee Infrastructure Service Division and the 218 MCAMLIS format cadastral maps transformed by computer algorithm to fit the MCAMLIS survey control network by the City of Milwaukee Information and Technology Management Division will be added to this map maintenance effort. Finally, an additional 97 City of Milwaukee transformed MCAMLIS format cadastral maps will be added to this map maintenance effort on a "work flow" basis after July 1, 2003, as the transformation process is completed. The locations of these groups of cadastral maps are delineated on the map attached to this Addendum as Exhibit A and made a part hereof by this reference. The street address maintenance work shall be carried out for all of Milwaukee County, except the City of Milwaukee."

### **AUTHORIZATION**

The Steering Committee approved the additional work referenced in this Addendum by action taken at its regular meetings held on June 25, 2002, and on December 3, 2002. The Steering Committee approved the execution of this Addendum to the April 4, 2000, Agreement by action taken at its regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the parties hereto have executed this Addendum to the April 4, 2000, Agreement as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

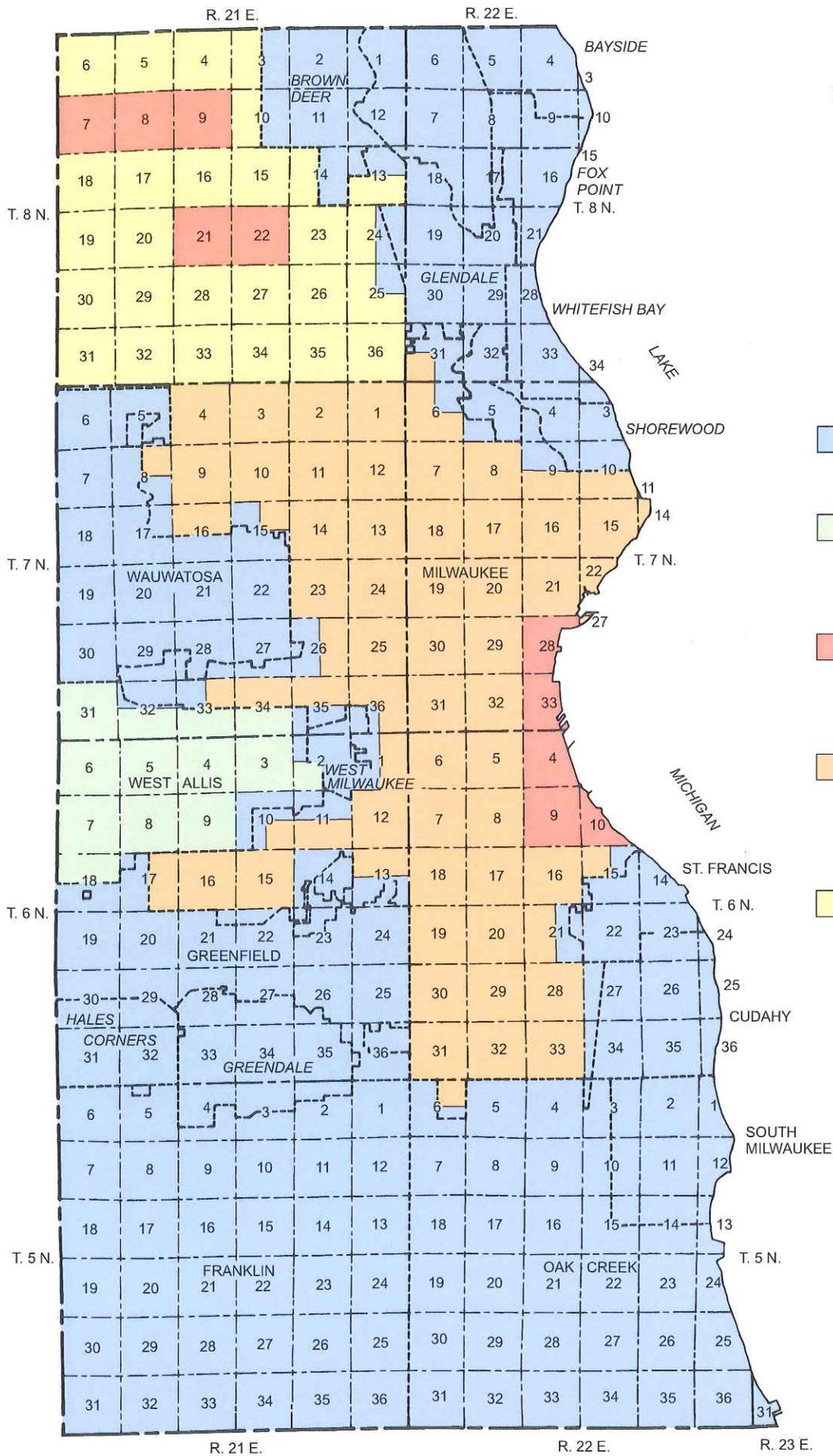
**REVIEWED AS TO INDEMNIFICATION  
AND INSURANCE**

By \_\_\_\_\_  
William J. Domina (Date)  
Milwaukee County Corporation Counsel

By \_\_\_\_\_  
John R. Rath (Date)  
Milwaukee County Department of Risk Management

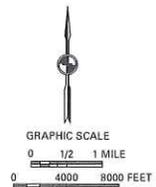
Exhibit A

MCAMLIS CADASTRAL  
MAP MAINTENANCE



LEGEND

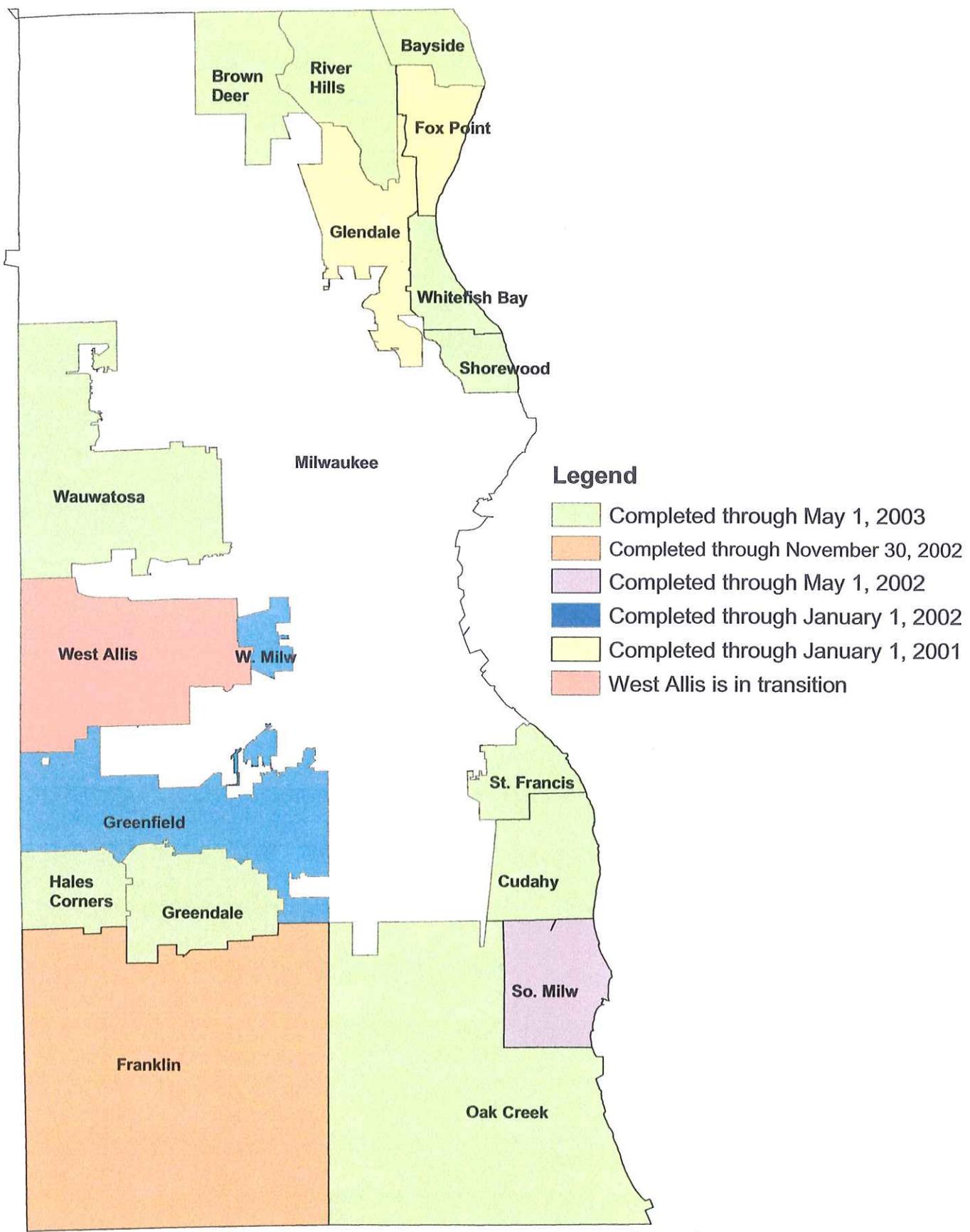
- MCAMLIS CADASTRAL MAPS TO BE MAINTAINED BY MILWAUKEE COUNTY REGISTER OF DEEDS (600 U.S. PUBLIC LAND SURVEY QUARTER SECTIONS)
- CITY OF WEST ALLIS MCAMLIS FORMAT CADASTRAL MAPS TO BE MAINTAINED BY MILWAUKEE COUNTY REGISTER OF DEEDS EFFECTIVE JULY 1, 2003 (41 U.S. PUBLIC LAND SURVEY QUARTER SECTIONS)
- CITY OF MILWAUKEE RECOMPILED MCAMLIS FORMAT CADASTRAL MAPS TO BE MAINTAINED BY MILWAUKEE COUNTY REGISTER OF DEEDS EFFECTIVE JULY 1, 2003 (40 U.S. PUBLIC LAND SURVEY QUARTER SECTIONS)
- CITY OF MILWAUKEE TRANSFORMED MCAMLIS FORMAT CADASTRAL MAPS TO BE MAINTAINED BY MILWAUKEE COUNTY REGISTER OF DEEDS EFFECTIVE JULY 1, 2003 (218 U.S. PUBLIC LAND SURVEY QUARTER SECTIONS)
- CITY OF MILWAUKEE TRANSFORMED MCAMLIS FORMAT CADASTRAL MAPS TO BE MAINTAINED BY MILWAUKEE COUNTY REGISTER OF DEEDS FOLLOWING TRANSFORMATION (97 U.S. PUBLIC LAND SURVEY QUARTER SECTIONS)



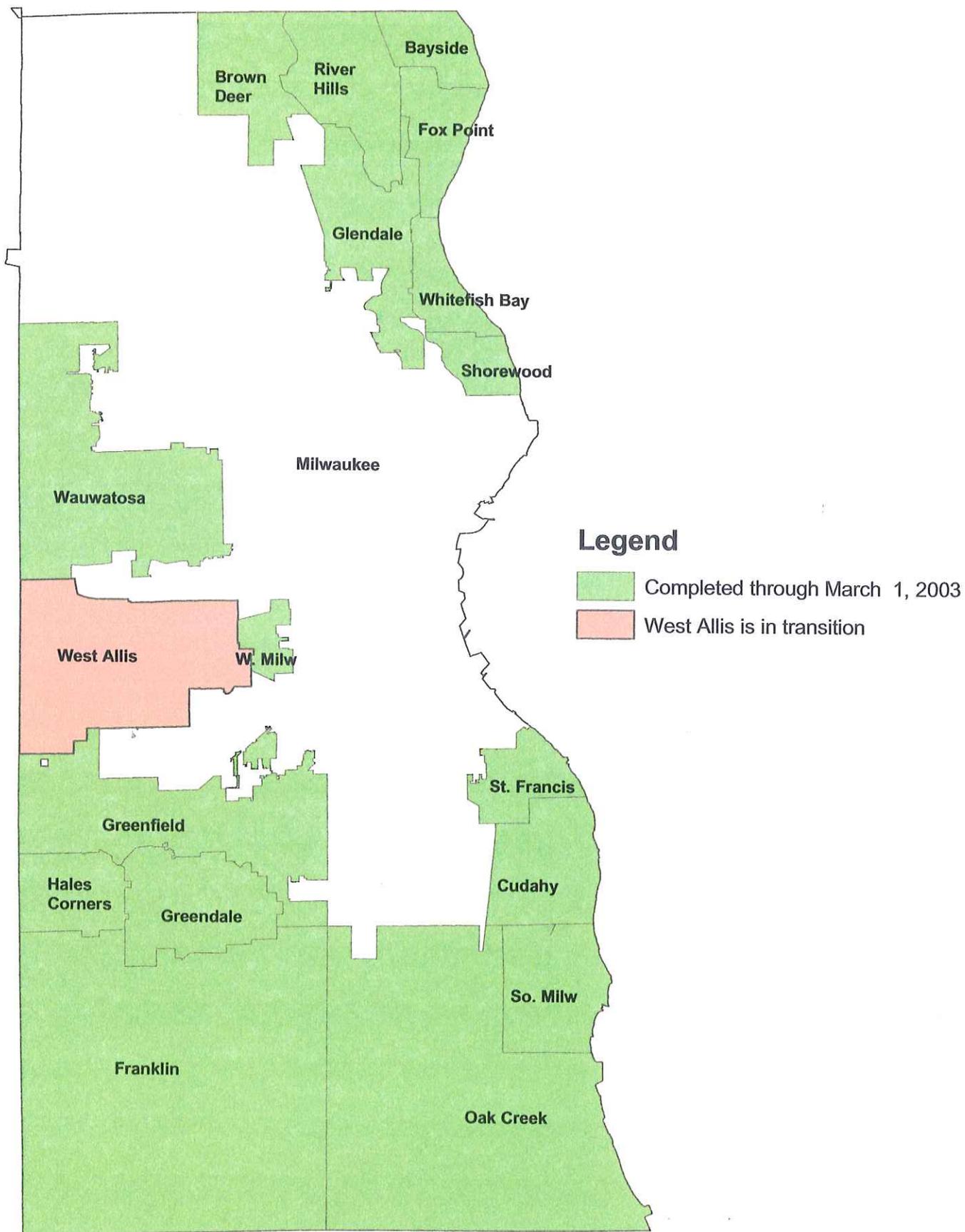
MAY 1, 2003

Source: MCAMLIS Project Manager.

# Milwaukee County Address Status as of May 19, 2003



# Milwaukee County Cadastral Status as of May 19, 2003



COPY

III

6

# SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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## MEMORANDUM

**TO:** MCAMLIS Steering Committee  
**FROM:** SEWRPC Staff  
**DATE:** May 29, 2003  
**SUBJECT:** STATUS REPORT NO. 7 ON MILWAUKEE COUNTY  
FLOODLAND MAPPING PROJECT

This memorandum sets forth the progress made on the Milwaukee County Floodland Mapping project from January 1, 2003, through May 27, 2003. This status report addresses project progress in the following three major areas and also identifies major issues that have arisen:

- Data Acquisition
- Hydrologic and Hydraulic Modeling
- Floodland Map Preparation

Overall, the Phase I portion of the project is about 60 percent completed. Progress is summarized in the attached Exhibit 1 and is graphically summarized on the map attached hereto as Exhibit 2.

### DATA ACQUISITION

During the period of January 1, 2003, through May 27, 2003 the following data acquisition activities were carried out:

- Work continued on coordination of the project work with the Milwaukee Metropolitan Sewerage District (MMSD), the Wisconsin Department of Natural Resources (WDNR), the Wisconsin Department of Transportation (WisDOT), and the City of Milwaukee. In general, where Phase I data have not been acquired, cooperative efforts are underway to obtain the data.
- Obtained from the MMSD the as-built topography for the Bradley Road and Library detention basins that are part of the Southbranch Creek flood mitigation project.
- Obtained from the City of Milwaukee design drawing for two detention basins in the Southbranch Creek subwatershed.

- Obtained as-built drawings of the north and south Miller Park access road bridges over the Menomonee River and the Miller Park pedestrian bridge from WisDOT.
- Obtained field survey data for the Menomonee River overflow area on the east bank of the River downstream of IH 94 in the vicinity of the Miller Park detention basin.
- Completed field and office checking of preliminary drafts of large-scale topographic maps for 25 U.S. Public Land Survey one-quarter Sections along Lincoln Creek and Southbranch Creek and prepared final maps. The subject maps reflect the MMSD flood control and environmental restoration projects recently completed for those streams.
- The following data were obtained from the MMSD and its consultants and reviewed by the Commission staff: 1) hydrologic model for the Menomonee River watershed; and 2) hydraulic model for the main stem of the Menomonee River.
- As-built field survey data for the new N. 51st Street and W. Green Tree Road bridges over Lincoln Creek were obtained by the City of Milwaukee and provided to the Commission staff. The City is in the process of obtaining survey data for several other new bridges over Lincoln Creek.
- Coordinated with MMSD regarding the progress of the as-built drawing for the Lincoln Creek restoration project.

## **HYDROLOGIC AND HYDRAULIC MODELING**

During the reporting period, progress on hydrologic and hydraulic modeling for Phase I of the project included the following:

### **Milwaukee River Watershed**

- Received preliminary Federal Emergency Management Agency (FEMA) approval of the proposed Milwaukee River hydrologic methodology as described in a detailed SEWRPC Staff Memorandum that was provided to FEMA and WDNR in July 2002.
- The Commission staff completed development of the U.S. Army Corps of Engineers HEC-RAS river analysis systems hydraulic model of the main stem of the Milwaukee River.
- Work began on review of the hydrologic and hydraulic models developed by MMSD for the Lincoln Creek environmental restoration project.
- Work continued on modifying the U.S. Environmental Protection Agency (USEPA) SWMM hydrologic model of the Southbranch Creek subwatershed to apply consistent methodology throughout the subwatershed.

### **Menomonee River Watershed**

- Substantial work was completed on developing planned year 2020, existing channel condition hydrologic and hydraulic models for the main stem of the Lower Menomonee River. The base models used were developed under previous Regional Planning Commission studies and the MMSD Phase 1 and 2 watercourse system planning efforts.

- Reviewed preliminary FEMA comments on the proposed Underwood Creek hydrologic methodology as described in a detailed SEWRPC Staff Memorandum that was provided to FEMA and WDNR in September 2002.
- Began computing water surface profiles for Underwood Creek and the South Branch of Underwood Creek in the Cities of Wauwatosa and West Allis.
- Began work on the hydraulic model for the Little Menomonee River, incorporating information from the U.S. Environmental Protection Agency Superfund project to remediate contamination of sediment through realignment of the channel. That realignment has been essentially completed from the Union Pacific Railroad to W. Bradley Road.

### **FLOODLAND MAP PREPARATION**

- The preliminary delineations of the 10-, 50-, 100-, and 500-year floodplain limits were completed along the entire 16-mile reach of the Milwaukee River main stem in Milwaukee County. These delineations are currently undergoing quality control checking.
- Began investigating approaches to automate mapping of the Lincoln Creek floodplain boundaries using the HEC-GeoRAS model and the digital terrain model recently developed along the stream under the MCAMLIS large-scale topographic mapping program.

### **MAJOR PROJECT ISSUES AND CONSIDERATIONS**

Hydrologic Modeling Procedure Approvals—It was reported in the sixth status report, dated January 10, 2003, that, as part of their review of the hydrologic study for the Pike River watershed in Kenosha and Racine Counties, Post, Buckley, Schuh & Jernigan (PBS&J), the Federal Emergency Management Agency's (FEMA) map coordination contractor, was developing a set of standards for acceptable continuous simulation modeling studies. As yet, the results of that effort have not been provided. The Commission staff believes that the PBS&J review should generally support the continuous simulation modeling procedures as practiced by the Commission and the MMSD. Accordingly, work is proceeding with the necessary continuous simulation hydrologic analyses for the MCAMLIS/MMSD project.

As indicated above, SEWRPC Staff Memoranda summarizing the proposed hydrologic modeling approach for the Milwaukee River main stem and the entire Underwood Creek subwatershed were sent to WDNR and FEMA on July 24, 2002, and September 16, 2002, respectively. As noted above, generally favorable reviews of the modeling approaches have now been obtained from FEMA. To date, there has been no response from the WDNR; however, the Commission staff is continuing with the hydraulic modeling and floodplain mapping for both streams.

\* \* \*

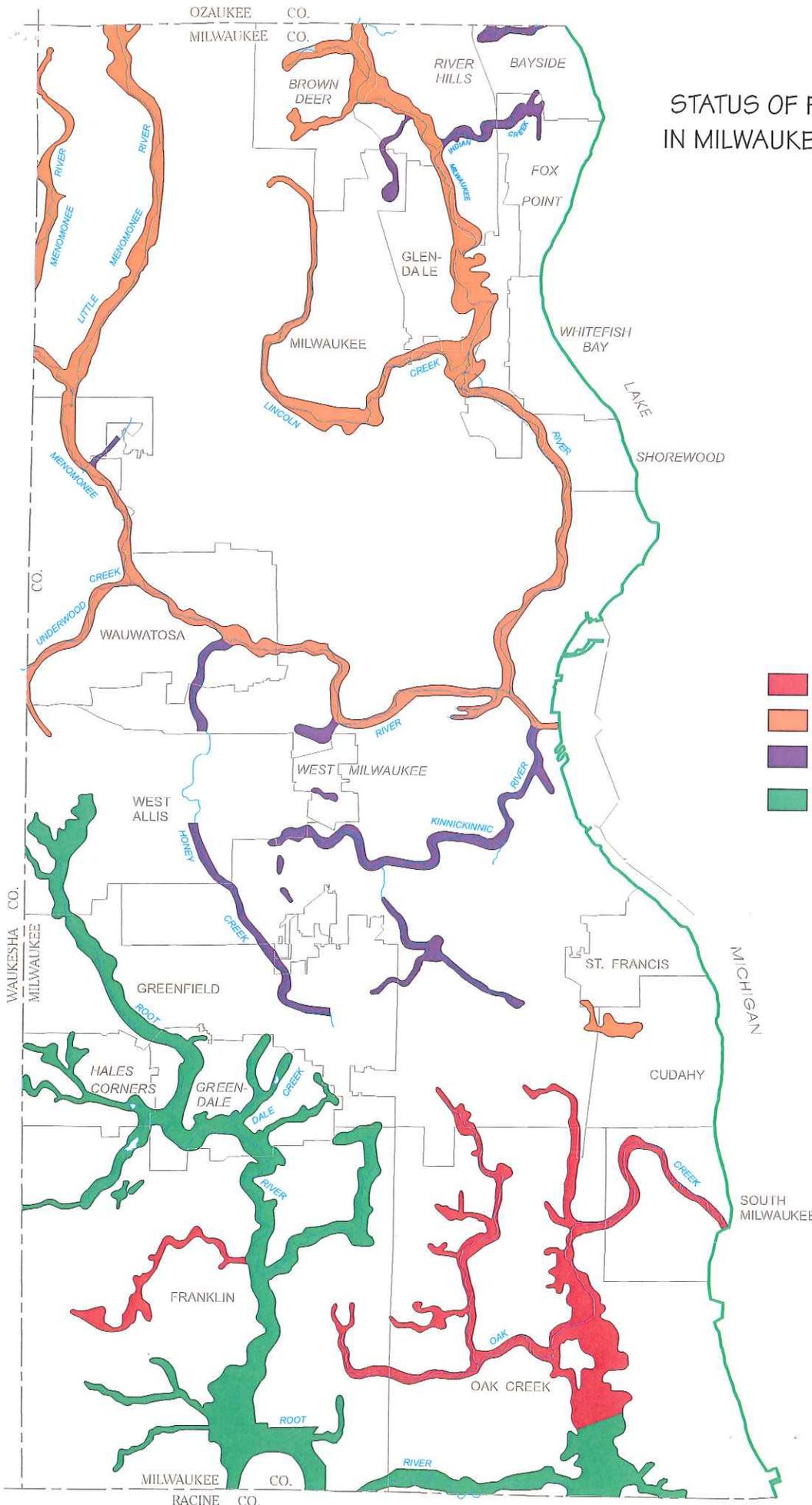
Exhibit 1

STATUS OF MCAMLIS MILWAUKEE COUNTY FLOODLAND MAPPING PROJECT: DECEMBER 31, 2002

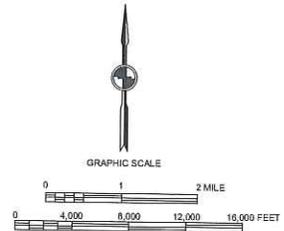
Major Area	Data Acquisition (percent complete)					Hydrologic and Hydraulic Modeling (percent complete)					Floodland Map Preparation (percent complete)				
	20	40	60	80	100	20	40	60	80	100	20	40	60	80	100
Phase I															
Kinnickinnic River Watershed					100										
Lake Michigan Coastal Flooding Areas						NA	NA	NA	NA	NA					
Lake Michigan Direct Drainage Area - Fish Creek			60												
Menomonee River Watershed											100				
Milwaukee River Watershed												100			
Oak Creek Watershed															100
Legend Creek (Root River Watershed)															100

Exhibit 2

STATUS OF FLOODPLAIN MAPPING  
IN MILWAUKEE COUNTY: MAY 2003



- Floodplain Mapping Completed
- Floodplain Mapping In Progress
- Floodplain Mapping to be Completed Under Phase 1.
- Floodplain Mapping Scheduled to be Completed Under Phase 2.



Source: SEWRPC.

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## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: Commission Staff

DATE: May 15, 2003

**SUBJECT: RECENT ACTIONS WHICH WILL IMPROVE THE MCAMLIS PROJECT 2003 CASH FLOW SITUATION AND THE MCAMLIS PROJECT 2003 YEAR END BALANCE**

Recently several individual actions have occurred that collectively will improve the MCAMLIS project cash flow for the balance of 2003 and which will also have a positive effect on the MCAMLIS project 2003 year end balance. This memorandum summarizes these actions.

At the conclusion of the MCAMLIS Land and Utility Information System Internet Prototype Study, \$4,800 of unexpended funds remained. This remainder was the result of a suggestion made by Ruckert-Mielke, Inc. to reduce the scope of work for one work element of the project based upon the manner in which the project was proceeding. That work element involved the actual implementation of a MCAMLIS website. Subsequently, Ruckert-Mielke, Inc. voluntarily reduced its final billing for this project by the amount of \$4,800, which amount has been "unencumbered" by Milwaukee County staff and returned to the MCAMLIS project account. This action has improved the MCAMLIS project 2003 cash flow situation and will also have a positive effect on the MCAMLIS project 2003 year end balance. Importantly, this \$4,800 amount will also be available for expenditure on other MCAMLIS projects in future years.

Project staff and Milwaukee County Department of Administrative Services staff have jointly taken action to release the remaining encumbrances for two MCAMLIS projects that were not completely closed out at the termination of the two projects. Both of the two projects involved the conversion of hardcopy topographic maps to digital format and the compilation of digital cadastral mapping undertaken in the middle 1990s in a portion of central Milwaukee County. Cancellation of these encumbrances will result in a total amount of \$37,862 being "unencumbered." Again, this action will improve the MCAMLIS project 2003 cash flow situation, have a positive effect on the MCAMLIS project 2003 year end balance, and release the \$37,862 amount for use in MCAMLIS projects in future years.

The total amount involved in these actions and returned to the MCAMLIS project account is \$42,662.

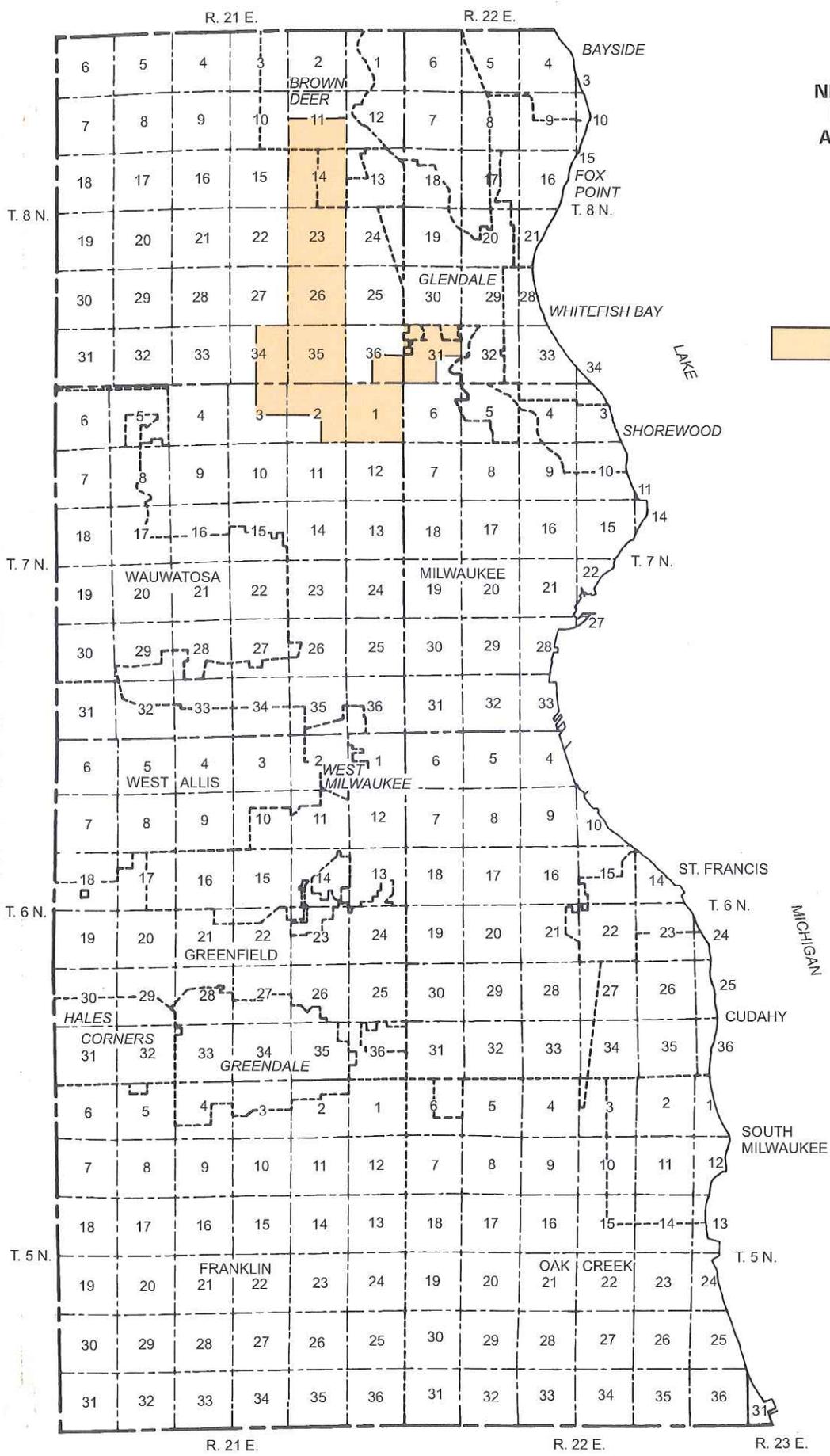
\* \* \* \* \*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	4/30/2003	TOTAL
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	
Beginning Period Reserve-January 1	0	283,340	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-141,197
Mid-Year Reserve Changes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Current Period Reserve	0	283,340	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-141,197
Recording Fees (\$4.00 Portion)	101,886	324,983	612,592	676,093	647,355	503,342	574,328	644,508	769,820	773,078	609,683	743,977	918,012	374,836	8,274,493
Recording Fees (\$1.00 Portion)	0	0	0	150,000	200,000	165,000	138,500	55,300	139,226	152,270	103,895	325,997	230,597	94,128	397,693
State Grants	312,000	312,000	312,000	312,000	312,000	0	0	0	0	0	0	0	197,979	0	1,628,167
1 Private Utility Contributions	0	0	0	50,000	50,000	50,000	50,000	50,000	50,000	50,000	170,000	0	0	0	1,560,000
2 MMUSD Contribution	413,886	636,983	924,592	1,188,093	1,209,355	718,342	762,828	749,808	959,046	975,348	883,578	1,142,942	1,346,568	468,964	520,000
Annual Revenue	413,886	920,323	1,420,514	1,761,142	1,504,485	1,778,755	2,073,474	2,024,667	2,041,364	2,101,100	1,992,266	1,707,402	1,530,340	327,767	12,239,156
TOTAL FUNDS AVAILABLE	413,886	920,323	1,420,514	1,761,142	1,504,485	1,778,755	2,073,474	2,024,667	2,041,364	2,101,100	1,992,266	1,707,402	1,530,340	327,767	12,239,156
Additional Encumbrance	100,000	22,075	534,849	272,943	-900,864	112,067	308,902	367,776	361,580	386,754	586,545	737,559	577,619	471,813	3,939,618
Legal Fees	0	350	600	0	0	0	0	0	0	0	0	0	0	0	950
Systems Consulting (UGC)	0	128,638	0	0	0	0	0	0	0	0	0	0	0	0	128,638
USPLS Remonumentation	0	41,260	0	0	0	0	0	0	0	0	0	0	0	0	41,260
Horizontal/Vertical Control Surveys	0	144,443	0	0	0	0	0	0	0	0	0	0	0	0	144,443
Aerial Photos/Mapping	21,555	17,925	292,060	1,178,794	1,340,370	356,953	490,821	576,268	556,108	608,450	842,594	787,620	1,095,708	165,807	8,331,032
Project Facilitator	8,991	73,567	21,660	14,995	0	0	0	0	0	0	0	0	0	0	119,203
Conference	0	59	1,046	319	0	0	528	0	0	0	0	0	0	0	1,953
Project Conversion Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEWRPC Staff and Training	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computer Hardware/Software	0	0	0	0	6,291	797	0	0	0	0	0	0	0	0	7,088
ROD Materials Copied	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computer Maintenance	0	0	0	0	0	0	26	0	0	0	0	0	0	0	26
Computer/Office Supplies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rent and Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Database Maintenance and Updates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contractual Crosscharges	40	554	13	0	0	0	3	5	-2,116	-2,792	343	0	442	0	1,399
Charges Paid By Other Departments	0	-4,470	-2,752	-1,040	-1,724	-1,708	-1,664	-1,700	-2,116	-2,792	-1,676	-1,529	-2,232	-530	-25,933
Miscellaneous	0	0	0	0	0	0	0	0	40	0	0	0	0	0	40
Annual Expenditures	30,586	402,326	312,616	1,193,069	1,344,936	356,042	489,713	574,573	554,032	605,658	841,261	786,091	1,093,918	165,277	8,750,099
TOTAL EXPNS / ENCUMBRANCES	130,586	424,401	847,466	1,466,012	444,072	468,109	798,615	942,349	915,612	992,412	1,427,806	1,523,650	1,671,537	637,090	12,689,717
NET AVAIL FUNDS (END RESERVE)	283,300	495,922	573,049	295,130	1,060,413	1,310,646	1,274,859	1,082,318	1,125,752	1,108,688	564,460	183,752	-141,197	-309,323	-450,561

1. 1994 was the final year for this revenue source.  
2. \$50,000 will be paid each year through 2002, and \$20,000 in 2003.

Exhibit A

NEW MCAMLIS TOPOGRAPHIC MAPPING ALONG LINCOLN AND SOUTHBRANCH CREEKS



 AREA FOR WHICH NEW AERIAL PHOTOGRAPHY AND DIGITAL TOPOGRAPHIC MAPPING WILL BE ACQUIRED. (APPROXIMATELY 8.0 SQUARE MILES).

MAY 20, 2002



Source: SEWRPC.

**MEMORANDUM**

TO: MCAMLIS Steering Committee

FROM: Project Staff

DATE: May 8, 2003

SUBJECT: PUBLICATION OF A MCAMLIS NEWSLETTER

*approved*

**BACKGROUND**

At the Steering Committee meeting held on April 8, 2003, project staff were asked to prepare a staff memorandum concerning a request for the publication of a MCAMLIS newsletter. This request was originally placed before the Steering Committee by Mr. John M. Bennett, representative of the Milwaukee County Intergovernmental Coordination Council to the MCAMLIS Steering Committee, at the Committee meeting held on December 3, 2002.

**THE NEED FOR A MCAMLIS NEWSLETTER**

Mr. Bennett, in making his request for consideration of the publication of a MCAMLIS newsletter, stated that a number of the Milwaukee County suburban municipal staff with whom he had contact exhibited a poor understanding of the MCAMLIS project and had indicated to him that they would like to be kept better informed of MCAMLIS project activity and products. It should be further noted in this regard that the interviews that were conducted and the questionnaires that were distributed as part of the MCAMLIS Land and Utility Information System Internet Prototype Study also indicated a lack of understanding of project products and work tasks and also contained requests from local municipal staff for a method of keeping them better informed of MCAMLIS project activities. Therefore, it appears that there is an information need that could be met, at least in part, by the publication of a MCAMLIS project newsletter.

**GENERAL TYPES OF INFORMATION TO BE PROVIDED IN A MCAMLIS NEWSLETTER**

Project staff are of the opinion, based in part upon a review of local municipal staff comments obtained through the MCAMLIS Land and Utility Information system Internet Prototype Study, that the types of information that would be most useful to local municipal staff and other users of the MCAMLIS products would be specific information about products available; procedures to be followed for obtaining MCAMLIS maps and other products; work tasks recently completed and the products available from those work tasks; work tasks underway and the products to be available following completion of those work tasks; and occasional status reports on the work in progress. Such information is, in many ways, similar to information provided by project staff to the Steering Committee at its regular meetings. To the extent that this is a correct observation, the content needs of a newsletter could potentially be provided by the editing and provision of reports and other material already prepared for the Steering Committee.

## **FREQUENCY OF ISSUANCE OF A MCAMLIS NEWSLETTER**

It is the position of the MCAMLIS project staff that it would serve no purpose to publish a newsletter any more frequently than twice yearly. This type of a schedule should be sufficient to keep most municipal employees and other users of MCAMLIS information apprised of both completion and progress of various MCAMLIS work tasks. Those occasional users who may require more frequent updates on specific products or tasks always have the option of contacting project staff directly.

## **DISTRIBUTION OF A MCAMLIS NEWSLETTER**

An initial distribution list to receive a MCAMLIS newsletter would, in all likelihood, be comprised of Steering Committee members, their designated alternates where applicable, and those others who have asked to be provided with MCAMLIS meeting notices and materials at the time of their distribution to the Steering Committee. This basic group should be augmented by at least one representative from each municipal unit of government within Milwaukee County. The local government representatives can initially be comprised of the contact persons that were identified for interviews and questionnaires during the conduct of the MCAMLIS Land and Utility Information System Internet Prototype Study. Over time, it can be expected that additional municipal employees and private users of MCAMLIS information will request to be added to the distribution list.

Recipients of the newsletter should be encouraged to provide their evaluation and comments concerning all aspects of the newsletter: content; frequency of issuance; electronic format for distribution; and other comments of their own choosing. The newsletter should be designed in such a manner that this type of feedback is easily provided. The most likely manner in which this could be accomplished is through the insertion of electronic mail links in the newsletter itself, providing a fast and convenient way for readers to comment.

## **ALTERNATIVE MEDIA FOR THE DISTRIBUTION OF A MCAMLIS NEWSLETTER**

Given the near universal access to the Internet that presently exists, it is the position of the project staff that the distribution of a newsletter should be by electronic rather than the print media. It is the further position of the project staff that the specific electronic distribution method should be as a PDF (portable document file) document associated with an electronic mail distribution list.

The PDF format is widely used in the printing and publishing industry so it has become a firmly established tool with deep vendor support. PDF readers, which would be necessary for the receipt of a PDF document, can be downloaded from the Internet at no direct out-of-pocket cost. Perhaps the most powerful argument for the use of PDF format, however, is that once a map or figure is incorporated into a PDF format, its appearance at the destination point is exactly the same as at the composition point. In more simplistic terms, it is a "what you see is what you get" digital composition and transmission medium.

Many commercial digital printers and copiers can handle PDF format; however, not all digital printers and copiers have color printing capabilities, a potential liability for a document expected to make use of color figures or maps. While this is one potential shortcoming in the use of PDF, this same shortcoming would exist for other electronic media choices. On the positive side, commercial "quick print" locations provide a mechanism for the printing of PDF documents containing color for those users desiring a hard copy of the newsletter for whatever reason.

For those individuals or organizations lacking the ability to receive electronic mail, a PDF format document can be used rather simply to produce printed copies of the newsletter.

### **COMPILATION AND PUBLISHING OF A MCAMLIS NEWSLETTER**

It is the project staff position that project staff are in the most efficient and effective position to produce a MCAMLIS newsletter. Project staff have the most complete knowledge of the status of all MCAMLIS project activities. Project staff already prepare the materials that are distributed for the regular Steering Committee meetings. As noted above, these materials are expected to provide the basic source of material for the publication of a MCAMLIS newsletter.

### **COST OF PUBLISHING A MCAMLIS NEWSLETTER**

Project staff have estimated that the publication by project staff of a PDF format MCAMLIS newsletter could be carried out for approximately \$1,500 per issue. This estimate is comprised largely of labor costs based upon the assumption that each newsletter would require about ten hours of professional staff time, four hours of secretarial and clerical staff time, four hours of graphic arts staff time, and one hour of computer technician time. As experience is gained with production of the newsletter, this estimated cost may increase or decrease, and any such change would be subject to review and approval by the Steering Committee.

### **SUMMARY AND RECOMMENDATIONS**

There does appear to be an informational need that could be served, at least in part, by the publication of a MCAMLIS newsletter. Relatively easy to use tools and products exist such that a newsletter could be published and distributed in an electronic environment. By reworking staff reports which are already prepared for the regular Steering Committee meetings, assembling the content for a newsletter should not be an onerous burden. The cost of preparing a MCAMLIS newsletter utilizing the electronic tools available and re-using existing text, maps, and figures, is relatively minor in comparison to other MCAMLIS project expenditures.

Based upon the project staff assessment of this issue, the following recommendations are made to the MCAMLIS Steering Committee:

- It is recommended that the Steering Committee authorize the publication of a MCAMLIS newsletter.
- It is recommended that the MCAMLIS newsletter be issued twice annually. One issue would be published in the autumn of 2003. Two issues would be published in the spring and autumn of 2004. It is recommended that the Steering Committee revisit the matter after distribution of the autumn 2004 issue and evaluate whether or not to continue.
- It is recommended that the MCAMLIS newsletter be distributed as an electronic document in PDF format.

- It is recommended that the SEWRPC staff in its capacity as the MCAMLIS project management staff be given the responsibility to determine the newsletter content; to compile and publish the newsletter; and to distribute the newsletter.
- It is recommended that the MCAMLIS Steering Committee authorize the payment of \$4,500 for the preparation and distribution of three MCAMLIS newsletters and that project staff be directed to secure the execution of an agreement between the Steering Committee and the Southeastern Wisconsin Regional Planning Commission for the preparation of these three newsletters.

In the event that the Steering Committee determines to proceed in the recommended manner set forth herein, a proposed Agreement between the MCAMLIS Steering Committee and the Southeastern Wisconsin Regional Planning Commission is attached hereto for Steering Committee consideration.

Attachment

\* \* \* \* \*

## AGREEMENT

**THIS AGREEMENT**, entered into this \_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as the "Commission"); and the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee (hereinafter referred to as the "Steering Committee").

### WITNESSETH:

**WHEREAS**, the Commission is authorized by Section 66.0309 of the Wisconsin Statutes to make studies and prepare plans for, and to provide advisory services to local governments, and to act as a coordinating agency for planning activities within its jurisdictional area; and

**WHEREAS**, by Resolution No. 88-379, the Milwaukee County Board of Supervisors requested the Southeastern Wisconsin Regional Planning Commission to conduct a feasibility study pertaining to an automated mapping and land information system; and

**WHEREAS**, the requested feasibility study was completed and is documented in SEWRPC Community Assistance Planning Report No. 177, Feasibility Study for a Milwaukee County Automated Mapping and Land Information System, published in October 1989; and

**WHEREAS**, by resolution adopted on November 8, 1990, the Milwaukee County Board of Supervisors authorized the execution of a Cooperative Agreement between Milwaukee County and the public and private utilities serving Milwaukee County, which Cooperative Agreement created a public-private partnership to implement the proposed Milwaukee County automated mapping and land information system, whereby the County and the utilities involved agreed to jointly fund the development of the Milwaukee County automated mapping and land information system; and

**WHEREAS**, the aforementioned Cooperative Agreement further created a Steering Committee to provide oversight in the implementation of the Milwaukee County automated mapping and land information system and delegated to the Steering Committee full responsibility for all policy matters relating to the conduct of the work program, including proposed contracts and specifications and the selection of contractors; and

**WHEREAS**, the Steering Committee on July 29, 1991, formally requested the Commission to accept the responsibilities of Project Manager of the Milwaukee County automated mapping and land information system; and

**WHEREAS**, the Executive Committee of the Commission on August 21, 1991, authorized Commission assistance in execution of the work required to implement the Milwaukee County automated mapping and land information system in the manner envisioned in the aforereferenced Commission report; and

**WHEREAS**, Sections 66.0309(12)(b) and 66.0301 of the Wisconsin Statutes authorize the Commission to enter into contracts with local units of government and their agents to make and implement studies and plans, and to otherwise provide advice and services.

NOW, THEREFORE, in consideration of these premises and of their mutual and dependent promises and agreements, the parties hereto contract and agree as follows:

I. Scope of Services

The Commission, acting on behalf of the MCAMLIS Steering Committee, shall prepare three MCAMLIS Newsletters. These Newsletters shall be published as PDF (portable document file) documents and shall be distributed electronically to those individuals on a distribution list approved by the Steering Committee. The three Newsletters shall be published: in the Autumn of 2003, in the Spring of 2004, and in the Autumn of 2004.

II. Compensation

The Steering Committee shall pay to the Commission the sum of \$4,500 as full payment for the services described in Section I.

III. Method of Compensation

The Commission shall submit an invoice in the amount of \$1,500 to the Steering Committee upon the distribution of each Newsletter specified in Section I. The Steering Committee shall pay to the Commission the amount shown on the invoice upon receipt of said invoice.

IV. Timing

The work to be performed under this Agreement shall be completed no later than December 31, 2004.

V. Indemnity

Except for acts done or taken at the direction of or pursuant to the Steering Committee policy or procedures, the Commission agrees to the fullest extent permitted by law, to indemnify, defend, and hold harmless, the Steering Committee, and its agents, officers, and employees from and against all loss or expense including costs and attorney's fees by reason of statutory benefits under Worker Compensation Laws, and/or liability for damages including suits at law or in equity, caused by any wrongful, intentional, or negligent act or omission of the Commission, or its agents which may arise out of, or are connected with, the activities covered by this Agreement.

VI. Insurance

The Commission, as an agency of the State, is self-funded for liability under Section 893.82 and Section 895.46(1) of the Wisconsin Statutes. As a result, such protection as is afforded under respective Wisconsin Statutes, is applicable to officers, employees, and agents while acting within the scope of their employment or agency. Since this is statutory indemnification, there is no liability policy as such that can extend protection to any other.

VII. Records and Audits

The Commission shall allow Milwaukee County, the Milwaukee County Department of Audit, or any other party the Milwaukee County may name, when and as they demand, to audit, examine and make copies of, excerpts or transcripts from any records or other information directly relating to matters under this Agreement. Any subcontracting by the Commission in performing the duties described under this contract shall subject the subcontractor and/or associates to the same audit terms and conditions as the Commission. The Commission (or any subcontractor) shall maintain and make available to the Milwaukee County aforementioned audit information for no less than three years after the conclusion of each contract term.

VIII. Independent Contractor

Nothing contained in this Agreement shall constitute or be construed to create a partnership or joint venture between Milwaukee County or its successors or assigns; the Steering Committee or its successors or assigns; and the Commission or its successors or assigns. In entering into this Agreement, and in acting in compliance herewith, the Commission is at all times acting and performing as an independent contractor, duly authorized to perform the acts required of it hereunder.

IX. Authorization

The Steering Committee approved the project that is the subject of this Agreement by action taken at a regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the Commission and the Steering Committee have executed this Agreement, as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
MCAMLIS Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

\_\_\_\_\_  
William J. Domina (Date)  
Milwaukee County Corporation Counsel

**REVIEWED AS TO  
INDEMNIFICATION AND INSURANCE**

\_\_\_\_\_  
John R. Rath (Date)  
Milwaukee County Department of Risk Management

**APPROVED AS TO CHAPTER 42  
DBE PROVISIONS**

\_\_\_\_\_  
Freida F. Webb (Date)  
Milwaukee County DBD Director

VA

#83308 v1 - LRMP UPDATES

**AMENDMENT**

**MILWAUKEE COUNTY**

**UPDATE TO LAND RECORDS MODERNIZATION PLAN: 1999**

**DRAFT**

**June 10, 2003**

**I. EXECUTIVE SUMMARY**

**A. Identification and Contact Information**

Is replaced in its entirety as follows:

Mr. John LaFave  
Milwaukee County Land Information Officer  
Milwaukee County Courthouse  
901 N. 9<sup>th</sup> Street  
Milwaukee, WI 53233  
Telephone: 414-278-4021  
Fax: 414-223-1257  
Electronic Mail Address: jlafave@milwenty.com

**II. UPDATED LAND INFORMATION MODERNIZATION AND INTEGRATION PLAN**

**A. Goals and Objectives**

Is expanded to include two additional goals as follows:

13. Identify, initiate, and complete projects that will utilize the \$1.00 of each \$5.00 of the fees retained locally to develop and maintain a computerized indexing of the County land information records related to housing in a manner that would allow for greater public access.
14. Where appropriate, and in those areas of subject content overlap between the Wisconsin "Smart Growth" legislation and the Wisconsin Land Information Program, identify, initiate, and complete projects proposed by Milwaukee County or its constituent municipalities which would prepare information and maps useful for meeting the "Smart Growth" requirements of state legislation, thereby serving the needs of the County and its municipalities and contributing toward the implementation of both "Smart Growth" and the Wisconsin Land Information Program.

**III. UPDATED LAND INFORMATION MODERNIZATION AND INTEGRATION PLAN**

**C. New Initiatives**

Is expanded to include two additional initiatives, as follows:

WLIS  
↓ covered to  
Wisconsin Land Council

13. Identify, initiate, and complete projects that will utilize the \$1.00 of each \$5.00 of the fees retained locally to develop and maintain a computerized indexing of the County land information records related to housing in a manner that would allow for greater public access.

The Milwaukee County Land Information Officer, who is also the Milwaukee County Register of Deeds, will be asked to develop a list of projects in keeping with the spirit and requirements of s.66.1001(2)(b) of the *Wisconsin* Statutes for the development and maintenance of a computerized indexing of the County's land information records relating to housing in a manner that would allow for greater public access. Such projects may include the acquisition of specialized computer hardware to accomplish the digital conversion of oversized maps and records and the modernization of both the hardware and software currently utilized by the Register of Deeds Office to carry out the optical imaging of land records related documents. Additional projects, such as the automation of tax lien records and the recording of mortgage satisfactions and similar types of documents that would serve to automate existing hardcopy County records related to housing identified under the "Guidelines for the Use of the Additional \$1.00 Retained by the County" as promulgated by the Office of Land Information Services, Wisconsin Department of Administration, may also be undertaken as determined to be appropriate and useful.

14. Where appropriate, and in those areas of subject content overlap between the Wisconsin "Smart Growth" legislation and the Wisconsin Land Information Program, identify, initiate, and complete projects proposed by Milwaukee County or its constituent municipalities which would prepare information and maps useful for meeting the "Smart Growth" requirements of state legislation, thereby serving the needs of the County and its municipalities and contributing toward the implementation of both "Smart Growth" and the Wisconsin Land Information Program.

In 1999 the Wisconsin Legislature enacted new legislation that greatly expanded the scope and significance of comprehensive plans within the State. The legislation, often referred to as the "Smart Growth" law provides a new framework for the development, adoption, and implementation of comprehensive plans by regional planning commissions and by county, city, village, and town units of government.

The law requires that the following nine elements be addressed in a comprehensive plan:

- Issues and Opportunities
- Housing
- Transportation
- Utilities and Community Facilities
- Agricultural, Natural, and Cultural Resources
- Economic Development
- Intergovernmental cooperation
- Land Use
- Implementation

The emphasis of the "Smart Growth" legislation is on the preparation and adoption of county and local comprehensive plans; the emphasis of the WLIP is on the modernization of land records. However, there is subject matter overlap between the two programs. More specifically, overlap occurs in the content areas of housing; transportation; utilities and community facilities; agricultural, natural, and cultural resources; land use; and intergovernmental cooperation. Given the degree of interrelationship between subject matter in these two programs, there are opportunities for the County to pursue the development of information and maps that contribute to the implementation of both programs. Projects serving the requirements of both programs should be identified and pursued where judged to be appropriate and useful. Such action would be responsive to the changing gubernatorial and legislative priorities manifested in recent biennial budgets as funding is transferred from land records modernization support to local comprehensive planning support.

\* \* \* \* \*

# MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM

c/o Southeastern Wisconsin Regional Planning Commission  
W239 N1812 Rockwood Drive -- PO Box 1607 -- Waukesha, Wisconsin 53187-1607

Telephone (262) 547-6721  
Fax (262) 547-1103

## MEMORANDUM

RECEIVED

MAY 02 2003

Milwaukee County  
Dept. of Public Works

**TO:** MCAMLIS Steering Committee  
**FROM:** Kurt W. Bauer, Chairman  
**DATE:** May 1, 2003

We are providing to you herewith for your files final copies of the following reports:

- "MCAMLIS Land and Utility Information System Internet Prototype Study" Report No. 3, dated December 3, 2002; and
- "MCAMLIS Land and Utility Information System Internet Prototype Study" Report No. 4, dated April 8, 2003.

These reports, prepared by a consultant pursuant to Steering Committee direction, have been reviewed and approved by the Steering Committee at past meetings. Therefore, no further action is required on these reports by the Committee.

cc: Mr. Gregory G. High, Director, Architectural and Engineering Services  
Milwaukee County Department of Public Works

KWB/wb

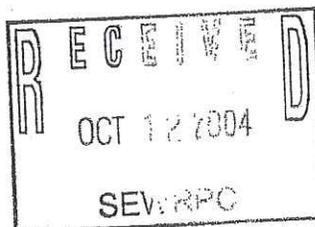
#82556 v1 - MCAMLIS TRANSMIT REPS 3 & 4



5A.

October 12, 2004

Mr. Thomas D. Patterson  
MCAMLIS Project Manager  
c/o Southeastern Wisconsin  
Regional Planning Commission  
W239 N1812 Rockwood Drive  
PO Box 1607  
Waukesha, WI 53187-1607



*Proposal to Develop an Automated Update Procedure  
for the  
Diggers Hotline Land Information System*

Background

Historically, one of the organizations with the greatest need for a current land information database and information about newly recorded subdivision plats and certified survey maps is Diggers Hotline. Diggers Hotline is the statewide one-call notification system for Wisconsin that was developed in order to provide excavators and the general public the ability to inform multiple owners of underground facilities subject to non-emergency excavation with a single telephone call. It is important to note that Diggers is a *not for profit* organization whose primary responsibility it is to route the locate requests (tickets) to the appropriate municipality and utility. Municipalities and utilities are assessed a fee for the service and that fee is based on the number of tickets routed to their organization.

To better understand the magnitude of work processed through the one call center, Diggers Hotline received 62,730 locate requests for Milwaukee County during 2003. This means that in total, We-Energies Electric, We-Energies Gas and SBC received approximately 188,000 locate tickets for Milwaukee County alone. For all of Wisconsin, We-Energies paid out a total of approximately 1 million dollars to Diggers Hotline and another 10 million dollars to respond to the locate requests. With such a high work volume, it is easy to understand why Diggers Hotline has a desperate need for new land information in order to accurately process and direct the locate tickets.

Diggers Hotline currently uses an off the shelf land information database and is frequently challenged with the task of receiving and routing locate requests for new streets or subdivisions that have not been posted to its system. A shortcoming of the database is the fact that it does not have the positional accuracy of MCAMLIS and represents more of a schematic mapping system as opposed to a survey controlled land

information system. While additions or changes are posted to the database on an annual basis, the updates are delivered long past the time that the information is needed.

Historically, new developments generate an average of 17 locate requests and those requests are received shortly after the subdivision plats or certified survey maps are approved and construction work begins. For such new areas, locate tickets are often described in very general terms or directions and estimated distances from existing known landmarks or intersections. To be safe and certain that the request will cover the appropriate area, Diggers Hotline often issues a ticket for an area that is significantly larger than necessary. This not only wastes staff resources, it results in unnecessary costs that are ultimately passed along to utility ratepayers and municipality taxpayers.

### Investigation

Cost considerations alone have resulted in We-Energies and SBC seeking resolution of this serious mapping problem with Diggers Hotline. An investigation has already been completed that explored the use of new technology and development of procedural changes for integrating new subdivision plats and certified survey maps into Diggers Hotline in a better and more timely manner. A means for automating the updating of the land information database immediately upon approval of the new subdivision plats and certified survey maps is the ultimate solution envisioned.

That solution has demonstrated the most promise includes the following:

- Use of software that can merge and geo-reference files generated from different software products such as AutoCad and MicroStation and separate the feature information into layers that allows for that information to be referenced from Portable Document Format (PDF) files using Adobe Acrobat software.
- Establish a comprehensive set of electronic database standards and specifications that land surveyors, employed by developers, comply with when submitting plans for community approval.
- Require the use of the MCAMLIS database by the Diggers Hotline.

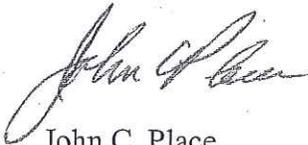
Further investigation determined that prototyping the process with a community in Milwaukee County would be the best way to proceed and will produce a model or models that would apply to the balance of communities in Milwaukee County. The expectation is that the study will produce a means for adopting the MCAMLIS database for use by Diggers Hotline and a tested set of specifications and process flow, including costs, to facilitate the update of the database for local units of government in Milwaukee County, the utilities and Diggers Hotline.

Proposal

We have had discussions with representatives of SBC and both of our companies would like to see the following proposal approved by the MCAMLIS Steering Committee. We-Energies and SBC are hereby requesting that MCAMLIS Staff be authorized to undertake a prototype study that will produce a tested set of specifications and process flow to facilitate the update of the database for Diggers Hotline, the utilities, and units of government in Milwaukee County. A final report would be produced setting forth the findings of the prototype study to the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee and the recommendations on how to proceed with the balance of work for Milwaukee County.

The cost for implementation of the prototype study is estimated as not to exceed \$75,000. The prototype study would include the establishment of a project team including participants from the utilities, municipalities, the Wisconsin Society of Land Surveyors, Milwaukee County and Diggers Hotline. The project would be completed in approximately 6 calendar months.

Sincerely,



John C. Place  
Manager Gas Planning Engineering & Mapping

Cc: Mr Jim Owen, SBC

MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: MCAMLIS Project Staff

DATE: June 2, 2003

SUBJECT: MCAMLIS PROGRAM STRATEGIC ASSESSMENT FOR 2003 - 2006

*approved  
except for  
small growth*

INTRODUCTION

At its meeting held on April 8, 2003, the MCAMLIS Steering Committee directed project staff to update and extend the MCAMLIS Program Strategic Assessment originally reviewed and approved by the Steering Committee at its meeting held on October 8, 2002. This memorandum has been prepared in response to that directive.

The revenue analysis contained in the preceding Strategic Assessment has been updated and extended to include revenues received for the balance of 2002 and the first three months of 2003. Further, the Wisconsin Land Information Program (WLIP) 2002 grant awards received by Milwaukee County during December 2002 and January 2003 have been accounted for in the revenue analysis.

The list of committed work projects set forth in the preceding Strategic Assessment has been updated to reflect additional projects authorized by the Steering Committee since October 2002. Work tasks recommended in the final report of the MCAMLIS Land and Utility Information System Internet Prototype Study, as adopted by the Steering Committee at its April 8, 2003, meeting have been evaluated and as found necessary or desirable, included in the revised work program for 2003 through 2006.

The general format and order of presentation contained in this memorandum follows that of the October 2002 memorandum to allow for easy comparisons between the two memoranda for those who may be inclined to so do.

OVERVIEW

Beginning in calendar year 2000, the MCAMLIS Steering Committee began an accelerated work program funded in part by a calendar year 1999 year end funding surplus. This surplus was largely comprised of locally retained document recording fees that had accumulated during the second half of the 1990's and a one-time increase in grant awards from the Wisconsin Land Information Program (WLIP) represented by the 1999 grant award cycle. During the 2000 through 2002 period, an annual expenditure level of \$1,000,000 was budgeted. Prior to 2000, an annual budgeted expenditure level of about \$650,000 to \$750,000 was typical. While it has been possible to maintain a budgeted expenditure level of \$1,000,000 in 2003 equivalent to expenditure levels established for 2000 through 2002, the fund surplus of approximately \$1,110,000 which existed at the end of 1999 was effectively depleted by the end of 2002.

Further affecting potential revenues is the scheduled elimination of the WLIP grant awards following the 2002-2003 award cycle which was completed in January 2003.<sup>1</sup>

**REVENUES**

The MCAMLIS program revenues have traditionally been generated from three sources—locally retained document filing fees collected under the provisions of the WLIP, WLIP grant awards, and utility contributions. The amounts actually received from these sources over the period from calendar 1990 through calendar year 2002 are set forth in Table 1, together with the amount received in the first three months of calendar year 2003.

Table 1

**ACTUAL MCAMLIS REVENUES:  
CALENDAR YEARS 1990 THROUGH 2002<sup>a</sup>**

Year	Document Filing Fees (\$4 Portion)	Document Filing Fees (\$1 Portion) <sup>b</sup>	WLIP Grant Receipts	Utility Contributions	Total
1990	\$ 101,886 <sup>c,d</sup>	--	--	\$ 312,000	\$ 413,886
1991	324,983 <sup>d</sup>	--	--	312,000	636,983
1992	612,592	--	--	312,000	924,592
1993	676,093	--	\$ 150,000	362,000	1,188,093
1994	647,355	--	200,000	362,000	1,209,355
1995	503,342	--	165,000	50,000	718,342
1996	574,328	--	138,500	50,000	762,828
1997	644,508	--	55,300	50,000	749,808
1998	769,820	--	139,226	50,000	959,046
1999	773,078	--	152,270	50,000	975,348
2000	609,683	--	103,895	170,000	883,578
2001	743,977	\$ 72,968	325,997	0	1,142,942
2002	918,012	230,597	197,979	0	1,346,588
Totals	7,822,657	\$303,565	\$1,628,167	\$2,080,000	\$11,911,389

<sup>a</sup>Revenues in the first three months of calendar year 2003 totaled \$214,928 from the \$4 portion, and \$53,941 from the \$1 portion of the retained document filing fees.

<sup>b</sup>Under current State Statutes, this fee will only be collected during the period September 1, 2001, through August 31, 2003.

<sup>c</sup>Collection of this fee did not begin until July 1, 1990.

<sup>d</sup>During the period July 1, 1990, through June 30, 1991, a \$2 document filing fee was in effect. The fee was increased to \$4 effective July 1, 1991.

Source: Milwaukee County Department of Administration.

**Locally Retained Document Filing Fees**

The \$4 document recording fee retained locally under the provisions of the WLIP has been the largest source of funding to date for the MCAMLIS Program. The \$7,899,6575 obtained from this source from 1990 through 2002 has accounted for about 66 percent of all MCAMLIS program revenues. During the period 1992<sup>2</sup> through 2002, annual revenue obtained from this source has ranged from a low of \$503,342 in 1995, to a high of \$918,012 in 2002, averaging about \$679,617 per year over this period. Over the most

<sup>1</sup>Statutory authority for the collection of the document filing fees (\$2 per document) used to fund the WLIP Grants-in-Aid Program will lapse on August 31, 2003. The Wisconsin Land Information Board will also discontinue operations on that date. The locally retained document filing fee (\$4 per document) will continue in force beyond this date, barring changes to the State Statutes.

<sup>2</sup> 1992 represents the first full calendar year during which the \$4 per document filing fee was in force.

recent five full years, or the period 1998 through 2002, revenue obtained from this source has averaged about \$762,914 per year.

Beginning in calendar year 2005, and barring any changes to the State Statutes, this \$4 document filing fee may be expected to be the sole source of funding for the MCAMLIS program.

Under the provisions of 2001 Wisconsin Act 16, a \$1 per document filing fee is being assessed over the period September 1, 2001, through August 31, 2003, at which time this fee will lapse, barring changes to Wisconsin Statutes. During the first 16 months of this collection period, this fee generated \$303,565, or about 3 percent of total program revenues. Unlike the \$4 document filing fee, which can be expended by the MCAMLIS program for a wide range of tasks intended to implement the adopted Milwaukee County Land Records Modernization Plan, Wisconsin Act 16 placed more stringent expenditure guidelines on the use of this category of retained fees. The effect of these restrictions is reflected in the expenditure section of this memorandum.

#### **WLIP Grant Awards**

Grant awards received by the MCAMLIS Steering Committee from the WLIP have been the third largest source of revenue for the MCAMLIS Program. The \$1,628,167 obtained from this source has accounted for about 14 percent of all MCAMLIS program revenues. Revenue from this source has ranged from a low of \$55,300 in 1997, to a high of \$325,997 in 2001. Revenue received by MCAMLIS from this source has been subject to somewhat erratic changes on an annual basis due, in part, to policy decisions made by the Wisconsin Land Information Board (WLIB) concerning the manner in which these funds were allocated to the counties, and, in part, to the timing of the award cycles.<sup>3</sup>

In view of policy decisions made by the WLIB and budgetary decisions made by the Wisconsin Department of Administration, the WLIP grant program for land records modernization may be expected to end by calendar year 2003. The revenues expected from this source in calendar years 2003 and 2004 are set forth in Table 2.

Table 2

#### **ACTUAL AND ANTICIPATED MCAMLIS WLIP GRANT REVENUES: CALENDAR YEARS 2001 THROUGH 2006**

<u>Year</u>	<u>Amount</u>
2001 Actual	\$325,397
2002 Actual	197,679
2003 Projected	227,705 <sup>a</sup>
2004 Projected	108,725
2005 Projected	0
2006 Projected	0

<sup>a</sup>150,000 was budgeted from this source for 2003.

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<sup>3</sup>For example, the 1999 and 2000 award cycles were both initiated by the Wisconsin Land Information Board during 2000.

**Utility Contributions**

Contributions from Wisconsin Bell (now SBC), the Wisconsin Electric Power Company, the Wisconsin Gas Company, (the Wisconsin Electric Power Company and the Wisconsin Gas Company have recently been combined into a single company—WE Energies), and the Milwaukee Metropolitan Sewerage District has been the second largest source of MCAMLIS Program revenue. The \$2,080,000 received from this source has accounted for about 17 percent of all program revenues. Under the terms of the Cooperative Agreement that created the MCAMLIS program, each of these four utilities agreed to provide \$520,000 toward the creation of the countywide automated base maps that constituted the first major undertaking of the MCAMLIS program. Contributions from Wisconsin Bell, Wisconsin Electric, and Wisconsin Gas were completed during 1994. The MMSD contribution was completed during 2000. Accordingly, no further revenue can be expected from this source.

**Anticipated Revenue Trend 2003 Through 2006**

Anticipated MCAMLIS revenues for the period 2003 through 2006 are set forth in Table 3. Revenue amounts shown for calendar years 2003 through 2006 are estimates based upon staff analyses.

Table 3

**ANTICIPATED MCAMLIS REVENUES BY SOURCE  
CALENDAR YEARS 2003 THROUGH 2006**

Year	Document Filing Fees (\$4 Portion)	Document Filing Fees (\$1 Portion)	WLIP Grant Receipts	Utility Contributions	Total Revenue
2003	\$720,000	\$130,000	\$150,000	\$0	\$1,000,000
2004	650,000	0	108,700	0	758,700
2005	650,000	0	0	0	650,000
2006	650,000	0	0	0	650,000

The revenue projections assume that, barring changes to the State Statutes, there will be no receipts from the \$1 document filing fees after August 31, 2003, and from WLIP grants after calendar year 2004. The revenue projections thus assume that the \$4 locally retained document filing fee will remain as the sole source of funding for the MCAMLIS program after calendar year 2004.

Revenues from the \$4 document filing fee for the period 2004 through 2007, were assumed to average \$650,000 per calendar year. As noted previously in this memorandum, the average amount received from this source for the 11-year period of record has been \$679,617; however, in seven of these 11 years, receipts from this source were less than the average amount. Accordingly, the assumed \$650,000 level appears to be a suitably conservative estimate.

Based upon the assumptions contained in this analysis, total revenue available to fund the MCAMLIS work program may be expected to decline from \$1,000,000 in 2003, to approximately \$750,000 in 2004, and to \$650,000 in 2005, thereafter to remain at approximately this level through calendar year 2006.

**ANTICIPATED EXPENDITURE LEVELS AND COMMITTED WORK TASKS:  
2003 THROUGH 2006**

**Anticipated 2003 Through 2006 Expenditure Levels**

The amounts anticipated to be available for funding MCAMLIS work tasks for the period 2003 through 2006 are set forth in Table 4. The expenditure authority of \$1,000,000 shown for calendar year 2003 was approved by the Milwaukee County Board. Total estimated expenditure levels of \$750,000 for calendar year 2004 and \$650,000 for calendar years 2005 and 2006 are based upon the anticipated MCAMLIS revenues set forth in Table 3.

Table 4

**COMMITTED MCAMLIS WORK PROGRAM: CALENDAR YEARS 2003 THROUGH 2006**

Work Task	2003	2004	2005	2006
Estimated Total Expenditure Authority Available	\$ 1,000,000	\$750,000	\$650,000	\$ 650,000
Projects Obligated by Previous Action of the Steering Committee				
WLIP 2001 Strategic Initiatives Project (Property Assessment and Property Tax Data)	15,000	--	--	--
WLIP 2002 Strategic Initiatives Project (Floodland Data)	13,600	--	--	--
City of Milwaukee Cadastral Map Transformation-Phase 7	129,345	--	--	--
City of Milwaukee Cadastral Map Transformation-Phase 8	110,000	16,185	--	--
City of Milwaukee Cadastral Map Transformation-Phase 9A	30,000	29,175	--	--
City of Milwaukee Cadastral Map Transformation-Phase 9B	--	53,950	--	--
ROD Federal Tax Lien Automation Project	9,800	--	--	--
ROD Equipment Purchase (InGeo)	20,000	--	--	--
ROD Document Imaging System Upgrade	240,000	--	--	--
Subtotal	\$ 567,745	\$ 99,310	\$ --	\$ --
Projects Requiring Authorization from the Steering Committee for Continuation of Previously Committed Work Tasks				
MCAMLIS Floodland Mapping Project - Phase 2	\$ --	\$ 218,000	\$ 218,000	\$ --
City of Milwaukee Cadastral Map Transformation-Phase 10	--	--	--	--
Subtotal	\$ --	\$ 218,000	\$ 218,000	\$ --
On-Going Project Management and Database Maintenance Tasks				
MCAMLIS Cadastral Map and Street Address Database Maintenance	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000
Milwaukee County Surveyor <sup>a</sup>	60,000	60,000	60,000	60,000
MCAMLIS Project Management	100,000	100,000	100,000	100,000
Subtotal	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000
Total	\$ 787,748	\$ 537,310	\$ 438,000	\$ 220,000
Estimated Amount Available to Undertake New Work Tasks	\$ 212,252	\$ 212,690	\$ 212,000	\$ 430,000

<sup>a</sup>By County Board policy, expenses associated with the services of the Milwaukee County Surveyor are supported from MCAMLIS Program revenues.

In addition, in association with the assumption that the \$4 document filing fee will generate approximately \$650,000 annually to fund MCAMLIS work tasks, it needs to be noted that shortfalls in this amount would have significant impacts on the actual expenditure levels that can be budgeted annually. It should be further noted in this regard that in two of the six most recent years of collection of this fee, fund collections were less than \$650,000--approximately \$610,000 in 2000 and approximately \$645,000 in 1997. Occasional collection shortfalls of this magnitude could probably be dealt with

successfully. However, in the five earliest years of collection of the \$4 document filing fee, revenues from this source exceeded \$650,000 in only one year--1993. Accordingly, a return to the document filing levels characteristic of the early 1990s could have significant adverse impacts on the future amounts available for expenditure. This uncertainty will have to be monitored on a year-by-year basis and will need to be reflected, as may be necessary, in annual MCAMLIS budgets beginning with the budget for calendar year 2004.

### **Committed Work Tasks**

Also shown in Table 4 are work tasks considered by project staff to be "committed" by past Steering Committee actions. The first group of these tasks represents active projects currently under contract or recently authorized by the Steering Committee, some of which will have expenditure obligations beyond the current 2003 budget year. Included in this group of work tasks are four City of Milwaukee cadastral map transformation projects totaling \$368,655 over calendar years 2003 and 2004; two relatively small WLIP strategic initiatives projects totaling \$28,600<sup>4</sup>; two relatively small projects being carried out in the Register of Deeds Office utilizing the \$1 locally retained fee and totaling approximately \$29,800; and finally, in accordance with the action taken by the Steering Committee at its April 8, 2003, meeting, the amount of \$240,000 being "held" pending determination by the Register of Deeds as to if and when any or all of this amount may be needed for the upgrading of the Register of Deeds' document imaging system. Any funds expended from this \$240,000 amount would be "charged" against the \$1 locally retained fee.

The second category of projects considered committed for the purpose of this analysis includes projects which are not currently under contract, but which represent continuations of previously authorized work programs. Making up this category are the MCAMLIS floodland mapping project, Phase 2, and the completion of the City of Milwaukee cadastral map transformation program.

Phase 2 of the MCAMLIS floodland mapping project is estimated to begin in calendar year 2004, and funding in support of this project has been allocated in calendar years 2004 and 2005. Project staff have determined that the remaining City of Milwaukee cadastral map transformation work, the Phase 10 project, can be completed using previously obligated funds and that, therefore, no additional obligations will be necessary to complete this work in budget years 2004 or 2005.

Also shown as commitments in Table 4 are estimates of current and future expenses associated with the continuation of the MCAMLIS cadastral map and street address maintenance work, the Milwaukee County Surveyor's annual work program, and the expenses associated with MCAMLIS project management.

Assuming that the work tasks set forth in Table 4 are undertaken at the estimated budget amounts, approximately \$212,000 would still be available to undertake new work initiatives in each of the calendar years 2003, 2004, and 2005, and approximately \$430,000 in calendar year 2006.

### **Locally Retained \$1 Document Filing Fee**

The requirements for expenditure of the \$1 locally retained document filing fee will affect decisions on how to allocate available funds for future work tasks. Wisconsin Act 16, which created this fee, states that these receipts must be used ". . . to develop and maintain a computerized indexing of the County's land information records related to housing, including the housing element of the County's land use plan under

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<sup>4</sup>These two projects are funded entirely by WLIP grants. No locally collected MCAMLIS funds are being utilized to carry out these two projects.

S 66.1001 (2) (b) in a manner that would allow for greater public access via the Internet.” The legislative intent of the Act has been further refined in guidelines promulgated by the WLIB. These guidelines are attached to this Memorandum as Exhibit A. These guidelines were adopted as preliminary, but have not yet been replaced by permanent guidelines. Accordingly, these preliminary guidelines continue to specify the current uses for which these funds can be expended.

The \$1 locally retained document filing fee will be collected for a period of two years beginning on September 1, 2001, and ending on August 31, 2003. Over the first 19 months of this period, revenues from these fees have totaled \$357,506 in Milwaukee County. A straight-line projection of this amount over the entirety of the 24-month collection period would result in an amount of approximately \$451,600 that can be expended in accordance with the attached State guidelines. To date, three tasks have been authorized by the MCAMLIS Steering Committee in accordance with the guidelines: the acquisition by the Milwaukee County Register of Deeds Office of a large-format scanner for over-size documents, principally maps; the Federal Tax Lien Automation Project that will also be carried out in the County Register of Deeds Office; and the acquisition of computer hardware and software sufficient to carry out a 12-month test of an application software package for the recording of mortgage satisfactions, again in the Register of Deeds Office. In addition, the Steering Committee has taken action to set aside up to \$240,000 for possible use in upgrading the document imaging system and ancillary computer operations in the Register of Deeds Office. Anticipated expenditures for these four projects total about \$262,700, leaving approximately \$188,900 yet to be committed. At this time, no additional projects have been identified and proposed to the Steering Committee for expenditure under the State guidelines.

#### **GEODATABASES AND THEIR POTENTIAL TO AFFECT THE MCAMLIS WORK PROGRAM**

An emerging technology within the larger construct of geographic information systems software is the geodatabase. The evolution of this technology has the potential to lead to a change in the manner in which the MCAMLIS digital maps and digital map databases are currently organized and maintained. Under the present organizational structure, the MCAMLIS digital map databases are essentially spatial databases which have the ability to be linked to separate attribute databases. One example of the manner by which such a linkage occurs is the parcel identification number, PIN; another is the street address. Essentially then, the current MCAMLIS database environment consists of a separate spatial database model which can be linked by users to one or more attribute database models.

A geodatabase environment usually integrates the linkage between the spatial features that represent the maps and the attribute databases that contain information about the map features. This integration usually provides that both map features and attribute features can be accessed and manipulated by a single set of software as opposed to two or more sets of software as is typical in the current MCAMLIS environment. There are current users of MCAMLIS data projects, such as the City of Franklin, that have already made this transition to a geodatabase environment. There are other users, such as the Milwaukee County Department of Public Works and the Milwaukee County Parks Department, who plan to make this transition over time.<sup>5</sup>

That aspect of the MCAMLIS work program where the emerging issue of geodatabases may be expected to have the greatest potential impact over the next few years is in the development of transactional cadastral map update procedures. New ESRI ArcInfo software,<sup>6</sup> anticipated to be released within the next

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<sup>5</sup> *Milwaukee County Public Works and Parks GIS Conceptual Design and Implementation Plan, Plan Graphics, Inc., and Abernathy Consulting, June, 2001.*

<sup>6</sup> *The MCAMLIS digital cadastral maps are presently maintained in an ESRI ArcInfo environment.*

nine months, is expected to possess the ability to deal with the transactional update issue thus avoiding the need to develop customized procedures and software for the MCAMLIS digital cadastral maps. An ESRI white paper<sup>7</sup> concerning this issue refers to this capability as "versioning." Early product announcements indicate that the release—release 9.0<sup>8</sup>--will also be "backwards" compatible, which will protect the interest of those MCAMLIS map users who wish to continue to operate in the ESRI "coverage" and "shapefile" environments. The 9.0 release also appears to afford translation capability for users of MicroStation DGN and AutoCAD DWG formats which will protect the interests of MCAMLIS data users operating in these software environments.

Since newer versions of GIS operating system software expected within the next nine months or so offer the potential to deal with the transactional map update issue without the need to develop customized software, project staff recommend that a decision concerning the manner in which transactional map updates might be implemented be held in abeyance until 2004. This recommendation, if approved by the Steering Committee, has the potential to eliminate the need for an expenditure of about \$33,000 for the development of procedures and software programs to implement this desired capability..

#### **POTENTIAL FUTURE MCAMLIS WORK TASKS**

The following proposed MCAMLIS work tasks represent tasks that, at this time, have either been discussed by the Steering Committee or that are currently under active investigation by project staff, but have yet to be presented to the Steering Committee for consideration and approval. These tasks also include projects specifically recommended in the recently completed MCAMLIS Land and Utility Information System Internet Prototype Study report. All expenditure amounts set forth in the narrative are approximate amounts for the purposes of planning future annual work programs. At the time that actual contracts would be negotiated for the pursuit of any of these projects, final project budgets would be developed by project staff and presented to the Steering Committee for review and approval. The order in which these potential tasks are presented is not intended to imply any order of priority.

#### **Projects Developed for the Use of the \$1 Locally Retained Document Filing Fee**

As noted in the preceding section of this memorandum, additional projects for the use of this fee will need to be developed. As also noted, it would most probably be desirable to develop a strategy for expending these receipts in the relatively near future.

#### **Replacement Topographic Mapping**

On several occasions the Steering Committee has discussed the desirability of undertaking additional projects to acquire replacement topographic mapping. Fiscal reality, however, dictates that replacement topographic mapping projects, with their relatively high costs in comparison with the typical MCAMLIS annual budget, will need to be held in abeyance until at least 2005 until other MCAMLIS work efforts have been completed. For example, completion of the current City of Milwaukee cadastral map transformation projects would allow for the funding expended on these projects—an average of several hundreds of thousands of dollars annually over the last five MCAMLIS budgets--to be redirected toward replacement topographic mapping projects.

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<sup>7</sup> *Modeling and Using History in ArcGIS, ESRI, May 2002.*

<sup>8</sup> *Version 8.3 of the ArcInfo is the most current version of ArcInfo presently available and is the version used currently to maintain the MCAMLIS digital cadastral maps.*

### **Retiling of MCAMLIS Cadastral Base Maps**

On several occasions the MCAMLIS Steering Committee has debated the merits of changing the tiling scheme for MCAMLIS base maps from the current one-quarter section-based maps to "tiles" of some larger, but yet-to-be-proposed, size. The Steering Committee has yet to determine whether or not to undertake this work task; however, the recently completed MCAMLIS Land and Utility Information System Internet Prototype Study report recommends that this work be undertaken and provides partial estimates of the cost for so doing. The estimate provided for retiling the MCAMLIS cadastral base maps is approximately \$45,000.

This estimate, however, does not include the ancillary tasks that would need to be carried out as part of the conversion. MCAMLIS project staff have recently developed a cost estimate of \$84,500 to convert the individual MCAMLIS digital cadastral map sheets into a continuous county-wide coverage. This estimate includes the additional tasks, such as the creation of municipal-based tiles, that are necessary to be fully responsive to municipal requests.

It is not known at this time what implications the implementation of a county-wide, continuous digital cadastral map may have on the cadastral map maintenance procedures being carried out in the Milwaukee County Register of Deeds Office. Since any possible needed changes in the procedures cannot be determined in advance, the Steering Committee should be prepared for the potential need to restructure the cadastral map maintenance operation in the Register of Deeds Office and its potential to affect the current costs of this operation.

### **Transactional Update Procedure For MCAMLIS Digital Cadastral Maps**

One of the recommendations emanating from the MCAMLIS Land and Utility Information System Internet Prototype Study report was the development of a transactional map update procedure for the MCAMLIS cadastral maps. Updates are currently distributed on a "batch" basis. Analysis of this issue by the study consultant has determined an approximate cost of \$33,000 dollars to develop and implement this capability. However, as with the creation of larger tiled digital maps, it is not known at this time what implications the implementation of such a process may have on the current cadastral map update operation being carried out in the Milwaukee County Register of Deeds Office. Since any possible disruptions cannot be determined in advance, the Steering Committee should be prepared for the potential need to restructure the cadastral map maintenance operation in the Register of Deeds Office and its potential to affect the current costs of this operation.

### **Maintenance of MCAMLIS Format Cadastral Mapping Covering the City of Milwaukee**

At its meeting held on May 7, 2002, the MCAMLIS Steering Committee asked MCAMLIS project staff to investigate—in consultation with City of Milwaukee representatives and Milwaukee County representatives—a process for maintenance of the MCAMLIS format cadastral mapping that is currently being created by the City of Milwaukee Geographic Information Systems staff. At its meeting held on December 3, 2002, project staff reported back to the Steering Committee that the recommendation arising from this interagency evaluation was that the maintenance of the MCAMLIS format cadastral mapping currently being created by the City of Milwaukee should be carried out by the Milwaukee County Register of Deeds Office in conjunction with its maintenance of MCAMLIS cadastral maps for the balance of the County. As with the development of a transactional update procedure for the MCAMLIS cadastral maps, it is not known what implications the implementation of this decision may have on the current cadastral map update operation. Again, since any possible effects cannot be determined in advance, the Steering Committee should be prepared for the potential need to restructure the cadastral map maintenance operation in the Register of Deeds Office with its concomitant potential to affect the current costs of this operation.

#### **MCAMLIS Address Database Enhancement**

At its meeting held on July 10, 2001, the MCAMLIS Steering Committee authorized project staff to investigate the potential costs associated with enhancing the MCAMLIS address database to include addresses inside multiple-unit residential and commercial structures. Estimates of the cost of this potential enhancement have yet to be determined by MCAMLIS project staff, although some potential address sources have been investigated and eliminated. This project should not be undertaken until project staff have located a suitable source or sources for the needed data, can structure a project for incorporation of the data into the MCAMLIS address databases, and develop a cost estimate for completing the desired work.

#### **City of Milwaukee Address Database Integration**

At its meeting held on October 8, 2002, the MCAMLIS Steering Committee approved a report prepared by Spatial Data Systems, Inc., assessing the accuracy and currency of the City of Milwaukee address database and the steps that would need to be taken to render that database compatible with the MCAMLIS street address database. An estimated cost of \$149,000 was provided by Spatial Data Systems, Inc., for this undertaking.

It should be noted that this estimated cost was not broken down by component and included only the cost of merging the City of Milwaukee address database and the MCAMLIS street address components, and the cost of field checking addresses for approximately 70,000 ownership parcels in the central section of the City. Based upon consultation with cognizant City staff, it is recommended by project staff that the field checking not be included in the work at this time. Importantly, the costs associated with extending the database structure inherent within the MCAMLIS street address database into the City of Milwaukee were not included in the study consultant's estimate.

Project staff have developed a project scope of work that would merge the address contents of the two street address databases and would create within the areal extent of the City of Milwaukee the equivalent graphic and database relationships between street addresses, structures, parcels, and street centerlines that currently exist for the other 18 of the County's municipalities. The cost estimate for the project scope of work developed by project staff is \$142,000.

#### **Consolidation of Milwaukee County Plat-of-Survey Records**

Milwaukee County plats-of-survey are currently stored in two discrete locations. Approximately 33,000 plats-of-survey are stored at SEWRPC where they have been submitted for filing in conformance with the requirements of State Statutes and SEWRPC's statutory designation as Milwaukee County Surveyor. Approximately 7,000 plats-of-survey are on file in the Milwaukee County Register of Deeds Office where they were submitted for filing prior to SEWRPC's statutory designation as Milwaukee County Surveyor.

Information taken from the plats-of survey on file at SEWRPC has been organized into a computer data base of the "flat-file" type. A variety of attributes relating to each plat-of-survey such as civil division, name of the property owner or client, name of the land surveyor completing the plat-of-survey, location by U. S. Public Land Survey one-quarter section, and date of survey. Plats-of-survey on file in the Register of Deeds Office are accessed through a manual "file card" index sorted by street address.

MCAMLIS project staff, on their own initiative, have been investigating the feasibility of a project that would transfer the plats from the Milwaukee County Register of Deeds Office to the SEWRPC offices and would index the transferred plats utilizing the existing SEWRPC system, thus integrating the old

surveys into the Milwaukee County database currently maintained by SEWRPC in its capacity as the Milwaukee County Surveyor.

A possible advantage of undertaking this project is that it may qualify as a project for expenditure of the \$1.00 document filing fee revenues.

#### **Publication of a MCAMLIS Newsletter**

Interest has been expressed in the publication of a MCAMLIS newsletter and at the Steering Committee meeting held on April 8, 2003, project staff were asked to prepare a staff memorandum concerning the possible publication of such a newsletter. Project staff determined that a semi-annual MCAMLIS newsletter could be prepared, published, and distributed as an electronic document at a cost of about \$1,500 per issue, or about \$3,000 per year. Project staff are recommending to the Steering Committee that such an activity be undertaken with the issuance of the first newsletter to take place in the fall of 2003.

#### **Milwaukee County "Smart Growth" Activities**

In 1999, the Wisconsin Legislature enacted new legislation that greatly expanded the scope and significance of comprehensive plans within the State. The legislation, often referred to as the State's "Smart Growth" law, provides a new framework for the development, adoption, and implementation of comprehensive plans by regional planning commissions and by county, city, village, and town units of government. The law is set forth in Section 66.1001 of the *Wisconsin Statutes*.

Technically, the law does not require the adoption of county and local comprehensive plans. However, Section 66.1001(3) of the *Statutes* lists those actions and procedures that must be consistent with comprehensive plans beginning on January 1, 2010. There is an implication that if a county or local government does not prepare and adopt a comprehensive plan that meets the requirements of the law, the county or local government may not—after January 1, 2010—take those actions or exercise those procedures related to land use regulation and development identified in the law. In theory, then, it would appear that absent a duly adopted comprehensive plan, a county or local government would not be able to, for example, enforce its zoning, subdivision control or official map ordinances, enter into cooperative boundary adjustment agreements, or apply for State stewardship grants to acquire park and recreational lands.

The law requires that the following nine elements be addressed in a comprehensive plan:

- Issues and Opportunities
- Housing
- Transportation
- Utilities and Community Facilities
- Agricultural, Natural, and Cultural Resources
- Economic Development
- Intergovernmental Cooperation
- Land Use
- Implementation

The emphasis of the "Smart Growth" legislation is on the preparation and adoption of county and local comprehensive plans; whereas, the emphasis of the Wisconsin Land Information Program is on the modernization of land records. However, there is significant subject matter overlap between the two programs. More specifically, overlap occurs in the content areas of housing; transportation; utilities and

community facilities; agricultural, natural and cultural resources; land use; and intergovernmental cooperation.

At the State level, these two programs are administered by the same State staff, and there is an increasing degree of integration in the manner in which the two programs are pursued. Indeed, the State biennial budget currently under discussion in the State Joint Finance Committee would allocate virtually all of the \$2 document recording fee sent to the State to support grants for the development of local comprehensive plans rather than grants for land records modernization initiatives, as was originally the case. The use of a portion of these funds in partial support for local comprehensive planning had already begun in the present biennial budget, but the larger diversions now being implemented are a signal of increased gubernatorial and legislative support for the use of land records modernization funds to support local comprehensive planning initiatives.

MCAMLIS project staff has considered the potential impacts of "Smart Growth" legislation on Milwaukee County. One information void that has already been identified in these discussions is the area of water supply. One way to meet the funding needs created by this legislation would be for Milwaukee County to use MCAMLIS project funds. Such a response could provide information and digital maps useful to the County and its constituent municipalities in meeting requirements of the "Smart Growth" legislation. It could also provide information and digital maps that would support the components of the WLIP land records modernization initiatives. (\*) ?

Partial support of this "Smart Growth" planning initiative, approximately \$90,000 annually over a period of three years, or a total of about \$270,000, would be required for use in water supply system planning. Use of MCAMLIS project funds in support of this effort would not only serve to meet the requirements of both the "Smart Growth" legislation and WLIP initiatives, but also would be responsive to changing gubernatorial and legislative priorities as reflected in the State's biennial budgets. MCAMLIS project staff support the use of MCAMLIS project funds to carry out this planning effort.

#### RECOMMENDED MCAMLIS WORK PROGRAM: 2003 THROUGH 2006

Based upon the preceding analysis of anticipated revenue and potential work tasks, a recommended MCAMLIS work program for 2003, 2004, 2005, and 2006 is presented in Table 5. It should be clear from the preceding analysis that difficult work task choices will confront the MCAMLIS Steering Committee over the foreseeable future. In light of this, it is the project staff recommendation that the program emphasis be largely directed to the original MCAMLIS program tasks—the creation and maintenance of a uniform, countywide system of digital, large-scale base maps and the creation and maintenance of a street address database, while recognizing that the needs of Milwaukee County and its constituent municipalities, in responding to the State's "Smart Growth" legislation, may require the use of some MCAMLIS funding to develop information that would serve to implement both Land Records Modernization and "Smart Growth." The work program set forth in Table 5 reflects this recommended emphasis as tempered by fiscal realities.

- what is water supply planning
- maintain water maps annually?
- Regional planning issue not county?
- County's benefit?

- why not utilize \$ for  
fiscal needs (655)  
of municipalities.

Table 5

RECOMMENDED MCAMLIS WORK PROGRAM: CALENDAR YEARS 2003 THROUGH 2006

Work Task	2003	2004	2005	2006
WLIP 2001 Strategic Initiatives Project (Property Assessment and Property Tax Data).....	15,000	--	--	--
WLIP 2002 Strategic Initiatives Project (Floodland Data).....	13,600	--	--	--
City of Milwaukee Cadastral Map Transformation-Phase 7.....	129,345	--	--	--
City of Milwaukee Cadastral Map Transformation-Phase 8.....	110,000	16,185	--	--
City of Milwaukee Cadastral Map Transformation-Phase 9A.....	30,000	29,175	--	--
City of Milwaukee Cadastral Map Transformation-Phase 9B.....	0	53,950	--	--
City of Milwaukee Cadastral Map Transformation-Phase 10.....	0	0	--	--
Register of Deeds Tax Lien Project.....	9,800	--	--	--
Register of Deeds Equipment Purchase (InGeo).....	20,000	--	--	--
Projects for Expenditure of \$1 Document Filing Fee.....	240,000 <sup>a</sup>	100,000	88,900	--
Maintenance of MCAMLIS Format Cadastral Mapping within the City of Milwaukee.....	0 <sup>b</sup>	0 <sup>b</sup>	0 <sup>b</sup>	0 <sup>b</sup>
MCAMLIS Cadastral Map and Street Address Database Maintenance.....	60,000	60,000	60,000	60,000
Milwaukee County Surveyor.....	60,000	60,000	60,000	60,000
MCAMLIS Project Management.....	100,000	100,000	100,000	100,000
MCAMLIS Floodland Mapping Project-Phase 2.....	0	145,300	145,300	145,400
Retiling MCAMLIS Cadastral Maps.....	84,500	--	--	--
Merging the City of Milwaukee Address Database with the MCAMLIS Street Address Database.....	100,000	42,000	0	--
"Smart Growth" Related Projects.....	0	90,000	90,000	90,000
MCAMLIS Newsletter.....	1,500	3,000	--	--
Replacement Topographic Mapping.....	0	0	80,000	160,000
Estimated Total Expenditures	\$973,145	\$699,610	\$624,200	\$615,400
Estimated Expenditure Authority Available	\$1,000,000	\$750,000	\$650,000	\$650,000
Amount Held in Reserve	\$26,855	\$57,390	\$25,800	\$34,600

<sup>a</sup>This amount has been tentatively set aside for use in upgrading the optical imaging system in the Milwaukee County Register of Deeds Office.

<sup>b</sup>An analysis will be conducted to determine whether or not this task can be accommodated within the "MCAMLIS Cadastral Map and Street Address Database Maintenance" line item at no additional cost to the MCAMLIS program over the amount already set forth for this task. In the event that this does not prove feasible, then additional monies will have to be obtained through use of the anticipated reserve funds and/or reductions in one or more project line items.

**Recommended Work Tasks**

- It is recommended that the Steering Committee enter into an agreement to carry out the MCAMLIS Floodland Mapping Project-Phase 2. In response to SEWRPC staff work commitments, however, it is recommended that the work be funded over three budget years rather than the two budget years originally proposed.
- It is recommended that the Steering Committee request the County Register of Deeds to develop a list of projects that meet conditions for expenditure of the \$1 locally retained document filing fee; to request the Milwaukee County Register of Deeds to submit this list along with estimated fiscal requirements to the Steering Committee for its information, and for needed committee action to budget for the expenditure of these receipts as a part of the overall MCAMLIS program.
- It is recommended that the Steering Committee initiate a project to develop a map organization scheme suitable for recompiling the MCAMLIS digital cadastral maps and to reorganize the

\$ 240,000

should be doing this in the new format, so that the municipalities will use it.

MCAMLIS cadastral map database into a system of maps comprised of "tiles" larger than the current organizational system of one-quarter-section based maps. Because of fiscal constraints, it is further recommended that the reorganization of the MCAMLIS digital topographic maps not be initiated until some determined future date, if at all.

*same as IC?*

*KW?  
are you aware of this.*

- It is recommended that the development of a transactional digital cadastral map update mechanism not be initiated at this time, but rather that the Steering Committee revisit this issue in 2004 when it is judged by project staff that sufficient progress has been made in the development of a continuous digital cadastral base map and following project staff determination as to whether or not a release of ESRI software planned for early 2004 has the potential to address the MCAMLIS transactional map update requirements without the additional costs associated with development of customized procedures and computer software.
- It is recommended that the Steering Committee initiate a project that will result in the merger of the City of Milwaukee address database with the MCAMLIS street address database. The recommended work would not include field checking of addresses in the central area of the City, nor the acquisition of unit addresses for multiunit structures in the suburban municipalities.

*no one is using mcamlis street address*

It is recommended that the Steering Committee approve the expenditure of \$90,000 per year in each of calendar years 2004, 2005, and 2006 for use by Milwaukee County to meet "Smart Growth" planning requirements. It is expected that these amounts will initially be used in support of water supply planning.

*?  
larger  
6/14/03*

- It is recommended that the Steering Committee authorize the publication of a MCAMLIS newsletter with the issuance of the first newsletter to take place in the fall of 2003. It is further recommended that the Steering Committee evaluate the effectiveness of the publication of this newsletter following the publication of the third issue in the fall of 2004.
- It is recommended that the Steering Committee initiate a topographic map replacement program beginning in 2005 with funds allocated on a yearly basis to carry out individual projects, identified on a yearly basis, based in part on available funding. It is also recommended that priority be given to the replacement of older topographic mapping.

### SUMMARY

The analysis set forth in this memorandum demonstrates that the Steering Committee will have to direct the MCAMLIS Program within a framework of declining revenue. In view of this situation, the project staff recommends that annual work programs for 2003, 2004, 2005, and 2006 be directed to funding work that contributes directly to core functions of the MCAMLIS Program; that is, the development and maintenance of a system of uniform, countywide, large-scale digital maps and the development and maintenance of a street address database while recognizing that the needs of Milwaukee County and its constituent municipalities, in responding to the State's "Smart Growth" legislation, may benefit from the use of some MCAMLIS funds to develop information that would serve to implement both Land Records Modernization and "Smart Growth". The recommended MCAMLIS work program set forth in Table 5 would direct increasingly scarce revenues to addressing these functions.

\* \* \* \* \*

Exhibit A

Office of Land Information Services  
Wisconsin Department of Administration

GUIDELINES FOR THE USE OF THE  
ADDITIONAL DOLLAR RETAINED BY THE COUNTY

The 2001-2003 Wisconsin State Biennial Budget, 2001 Wisconsin Act 16, enacted legislation relating to the recording fees retained by the county. Specifically, s. 59.72 (5) (b) 3., Wis Stats., now provides as a condition for retaining those fees, that:

*“The county uses \$4 of each \$5 fee retained under this paragraph to develop, implement, and maintain the county wide plan for land records modernization, and \$1 of each \$5 fee retained under this paragraph to develop and maintain a computerized indexing of the county’s land information records relating to housing, including the housing element of the county’s land use plan under s. 66.1001(2)(b), in a manner that would allow for greater public access via the Internet.”*

Section 66.1001 (2) (b), Wis. Stats., describes the housing element as:

*“A compilation of objectives, policies, goals, maps and programs of the local governmental unit to provide an adequate housing supply that meets existing and forecasted housing demand in the local governmental unit. The element shall assess the age, structural, value and occupancy characteristics of the local governmental unit's housing stock. The element shall also identify specific policies and programs that promote the development of housing for residents of the local governmental unit and provide a range of housing choices that meet the needs of persons of all income levels and of all age groups and persons with special needs, policies and programs that promote the availability of land for the development or redevelopment of low-income and moderate-income housing, and policies and programs to maintain or rehabilitate the local governmental unit's existing housing stock.”*

This document is intended to provide guidelines for the use of \$1 of the \$5 retained under s. 59.72 (5) (b) 3, Wis. Stats. These funds are available for land records modernization activities with respect to developing and maintaining computerized housing information, including data related to the housing element of a comprehensive plan, and making that data accessible to the public via the Internet.

The Land Information Board-empanelled Ad Hoc Committee on Strategic Initiatives has identified the following as areas of eligible expenditures.

1. Property Tax Assessment Information assessable via the Internet.  
The Board is working on a tax assessment file that will offer seamless statewide queries over the Internet. This file will be populated with existing tax assessment data from the counties and will be a focus of the strategic initiative.

2. Current Housing Supply and Forecasted Demand of Residential, Commercial, Industrial and Other Lands
  - Number and Type of Housing Units (single family, duplex, multi-family, mobile home, etc.)
  - Owner Occupancy, Rented, Vacant
  - Condition of Housing Stock
  - Census Data (trends in population, economic conditions, household characteristics, income and economic factors)
  - Developable Land
3. Affordable and Special Needs Housing Information
  - Market Rents
  - Subsidized Housing
4. Housing Sales Information

Eligible Expenditures of this \$1 retained fees to achieve the above would include:

1. Computer Hardware
2. Computer Web-Enabling Software
3. In-House Staff Time Including Database Design
4. Vendor Contracting
5. Metadata Development – *Please note, the development of metadata is a requirement for all data collected and maintained with Land Information Program-revenues, whether they are retained fees or grant funds.*

AGREEMENT

**THIS AGREEMENT**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2004, by and between the Milwaukee County Department of Administrative Services (hereinafter referred to as the "County"); and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter referred to as the "Steering Committee").

**WITNESSETH:**

**WHEREAS**, by Resolution No. 88-379, the Milwaukee County Board of Supervisors requested the Southeastern Wisconsin Regional Planning Commission (SEWRPC) to conduct a feasibility study pertaining to an automated mapping and land information system; and

**WHEREAS**, the requested feasibility study was completed and documented in SEWRPC Community Assistance Planning Report No. 177, Feasibility Study for a Milwaukee County Automated Mapping and Land Information System, published in October 1989; and

**WHEREAS**, by Resolution No. 90-707 (a) (a) adopted on November 8, 1990, the Milwaukee County Board of Supervisors, working in cooperation with the utilities concerned, created a public-private partnership to implement the proposed Milwaukee County Automated Mapping and Land Information System, including creation of a Steering Committee to provide oversight in the implementation of the system recommended in SEWRPC Community Assistance Planning Report No. 127; and

**WHEREAS**, the aforereferenced Milwaukee County resolution adopted on November 8, 1990, further authorized the execution of a Cooperative Agreement between Milwaukee County and the public and private utilities serving Milwaukee County, whereby the County and such utilities agreed to jointly fund the development of the Milwaukee County Automated Mapping and Land Information System, such Agreement delegating to the aforereferenced Steering Committee full responsibility for all policy matters relating to the conduct of the work program, including proposed contracts and specifications and the selection of contractors; and

**WHEREAS**, the Steering Committee on \_\_\_\_\_, 2004, formally authorized the County to charge-administrative costs associated with the implementation of the recommended automated mapping and land information system;

**NOW, THEREFORE**, in consideration of the mutual promises each agency has made to the other and in the fulfillment of the terms and conditions, agreements, and understandings hereinafter set forth,

**I. Scope of Work**

In general, the County agrees to perform the following administrative duties related to the Steering Committee operations. Other tasks to be completed by the County not covered herein will be carried out under separate agreements.

- Contract Review - Each contract (and all contract addenda) the Steering Committee enters into must be fully reviewed and approved by the offices of Corporation Counsel, Risk Management, and Office of Community Business Development Partners (formerly Disadvantaged Business Development).
- Contract Encumbering & Payment Processing - Each contract must be encumbered and invoices against those contracts must be processed involving staff within the Department of Administrative Services, including the Director, a Fiscal and Management Analyst and staff within the Accounts Payable unit. In addition, Department of Administrative Services staff is responsible for processing fund transfers and/or journal vouchers, as necessary.
- Contract Monitoring - Staff within the Department of Administrative Services must also ensure that invoices are applied to the appropriate encumbered contract.

-DRAFT-

- Monthly Cash Flow Statements – Department of Administrative Services staff also prepares and presents monthly cash flow statements on the MCAMLIS reserve at Steering Committee meetings.
- Oversight of any of the aforementioned responsibilities may, at times, involve the County's Controller.

II. Timing

All services to be performed under this Agreement shall be carried out over the period beginning January 1, 2005 and ending on December 31, 2005.

III. Compensation to County

The Steering Committee shall pay \$25,000 to the County for those services described above.

IV. Method of Compensation

Compensation is to be provided to the Department of Administrative Services for services performed for the Steering Committee. DAS shall submit a single invoice in the amount of \$25,000 to the Steering Committee for approval. If, during the course of carrying out the work elements identified herein, additional unanticipated work efforts not identified in the scope of work contained herein become necessary for successful project completion in the judgment of the County or in the judgment of the Steering Committee, then it is agreed that the County can request an amendment to the scope of work, with an attendant increase in the maximum amount payable to the County under this Agreement. Such an amendment would require the approval of both the County and the Steering Committee before becoming effective.

V. Support and Materials to be Provided by Others

It is assumed that the members of the Steering Committee, on behalf of their respective public agencies and private utilities, agree to make available without charge to the County all existing digital and hardcopy maps, documents, reports, legal records, and related materials deemed by the County to be needed to carry out its responsibilities under this Agreement. If this assumed level of cooperation does not materialize, then it is agreed that the County may, at its discretion, request payment from the Steering Committee for these costs above and beyond the total amount set forth in Section III of this Agreement.

VI. Ownership of Data

The County agrees not to release such data to others without the prior consent of the Steering Committee. At the end of the Agreement, the County agrees to turn over to a designated MCAMLIS Project Manager all materials and computer hardware and software acquired and/or developed as a part of this Agreement.

VII. Subcontracts

The County and Steering Committee agree that it may be desirable to perform certain of the tasks associated with work projects conducted during the life of this Agreement through subcontracts with qualified firms. In addition, it is envisioned that subcontracts may be required for the acquisition of computer hardware and software and communication devices. The County agrees to bring any such subcontracts to the Steering Committee for its approval prior to execution.

VIII. Indemnity

Except for acts done or taken at the direction of or pursuant to the Steering Committee policy or procedures, the County agrees to the fullest extent permitted by law, to indemnify, defend and hold harmless, the Steering Committee, and its agents, officers and employees, from and against all loss or expense including costs and attorney's fees by reason of statutory benefits under Worker Compensation Laws, and/or liability for damages including suits at law or in equity, caused by any wrongful, intentional, or negligent act or omission of the County, or its (their) agents which, may arise out of or are connected with the activities covered by this agreement.

IX. Insurance

The County, as an agency of the state, is self-funded for liability (both public and property) under Section 893.82 and Section 895.46 (1) of the Statutes. As a result, such protection as is afforded under respective Wisconsin Statutes, is applicable to officers, employees, and agents while acting within the scope of their employment or agency. Since this is statutory indemnification, there is no liability policy as such that can extend protection to any other.

-DRAFT-

X. Authorization

The Steering Committee approved the execution of this Agreement by action taken on \_\_\_\_\_,  
200\_\_.

Revised nov 5 contract.DOC

## **Agenda Item 5B**

### **Subject**

MCAMLIS Program Strategic Assessment for 2003-2006

### **Issues**

#### ***Milwaukee County "Smart Growth" Activities***

1. What would be the value to Milwaukee County of a water supply plan?
2. What would be the data product produced by MCAMLIS? Would it be maintained? If it is not maintained, what is the value to the MCAMLIS program?
3. Is a countywide water system plan a "core" function of the MCAMLIS program? Don't the independent water utilities/municipalities already plan for water system growth? Does this set a precedent that Milwaukee County is to become involved in local municipal planning process?
4. Who would be performing this study?

### **Alternatives**

1. Instead of using MCAMLIS funds for a regional planning study that supports "Smart Growth", why not research ways to provide the municipalities the tools/training they need to enable them to utilize the MCAMLIS data products in their own planning process?
2. Do not expend all revenue every year and build up a MCAMLIS reserve for future projects.

### **Actions**

1. Remove from page 12 the last three paragraphs concerning water supply regional plan.
2. Insert language to the effect:

"The Steering Committee directs project staff to research possible role of MCAMLIS in enabling municipalities to better utilize MCAMLIS data products in support of their "Smart Growth" planning process."

## **Agenda Item 5C**

### **Subject**

Reorganization of MCAMLIS Cadastral Base Maps into a Continuous Digital Base Map

### **Issues:**

1. Reorganization should be from ArcInfo coverage format (current) to geodatabase format. This would be compatible with the county's enterprise system.
2. A countywide seamless coverage would be preferred. Any other level of tiling would cause the County to expend resources to use it in their enterprise system.
3. Recent MCAMLIS survey shows that most municipalities are not using the cadastral products. The new database design should be as flexible as possible to facilitate broader MCAMLIS usage.
4. Maintenance of the cadastral maps would be enhanced by conversion to geodatabase. Maintenance tools should be included with database design.

### **Alternatives**

Convene a Subcommittee, comprised of the county and interested municipalities to research a database design.

### **Actions**

Table discussion until such time as Milwaukee County DPW and Register of Deeds Office have determined the impact that the recompilation of the cadastral data has on the maintenance process and county's enterprise system.

## **Agenda Item 5E**

### **Subject**

Extension of Milwaukee County Street Address database

### **Issues**

1. Does anyone use the database? Does anyone currently use the address database as it is designed?
2. Why can't we incorporate sub addressing? Wouldn't that make the address database more useful for municipalities?
3. Address database should be converted to geodatabase format. Maintenance of the address database would be enhanced by conversion to geodatabase. Maintenance tools should be included with database design.
4. Why is the street centerline file not maintained? An updated street centerline file would benefit the county's E911 system. Currently, the county contracts to have a file created and it is out of date.

### **Alternatives**

Convene a Subcommittee, comprised of the county and interested municipalities to research current usage and to determine if the current format meets the needs of the concerned parties. Develop a database design for the address database and street centerline files.

### **Actions**

Table discussion until such time as Milwaukee County DPW and Register of Deeds Office have determined the impact that the extension of the address database has on the maintenance process and county's enterprise system.

## **Agenda Item 5F**

### **Subject**

Review of the MCAMLIS Digital Map Copyright and Attendant License Agreement Practices

### **Issues**

What about use of MCAMLIS data products in county web applications? Can the county display MCAMLIS data products over the Internet under this agreement?

### **Actions**

Have the MCAMLIS Project Staff get a legal opinion about the display of MCAMLIS copyrighted data over the Internet.

## **Agenda Item 5B**

### **Subject**

MCAMLIS Program Strategic Assessment for 2003-2006

### **Issues**

#### ***Milwaukee County "Smart Growth" Activities***

1. What would be the value to Milwaukee County of a water supply plan?
2. What would be the data product produced by MCAMLIS? Would it be maintained? If it is not maintained, what is the value to the MCAMLIS program?
3. Is a countywide water system plan a "core" function of the MCAMLIS program? Don't the independent water utilities/municipalities already plan for water system growth? Does this set a precedent that Milwaukee County is to become involved in local municipal planning process?
4. Who would be performing this study?

### **Alternatives**

1. Instead of using MCAMLIS funds for a regional planning study that supports "Smart Growth", why not research ways to provide the municipalities the tools/training they need to enable them to utilize the MCAMLIS data products in their own planning process?
2. Do not expend all revenue every year and build up a MCAMLIS reserve for future projects.

### **Actions**

1. Remove from page 12 the last three paragraphs concerning water supply regional plan.
2. Insert language to the effect:

"The Steering Committee directs project staff to research possible role of MCAMLIS in enabling municipalities to better utilize MCAMLIS data products in support of their "Smart Growth" planning process."

## **Agenda Item 5B**

### **Subject**

MCAMLIS Program Strategic Assessment for 2003-2006

### **Issues**

#### ***Milwaukee County "Smart Growth" Activities***

1. What would be the value to Milwaukee County of a water supply plan?
2. What would be the data product produced by MCAMLIS? Would it be maintained? If it is not maintained, what is the value to the MCAMLIS program?
3. Is a countywide water system plan a "core" function of the MCAMLIS program? Don't the independent water utilities/municipalities already plan for water system growth? Does this set a precedent that Milwaukee County is to become involved in local municipal planning process?
4. Who would be performing this study?

### **Alternatives**

1. Instead of using MCAMLIS funds for a regional planning study that supports "Smart Growth", why not research ways to provide the municipalities the tools/training they need to enable them to utilize the MCAMLIS data products in their own planning process?
2. Do not expend all revenue every year and build up a MCAMLIS reserve for future projects.

### **Actions**

1. Remove from page 12 the last three paragraphs concerning water supply regional plan.
2. Insert language to the effect:

"The Steering Committee directs project staff to research possible role of MCAMLIS in enabling municipalities to better utilize MCAMLIS data products in support of their "Smart Growth" planning process."

## **Agenda Item 5C**

### **Subject**

Reorganization of MCAMLIS Cadastral Base Maps into a Continuous Digital Base Map

### **Issues:**

1. Reorganization should be from ArcInfo coverage format (current) to geodatabase format. This would be compatible with the county's enterprise system.
2. A countywide seamless coverage would be preferred. Any other level of tiling would cause the County to expend resources to use it in their enterprise system.
3. Recent MCAMLIS survey shows that most municipalities are not using the cadastral products. The new database design should be as flexible as possible to facilitate broader MCAMLIS usage.
4. Maintenance of the cadastral maps would be enhanced by conversion to geodatabase. Maintenance tools should be included with database design.

### **Alternatives**

Convene a Subcommittee, comprised of the county and interested municipalities to research a database design.

### **Actions**

Table discussion until such time as Milwaukee County DPW and Register of Deeds Office have determined the impact that the recompilation of the cadastral data has on the maintenance process and county's enterprise system.

## **Agenda Item 5E**

### **Subject**

Extension of Milwaukee County Street Address database

### **Issues**

1. Does anyone use the database? Does anyone currently use the address database as it is designed?
2. Why can't we incorporate sub addressing? Wouldn't that make the address database more useful for municipalities?
3. Address database should be converted to geodatabase format. Maintenance of the address database would be enhanced by conversion to geodatabase. Maintenance tools should be included with database design.
4. Why is the street centerline file not maintained? An updated street centerline file would benefit the county's E911 system. Currently, the county contracts to have a file created and it is out of date.

### **Alternatives**

Convene a Subcommittee, comprised of the county and interested municipalities to research current usage and to determine if the current format meets the needs of the concerned parties. Develop a database design for the address database and street centerline files.

### **Actions**

Table discussion until such time as Milwaukee County DPW and Register of Deeds Office have determined the impact that the extension of the address database has on the maintenance process and county's enterprise system.

## **Agenda Item 5F**

### **Subject**

Review of the MCAMLIS Digital Map Copyright and Attendant License Agreement Practices

### **Issues**

What about use of MCAMLIS data products in county web applications? Can the county display MCAMLIS data products over the Internet under this agreement?

### **Actions**

Have the MCAMLIS Project Staff get a legal opinion about the display of MCAMLIS copyrighted data over the Internet.

AS OF THIS MORNING

I HAVE NOT GOTTEN A REPLY

FROM GREG REIMAN ABOUT

WATER PLANNING STUDY FOR

\$90,000 A YEAR, DID YOU

HEAR FROM LEX THAT'S WHAT

HE WANTS?

DC

#82977 v1 - MCAMLIS MEMO-RETILING BASE MAPS  
TDP/wb/mlh  
5/20/03

## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: MCAMLIS Project Staff

DATE: May 14, 2003

SUBJECT: **REORGANIZATION OF THE MCAMLIS DIGITAL CADASTRAL BASE MAPS INTO A CONTINUOUS DIGITAL BASE MAP**

### BACKGROUND

On several occasions the MCAMLIS Steering Committee has debated the merits of changing the organizational format for MCAMLIS digital base maps from the current U.S. Public Land Survey one-quarter section based digital maps to digital "tiles" of greater areal extent, perhaps as large as the entire County. To date, the Steering Committee has not taken action to initiate such a work task. However, the recently completed MCAMLIS Land and Utility Information System Internet Prototype Study recommended that this work be undertaken. At its meeting held on April 8, 2003, the Steering Committee requested that project staff prepare a staff memorandum describing a project to undertake this work task. This Memorandum sets forth the need for the development of such a tiling system, describes in basic form the work tasks that would need to be undertaken to accomplish this goal, estimates the cost for carrying out this work effort, and provides specific recommendations for a course of action.

### THE NEED FOR A CHANGE IN THE ORGANIZATIONAL SCHEME FOR MCAMLIS DIGITAL BASE MAPS

The MCAMLIS digital cadastral base maps have, from the inception of the MCAMLIS project, been organized as U.S. Public Land Survey one-quarter section based maps. Approximately 1,000 of these digital cadastral base maps are needed to cover Milwaukee County in its entirety.

In conducting the MCAMLIS Land and Utility Information System Internet Prototype Study, the consultant retained to carry out the study distributed a questionnaire to the staffs of municipal units of government in Milwaukee County in order to determine the manner in which these units of government made use of the various MCAMLIS products and to solicit staff opinions as to how these products might be made more useful for their work. Of the \_\_\_\_\_ municipalities responding, \_\_\_\_ indicated that they had already reorganized the MCAMLIS digital cadastral maps into municipality-wide, continuous digital map files. An additional \_\_\_\_ municipalities responded that they would like either to complete this operation for themselves or to have the MCAMLIS project develop such a continuous map product.

The City of Milwaukee represents a major exception to this trend, having indicated that the City staff expects to continue to operate in a digital map sheet environment with the map sheets referenced to the U.S. Public Land Survey one-quarter section. Therefore, while the desire is not universal, there does appear to be interest on the part of Milwaukee County municipalities for the development of digital cadastral maps based on an areal unit larger than the U.S. Public Land Survey one-quarter section.

Among the entities whose jurisdictions extend to or beyond the Milwaukee County boundary, the creation of a single continuous digital cadastral base map may be expected to result in a decrease in data storage and file management requirements for these entities. WE Energies already operates in a continuous map environment, and a plan prepared for Milwaukee County envisions the implementation of continuous mapping.<sup>1</sup>

### DESCRIPTION OF WORK EFFORT

To create a digital cadastral base map for an area larger than the U.S. Public Land Survey one-quarter section requires what can be probably best described as assembling adjacent maps until a map of the desired areal extent is obtained. Given the manner in which the MCAMLIS cadastral maps are currently organized, the general requirements of this assembly effort would entail the following three principal tasks:

1. The removal of redundant and duplicate text and line features; principally along the common edges of adjoining maps.
2. The repositioning of text labels, where needed, to make them more legible and recognizable; again principally along the common edges of adjoining maps.
3. The recreation of whole parcel polygons where parcels extend across section and one-quarter section lines.

Additionally, while not a necessary step in the creation of a continuous map, the consultant who completed the MCAMLIS Land and Utility Information System Internet Prototype Study recommended that the following task be carried out in conjunction with the creation of a continuous digital cadastral map.<sup>2</sup>

4. The organization of the bounding lines of civil divisions, land subdivision and condominium plats and certified survey maps as closed polygons.

Completion of the four tasks set forth above would result in the creation of a single continuous digital cadastral base map for Milwaukee County. The map would be completed in ArcInfo format consistent with the format of the current individual MCAMLIS digital cadastral base maps.

Additional tasks which would need to be undertaken as part of this work effort are as follows:

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<sup>1</sup>*Milwaukee County Public Works and Parks GIS Conceptual Design and Implementation Plan, Plan Graphics, Inc., and Abernathy Consulting, June 2001.*

<sup>2</sup>*MCAMLIS Land and Utility Information System Internet Prototype Study, Ruekert & Mielke, Inc., Report No. 3, p. 65.*

5. The definition of the geographic extent of continuous map coverage for individual municipalities. This task would need to be carried out in consultation with the cognizant staff of each affected municipality. This consultation is proposed to consist of personal interviews and communications with the staffs of the municipalities who desire to operate in a continuous map environment.
6. The development of an automated procedure for "cutting out" individual municipal continuous maps. This capability would be necessary to deal with map replacement, update, and maintenance operations.
7. The development of procedures to generate MicroStation DGN and AutoCAD DWG formats from the ArcInfo coverages that would constitute the basic MCAMLIS digital cadastral map. This capability would be needed to accommodate those municipalities and other organizations that operate in these alternate software environments.
8. Creation of an automated procedure to "cut out" individual one-quarter-section based map sheets. This capability will be needed to support those municipalities, individuals, and organizations that may choose to continue to carry out their functions in this type of environment and to deal with digital map requests from architects, landscape architects, engineers, planners, surveyors, land developers, and others involved in site planning work.
9. Evaluate the potential impact of the change in digital cadastral map organizational schemes on the cadastral map maintenance function in the Register of Deeds Office.

The estimated size of a county-wide continuous digital cadastral map in ArcInfo coverage format is approximately two gigabytes. While a file of this size can be accommodated with ArcInfo software, a translation of a file of this size into either MicroStation DGN format or AutoCAD 2000 DWG format would yield file sizes that exceed the capacities of these two software environments. This fact will have the greatest impact on current and potential users wanting to use a continuous county coverage in either of these software environments. Alternative operational procedures, such as sectioning the county into smaller continuous maps, may need to be developed by these users. Such impacts cannot be assessed in advance of the creation of the files. As these two software systems continue to evolve and new versions are released, it is reasonable to expect that these maximum file size limitations will change. While the project staff will attempt to assess these impacts during the course of the project, no specific work steps or costs have been included in the project description for specifically dealing with these impacts.

### ESTIMATED COST

The MCAMLIS Land and Utility Information System Internet Prototype Study provided a cost estimate of \$45,000 for the creation of a single countywide digital cadastral map in ArcInfo coverage format (tasks 1, 2, and 3 in the preceding section) and a cost estimate of \$5,000 for the development of an automated procedure for "cutting out" individual municipal continuous maps (task 6 in the preceding section). Cost estimates for the remaining tasks were not contained within the MCAMLIS Land and Utility Information System Internet Prototype Study, so were developed instead by project staff.

The estimated costs for conducting this project, developed by project staff, are as follows:

1. The removal of redundant and duplicate text and line features; the repositioning of text labels; and the recreation of whole parcel polygons along section and one-quarter section lines ..... \$45,000

2.	The organization of the boundary lines of land subdivisions and condominium plots and certified survey maps and civil divisions as closed polygons.....	\$ 5,500
3.	The definition of continuous map "extents" for individual municipalities.....	\$ 5,000
4.	The development of an automated procedure for "cutting out" individual municipal continuous maps .....	\$ 5,000
5.	The development of automated procedures to generate MicroStation DGN and AutoCAD DWG formats from the ArcInfo coverages comprising the MCAMLIS continuous digital cadastral map.....	\$ 5,000
6.	The development of an automated procedure to "cut out" individual one-quarter section based map sheets .....	\$15,000
7.	Evaluation of the impact of the change to a continuous map organizational scheme on the cadastral map maintenance function in the Register of Deeds Office .....	\$ <u>4,000</u>
	Total	<u>\$84,500</u>

MCAMLIS project staff believe that the project herein described could be completed within approximately 12 months following project initiation. As a practical matter, however, the last of the MCAMLIS format City of Milwaukee transformed cadastral maps are not scheduled for completion until the end of 2004. Accordingly, this project could not be completed until sometime during the first calendar quarter of 2005.

### RECOMMENDATIONS

Based upon the project staff assessment of this issue, the following recommendations are made to the MCAMLIS Steering Committee:

- It is recommended that the Steering Committee authorize the initiation of the project described herein.
- It is recommended that the Steering Committee authorize the expenditure of \$84,500 from MCAMLIS project funds to carry out the project.
- It is recommended that the project staff be directed to secure the execution of an agreement between the Steering Committee and the Southeastern Wisconsin Regional Planning Commission to complete the project.

In the event that the Steering Committee determines to proceed in the recommended manner set forth herein, a proposed Agreement between the MCAMLIS Steering Committee and the Southeastern Wisconsin Regional Planning Commission is attached hereto for Steering Committee consideration.

## AGREEMENT

**THIS AGREEMENT**, entered into this \_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as the "Commission"); and the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee (hereinafter referred to as the "Steering Committee").

### WITNESSETH:

**WHEREAS**, the Commission is authorized by Section 66.0309 of the Wisconsin Statutes to make studies and prepare plans for, and to provide advisory services to local governments, and to act as a coordinating agency for planning activities within its jurisdictional area; and

**WHEREAS**, by Resolution No. 88-379, the Milwaukee County Board of Supervisors requested the Southeastern Wisconsin Regional Planning Commission to conduct a feasibility study pertaining to an automated mapping and land information system; and

**WHEREAS**, the requested feasibility study was completed and is documented in SEWRPC Community Assistance Planning Report No. 177, Feasibility Study for a Milwaukee County Automated Mapping and Land Information System, published in October 1989; and

**WHEREAS**, by resolution adopted on November 8, 1990, the Milwaukee County Board of Supervisors authorized the execution of a Cooperative Agreement between Milwaukee County and the public and private utilities serving Milwaukee County, which Cooperative Agreement created a public-private partnership to implement the proposed Milwaukee County automated mapping and land information system, whereby the County and the utilities involved agreed to jointly fund the development of the Milwaukee County automated mapping and land information system; and

**WHEREAS**, the aforementioned Cooperative Agreement further created a Steering Committee to provide oversight in the implementation of the Milwaukee County automated mapping and land information system and delegated to the Steering Committee full responsibility for all policy matters relating to the conduct of the work program, including proposed contracts and specifications and the selection of contractors; and

**WHEREAS**, the Steering Committee on July 29, 1991, formally requested the Commission to accept the responsibilities of Project Manager of the Milwaukee County automated mapping and land information system; and

**WHEREAS**, the Executive Committee of the Commission on August 21, 1991, authorized Commission assistance in execution of the work required to implement the Milwaukee County automated mapping and land information system in the manner envisioned in the aforereferenced Commission report; and

**WHEREAS**, Sections 66.0309(12)(b) and 66.0301 of the Wisconsin Statutes authorize the Commission to enter into contracts with local units of government and their agents to make and implement studies and plans, and to otherwise provide advice and services.

**NOW, THEREFORE**, in consideration of these premises and of their mutual and dependent promises and agreements, the parties hereto contract and agree as follows:

I. Scope of Services

The Commission will reorganize approximately 1,000 individual MCAMLIS digital cadastral maps into a single, continuous digital cadastral map covering all of Milwaukee County. The map content will be merged and edited along the common edges of adjoining maps to remove redundant and duplicate text and line features; reposition text labels where required to render them legible; establish correct topology for real property parcel polygons where these parcels cross map sheet boundaries; and establish topology for the closed polygons representing municipal boundaries, land subdivision and condominium plats, and certified survey maps. The continuous digital cadastral map will be created as an ESRI ArcInfo format "coverage."

Further, the Commission will define, in consultation with individual Milwaukee County municipalities, continuous map extents for these individual municipalities and develop automated procedures for "cutting out" individual municipal continuous maps.

Further, the Commission will develop procedures for the automated conversion of the countywide ArcInfo format digital cadastral map, or subsets thereof, to MicroStation DGN and AutoCad DWG formats and will develop automated procedures to "cut out" individual one-quarter section based map sheets for plotting of hard copy cadastral maps.

Finally, the Commission will evaluate the impact of the change from an individual map sheet organizational scheme to a continuous map organizational scheme on the cadastral map maintenance function in the Milwaukee County Register of Deeds Office and will report the findings of the evaluation to the Steering Committee.

The Commission will complete these tasks through a combination of its own staff resources and the retention of a qualified firm or firms.

II. Compensation

The Steering Committee shall pay to the Commission the sum of \$84,500 as full payment for the services described in Section I.

III. Method of Compensation

The Commission shall submit invoices to the Steering Committee during the progress of the work for partial payment on account for work completed to date. The Steering Committee shall pay to the Commission the amounts shown on the invoices upon receipt of said invoices.

IV. Timing

The work to be performed under this Agreement shall be completed no later than March 31, 2005.

V. Indemnity

Except for acts done or taken at the direction of or pursuant to the Steering Committee policy or procedures, the Commission agrees to the fullest extent permitted by law, to indemnify, defend, and hold harmless, the Steering Committee, and its agents, officers, and employees from and against all loss or expense including costs and attorney's fees by reason of statutory benefits under Worker Compensation Laws, and/or liability for damages including suits at law or in equity, caused by any wrongful, intentional, or negligent act or omission of the

Commission, or its agents which may arise out of, or are connected with, the activities covered by this Agreement.

VI. Insurance

The Commission, as an agency of the State, is self-funded for liability under Section 893.82 and Section 895.46(1) of the Wisconsin Statutes. As a result, such protection as is afforded under respective Wisconsin Statutes, is applicable to officers, employees, and agents while acting within the scope of their employment or agency. Since this is statutory indemnification, there is no liability policy as such that can extend protection to any other.

VII. Records and Audits

The Commission shall allow Milwaukee County, the Milwaukee County Department of Audit, or any other party the Milwaukee County may name, when and as they demand, to audit, examine and make copies of, excerpts or transcripts from any records or other information directly relating to matters under this Agreement. Any subcontracting by the Commission in performing the duties described under this contract shall subject the subcontractor and/or associates to the same audit terms and conditions as the Commission. The Commission (or any subcontractor) shall maintain and make available to the Milwaukee County aforementioned audit information for no less than three years after the conclusion of each contract term.

VIII. Independent Contractor

Nothing contained in this Agreement shall constitute or be construed to create a partnership or joint venture between Milwaukee County or its successors or assigns; the Steering Committee or its successors or assigns; and the Commission or its successors or assigns. In entering into this Agreement, and in acting in compliance herewith, the Commission is at all times acting and performing as an independent contractor, duly authorized to perform the acts required of it hereunder.

IX. Authorization

The Steering Committee approved the project that is the subject of this Agreement by action taken at a regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the Commission and the Steering Committee have executed this Agreement, as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
MCAMLIS Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

\_\_\_\_\_  
William J. Domina (Date)  
Milwaukee County Corporation Counsel

**REVIEWED AS TO  
INDEMNIFICATION AND INSURANCE**

\_\_\_\_\_  
John R. Rath (Date)  
Milwaukee County Department of Risk Management

**APPROVED AS TO CHAPTER 42  
DBE PROVISIONS**

\_\_\_\_\_  
Freida F. Webb (Date)  
Milwaukee County DBD Director

66  
5c.

**AGREEMENT**

**THIS AGREEMENT**, entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2004, by and between the Milwaukee County Department of Parks and Public Infrastructure (hereinafter referred to as the " County"; and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter referred to as the "Steering Committee").

**WITNESSETH:**

**WHEREAS**, by Resolution No. 88-379, the Milwaukee County Board of Supervisors requested the Southeastern Wisconsin Regional Planning Commission to conduct a feasibility study pertaining to an automated mapping and land information system; and

**WHEREAS**, the requested feasibility study was completed and documented in SEWRPC Community Assistance Planning Report No. 177, Feasibility Study for a Milwaukee County Automated Mapping and Land Information System, published in October 1989; and

**WHEREAS**, by resolution adopted on November 8, 1990, the Milwaukee County Board of Supervisors, working in cooperation with the utilities concerned, created a public-private partnership to implement the proposed Milwaukee County automated mapping and land information system, including creation of a Steering Committee to provide oversight in the implementation of the system recommended in SEWRPC Community Assistance Planning Report No. 127; and

**WHEREAS**, the aforereferenced Milwaukee County resolution adopted on November 8, 1990, further authorized the execution of a Cooperative Agreement between Milwaukee County and the public and private utilities serving Milwaukee County, whereby the County and such utilities agreed to jointly fund the development of the Milwaukee County automated mapping and land information system)., such Agreement delegating to the aforereferenced Steering Committee full responsibility for all policy matters relating to the conduct of the work program, including proposed contracts and specifications and the selection of contractors; and

**WHEREAS**, the Steering Committee on September 14, 2004, formally authorized the County to accept the responsibilities of Project Manager for the implementation of the recommended automated mapping and land information system;

**NOW, THEREFORE**, in consideration of the mutual promises of each agency made to the other, the fulfillment of the terms and conditions, agreements, and understandings hereinafter set forth,

I. Scope of Work

In general, the County agrees to perform all of the tasks specified herein. Other tasks to be completed by the County not covered herein will be carried out under separate agreements.

The County will provide the professional staff services, including the services of a Project Manger, necessary to manage the Milwaukee County automated mapping and land information system projects throughout the duration of this agreement, and beyond subject to amendment of this agreement. This responsibility includes the identification and recommendation of work projects to be carried out under the MCAMLIS program. The preparation and submittal of grant applications to the Wisconsin Land Information Board on behalf of the MCAMLIS Steering Committee, the fiscal management of MCAMLIS projects, and the quality control of end products produced under MCAMLIS contracts and subcontracts. The County will serve as staff to the Steering Committee in the preparation for and the carrying out of its meetings.

The County agrees to perform day-to-day operations services attendant to the Milwaukee County automated mapping and land information system until the end of the period specified in this

contract. This will include housing and maintenance of the MCAMLIS produced end products, update of cadastral and street address databases, handling requests for the distribution of MCAMLIS produced products as approved by the Steering Committee, and researching and implementing hardware and software data transfer protocols and standards. Additionally, the County will supply routine maintenance as required in the housing of MCAMLIS data, and continue to integrate new materials created under MCAMLIS projects as they become available.

In addition to the services described above, the County will be responsible for developing and managing any and all sub-contacts to qualified engineering firms participating in the conduct of MCAMLIS mapping projects. Furthermore, the MCAMLIS Project Manager as an employee of the County will serve as liaison to the MCAMLIS attorney related to the development of the MCAMLIS data sharing policy, and in matters pertaining to the copyright of MCAMLIS derived products.

II. Timing

All services to be performed under this Agreement shall be carried out over the period beginning January 1, 2005, and ending on December 31, 2005.

III. Compensation to County

The Steering Committee shall pay to the County the following amounts for those services described above:

SERVICES PROVIDED	AMOUNT
Project Management and Related Operating Services (DPPI)	\$206,589
MCAMLIS Cadastral and Street Address Database Maintenance (ROD)	\$ 73,695
<b>Total</b>	<b>\$280,284</b>

IV. Method of Compensation

Compensation is to be provided to the Department of Parks and Public Infrastructure (DPPI) and the Register of Deeds (ROD) for services performed through the County MCAMLIS Program Org. 1923. DPPI and ROD will request on a quarterly (March 31, June 30, September 30, December 31) basis reimbursement for said services provided. The Milwaukee County Department of Administration (DAS) will administer all journal vouchers as deemed necessary to Orgs. 5081 and 3430 for those services that they provided during the course of carrying out its responsibilities.

If, during the course of carrying out the work elements identified herein, additional unanticipated work efforts not identified in the scope of work contained herein become necessary for successful project completion in the judgment of the County or in the judgment of the Steering Committee, then it is agreed that the County can request an amendment to the scope of work, with an attendant increase in the maximum amount payable to the County under this Agreement. Such an amendment would require the approval of both the County and the Steering Committee before becoming effective.

V. Support and Materials to be Provided by Others

It is assumed that the members of the Steering Committee, on behalf of their respective public agencies and private utilities, agree to make available without charge to the County all existing digital and hardcopy maps, documents, reports, legal records, and related materials deemed by the County to be needed to carry out its responsibilities under this Agreement. If this assumed level of cooperation does not materialize, then it is agreed that the County may, at its discretion, request payment from the Steering Committee for these costs above and beyond the total amount set forth in Section III of this Agreement.

VI. Ownership of Data

The County agrees not to release such data to others without the prior consent of the Steering Committee. At the end of the Agreement, the County agrees to turn over to a designated MCAMLIS Project Manager all materials and computer hardware and software acquired and/or developed as a part of this Agreement.

VII. Subcontracts

The County and Steering Committee agree that it may be desirable to perform certain of the tasks associated with work projects conducted during the life of this Agreement through subcontracts with qualified firms. In addition, it is envisioned that subcontracts may be required for the acquisition of computer hardware and software and communication devices. The County agrees to bring any such subcontracts to the Steering Committee for its approval prior to execution.

VII. Indemnity

Except for acts done or taken at the direction of or pursuant to the Steering Committee policy or procedures, the County agrees to the fullest extent permitted by law, to indemnify, defend and hold harmless, the Steering Committee, and its agents, officers and employees, from and against all loss or expense including costs and attorney's fees by reason of statutory benefits under Worker Compensation Laws, and/or liability for damages including suits at law or in equity, caused by any wrongful, intentional, or negligent act or omission of the County, or it's (their) agents which, may arise out of or are connected with the activities covered by this agreement.

IX. Insurance

The County, as an agency of the state, is self-funded for liability (both public and property) under Section 893.82 and Section 895.46 (1) of the Statutes. As a result, such protection as is afforded under respective Wisconsin Statutes, is applicable to officers, employees, and agents while acting within the scope of their employment or agency. Since this is statutory indemnification, there is no liability policy as such that can extend protection to any other.

X. Authorization

The Steering Committee approved the execution of this Agreement by action taken on September 14, 2004.

IN WITNESS WHEREOF, This Agreement executed the date and year first above written.

FOR: MILWAUKEE COUNTY

FOR: MILWAUKEE COUNTY  
AUTOMATED MAPPING AND LAND  
INFORMATION SYSTEM STEER  
COMMITTEE

\_\_\_\_\_  
Thomas E. Carlsen, Director      Date  
Department of Parks and Public Infrastructure

\_\_\_\_\_  
Kurt W. Bauer, Chairman      Date

WITNESSED BY:

WITNESSED BY:

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

APPROVED AS TO FORM BY  
CORPORATION COUNSEL

\_\_\_\_\_  
Bill Domina      Date  
Corporation Counsel

REVIEWED AS TO INSURANCE REQUIREMENTS

\_\_\_\_\_  
John R. Rath      Date  
Risk Manager

APPROVED WITH REGARDS TO COUNTY ORDINANCE CHAPTER 42

\_\_\_\_\_  
Freida Webb, Director      Date  
Disadvantaged Business Development

IN WITNESS WHEREOF, This Agreement executed the date and year first above written.

FOR: MILWAUKEE COUNTY

FOR: MILWAUKEE COUNTY  
AUTOMATED MAPPING AND LAND  
INFORMATION SYSTEM STEER  
COMMITTEE

\_\_\_\_\_  
Thomas E. Carlsen, Director      Date  
Department of Parks and Public Infrastructure

\_\_\_\_\_  
Kurt W. Bauer, Chairman      Date

WITNESSED BY:

WITNESSED BY:

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

APPROVED AS TO FORM BY  
CORPORATION COUNSEL

\_\_\_\_\_  
Bill Domina      Date  
Corporation Counsel

REVIEWED AS TO INSURANCE REQUIREMENTS

\_\_\_\_\_  
John R. Rath      Date  
Risk Manager

APPROVED WITH REGARDS TO COUNTY ORDINANCE CHAPTER 42

\_\_\_\_\_  
Freida Webb, Director      Date  
Disadvantaged Business Development

**AGREEMENT**

**THIS AGREEMENT**, entered into this \_\_\_\_ day of \_\_\_\_\_, 2005, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as the "Commission"); and the Milwaukee County Automated Mapping and Land Information System Steering Committee (hereinafter referred to as the "Steering Committee").

**WITNESSETH:**

**WHEREAS**, under Section 59.74 of the Wisconsin Statutes, the Commission serves as the County Surveyor for Milwaukee County; and

**WHEREAS**, under the requirements of this legislation, the Commission is responsible for receiving, indexing, and filing as a public record, a copy of each land survey plat prepared by a land surveyor; and

**WHEREAS**, under the further requirements of this legislation, the Commission is also made responsible for the perpetuation of the corners of the U.S. Public Land Survey which may be subject to destruction, removal, or burial through construction or other activities and for maintaining a record of the surveys for such perpetuation; and

**WHEREAS**, the activities of the Milwaukee County Surveyor are essential to the development and maintenance of the Milwaukee County Automated Mapping and Land Information System (MCAMLIS); and

**WHEREAS**, the Milwaukee County Board of Supervisors has determined that the expenses associated with the Milwaukee County surveyor function should be paid from the annual operating budget of the MCAMLIS project; and

**WHEREAS**, Sections 66.0309 (12)(b) and 66.0301 of the Wisconsin Statutes authorize the Commission to enter into contracts with local units of government and their agents to make and implement studies and plans and to otherwise provide advice and services.

**NOW, THEREFORE**, in consideration of these premises and of their mutual and dependent promises and agreements, the parties hereto contract and agree as follows:

I. Scope of Work

The Commission will provide the professional staff services as necessary to act in the capacity of County Surveyor for Milwaukee County pursuant to the provisions of Section 59.635 of the Wisconsin Statutes. More specifically, under this agreement, the Commission, acting in the capacity of the Milwaukee County Surveyor, will perform the following functions:

- A. Record and maintain a file of all land survey plats prepared by land surveyors for parcels in Milwaukee County. An estimated 2,000 such land surveys are prepared and filed annually. Such surveys are essential to the maintenance effort required to keep the MCAMLIS cadastral maps up-to-date.

identified in paragraph 2 above. These updated lists shall be provided to the Milwaukee County Director of Public Works, the Milwaukee County Register of Deeds, selected city and village engineers within the County, and all land surveyors who have submitted records of surveys to the Commission for indexing and filing.

- IV. Steering Committee to Receive Copies of Records  
The Commission shall furnish to the Steering Committee, as necessary for the pursuit of its responsibilities, copies of the records created and maintained by the Milwaukee County Surveyor.
- V. Compensation  
The Steering Committee through Milwaukee County shall pay to the Commission the sum of \$60,000.00 as full payment for the services described herein.
- VI. Method of Compensation  
The Commission shall submit a single invoice in the amount of \$60,000.00 to Milwaukee County. The County, on behalf of the Steering Committee, shall pay to the Commission the amount shown on the invoice upon receipt of said invoice.
- VII. Timing  
The work to be performed under this Agreement shall be carried out over the period from January 1, 2005, through December 31, 2005.
- VIII. Indemnity  
Except for acts done or taken at the direction of or pursuant to the Steering Committee policy or procedures, the Commission agrees to the fullest extent permitted by law, to indemnify, defend and hold harmless, the Steering Committee, and its agents, officers, and employees from and against all loss or expense including costs and attorney's fees by reason of statutory benefits under Worker Compensation Laws, and/or liability for damages including suits at law or in equity, caused by any wrongful, intentional, or negligent act or omission of the Commission, or its agents which may arise out of or are connected with the activities covered by this agreement.
- IX. Insurance  
The Commission, as an agency of the State, is self-funded for liability under Section 893.82 and Section 895.46(1) of the Statutes. As a result, such protection as is afforded under respective Wisconsin Statutes, is applicable to officers, employees, and agents while acting within the scope of their employment or agency. Since this is statutory indemnification, there is no liability policy as such that can extend protection to any other.
- X. Records and Audits  
The Commission shall allow Milwaukee County, the Milwaukee County Department of Audit, or any other party that Milwaukee County may name, when and as they demand, to audit, examine, and make copies of, excerpts or transcripts from, any records or other information directly relating to matters under this agreement. Any subcontracting by the Commission in performing the duties described under this contract shall subject the subcontractor and/or associates to the same audit terms and conditions as the

Commission. The Commission (or any subcontractor) shall maintain and make available to Milwaukee County the aforementioned audit information for no less than three years after the conclusion of each contract term.

XI. Independent Contractor

Nothing contained in the Agreement shall constitute or be construed to create a partnership or joint venture between Milwaukee County or its successors or assigns; the Steering Committee or its successors or assigns; and the Commission or its successors or assigns. In entering into this Agreement, and in acting in compliance herewith, the Commission is at all times acting and performing as an independent contractor, duly authorized to perform the acts required of it hereunder.

XII. Authorization

The Steering Committee approved the execution of this Agreement by action taken on November 2, 2004.

IN WITNESS WHEREOF, the Commission and the Steering Committee have executed this Agreement, as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

By \_\_\_\_\_  
William J. Domina (Date)  
Milwaukee County Corporation Counsel

**REVIEWED AS TO  
INDEMNIFICATION AND INSURANCE**

By \_\_\_\_\_  
John R. Rath (Date)  
Milwaukee County Department of Risk Management

**APPROVED AS TO CHAPTER 42  
DBE PROVISIONS**

\_\_\_\_\_  
Frieda F. Webb (Date)  
Milwaukee County DBD Acting Director

#83064 v1 - MCAMLIS-TRANSACTIONAL MAP UPGRADE MEMO  
TDP/wb/mlh  
5/19//03

vd

## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: MCAMLIS Project Staff

DATE: May 19, 2003

SUBJECT: **DEVELOPMENT OF A TRANSACTIONAL MAP UPDATE CAPABILITY FOR THE MCAMLIS CADASTRAL MAP LAYER**

### BACKGROUND

The development of a transactional map update capability for the MCAMLIS digital cadastral base maps has been a topic of discussion at MCAMLIS Steering Committee meetings for several years. The recently completed MCAMLIS Land and Utility Information System Internet Prototype Study recommended that MCAMLIS digital cadastral base maps be organized into a continuous map scheme and that a transactional update mechanism be developed to work with the continuous digital cadastral maps. This memorandum sets forth the need for the development of such a mechanism, describes in basic form the work tasks that would need to be undertaken to accomplish this goal, estimates the cost for carrying out this work effort, and provides specific recommendations for a course of action.

### THE NEED FOR A TRANSACTIONAL DIGITAL CADASTRAL MAP UPDATE MECHANISM

The current MCAMLIS database environment is essentially a graphics database which has the ability to be linked to separate attribute databases. One example of the manner by which such a linkage occurs is the parcel identification number, or PIN. As users make use of these linkages in the MCAMLIS maps to link to one or more attribute database models, it becomes more important to maintain a record of changes in the map graphics. When this is not done, a new version of a MCAMLIS cadastral map, for example, requires a complete review of the revised map in order to identify those features of the map where additions, deletions, or modifications (transactions) have occurred. This review is not only time consuming, but subject to random error, which is difficult to catch and prevent.

An alternative map update environment where careful records are kept of transactions simplifies the process of reestablishing the linkage between a revised map and the attribute database or databases. It further reduces the probability of error since each change to the map is clearly identified and linkage of the map feature to an attribute database can be closely maintained. Such map and attribute linkage operations are becoming increasingly common. Among current users of MCAMLIS data products, the City of Franklin has already moved into such an environment. There are other users, such as the Milwaukee County Department of Public Works and the Milwaukee County Parks Department, that plan to make this transition. For this reason, a transactional digital cadastral map update mechanism has been

requested by a number of units of government and organizations that link the MCAMLIS cadastral base maps to attribute databases. WE Energies staff has also registered its support for the development of this capability.

Therefore, the development of a transactional digital cadastral map maintenance mechanism will serve those MCAMLIS data users who have entered, or are expected to enter, processing environments where the MCAMLIS graphic databases need to be more tightly integrated with attribute databases. Importantly, the development of a transactional mechanism in no way interferes with those users who will continue to operate in the more traditional map graphics oriented, or cartographic, environments.

### **WORK EFFORT REQUIRED FOR THE DEVELOPMENT OF A TRANSACTIONAL CADASTRAL MAP UPDATE MECHANISM**

The MCAMLIS Land and Utility Information System Internet Prototype Study evaluated a number of alternative methodologies for creating a transactional map update mechanism.<sup>1</sup> Based upon this evaluation, the study recommended that a particular mechanism be utilized in the development of this capability for the MCAMLIS project.<sup>2</sup> The recommendation put forth in the study is based upon a combination of functionality, relative complexity, and cost. Implementation of the recommended alternative would require some modest redesign of the existing MCAMLIS cadastral map database model and the development of customized procedures and computer software to perform the desired operations.

The consultant who carried out the MCAMLIS Land and Utility Information System Internet Prototype Study recommended that the development of a transactional cadastral map update mechanism not be initiated until substantial progress had been achieved in the completion of a continuous digital cadastral base map. While the reorganization of the present MCAMLIS digital cadastral maps into a continuous cadastral map could start during 2003, it is unlikely that substantial progress could be achieved to initiate the development of a digital transactional cadastral map update mechanism before the end of 2003. As a practical matter, then, this activity most likely could not be initiated until sometime during 2004.

### **ESTIMATED COST**

The MCAMLIS Land and Utility Information System Internet Prototype Study contains a cost estimate of \$33,000 for the necessary MCAMLIS map database redesign and for the development of procedures and software programs in order to implement the solution recommended in the study. This cost estimate assumes that the MCAMLIS digital cadastral maps have already been converted to a continuous map environment.

A future release of ESRI ArcInfo software<sup>3</sup> expected within the next nine months may possess the ability to deal with the transactional update issue thus avoiding the need to develop customized procedures and software for the MCAMLIS digital cadastral maps. An ESRI white paper<sup>4</sup> concerning this issue refers to

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<sup>1</sup>MCAMLIS Land and Utility Information System Internet Prototype Study, Report No. 3, Ruckert & Mielke, Inc., pp. 56-65.

<sup>2</sup>Op cit., p.65.

<sup>3</sup>The MCAMLIS digital cadastral maps are presently maintained in an ESRI ArcInfo environment.

<sup>4</sup>Modeling and Using History in ArcGIS, ESRI, May 2002.

this capability as "versioning." Early product announcements indicate that the release--release 9.0<sup>5</sup>--will also be "backwards" compatible, which will protect the interest of those MCAMLIS map users who wish to continue to operate in the ESRI "coverage" and "shapefile" environments. The 9.0 release also appears to afford translation capability for users of MicroStation DGN and AutoCAD DWG formats.

## RECOMMENDATIONS

Based upon the project staff assessment of this issue, the following recommendations are made to the MCAMLIS Steering Committee:

- It is recommended that the development of a transactional digital cadastral map update mechanism not be initiated at this time. It is further recommended that the Steering Committee revisit this issue in late 2003 or early 2004 when it is judged by project staff that sufficient progress has been made on the development of a continuous digital cadastral base map.
- It is recommended that project staff continue to investigate planned releases of ESRI software to determine if version 9.0 of this software has the potential to address the transactional map update requirement. Project staff should report to the Steering Committee on an as-needed basis their findings in this investigation.

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<sup>5</sup>Version 8.3 of the ArcInfo is the most current version of ArcInfo presently available and is the version used currently to maintain the MCAMLIS digital cadastral maps.

#83069 v1 - MCAMLIS-STREET ADDRESS DATABASE MEMO  
TDP/wb/mlh  
5/19/03

## MEMORANDUM

TO: MCAMLIS Steering Committee

FROM: MCAMLIS Project Staff

DATE: May 19, 2003

SUBJECT: **EXTENSION OF THE MILWAUKEE COUNTY STREET ADDRESS DATABASE**

### BACKGROUND

Beginning in 1996 and ending in 1999, the MCAMLIS project completed a street address database for the 18 suburban units of government in Milwaukee County. Since that time, the street address database has been the subject of a continuing maintenance program carried out by the Milwaukee County Register of Deeds Office with MCAMLIS funding.

At its meeting held on December 14, 1999, the MCAMLIS Steering Committee authorized an investigation to assess the accuracy and currency of the City of Milwaukee street address database and to identify the steps necessary to render that database compatible with the MCAMLIS street address database. The firm of Spatial Data Solutions, Inc., was retained to carry out the investigation. At its meeting held on October 8, 2002, the MCAMLIS Steering Committee accepted the report prepared by Spatial Data Systems, Inc., that resulted from this investigation.

Also, at its meeting held on October 8, 2002, the MCAMLIS Steering Committee, in reviewing a memorandum entitled "MCAMLIS Program Strategic Assessment for 2003 - 2006," determined that the completion of a county-wide MCAMLIS street address database, including the integration of the City of Milwaukee street address database, should be a relatively high priority MCAMLIS work program activity.

This memorandum sets forth the basic work tasks required to accomplish the integration of the City of Milwaukee street address database with the MCAMLIS street address database; describes the additional effort that would need to be undertaken to render the City database fully compatible with the MCAMLIS street address database; estimates the costs for carrying out this work effort; and provides a specific recommendation for a course of action.

### WORK EFFORT REQUIRED FOR THE COMPLETION OF A MCAMLIS STREET ADDRESS DATABASE

There are two major tasks that would need to be undertaken to integrate the City of Milwaukee street address database with the MCAMLIS street address database. The first of these steps is the simpler of the

two and requires the development of a common database format based upon the similarities and differences between the City of Milwaukee street address database and the MCAMLIS street address database and then populating the revised database format with the information contained in the two separate databases.

The second step is more complicated. The MCAMLIS street address database design is more complex than that of the City of Milwaukee and relates the street addresses to graphic features contained on MCAMLIS base maps. These features are the real property ownership parcels and the structure outlines. In addition, the MCAMLIS street address database includes a street centerline file that is geometrically related to the MCAMLIS base maps. Attributes, such as address range and limited census geography, are obtained from U.S. Bureau of the Census sources and are added to the street centerline file. Upon completion, the MCAMLIS street address database consists of six interrelated files--a graphic file and an attribute file for street centerlines, structures, and parcels all related to one another through structure addresses.

These interrelated files will need to be established for that portion of the MCAMLIS countywide street address database consisting of the City of Milwaukee. The MCAMLIS digital topographic maps and the MCAMLIS format transformed City of Milwaukee cadastral maps would provide the principal sources for completing this second activity.

Under the work effort herein proposed, two additional tasks would not be undertaken. The first of these is the field verification of approximately 70,000 street addresses in a portion of the City of Milwaukee, as recommended in the report prepared by Spatial Data Solutions, Inc. This task would not be carried out since there is a lack of consensus that the step is necessary.

The second task that would not be carried out at this time would be the enhancement of the original MCAMLIS street address database to include addresses inside multi-unit residential and commercial structures. MCAMLIS project staff have yet to identify a suitable source for obtaining this information. Multiple-unit addresses already exist for the City of Milwaukee street address database where these data have been developed incrementally over a decade or more through internal City sources, such as building permits and inspection reports, and constantly refined and improved through use, and would be retained in the merged database.

## **ESTIMATED COST**

The memorandum report prepared by Spatial Data Solutions, Inc., assessing the City of Milwaukee street address database provided a cost estimate of \$149,000 to reformat and merge the City of Milwaukee street address database and the MCAMLIS street address database and to field verify approximately 70,000 parcels located in older sections of the City of Milwaukee. No breakdown of the \$149,000 total cost by component was provided. More importantly, no estimated costs were provided for the linking of parcels and structures to the street centerline file, which is an integral component of the MCAMLIS street address database. Since project staff are not recommending that the field verification of street addresses for approximately 70,000 real property parcels be carried out as part of this effort, and in view of the absence of a cost estimate for the structuring of the street centerline file for the City of Milwaukee, cost estimates for carrying out the scope of work recommended in the preceding section were developed by project staff.

The total cost for the project, as described herein, is estimated to be \$142,000. This cost is comprised of the following components:

• The development of a revised database design based upon the components of the MCAMLIS street address database and the City of Milwaukee street address database and the merging of the two databases into the revised database model .....	\$ 3,000
• The completion of the street centerline component.....	\$ 43,100
• The completion of the structures component.....	\$ 32,150
• The completion of the parcel component.....	\$ 63,700
Total	<u>\$142,000</u>

The project cost estimate of \$142,000 assumes that the City of Milwaukee will supply digital street address information in its data holdings to the MCAMLIS Steering Committee at no cost. City staff in the past have verbally agreed to do this.

While it should be noted that City of Milwaukee transformed MCAMLIS format cadastral maps exist for a significant portion of the City of Milwaukee at this stage, the balance of these transformed maps are currently not expected to be completed until the end of 2004. Accordingly, while it would be possible to initiate this project in 2003, it could not be completed any earlier than the first calendar quarter of 2005 based upon the present schedule for the completion of the MCAMLIS format City of Milwaukee transformed cadastral maps.

### RECOMMENDATIONS

Based upon the project staff assessment of this issue, the following recommendations are made to the MCAMLIS Steering Committee:

- It is recommended that the Steering Committee authorize the initiation of the project described herein.
- It is recommended that the Steering Committee authorize the expenditure of \$142,000 from MCAMLIS project funds to carry out the project.
- It is recommended that the project staff be directed to secure the execution of an agreement between the Steering Committee and the Southeastern Wisconsin Regional Planning Commission to complete the project.

In the event that the Steering Committee determines to proceed in the recommended manner set forth herein, a proposed Agreement between the MCAMLIS Steering Committee and the Southeastern Wisconsin Regional Planning Commission is attached hereto for Steering Committee consideration.

\* \* \* \* \*

## AGREEMENT

**THIS AGREEMENT**, entered into this \_\_\_\_ day of \_\_\_\_\_, 2003, by and between the Southeastern Wisconsin Regional Planning Commission (hereinafter referred to as the "Commission"); and the Milwaukee County Automated Mapping and Land Information System (MCAMLIS) Steering Committee (hereinafter referred to as the "Steering Committee").

### WITNESSETH:

**WHEREAS**, the Commission is authorized by Section 66.0309 of the Wisconsin Statutes to make studies and prepare plans for, and to provide advisory services to local governments, and to act as a coordinating agency for planning activities within its jurisdictional area; and

**WHEREAS**, by Resolution No. 88-379, the Milwaukee County Board of Supervisors requested the Southeastern Wisconsin Regional Planning Commission to conduct a feasibility study pertaining to an automated mapping and land information system; and

**WHEREAS**, the requested feasibility study was completed and is documented in SEWRPC Community Assistance Planning Report No. 177, Feasibility Study for a Milwaukee County Automated Mapping and Land Information System, published in October 1989; and

**WHEREAS**, by resolution adopted on November 8, 1990, the Milwaukee County Board of Supervisors authorized the execution of a Cooperative Agreement between Milwaukee County and the public and private utilities serving Milwaukee County, which Cooperative Agreement created a public-private partnership to implement the proposed Milwaukee County automated mapping and land information system, whereby the County and the utilities involved agreed to jointly fund the development of the Milwaukee County automated mapping and land information system; and

**WHEREAS**, the aforementioned Cooperative Agreement further created a Steering Committee to provide oversight in the implementation of the Milwaukee County automated mapping and land information system and delegated to the Steering Committee full responsibility for all policy matters relating to the conduct of the work program, including proposed contracts and specifications and the selection of contractors; and

**WHEREAS**, the Steering Committee on July 29, 1991, formally requested the Commission to accept the responsibilities of Project Manager of the Milwaukee County automated mapping and land information system; and

**WHEREAS**, the Executive Committee of the Commission on August 21, 1991, authorized Commission assistance in execution of the work required to implement the Milwaukee County automated mapping and land information system in the manner envisioned in the aforereferenced Commission report; and

**WHEREAS**, Sections 66.0309(12)(b) and 66.0301 of the Wisconsin Statutes authorize the Commission to enter into contracts with local units of government and their agents to make and implement studies and plans, and to otherwise provide advice and services.

**NOW, THEREFORE,** in consideration of these premises and of their mutual and dependent promises and agreements, the parties hereto contract and agree as follows:

I. Scope of Services

The MCAMLIS street address database has been completed for 18 of the 19 Milwaukee County municipal units of government. Under the terms of this Agreement, the Commission will complete the MCAMLIS street address database for the last of these municipalities, the City of Milwaukee.

The Commission will acquire the City of Milwaukee's existing digital street address information and will augment that information with additional information from the MCAMLIS digital topographic maps, the MCAMLIS format digital cadastral maps recompiled and reformatted by City of Milwaukee staff from City sources, U.S. Bureau of the Census sources, and other sources as may be necessary to complete the work.

The resultant work will be completed in accordance with the descriptions of the MCAMLIS street address database set forth in the document "Address Data User's Guide, Milwaukee County Automated Mapping and Land Information System," prepared by the MCAMLIS project staff and dated April 17, 2003.

The Commission will complete these tasks through a combination of its own staff resources and, if necessary, through the retention of a qualified consultant.

II. Compensation

The Steering Committee shall pay to the Commission the sum of \$142,000 as full payment for the services described in Section I. This cost assumes that the City of Milwaukee will supply digital street address information in its holdings to the Steering Committee at no cost.

III. Method of Compensation

The Commission shall submit invoices to the Steering Committee during the progress of the work for partial payment on account for work completed to date. The Steering Committee shall pay to the Commission the amounts shown on the invoices upon receipt of said invoices.

IV. Timing

The work to be performed under this Agreement shall be completed no later than March 31, 2005.

V. Indemnity

Except for acts done or taken at the direction of or pursuant to the Steering Committee policy or procedures, the Commission agrees to the fullest extent permitted by law, to indemnify, defend, and hold harmless, the Steering Committee, and its agents, officers, and employees from and against all loss or expense including costs and attorney's fees by reason of statutory benefits under Worker Compensation Laws, and/or liability for damages including suits at law or in equity, caused by any wrongful, intentional, or negligent act or omission of the Commission, or its agents which may arise out of, or are connected with, the activities covered by this Agreement.

VI. Insurance

The Commission, as an agency of the State, is self-funded for liability under Section 893.82 and Section 895.46(1) of the Wisconsin Statutes. As a result, such protection as is afforded

under respective Wisconsin Statutes, is applicable to officers, employees, and agents while acting within the scope of their employment or agency. Since this is statutory indemnification, there is no liability policy as such that can extend protection to any other.

VII. Records and Audits

The Commission shall allow Milwaukee County, the Milwaukee County Department of Audit, or any other party the Milwaukee County may name, when and as they demand, to audit, examine and make copies of, excerpts or transcripts from any records or other information directly relating to matters under this Agreement. Any subcontracting by the Commission in performing the duties described under this contract shall subject the subcontractor and/or associates to the same audit terms and conditions as the Commission. The Commission (or any subcontractor) shall maintain and make available to the Milwaukee County aforementioned audit information for no less than three years after the conclusion of each contract term.

VIII. Independent Contractor

Nothing contained in this Agreement shall constitute or be construed to create a partnership or joint venture between Milwaukee County or its successors or assigns; the Steering Committee or its successors or assigns; and the Commission or its successors or assigns. In entering into this Agreement, and in acting in compliance herewith, the Commission is at all times acting and performing as an independent contractor, duly authorized to perform the acts required of it hereunder.

IX. Authorization

The Steering Committee approved the project that is the subject of this Agreement by action taken at a regular meeting held on June 10, 2003.

IN WITNESS WHEREOF, the Commission and the Steering Committee have executed this Agreement, as of the date first above written.

**ATTESTING WITNESS**

**SOUTHEASTERN WISCONSIN  
REGIONAL PLANNING COMMISSION**

By \_\_\_\_\_  
Philip C. Evenson  
Deputy Secretary

By \_\_\_\_\_  
Thomas H. Buestrin  
Chairman

**ATTESTING WITNESS**

**MILWAUKEE COUNTY AUTOMATED  
MAPPING AND LAND INFORMATION  
SYSTEM STEERING COMMITTEE**

By \_\_\_\_\_  
Thomas D. Patterson  
MCAMLIS Project Manager

By \_\_\_\_\_  
Kurt W. Bauer  
Chairman

**APPROVED AS TO FORM**

\_\_\_\_\_  
William J. Domina (Date)  
Milwaukee County Corporation Counsel

**REVIEWED AS TO  
INDEMNIFICATION AND INSURANCE**

\_\_\_\_\_  
John R. Rath (Date)  
Milwaukee County Department of Risk Management

**APPROVED AS TO CHAPTER 42  
DBE PROVISIONS**

\_\_\_\_\_  
Freida F. Webb (Date)  
Milwaukee County DBD Director

IF

MEMORANDUM

*Can the County display  
the image of data  
over the web.*

TO: MCAMLIS Steering Committee  
FROM: MCAMLIS Project Staff  
DATE: May 20, 2003  
SUBJECT: REVIEW OF THE MCAMLIS DIGITAL MAP COPYRIGHT  
AND ATTENDANT LICENSE AGREEMENT PRACTICES

BACKGROUND

The Milwaukee County Automated Mapping and Land Information System was formed in 1990 to develop and maintain the automated mapping base essential for the creation of a modernized land information system for Milwaukee County. This automated mapping base was intended to serve the needs of Milwaukee County, local units of government within Milwaukee County and the private utilities operating within Milwaukee County. At the outset it was recognized that an infusion of monetary resources from the private sector was necessary to create an automated mapping base for the County in a timely fashion. In response to this need, the Wisconsin Gas Company (now WE Energies), the Wisconsin Electric Power Company (also now WE Energies), and Wisconsin Bell (now SBC) invested significant private capital in the MCAMLIS program.

In order to protect their investments, the private utility members of MCAMLIS were granted the MCAMLIS copyright for the mapping base in its digital form. This was accomplished in December 1993 through the execution of a formal license agreement pertaining to matters of copyright ownership and use of MCAMLIS derived data (a copy of this agreement is attached hereto). With respect to mapping products, the license agreement distinguishes between hardcopy and digital mapped materials. Under the terms of the license agreement, the Steering Committee has taken copyright title to all hardcopy maps prepared by the project. A subcommittee of the Steering Committee comprised of representatives of the Wisconsin Gas Company (now We Energies), the Wisconsin Electric Power Company (also now WE Energies) and Wisconsin Bell (now SBC) holds copyright title to the digital mapping materials derived from the MCAMLIS work program. In order to form an operational construct for administering the 1993 MCAMLIS license agreement, the MCAMLIS Steering Committee, at its meeting held on October 17, 1995, adopted the "MCAMLIS Data Requisition and Distribution Guidelines." As part of these guidelines, acquisition and use of the MCAMLIS digital mapping materials requires execution by the prospective user of a license agreement. To this date, these guidelines have continued to govern the distribution of MCAMLIS digital mapping materials.

Through May 20, 2003, 94 units of government, nonprofit organizations, educational organizations and facilities, and private firms have executed a MCAMLIS license agreement.

At its meeting held on April 8, 2003, the Steering Committee requested that project staff review the current copyright and attendant license agreement procedures so that the Steering Committee might consider whether or not to continue these procedures.

This memo sets forth the steps that are being taken by project staff in response to that request.

### **COURSE OF ACTION**

In order to determine the position of the Utilities Subcommittee concerning the continuance of the current copyright and attendant license agreement practices, project staff are taking the following steps:

- Contact individual Utilities Subcommittee members and brief them concerning the current Steering Committee interest in this issue and, if necessary, brief them on the history of this issue.
- Organize a meeting of the Utilities Subcommittee and selected other individuals, such as the Milwaukee County Register of Deeds and the MCAMLIS Project Manager, to discuss the current Steering Committee interest in the issue and to establish a consensus among the Utilities Subcommittee members concerning the MCAMLIS copyright and attendant license agreement practices.
- Prepare a report for distribution to the Steering Committee that accurately reflects the Utilities Subcommittee position on this matter.

It is expected that the report can be provided to the Steering Committee for consideration at the next scheduled Committee meeting.

### **ESTIMATED COST**

It is anticipated that these tasks can be accomplished in 40 person hours or less. Therefore, the cost of carrying out this effort will be absorbed as part of the MCAMLIS project management agreement.

\* \* \* \* \*

**MCAMLIS  
LAND AND UTILITY INFORMATION  
SYSTEM INTERNET PROTOTYPE  
Report No. 3**

**Prepared by: Ruekert & Mielke, Inc.  
For: Milwaukee County Automated  
Mapping and Land Information  
System (MCAMLIS) Steering Committee**

**Approved by the MCAMLIS Steering Committee  
On December 3, 2002**

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## PREAMBLE

This is the third of four reports concerning the status of implementing a web based land and utility information system for the Milwaukee County Automated Mapping and Land Information System (MCAMLIS). The work effort to date represents approximately 86% of the total project outlined in the Prospectus approved by the MCAMLIS Steering Committee.

Based on feedback from other local municipal staff regarding the lack of information pertaining to this report, it was decided that a presentation should be given to the Intergovernmental Cooperation Council (ICC). A presentation was conducted by Mr. Thomas J Tym, Ruckert/Mielke on Monday, July 22, 2002. In addition, survey questionnaires were mailed to representatives of the ICC. Twelve of the remaining sixteen (75%) municipalities responded to the survey questionnaire. The results of the survey are included in Appendix 1. In total, 15 of the 19 (79%) communities in Milwaukee County participated in the survey.

As proposed and outlined in the Prospectus, this report covers the development and installation of the internet prototype web application, conversion of available data provided by the Technical Advisory Committee (TAC) participants, determination of data storage and server requirements, including the evaluation of purchasing new, or using existing, hardware and software to support the web application, establishing data standards, and documentation.

Following the initial review of Report No. 2 by the MCAMLIS Steering Committee on May 7, 2002, and subsequent approval at the June 25, 2002 meeting, Ruckert/Mielke embarked on the development of the prototype web application. On August 19, 2002, the Technical Advisory Committee met to evaluate the prototype web application. Representatives from all participants were in attendance. Recommendations provided herein are based on feedback from the Technical Advisory Committee members in attendance at this meeting.

## BACKGROUND

The Internet Prototype required an inventory of pertinent information for each of the participants in the pilot project area. The information was considered important to provide an understanding of the basic uses of the MCAMLIS products that will be used to determine the requirements of a successful web based system. The Internet Prototype developed as part of this project included all of the information provided by the participants. Since the digital data was provided in numerous file formats, data conversion was required.

## INVENTORY EXISTING SYSTEMS – OTHER LOCAL UNITS OF GOVERNMENT

### Survey Contacts

In order to complete the inventory of existing systems and data usage, the questionnaire originally prepared for, and completed by the Technical Advisory Committee members was distributed to the other local municipalities. The following is a list of the contact information:

	Municipality	Contact
√	Village of Bayside	Mr. Frank Sherman, Village Manager
√	City of Cudahy	Mr. Steve Miner, City Assessor
√	Village of Fox Point	Mr. Michael Lynett, Director of Public Works
√	City of Franklin	Mr. John Bennett, City Engineer/Director of Public Works
√	City of Glendale	Mr. Todd Stuebe, Director of Community Development
√	Village of Greendale	Mr. Joseph Murray, Village Manager
√	City of Greenfield	Mr. Steve Helminiak, City Engineer
√	Village of Hales Corners	Mr. Michael Martin, Directory of Public Works
√	City of Oak Creek	Mr. Paul Milewski, Director of Community Development
	Village of River Hills	Mr. Thomas Tollaksen, Village Manager
√	City of St. Francis	Mr. Jack Schultz, City Engineer
	Village of Shorewood	Mr. James Lynch, Community Development Director
√	City of South Milwaukee	Mr. Jac Zader, Director of Planning and Inspections
√	City of Wauwatosa	Mr. William Kappel, Director of Public Works
	Village of West Milwaukee	Ms. Donna Mazar-Buse, Inspection Services
	Village of Whitefish Bay	Ms. Mary Jo Lange, Director or Public Works/Engineer

Responses included on the following pages:

## MCAMLIS Questionnaire Responses

1. Do you use MCAMLIS Products?	Y	N	CAD Hard Copy	CAD Digital	Topo Hard Copy	Topo Digital
City of Wauwatosa	X		We never had a hard copy of just cadastral info. Still use Milwaukee Co. tax key mapping and hand drawing 1/4 sec. Maps.	We utilized to create a new City map, add items to department's utility and paving construction plans. Use of lot lines to determine sanitary sewer system plan comp. Totals. If GIS becomes reality, updated info very useful for Eng., Assessors, Planning, Bldg. Fire, Police, Clerk.	Hand out to public (100 scale) for many issues	We utilize to help determine storm drainage issues and to comp. Areas for storm sewer system plan drainage areas. If GIS becomes reality, updated info very useful for Eng., Assessors, Planning, Bldg, Fire, Police, Clerk
Village of Hales Corners	X		Planning, pre-design, drainage, land use, general municipal activities	Supply digital data to consultants for municipal projects	Supply digital data to consultants for municipal projects	Supply digital data to consultants for municipal projects
Village of Fox Point	X		Surveyor and resident reference use		Engineering and drainage reference documents	
City of Oak Creek	X			When the MCAMLIS project started, our base map was already complete and very accurate. We were not going to relinquish the ownership of our map to MCAMLIS. Therefore, we had a one-time swap of data - our base map for some cadastral text (Certified Survey Map info, lot numbers, lot dimensions).	We have printouts of the topo information over the top of our parcels & right-of-ways.	We use the topographic information frequently in many of our compiled maps. The only problem with them is that when they were converted to AutoCAD format, they lost the Z values.
City of Glendale	X			We utilize cad maps for ref. purposes, in order to respond to parcel info requests, plan'g and zon'g analyses, exhibits	We have hard copy topo maps obtained from SEWRPC	We have limited topo data that is out of date
Village of Bayside	X		Used for mapping. Prepared for us by our consultant. Sewer plans, etc. New 911 will use this.	Our consultant uses. No use in-house.		Our consultant uses. No in-house use.
City of St. Francis	X		For all of our City maps, Police Dept 911 system, building & zoning, property development.	For all of our City maps, Police Dept 911 system, building & zoning, property development.	Engineering, design, property development.	Engineering design, property development
City of Franklin	X		Engineering, Planning, Building Inspection, Assessor, Fire Department	Engineering, Planning, Building Inspection, Assessor, Fire Department, Police Department, Economic Development, Treasurer		
City of South Milwaukee	X			2000 Cadastral - Planning, Zoning, Engineering		Engineering, Planning
City of Greenfield	X		Public and internal distribution as needed for various uses	Use as basis for the majority of our digital mapping needs including CAD, GIS and general engineering projects		
Village of Greendale	X		Rarely referenced	The Village almost exclusively uses digital MCAMLIS data. The data is frequently used for engineering related tasks. The Village Clerk and Building Inspector also reference the cadastral data on a regular basis	Rarely referenced.	The Village almost exclusively uses digital MCAMLIS data. The data is frequently used for engineering related tasks. The Village Clerk and Building Inspector also reference the cadastral data on a regular basis
City of Cudahy	X			Need to update for base mapping, construction projects, planning purposes and zoning		Used for storm water utility.

SECTION A: MCAMLIS – Cadastral Files

1. Do you update the digital cadastral files:	Y	N	In What Dept?	By How Many Employees	Individual Responsible for Updates	How Often
City of Wauwatosa	X		Yes, but only if it would affect right-of-way for our City map and would do more if existing files were current			
Village of Hales Corners		X				
Village of Fox Point		X				
City of Oak Creek	X		Yes, but not for MCAMLIS - Engineering	1	Leslie Flynn	As soon as info comes in
City of Glendale		X				
Village of Bayside		X				
City of St. Francis	X		Engineering, Building & Zoning	1	Peter Bayerl	Yearly, or as-needed
City of Franklin	X		Engineering updates, graphics, Engineering & Assessor updates attribute data	1, graphic updates 2 attribute updates	Ron Ascuncion,	Ongoing
City of South Milwaukee	X		Planning	1	1	As needed
City of Greenfield	X		Engineering	2	Craig Skala & Jeff Tamblyn	As they occur
Village of Greendale		X				
City of Cudahy		X				

2. Would you like to see MCAMLIS Update the CAD files more often?	If yes, how often?							If yes, please explain which cadastral features need to be provided	Delivered in what software?
	Y	N	Daily	Weekly	Bi-monthly	Monthly	Qtrly		
City of Wauwatosa		X					X		AutoCAD Dwg or .dxf and all ArcView
Village of Hales Corners		X							N/A
Village of Fox Point	X								
City of Oak Creek									
City of Glendale	X							X	Any changes to parcels
Village of Bayside	X						X		
City of St. Francis	X							X	AutoCAD
City of Franklin	X					X			Updates are currently being performed by the City if data graphics edits could be performed on a timely basis receiving updates would be of interest to the City.
City of South Milwaukee	X					X			No response
City of Greenfield		X							There should be one standard format. Procedures can be made to convert data as needed. We prefer *.dgn at this time.
Village of Greendale	?X						X		All features, especially property lines.
City of Cudahy	X								We do not know the current schedule for updates

3. Do you use custom tools?	Y	N	If yes, who developed tools?	In what language was tool developed?
City of Wauwatosa	X			
Village of Hales Corners	X			
Village of Fox Point		X		
City of Oak Creek		X		
City of Glendale		X		
Village of Bayside		X		
City of St. Francis		X		
City of Franklin	X		PlanGraphics	ArcGIS
City of South Milwaukee		X		
City of Greenfield			No response	
Village of Greendale		X		
City of Cudahy		X		

<b>4. Explain process of obtaining source materials:</b>	
City of Wauwatosa	No response
Village of Hales Corners	Village does not update cadastral maps- no process in place
Village of Fox Point	No response.
City of Oak Creek	When Certified Survey Map's & subdivisions are recorded, we "COGO" them onto our maps immediately.
City of Glendale	Obtaining source materials through MCAMLIS has been inconsistent in terms of what is available and when materials will be available
Village of Bayside	No response
City of St. Francis	Consulting engineering services.
City of Franklin	Hard copy plats, Certified Survey Map's, condo projects, deeds are used as either approved by the City or as copies are received from the County.
City of South Milwaukee	No response
City of Greenfield	Most of the data is obtained internally as land transfers take place through CSM's, Subdivisions, ROW transfers, etc. We also get data from the Milwaukee County Register of Deeds office when land is transferred, however, that data generally takes several months to arrive. Often time we show current land divisions with incomplete tax key number information until we receive that data from the County
Village of Greendale	N/A
City of Cudahy	No response

<b>5. Is it important to track the history of updates?</b>	<b>Y</b>	<b>N</b>
City of Wauwatosa	X	
Village of Hales Corners	X	
Village of Fox Point		X
City of Oak Creek	X	
City of Glendale	X	
Village of Bayside	X	
City of St. Francis	X	
City of Franklin	X	
City of South Milwaukee	X	
City of Greenfield	X	
Village of Greendale	X	
City of Cudahy		X

<b>6. Do you think updates could be handled by an outside agency?</b>	<b>Y</b>	<b>N</b>	<b>If no, explain reasons</b>
City of Wauwatosa	X		If done w/appropriate direction
Village of Hales Corners	X		
Village of Fox Point			NO ANSWER SUBMITTED
City of Oak Creek			Maybe. I would worry about our level of accuracy being maintained.
City of Glendale	X		
Village of Bayside	X		
City of St. Francis		X	Accuracy of work would be lost.
City of Franklin		X	We are using SDE layers that include a significant amount of attribute data that must be integrated with other systems. As a result, we need to use the custom tools developed to ensure data integrity.
City of South Milwaukee		X	Data Integrity
City of Greenfield	X		Yes, provided that it could be done in a timely manner at a reasonable price.
Village of Greendale	X		
City of Cudahy	X		

7. If updates were supplied by an outside agency, could you maintain your organization's information in a separate file?	Y	N
	City of Wauwatosa	X
Village Hales Corners		X
Village of Fox Point		
City of Oak Creek	X	
City of Glendale	X	
Village of Bayside		X
City of St. Francis		X
City of Franklin	X	
City of South Milwaukee	X	
City of Greenfield	X	
Village of Greendale	X	
City of Cudahy	X	

8. Have you successfully integrated or imported digital information from other software into the digital cadastral maps:	Y	N	If yes, what software File format	Were custom tools developed?		If yes, explain
				Y	N	
City of Wauwatosa		X				
Village of Hales Corners		X				
Village of Fox Point		X				
City of Oak Creek		X				
City of Glendale		X				
Village of Bayside		X				
City of St. Francis		X				
City of Franklin	X		Shapefiles, Coverages, AutoCAD drawings, ASCII data, Excel, SQL Server, SDE Layers, Access	X		Initial data conversion and tools developed by R/M. Additional tools to import and maintain data developed by PlanGraphics including tools to expedite creation of topology, importing of graphic and attribute data elements, adjusting graphic to new features, and linking graphics and attributes.
City of South Milwaukee	X		ArcInfo			
City of Greenfield	X		Various CAD formats – namely *.dgn, *.dwg, *.dxf. Because the cadastral maps are not drawn to the same accuracy as surveys, CSM, etc – there always need to be some adjustments made to the data being imported. In most case we reference in the file, copy what is needed and then adjust our files.		X	
Village of Greendale	X		Shapefiles or coverages; GVS data; CAD data		X	
City of Cudahy	X		Done by EarthTech		?	

9. Have you compiled a seamless map of the digital cadastral maps?	Y	N	If Yes, what would be the desired extent of your seamless map?	If no, would you like to have this done by MCAMLIS?
City of Wauwatosa	X		At least 1/4 sec. surrounding including Waukesha County	
Village of Hales Corners		X		Yes, Village Boundary
Village of Fox Point		X		Yes
City of Oak Creek		X		Yes
City of Glendale	X		City of Glendale and periphery areas	
Village of Bayside	X		By our consultant	
City of St. Francis	X		MCAMLIS	
City of Franklin	X		No response	
City of South Milwaukee	X		City Limit	Yes
City of Greenfield	X		Southern Milwaukee County & Southeastern portions of Waukesha County	
Village of Greendale	X		We would like to have MCAMLIS create so updates will be easier	Yes
City of Cudahy	X		City Limits	

**SECTION A: MCAMLIS – Topographic Files**

<b>1. Do you update the digital topographic files:</b>	<b>Y</b>	<b>N</b>	<b>In What Dept?</b>	<b>By How Many Employees</b>	<b>Individual Responsible for Updates</b>	<b>How Often</b>
City of Wauwatosa		X				
Village of Hales Corners		X				
Village of Fox Point		X				
City of Oak Creek		X				
City of Glendale		X				
Village of Bayside		X				
City of St. Francis	X		Engineering	1	Peter Bayerl	Yearly or as needed.
City of Franklin	X		Engineering	2	Ronnie and Marcia	Currently updating backlog, hope to update select features as needed in the future.
City of South Milwaukee	X		Planning	1	l	As needed.
City of Greenfield	X		Engineering	2	Craig Skala & Jeff Tamblin	Varies. If there has been a need to update an area for meetings or discussions, then we will make changes as needed for a particular event. In most other cases we have not made updates to the files. We were told that MCAMLIS had no plans to make updates in the near future. Seeing as our current files dated 1993 are getting out of date, we have started the process of updating features such as structures, pavements, etc. based on data from building permits and various plans. We have not extensively used aerial photos at this time.
Village of Greendale		X				
City of Cudahy		X				

2. Would you like to see MCAMLIS Update the topographic files more often?	Y	N	If yes, how often?							If yes, explain which topographic features need to be provided	Delivered in what software?
			Daily	Weekly	Bi-Monthly	Monthly	Qtrly	Yearly			
City of Wauwatosa		X						X		AutoCAD 2002 .dwg or .dxf	
Village of Hales Corners		X									
Village of Fox Point	X								Contours, buildings and roads		
City of Oak Creek	X							X	Contours & buildings		
City of Glendale	X							X	Contour lines and buildings/site improvements	ESRI	
Village of Bayside	X							X	No response		
City of St. Francis	X							X	No response	AutoCAD	
City of Franklin	X								At a minimum, buildings, topography, pavement edges. Others that may be of interest are?	Topo - DEM and contour coverages. Planimetric coverages and/or SDE layers.	
City of South Milwaukee	X							X		XRCInfo	
City of Greenfield									All features would need to be provided because changing one feature usually affects all others.		
Village of Greendale	X							X	X	All features	ESRI format; coverages, shapefiles, or geodatabase
City of Cudahy	X								X		AutoCAD

3. Do you use custom tools?	Y	N	If yes, who developed tools?	In what language was tool developed?
City of Wauwatosa	X			
Village of Hales Corners		X		
Village of Fox Point		X		
City of Oak Creek		X		
City of Glendale		X		
Village of Bayside		X		
City of St. Francis		X		
City of Franklin	X		PlanGraphics	ArcGIS
City of South Milwaukee		X		
City of Greenfield			No response	
Village of Greendale		X		
City of Cudahy		X		

<b>4. Explain process of obtaining source materials:</b>	
City of Wauwatosa	An additional copy of site plan or survey could be obtained from developer, etc.
Village of Hales Corners	Village does not update – no process in place
Village of Fox Point	No response
City of Oak Creek	No response
City of Glendale	We have been expecting revised topographic maps from MCAMLIS for quite some time.
Village of Bayside	No response
City of St. Francis	Consulting engineering services
City of Franklin	Either use orthophotos, site plans in hard copy, only update buildings at this time.
City of South Milwaukee	No response
City of Greenfield	Aerial photos, surveys, construction plans and various permits on file.
Village of Greendale	N/A
City of Cudahy	No response

<b>5. Is it important to track the history of updates?</b>	<b>Y</b>	<b>N</b>
City of Wauwatosa	X	
Village of Hales Corners		X
Village of Fox Point		
City of Oak Creek		X
City of Glendale	X	
Village of Bayside	X	
City of St. Francis	X	
City of Franklin	X	
City of South Milwaukee	X	
City of Greenfield (no response)		
Village of Greendale	X	
City of Cudahy		X

<b>6. Do you think updates could be handled by an outside agency?</b>	<b>Y</b>	<b>N</b>	<b>If no, explain reasons</b>
City of Wauwatosa	X		If done with appropriate direction
Village of Hales Corners	X		
Village of Fox Point			No answer submitted
City of Oak Creek	X		
City of Glendale	X		
Village of Bayside	X		
City of St. Francis		X	Accuracy of work would be lost
City of Franklin	X		
City of South Milwaukee		X	Data integrity
City of Greenfield			No response
Village of Greendale	X		
City of Cudahy	X		

7. If updates were supplied by an outside agency, could you maintain your organization's information in a separate file?	Y	N
City of Wauwatosa	X	
Village of Hales Corners		X
Village of Fox Point (no answer submitted)		
City of Oak Creek	X	
City of Glendale	X	
Village of Bayside		X
City of St. Francis		X
City of Franklin	X	
City of South Milwaukee	X	
City of Greenfield	X	
Village of Greendale	X	
City of Cudahy	X	

8. Have you successfully integrated or imported digital information from other software into the digital cadastral maps:	Y	N	If yes, what software File format	Were custom tools developed		If yes, explain
				Y	N	
City of Wauwatosa	X		DXF or DWG		X	
Village of Hales Corners		X				
Village of Fox Point		X				
City of Oak Creek		X				
City of Glendale		X				
Village of Bayside	X					
City of St. Francis		X			X	
City of Franklin			Building and building attributes from address files imported into SDE layers in SQL Server database, buildings are updated using CAD drawing or heads up digitizing	X		No explanation
City of South Milwaukee	X		ArcInfo			
City of Greenfield			Various formats – namely *.dgn *.dwg, *.dxf, *.tif			We usually reference in a file and copy as needed.
Village of Greendale	X		CAD data and others noted previously			
City of Cudahy	X				?	Done by Earthtech

9. Have you compiled a seamless map of the topographic maps?	Y	N	If Yes, what would be the desired extent of your seamless map?	If no, would you like to have this done by MCAMLIS?
City of Wauwatosa	X		At least 1/4 sec. beyond and Waukesha County	
Village of Hales Corners		X		Yes, Village boundary
Village of Fox Point		X		Yes
City of Oak Creek	X			Oak Creek Limits
City of Glendale	X		City of Glendale and periphery areas	
Village of Bayside	X			
City of St. Francis	X			No response
City of Franklin	X		Future updates would need to be seamless	
City of South Milwaukee	X		City Limit	Yes
City of Greenfield				Not every feature in one file, but we have taken select features such as light poles and created a seamless map.
Village of Greendale	X		Village Boundaries	
City of Cudahy	X			No

**SECTION B: SOFTWARE**

Do you use GIS software?	Y	N	If Yes, please list operating system, your staff's expertise with each, and if applicable, software what MCAMLIS product is used with each software			
			Software Products	Operating System	Expertise 1 (low) 3 (high)	MCAMLIS Product
City of Wauwatosa	X		AutoCAD 2002	Win 98, 2000, XP	3	Most of cadastral & topo layers
City of Wauwatosa	X		ArcView 3.2	Win 98, 2000, XP	2	Structures, parking & lot lines, layers – key numbers
Village of Hales Corners		X				
Village of Fox Point		X				
City of Oak Creek	X		AutoCAD 2000	Windows 2000	3	
City of Oak Creek	X		ArcView 3.2	Windows 2000	3	
City of Oak Creek	X		Arc Map	Windows 2000	1	
City of Glendale	X		ArcGIS 8.1	MS Windows	2	Cadastral
City of Glendale	X		MicroStation	MS Windows	2	Cadastral
Village of Bayside		X				
City of St. Francis	X		AutoCAD			
City of St. Francis	X					
City of St. Francis	X		ArcView		1	
City of St. Francis	X		AutoCAD, Civil, Survey		2.5	SEWRPC
City of Franklin	X		Arc GIS 8.1	NT	1	Cadastral Address File Topo/Plan Street Centerline Orthophotos
City of Franklin	X		ArcView 8.1	N/T	2	Cadastral Address File Topo/Plan Street Centerline Orthophotos
City of Franklin	X		ArcIMS	NT	2	Cadastral Address File Topo/Plan Street Centerline Orthophotos
City of South Milwaukee	X		AutoCAD	Win 2000	2	Topo & Cadastral
City of South Milwaukee	X		ArcGIS 8.1	Win 2000	3	Topo & Cadastral
City of Greenfield	X		MicroStation SE	NT	3	Topo & Cadastral
City of Greenfield	X		ArcGIS 8.1	NT	1	Topo & Cadastral
Village of Greendale	X		ArcView 3.2	2000	2	Cadastral/Topo
Village of Greendale	X		ArcIMS	NT	2	Cadastral/Topo
City of Cudahy		X	AutoCAD Map	Windows 2000	2	

**SECTION C: INTERNET**

Do you have internet access?	Y	N	If no, do you have plans to obtain access?	If yes, how soon?			If Yes, speed	If Yes, Browser
				Months	Years			
City of Wauwatosa	X						T1 768 download, 384 upload	Microsoft internet explorer 6.0
Village of Hales Corners		X	YES			1-2 yrs.	56K	Internet Explorer
Village of Fox Point	X							
City of Oak Creek	X						DSL	Internet Explorer
City of Glendale	X						128 KB	Internet Explorer
Village of Bayside	X							?
City of St. Francis	X						56 K	
City of Franklin		X	YES	?				No response
City of South Milwaukee	X						T1	IE
City of Greenfield	X						1.5 Mbps/download and 256K/upload	Internet Explorer
Village of Greendale	X						56 K, DSL	Explorer
City of Cudahy	X						TI	Internet Explorer

## SUMMARY OF RESPONSES

Question	Yes	No	No Reply
Do you use MCAMLIS Products?	12		0
<b>CADASTRAL FILES</b>			
Do you update the digital cadastral files:	6	6	
Would you like to see MCAMLIS Update the CAD files more often?	8	3	1
Do you use custom tools?	3	8	1
Is it important to track the history of updates?	10	2	
Do you think updates could be handled by an outside agency?	8	3	1
If updates were supplied by an outside agency, could you maintain your organization's information in a separate file?	8	3	1
Have you successfully integrated or imported digital information from other software into the digital cadastral maps	5	7	
Have you compiled a seamless map of the digital cadastral maps?	9	3	
<b>TOPOGRAPHIC FILES</b>			
Do you update the digital topographic files?	4	8	
Would you like to see MCAMLIS Update the topographic files more often?	9	2	1
Do you use custom tools?	2	9	1
Is it important to track the history of updates?	7	3	2
Do you think updates could be handled by an outside agency	8	2	2
If updates were supplied by an outside agency, could you maintain your organization's information in a separate file?	7	3	2
Have you successfully integrated or imported digital information from other software into the digital cadastral maps?	6	5	1
Have you compiled a seamless map of the topographic maps?	9	2	1

Question	Yes	No	No Reply
<b>SOFTWARE</b>			
Do you use GIS software?	9	3	
<b>GIS SOFTWARE PROGRAMS</b>			
AutoCAD 2002	1		
AutoCAD 2000	1		
AutoCAD	3		
AutoCAD Map	1		
ArcMap1	1		
ArcView 3.2	3		
ArcView	1		
ArcGIS 8.1	5		
MicroStation	1		
MicroStation SE	1		
Civil	1		
Survey	1		
ArcIMS	2		
<b>INTERNET</b>			
Do you have Internet access?	10	2	

## CADASTRAL AND TOPOGRAPHIC INFORMATION

Most of the local participants use MCAMLIS information to some degree. Some are using it as their sole source of land information, which acts as a base map for their GIS. Others, such as the Village of Fox Point, are using the digital cadastral files as a base map for their utility data using AutoCAD software.

The response from the remaining municipalities was consistent with the Technical Advisory Committee. They confirmed that they used the hard copy cadastral and topographic maps for exhibits, presentations and reports. In some instances hard copy maps are provided to individuals and/or organizations having specific needs for land data. The respondents indicated that they are not maintaining or updating the hard copy cadastral or topographic maps.

Similarly, digital information is used for a variety of applications including day to day planning, project work, plotting of utility locations, permitting, recording new construction of utility information, updating of existing land information, engineering design and analysis, and diggers hotline identification. Most of the respondents did not maintain or update the digital cadastral files. Instead, most of them rely on Milwaukee County for these services and look forward to receiving updated information on a regular basis.

### Cadastral Maintenance

Of the municipalities not included on the Technical Advisory Committee, the City of Oak Creek, City of Franklin and the City of Wauwatosa are currently maintaining and updating the digital cadastral map files. The City of Wauwatosa, City of Glendale, and the Village of Fox Point have prepared seamless, or larger tile areas, than the existing one-quarter section MCAMLIS files.

### Currency of Information

#### Cadastral Maps

All of the communities that rely on the MCAMLIS cadastral mapping products would like to see the updates provided more frequently. Since the City of Oak Creek maintains their own files, they do not need updated MCAMLIS cadastral maps. Currently, the City of Oak Creek is not forwarding their updated digital cadastral files to MCAMLIS.

Most municipalities would be interested in tracking historical information concerning changes in the cadastral and topographic information.

#### Topographic Maps

The majority of users would like to see the topographic map files updated more often.

## Seamless Database

Although most of the respondents indicated that they have not yet compiled a seamless digital cadastral map, they all indicated that they would like MCAMLIS to recompile the digital cadastral in larger tiled areas, preferably to at least their municipal boundaries.

## Data Formats

The following list represents the software systems used by the other municipalities:

<b>Software Product</b>	<b>Municipality</b>
AutoCAD 2002	City of Wauwatosa-Engineering, City of Oak Creek
AutoCAD	City of St. Francis, City of South Milwaukee, City of St. Francis
ArcView 3.2	City of Wauwatosa-Engineering City of Oak Creek, St. Francis, Village of Greendale
ArcView 8.1	City of Franklin, City of Greenfield
ArcMap	City of Oak Creek, City of Glendale, City of Franklin, City of South Milwaukee, Village of Greendale
Bentley MicroStation	City of Glendale
AutoCAD, Civil & Survey	City of St. Francis
MicroStation SE	City of Greenfield

## Internet

All municipalities, with the exception of the Village of Hales Corners, have Internet access. The Village indicated that they have plans to obtain Internet service within 1-2 years. The City of Wauwatosa was the only municipality that currently has a high speed T1 connection. All other municipalities had connections speeds between 56K to 768K. This is a major impediment with regards to accessing digital MCAMLIS and utility files over the Internet.

Local Internet Service Providers (ISP), such as Ameritech or [Time Warner Cable](#), have services available at connection speeds starting at 768K, which will be adequate for accessing and downloading the MCAMLIS digital files. These services include Digital Subscriber Lines (DSL) and digital cable that can be purchased for approximately \$50 per month, but may not be available in all areas. T1 lines, which provide significantly faster connection speeds ([1.544 megabit per second](#)) are more costly to install and include higher monthly fees. One-time fees for installation and routing device are approximately \$2,000.

T1 (now being referred to as DS1) has the advantage of being a private, fully dedicated link from the ISP to the customer. DSL services can match the speed of DS1 but only by sacrificing distance. There is currently a 2-mile radius limit for DSL from the ISPs' point of presence. Cable modem services can at times achieve speeds well above DS1 (a maximum of 3 megabits per second) but the available bandwidth is shared with all customers on a particular cable segment which also means the line and transported data is not secured. Average costs for a DS1 service can range between \$700 to \$1,200 dollars per month

depending on the service contract period agreed upon and on the medium used (copper line or fiber optic line). A surcharge from the copper line or fiber optic provider may increase the monthly cost by approximately \$300 (based on a 3 year contract). The surcharge fees are typically eliminated or reduced if the service is contracted with the company providing the physical line connection. Extended contracts typically include lower monthly fees.

### **PROTOTYPE INSTALLATION**

Since Ruckert/Mielke agreed to provide the necessary hardware and software, and host the Internet Prototype, there were no additional purchases required. Ruckert/Mielke also provided the use of various web application development software licenses, including ESRI ArcIMS, Intergraph WebMap, and Autodesk MapGuide. Based on the prevalent use of ESRI software by Milwaukee County and other local municipalities, Ruckert/Mielke chose to develop the Internet Prototype with ESRI ArcIMS 4.0. This will reduce the conversion efforts, learning curve and simplify the installation efforts should Milwaukee County decide to implement a Land Information & Utility web application.

However, the large number of individual digital cadastral map files and associated layer names for similar digital map features dramatically affected the performance of the ArcIMS web application. In fact, simply loading and viewing a single U.S.P.L.S.S. one-quarter section map was so slow that an alternate web application solutions were developed and ultimately recommended. Although the layer names for each digital feature are identically named, ArcIMS retains a separate layer for each of the individual map files. For instance, the right-of-way lines in each digital file are commonly named "ROW". ArcIMS retains a separate ROW layer for each digital cadastral map file. Therefore, since there are approximately 1,000 individual one-quarter section map files, there is a similar number of layers in the web application just for right-of-way lines.

Additionally, there are approximately 50 different layer names in the existing MCAMLIS digital map specification. Assuming each digital cadastral map file includes at least one feature on each layer, the web application would include approximately 50,000 layers of data (1,000 digital maps x 50 layers). This is another reason for merging the individual cadastral map files into larger tiled areas. Once converted, the ArcIMS web application should be able to load and view the entire MCAMLIS data set as demonstrated in other county web applications.

The following tables list the hardware and software products and costs associated with the development and hosting of the Internet Prototype Web Application:

<b>ArcIMS Hardware: Components</b>
Microsoft Windows 2000 Server IIS 5.0
SCSI RAID 5 Hard Drive Configuration
3.0 gigabytes of Available Disk Space
1 gigabyte RAM
Dual Intel Pentium III Processors

<b>ArcIMS Development: Components</b>
ESRI ArcIMS 4.0 (dual processor license)
Microsoft Visual InterDev v 6.0

<b>ArcIMS Supplemental Software: Component</b>
New Atlanta ServletExec 4.0
Sun Microsystems Java™ 2 Runtime Environment, Standard Edition including Java™ Plug-in Version 1.3.1

<b>Web Page Development Software: Component</b>
Adobe PhotoShop 7.0
Microsoft PhotoDraw 2000 (discontinued)
MapEdit 2.64

<b>ArcIMS Database: Component</b>
Microsoft SQL Server (10 Client Access Licenses (CAL's))
Microsoft Access 2002

## WEB HOSTING OPTIONS

### Option 1 – Milwaukee County

The following table lists the hardware and software products and associated costs required to host the Internet Prototype Web Application:

#### **ArcIMS Web Server:**

<b>Components</b>	<b>Cost</b>
Microsoft Windows 2000 Server IIS 5.0	
SCSI RAID 5 Hard Drive Configuration	
3.0 gigabytes of available disk space	
1 gigabyte RAM (min.)	
Dual Intel Pentium III Processors	
<b>Total Cost:</b>	<b>\$6,000 - \$8,000</b>

#### **ArcIMS & Development Software:**

<b>Components</b>	<b>Cost</b>
ESRI ArcIMS 4.0*( <sup>1</sup> )	\$12,500

(<sup>1</sup>)\*(\$7,500 single processor license + \$5,000 for each additional processor). A single processor license is not sufficient to process the volume of data in Milwaukee County.

#### **ArcIMS Supplemental Software:**

<b>Component</b>	<b>Cost</b>
New Atlanta ServletExec 4.0	\$700
Sun Microsystems Java™ 2 Runtime Environment, Standard Edition including Java™ Plug-in Version 1.3.1	No Cost

#### **ArcIMS Database:**

<b>Component</b>	<b>Cost</b>
Microsoft SQL Server (10 Client Access Licenses (CAL's))	\$3,400
Security Database( <sup>2</sup> )	\$4,000-\$5,000
Microsoft Access 2002	\$300
<b>Total Cost:</b>	<b>\$7,700-\$8,700</b>
<b>TOTAL HARDWARE/SOFTWARE EXPENSES</b>	<b>\$21,900 - \$24,900</b>

(<sup>2</sup>)Custom security database developed by Ruekert/Mielke. See page 22 for description of use.

Annual Software Maintenance Costs:

In addition to the initial purchases, there would be annual expenses for software maintenance and technical support. The following is a list of the annual expenses:

Software	Cost
ESRI ArcIMS	\$1,200
Microsoft SQL Server	\$250
New Atlanta ServletExec 4.0	\$50
<b>Total Hardware/Software Expenses</b>	<b>\$1,500</b>

Option 2 – Local Web Hosting Service

In the event Milwaukee County is not interested in hosting the Land and Utility Information System Web Application, MCAMLIS could contract with a local web hosting service. The following is a list of required services and estimated costs for web hosting services:

Required Services	Cost
Data Storage and Web Hosting: (includes hardware, software licenses, yearly software maintenance fees)	*\$600 - \$900 per month
Data Maintenance: (includes appending or replacing available data sets)	\$200 - \$400 per update
Additional Web Page or ArcIMS Development	\$40 - \$85 per hour
<b>Total Monthly Data Storage and Web Hosting Fees</b>	<b>\$800 - \$1,300</b>

\*Based on Ruekert/Mielke's web hosting services. Infinity Technology, Green Bay, WI and Smart Data Strategies (SDS), Franklin, TN provide similar services and comparable web hosting fees.

Since the digital cadastral maps are currently up-to-date and will be updated and maintained on a regular basis to within 60 days of the recorded date, the updated digital cadastral maps could be uploaded to the web application to coincide with the maintenance efforts. However, since the upload process will require some time and effort, it is reasonable to expect that the latest digital cadastral maps could be uploaded on at least a monthly basis, which would accommodate the needs of the local municipalities based on their responses in the questionnaire. Hence, the yearly cost for data maintenance associated with the web application would range between \$2,400-\$4,800.

The following additional services and costs to modify the web pages or enhance the ArcIMS web application:

Additional Services	Cost
Web Page or ArcIMS Development	\$40 - \$85 per hour
Web Application Upgrade (dependent upon the extent of the software enhancement)	\$1,000 - \$2,000 per update
Data Conversion  (Convert existing digital files into larger tiles and to standard specifications)	\$250 - \$400 per update

### Web Services Cost Comparison

<b>Milwaukee County</b>					
<b>Initial Setup</b>			<b>Yearly Maintenance</b>		
Task	Low Cost	High Cost	Task	Low Yearly Costs	High Yearly Costs
GIS web based server software (Dual processor license)	\$12,500	\$12,500	Software Support & Maintenance	\$1,500	\$2,500
Microsoft SQL Server, 10 Client Access Licenses	\$3,500	\$3,500	Software Maintenance	\$250	\$250
Supplemental Software	\$1,000	\$2,000	Software Maintenance	\$50	\$100
Security Database	\$4,000	\$5,000			
Hardware (Dual Processor CPU, Firewall)	\$8,000	\$12,000	Internal IT Support	\$3,000	\$4,000
Installation & Configuration	\$2,000	\$3,000	Programming Support	\$4,000	\$5,000
			Hardware Upgrades (2-3 year replacement)	\$2,000	\$3,000
			Data Maintenance	\$4,000	\$8,000
<b>Total Costs</b>	<b>\$31,000</b>	<b>\$38,000</b>		<b>\$14,800</b>	<b>\$22,850</b>

<b>Ruekert/Mielke Data Storage and Hosting Services</b>					
<b>Initial Setup</b>			<b>Yearly Maintenance</b>		
Task	Low Cost	High Cost	Includes:	Cost Range	
Security Database	\$4,000	\$5,000	Hardware Upgrades	included	
			Software Upgrade	included	
			Support & Maintenance	included	
			IT Support	included	
			Programming Support	included	
			Secured Site	included	
			Subtotal	\$7,200	\$10,800
			Data Maintenance	\$2,400	\$4,800
<b>Total Costs</b>	<b>\$4,000</b>	<b>\$5,000</b>	<b>Total Costs</b>	<b>\$9,600</b>	<b>\$14,800</b>

Web Hosting services can be contracted for, and invoiced on a monthly (minimum 6 months) or yearly basis.

Actual Web Hosting Service Fee will be determined based on the amount of disk storage space required to host the County's data and the extent and complexity of the web application. Extended agreements (over 1 year) would reduce the monthly fee.

Data Maintenance may include features such as parcels, utilities, zoning, voting districts, etc. and will vary based on the amount of data and frequency of updates.

## MCAMLIS Participant Requirements:

The following is a list of software requirements to access the web application:

Hardware/Software Requirements	Cost
Microsoft Windows XP PRO	\$300
Microsoft Internet Explorer v 5.0 or newer	No Cost
Monitor w/1024 x 768 screen resolution (min.)	\$300-\$600

While MicroSoft Explorer is the recommended browser for this application, it should be noted that ArcIMS supports additional browsers including the following:

<b>ArcIMS 4.0.1 Supported Web Browsers (Clients)</b>		
Web Browser	Support Level	Notes
<b>Internet Explorer 5.0</b>	Fully supported	
<b>Internet Explorer 5.5</b>	Fully supported	
<b>Internet Explorer 6.0</b>	Fully supported	
<b>Netscape Communicator 4.75</b>	Fully supported	Java Custom Viewer is not supported in the Netscape browser.
<b>Netscape Communicator 4.76</b>	Untested	
<b>Netscape Communicator 6.0</b>	Fully supported	Java Custom Viewer is not supported in the Netscape browser.
<b>Netscape Communicator 6.1</b>	Unknown	

## Recommendation

The data and web application could be hosted either by a web hosting service provider or by Milwaukee County. Physical location of the site is not critical. The study calls for the hardware and software to be purchased by MCAMLIS and the development work is already complete. Any upgrades or modifications required would be extra cost in addition to the cost of hosting the application. If the data and web application were to be hosted initially by a web hosting service provider and should Milwaukee County decide to take over the maintenance and hosting in the future, the web application can be simply removed from the web hosting service providers' server and installed on a County server. The cost to hire a web hosting service provider to remove and re-install the web application is approximately \$1,500.

## SECURITY

Based on concerns regarding access to various data sets, including water distribution and public utility facilities, a secured web page and login process was designed which requires an authorized user name and password. Since sophisticated hackers have been able to compromise even the most secure computer networks, and the fact that most of the information is readily available through direct contacts with the data suppliers (e.g. MCAMLIS, We Energies, City of Milwaukee, etc.) the security measures and encryption built into the secured web page and login process are fairly simple. A Microsoft SQL Server database table contains the available user names, passwords, and associated rights. Each web page requires authentication which is established during the login process. Each of the participants was provided unrestricted, and unlimited, access to query and view the available digital information.

However, the database design will support the creation of user groups, which may be required to restrict or limit access to similar, or different data sets.

Ruekert/Mielke has taken several steps to protect its Internet services from hardware failure, data loss, power loss, connection loss, intrusion, and infection.

All Ruekert/Mielke web servers are protected from data loss through the use of multiple disk drives creating either a mirrored pair of drives or an array of drives. If any one drive were to fail, the data is still active. Regular backups are also done on a rotation to high capacity tapes, which are stored off site. A UPS (Uninterruptible Power Supply) is used to protect against power loss. The UPS's for the web services computers have added external batteries attached and stand-by, high capacity UPS's for long-term power outages.

Ruekert/Mielke's facility utilizes a Time Warner Telecom's Synchronous Optical Network (SONET) fiber optic ring for its telecommunication needs. The SONET fiber ring provides a complete, underground, self-repairing, fiber optic solution with no copper lines between Ruekert/Mielke and Time Warner Telecom.

Intrusion and infection from the Internet are the most dangerous aspects of doing e-commerce. Ruekert/Mielke's first line of defense is the Cisco PIX firewall. A firewall is a device which blocks all unwanted traffic and examines all data it does allow to pass through. Network Associates Netshield virus-scanning software is also used to protect against the constant threat of virus attack. The software is regularly updated with the latest virus definition files on an hourly basis.

The firm is also evaluating a new product called Entercept. Entercept will monitor all activities on the web services computers and watch for any event it considers disruptive to the normal operations of the computer. Monitoring new viruses and uploading patches is not necessary since Entercept will stop any event that could destroy files or give improper access to different levels of the computer.

### Recommendation

Regardless of the decision pertaining to web hosting options, the Land and Utility Information System Web Application should include a secured web site with login capabilities. A separate security database, using a server based database manager, such as Microsoft Access, SQL Server, Oracle, or Sybase, should be developed with user and group access rights. Since We Energies recently developed a license agreement for their facility data, and the City of Milwaukee Water Works is not certain if, and how much of their data they will release, the security database should be designed to limit access to those organizations that have executed the appropriate license agreement. The security database should allow for selected We Energies and City of Milwaukee personnel to update that portion of the security database that controls the distribution of their data. Users could be easily added, deleted, or modified over the internet. Potential users would be able to instantaneously login and download the requested data following the insertion of their user name and password. This will dramatically reduce the effort of compiling and distributing data via email, compact disks (CD), or digital versatile disks (DVD).

The development costs for the security database is estimated to cost \$4,000 - \$5,000.

## **INTERNET WEB APPLICATION**

### **Prototype Sites**

Based on Technical Advisory Committee feedback and their data requirements, three (3) prototype web-based applications were developed for review and comment. The following is a description for each of the web-based applications:

#### **Option 1 - ArcMap Server (Converted Data)**

Web Application Software: ESRI ArcIMS & ArcMap Server  
Data Storage: ESRI ArcMap.

The latest release of ArcIMS (version 4.0) includes an extension called ArcMap Server. This extension permits the creation of an Internet Map Service that is capable of reading data directly from an ArcMap document. In turn, ArcMap can directly read most all of the file formats in use by the participants, thereby eliminating any need for conversion. This is particularly useful for displaying text features that were previously required to be converted in version 3.1. The only exception being We Energies' gas operations land base that is maintained as SmallWorld GIS files. Since these were provided for the study as ArcInfo Export (Interchange) files, they could be extracted to ArcInfo coverages, which can be read directly by ArcMap as well.

All of the digital files were converted into an ArcMap document and rectified to the MCAMLIS geodetic reference framework. Each data layer was available for display in the web-based application. Users would be able to view and download the available data sets for selected geographic areas. Data from different data providers, such as the City of West Allis, Village of Brown Deer or MMSD, could be overlaid and viewed simultaneously.

The digital quarter-section cadastral and topographic files provided one of the greatest challenges. Because these digital maps are maintained as 1 file per quarter-section for the topographic maps and 10 files for the cadastral map data, the load time was extremely slow (2 minutes). This would produce thousands of map layers over the entire MCAMLIS region. Thus, the preparation of county-wide seamless files, or larger tiled areas, would significantly decrease the loading time.

#### **Option 2 - ArcIMS (Data Extract)**

- Web Application Software: ESRI ArcIMS
- Data Storage: Native File Format

A Milwaukee County base map was prepared containing selected digital cadastral related features, such as street centerlines, street names, hydrography, highways, U.S.P.L.S.S. one-quarter section and section lines. Users can either query by municipality, section number, or one-quarter section number, or navigate to specific areas by utilizing various zoom and pan functions. Since the TAC felt most end users would know the contents of the available data sets, they did not feel the display of this information was necessary. Instead, sample views, or

thumbnails, of the available data, could be viewed prior to downloading. The biggest advantage of this web application was the increased amount of base map information provided to assist the end user with identifying the specific area, and navigational tools.

### Option 3 - Image (HTML Document)

Web Application Software: Custom HTML programming

Data Storage: Native File Format

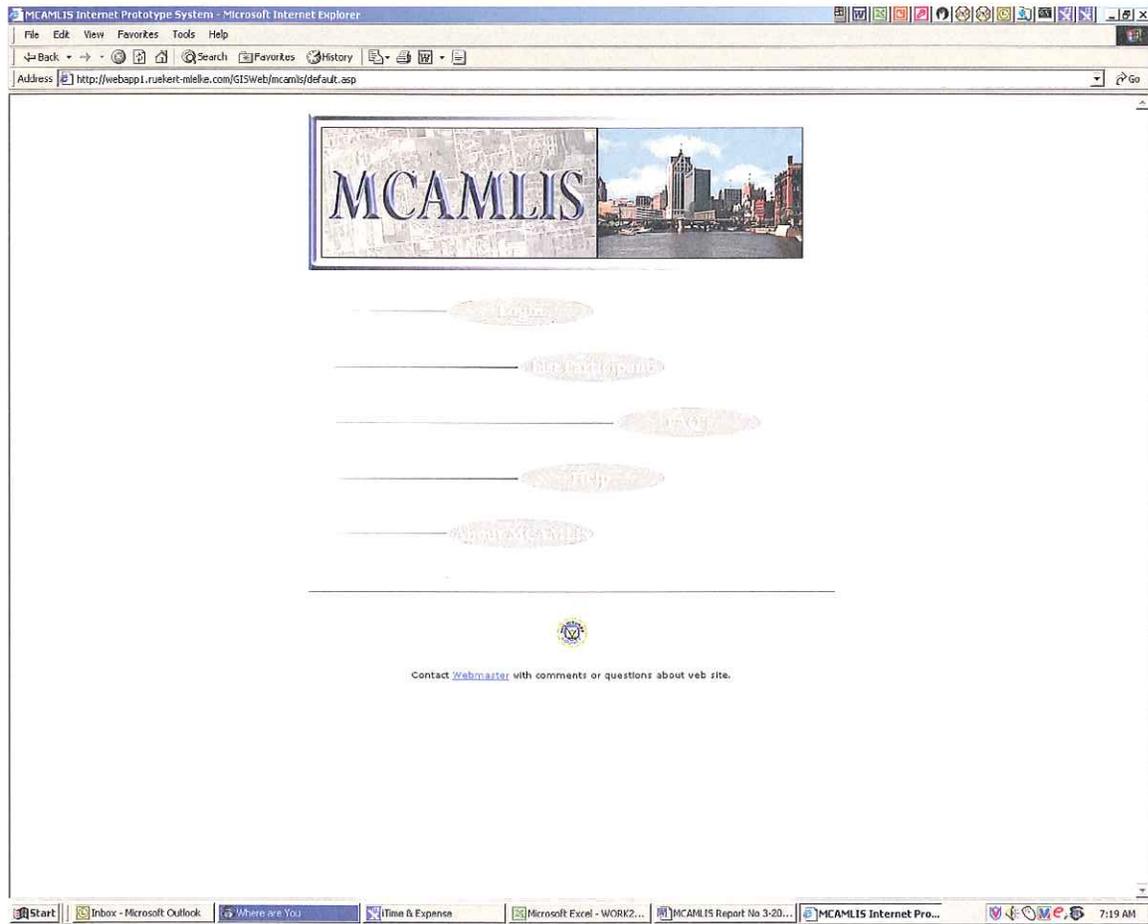
Three (3) separate images (.jpg) of Milwaukee County were created to guide the user through the selection process. One image included the municipal boundaries. A second image included the U.S.P.L.S.S. section lines and numbers. A third image included U.S.P.L.S.S. one-quarter section lines and Milwaukee County Map Sheet numbers. A user would first select the type of geographic search: by municipality, by section, or by one-quarter section. The map display would load the map image corresponding to the selected geographic search method. Next, the user selects available map data by clicking on the desired geographic area within the image map. A list of available digital files is returned to the screen. The user checks the boxes of the digital files they are interested in acquiring. Actual digital map files are not viewable. This web application was built with the premise that most technical users would know the contents of the particular data set they were looking for. If desired, contents of the digital files could be displayed as an image file. Eliminating conversion efforts required for viewing available digital files would save on conversion costs and would eliminate any concern regarding system performance. Since this web application does not include a mapping interface, users would not be able to navigate within the map image. This web interface utilizes standard HTML programming and images of the Milwaukee County base map. MapEdit 2.64 was used to prepare the Milwaukee County map images.

### Recommendation

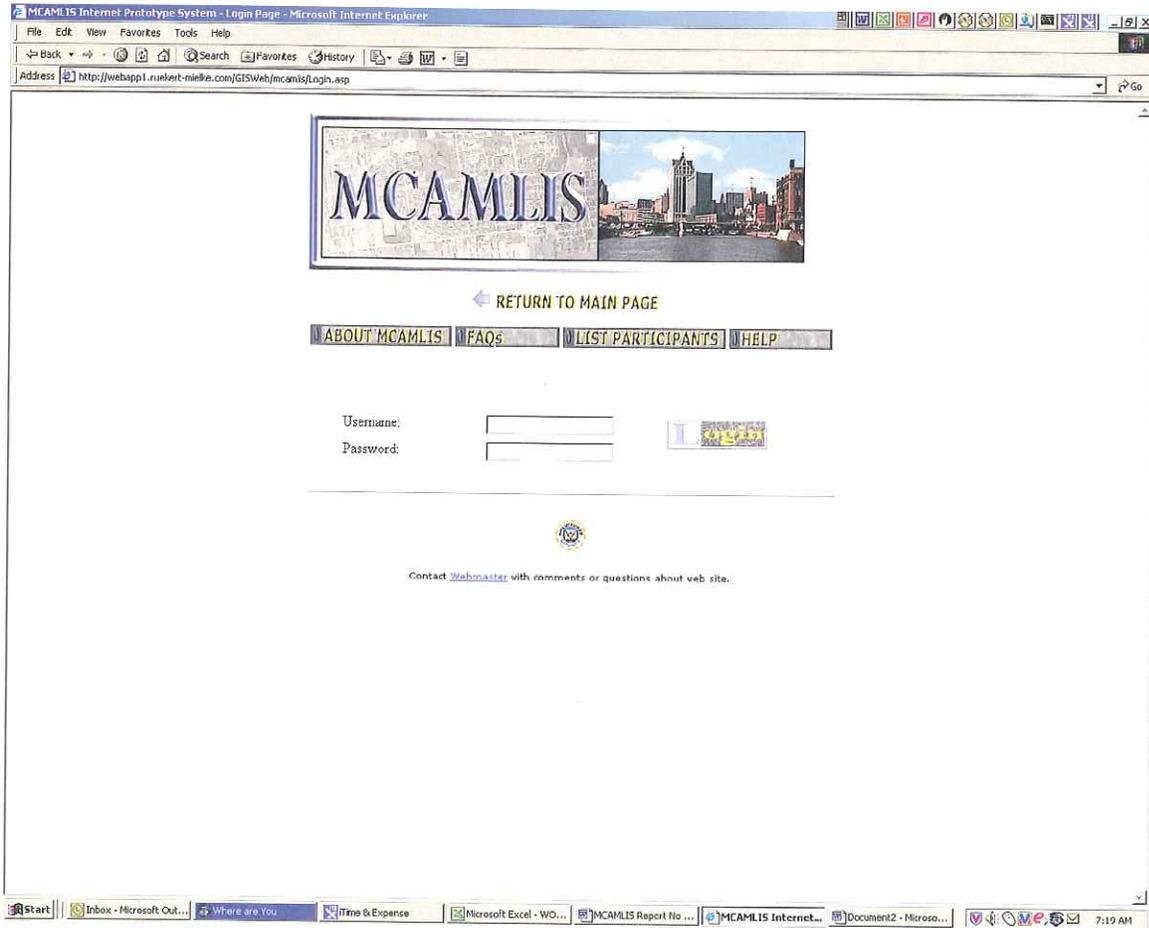
Based on feedback from a majority of the Technical Advisory Committee members, Option 2 - ArcIMS (Data Extract) was the easiest and most practical to implement. In addition to the current search criteria, the web application should include the ability to select multiple sections or one-quarter section map areas by simply clicking on multiple geographic areas or by defining two corners of a selection window. Since ArcIMS supports this type of selection process, the effort to enhance the web application will be nominal.

Screen shots for all of the Internet Prototype Web Applications appear on the following pages:

# SAMPLE PROTOTYPE WEB PAGES



MCAMLIS Main Page



MCAMLIS Login Page

MCAMLIS - List Participants - Microsoft Internet Explorer

Address: http://webapp1.ruekert-mielke.com/GISWeb/mcamlislist.asp

# MCAMLIS

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 [LIST PARTICIPANTS](#) | 
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## PARTICIPANT LISTING

City of Cudahy	City of Oak Creek	Village of Bayside	Village of Rivar Hills
City of Franklin	City of St. Francis	Village of Brown Deer	Village of Shorewood
City of Glendale	City of South Milwaukee	Village of Fox Point	Village of West Milwaukee
City of Greenfield	City of Wauwatosa	Village of Greendale	Village of Whitfish bay
City of Milwaukee	City of West Allis	Village of Halsar Corners	MMSD
Milwaukee County	SBC/Ameritech	SEWRPC	We Energies

Contact [Webmaster](#) with comments or questions about web site.

## MCAMLIS Data Sharing Participants

MCAMLIS - Frequently Asked Questions (FAQs) - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites History

Address http://webapp1.ruckert-mielke.com/GISWeb/mcamlis/faqs.asp

**MCAMLIS**

RETURN TO MAIN PAGE

ABOUT MCAMLIS | **FAQs** | LIST PARTICIPANTS | HELP

FREQUENTLY ASKED QUESTIONS

- > [What type of information can be found on this site?](#)
- > [How can I become a participant?](#)
- > [What are the fees for a participant?](#)
- > [What type of additional information does a participant have access to?](#)
- > [How current is the data?](#)

---

**What type of information can be found on this site?**

Datasets and metadata for particular regions or areas. This information can include cadastral maps, orthophotography, topography, sanitary sewer system maps, water system and storm sewer maps, along with private utilities including Ameritech, Wisconsin Electric and Gas.

---

**How can I become a participant?**

You need to obtain permission from the appropriate agencies in order to have full access to their datasets.

---

**What are the fees for a participant?**

\$0.00 yearly fee.

---

**What type of additional information does a participant have access to?**

At the participant level, you are already an active participant and contributor to MCAMLIS, you therefore have rights to obtain data from other contributors.

---

**How current is the data?**

Milwaukee County Cadastral Features are updated and posted at least once every 60 days.

Start | Inboxes - Microsoft Out... | Where are You | Time & Expense | Microsoft Excel - WO... | MCAMLIS Report No... | MCAMLIS - Freque... | Document2 - Micro... | 7:20 AM

## MCAMLIS Frequently Asked Questions (FAQ)

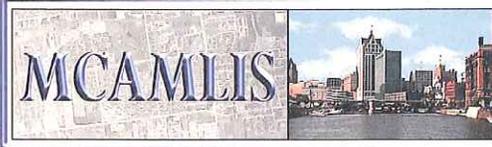
McAmlis - Help Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites History

Address http://webapp1.ruekert-mielke.com/GISWeb/mcamlis/help.asp

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HELP

[Dataset](#) > 
 [Login](#) > 
 [Metadata](#)

---

**Dataset**

A collection of data for a specific area. This collection can include data such as cadastral maps, orthophotography, water system and storm sewer maps, above-ground transmission and buried telephone cable.

---

**Login**

To login to the Milwaukee County Automated Mapping Land Information System, contact:

**Thomas Tyn - Technology Services Department Head**  
 Ruekert - Mielke  
 W233 N2080 Ridgeview Parkway  
 Waukesha, WI 53188  
 (262) 542-5733  
 (262) 542-5631 Fax  
[ttyn@ruekert-mielke.com](mailto:ttyn@ruekert-mielke.com)

---

**Metadata**

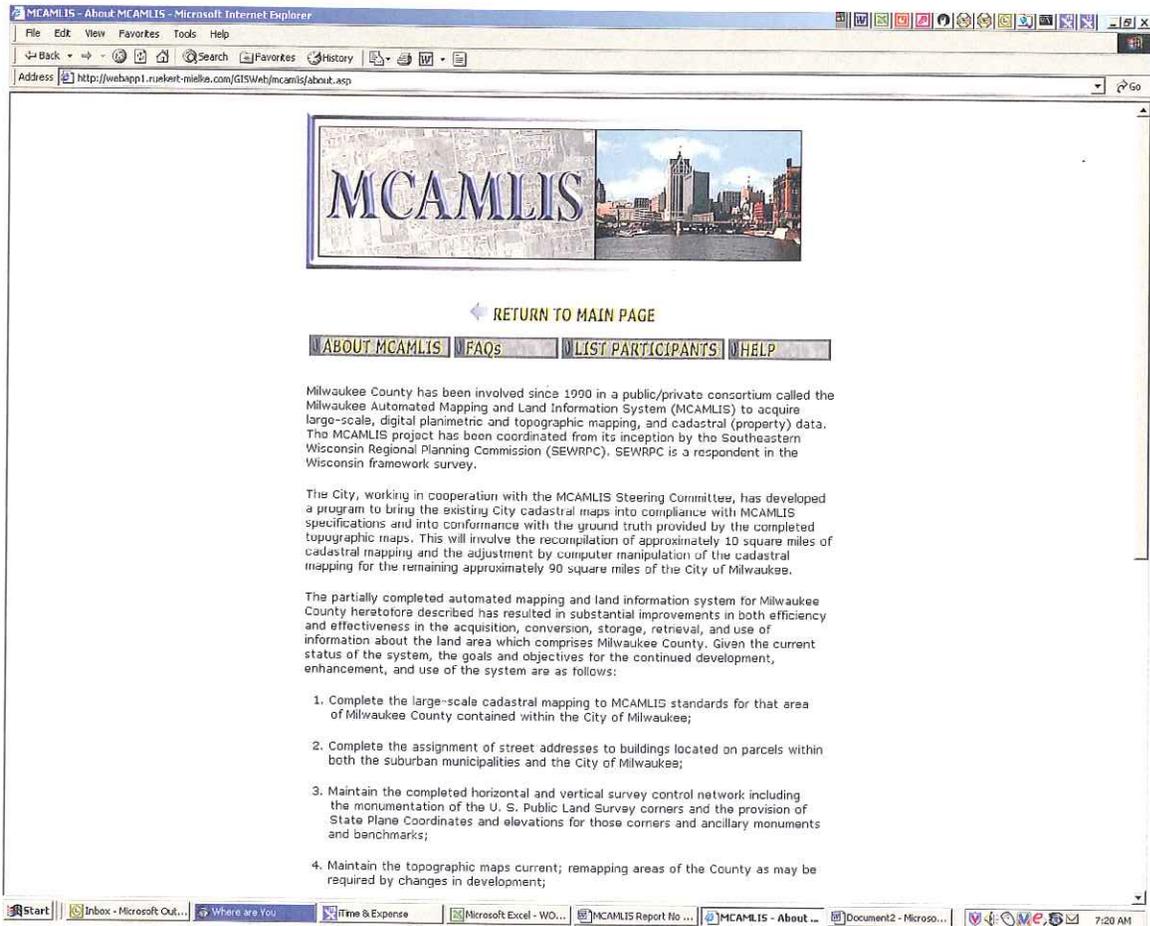
Metadata is information about the data, (e.g. date of mapping, accuracy, source, etc.)

---

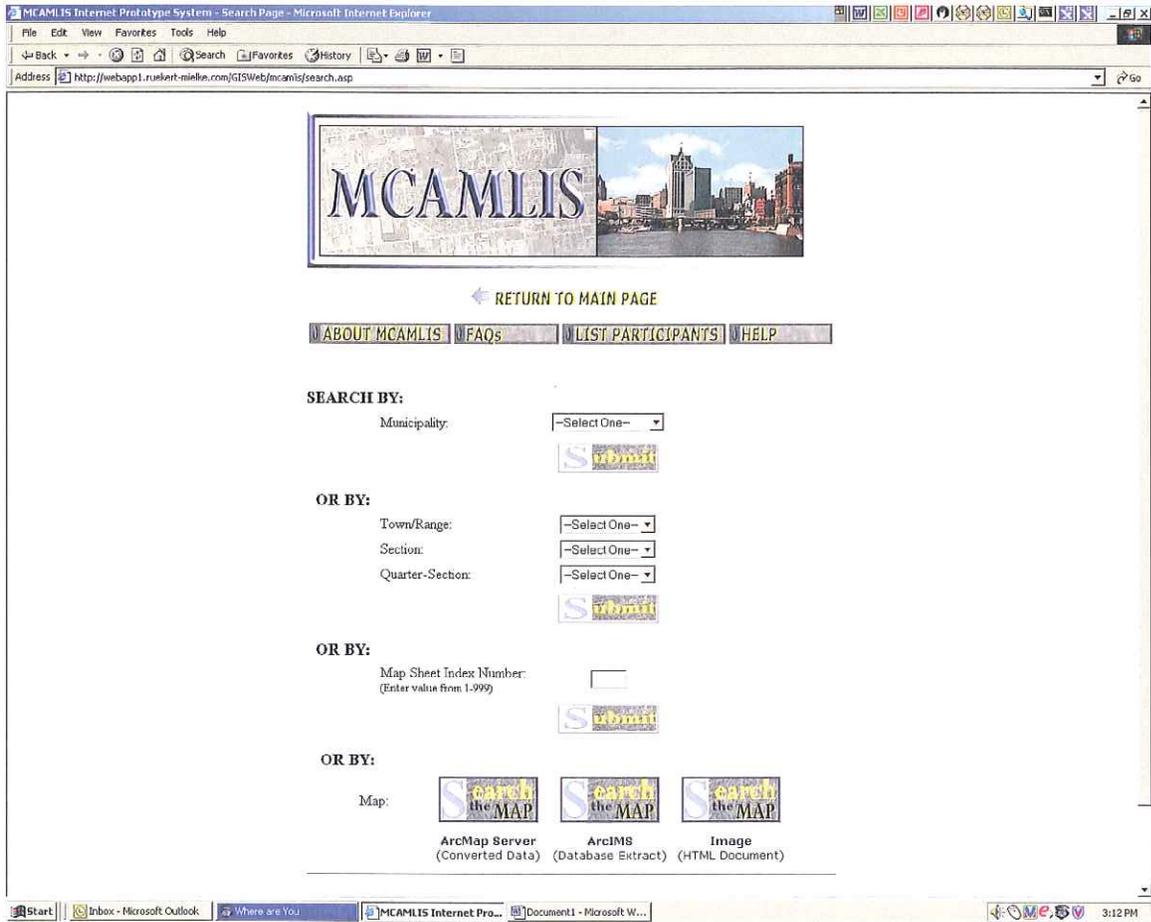
  
 Contact [Webmaster](#) with comments or questions about web site.

Start | Inbox - Microsoft Out... | Where are You | Time & Expense | Microsoft Excel - WO... | McAMLIS Report No ... | McAMLIS - Help Pa... | Document2 - Microso... | 7:20 AM

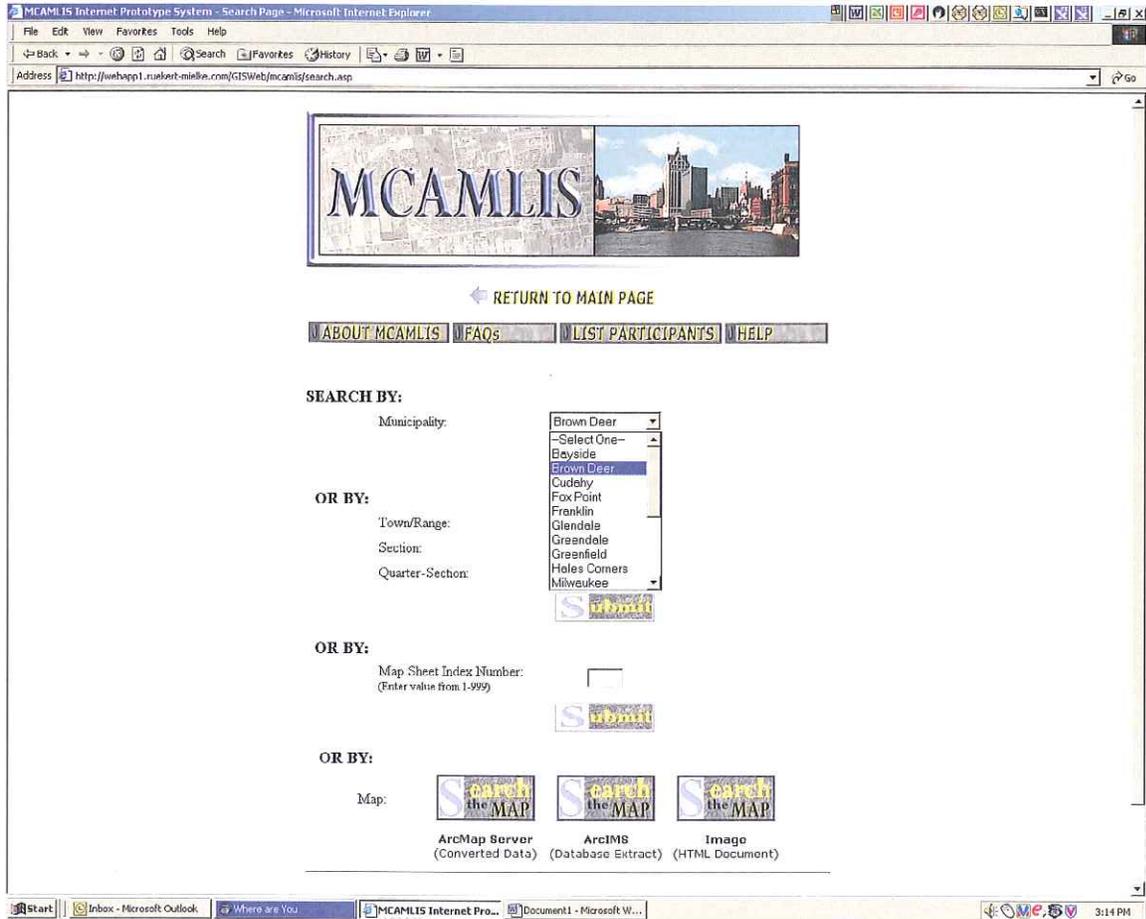
## McAMLIS Help Page



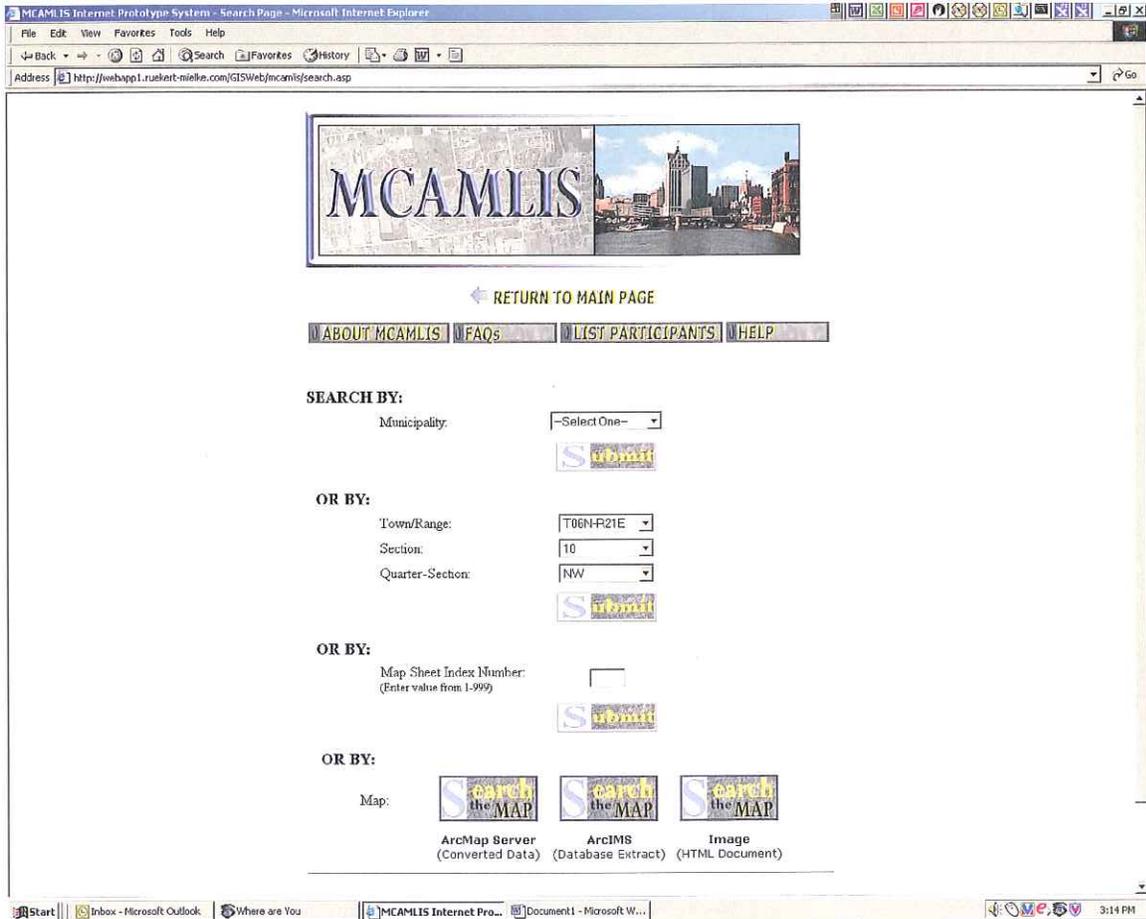
## About MCAMLIS Web Page



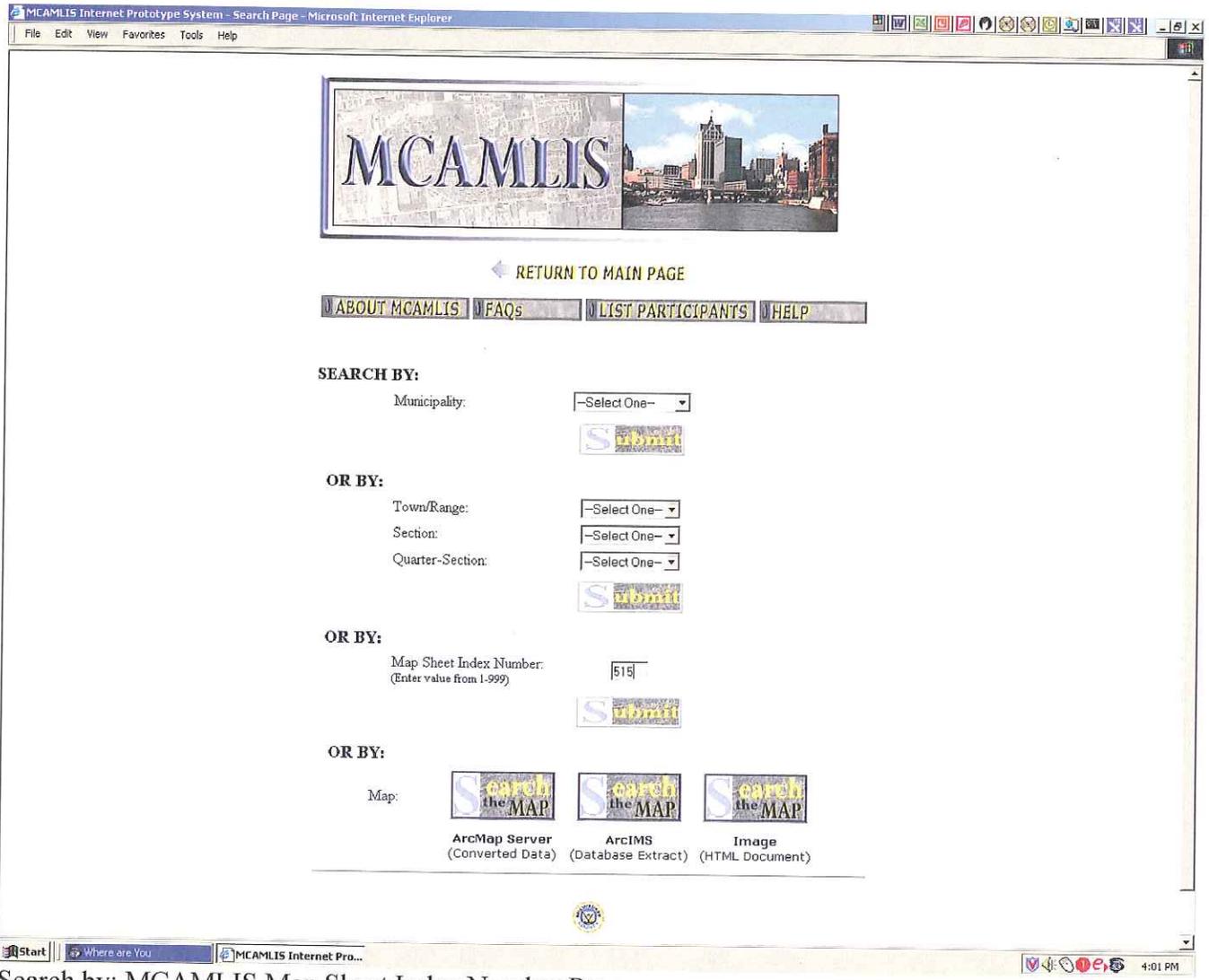
MCAMLIS Prototype Main Search Web Page



Search by: Municipality



Search by: Town, Range, Section or One-quarter Section



Search by: MCAMLIS Map Sheet Index Number Page

MCAMIS Internet Prototype System - Search Results Page - Microsoft Internet Explorer

Address: http://webapp1.ruekert-mielke.com/GISWeb/mcamis/results.asp

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Search Results for: **Brown Deer**

Search Results for Quarter-Section Number: 515

* Data Set - FULL	Source	Data Description	Data Format	Date	Metadata
<input type="checkbox"/> Electric Facilities	We Energies	Poles, CM, DB, DL	ArcINFO Coverage	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Land Basemap	We Energies	Parcels, Street Names, Addresses	ArcINFO Coverage	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Gas Facilities	We Energies	Mains, Service Laterals, Meters, Testpoints	AutoCAD DXF	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Metropolitan Interceptor System	Milwaukee Metropolitan Sewerage District (MMSD)	Interceptor Sewers	MicroStation DGN	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Sanitary Sewer System	Village of Brown Deer	Manholes, Mains, Laterals	MicroStation DGN	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Storm Sewer System	Village of Brown Deer	Manholes, Mains, Catch Basins	MicroStation DGN	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Water System	Village of Brown Deer	Hydrants, Mains, Laterals, Valves	MicroStation DGN	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Cadastral Features	Village of Brown Deer	Parcels, Rights-of-way, CSM's, Plats	MicroStation DGN	8/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Topographic Features	Village of Brown Deer	Contours, Structures, Pavement	MicroStation DGN	8/1/2002	<a href="#">Link to Metadata</a>

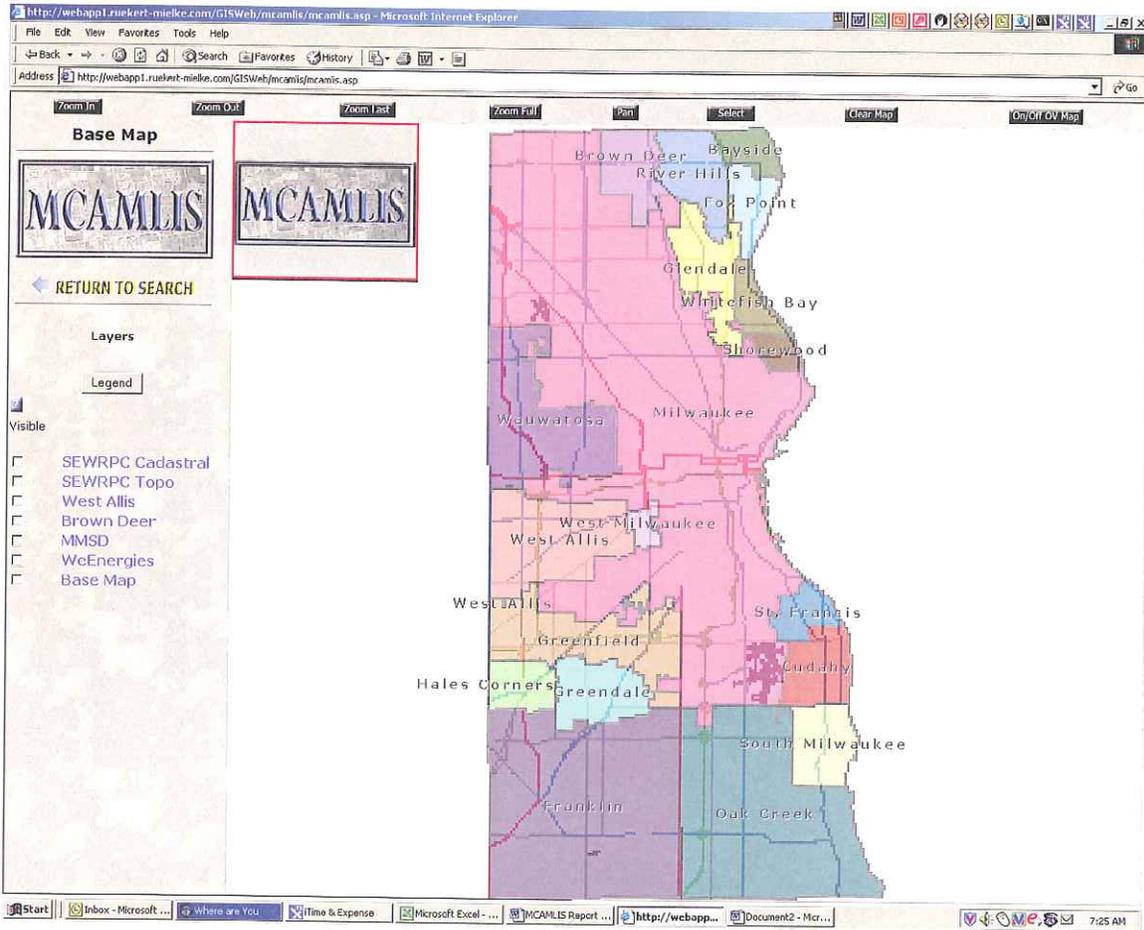
* Data Set - INCREMENTAL	Source	Data Description	Data Format	Date	Metadata
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<input type="checkbox"/> Land Basemap	We Energies	Parcels, Street Names, Addresses	ArcINFO Coverage	7/28/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Gas Facilities	We Energies	Mains, Service Laterals, Meters, Testpoints	AutoCAD DXF	7/28/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Metropolitan Interceptor System	Milwaukee Metropolitan Sewerage District (MMSD)	Interceptor Sewers	MicroStation DGN	7/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Sanitary Sewer System	Village of Brown Deer	Manholes, Mains, Laterals	MicroStation DGN	7/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Storm Sewer System	Village of Brown Deer	Manholes, Mains, Catch Basins	MicroStation DGN	7/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Water System	Village of Brown Deer	Hydrants, Mains, Laterals, Valves	MicroStation DGN	7/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Cadastral Features	Village of Brown Deer	Parcels, Rights-of-way, CSM's, Plats	MicroStation DGN	6/1/2002	<a href="#">Link to Metadata</a>
<input type="checkbox"/> Topographic Features	Village of Brown Deer	Contours, Structures, Pavement	MicroStation DGN	1/1/1995	<a href="#">Link to Metadata</a>



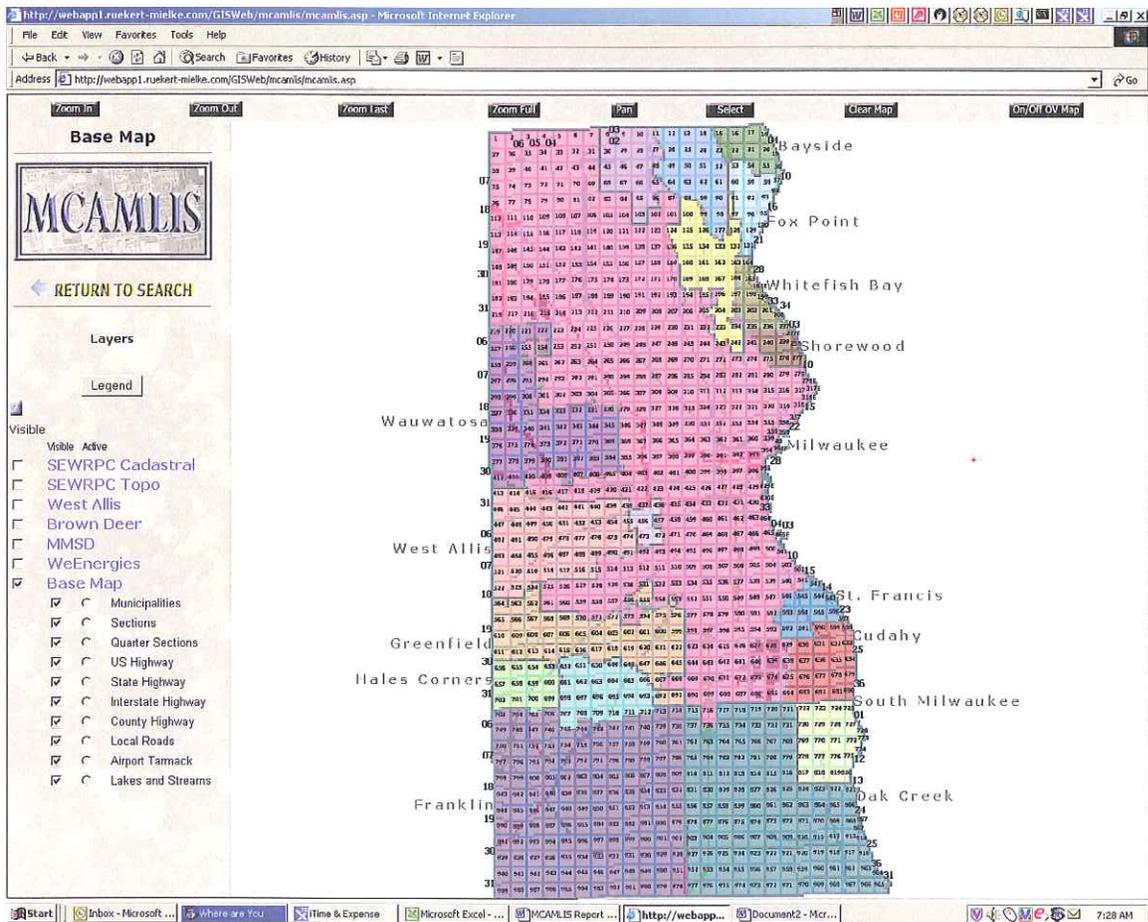
Contact [Webmaster](#) with comments or questions about web site.

Start | Inbox - Microsoft Outlook | Where are You | MCAMIS Internet Pro... | Document1 - Microsoft W... | -- Microsoft Internet Ex... | http://www.satekpop.c... | 3:17 PM

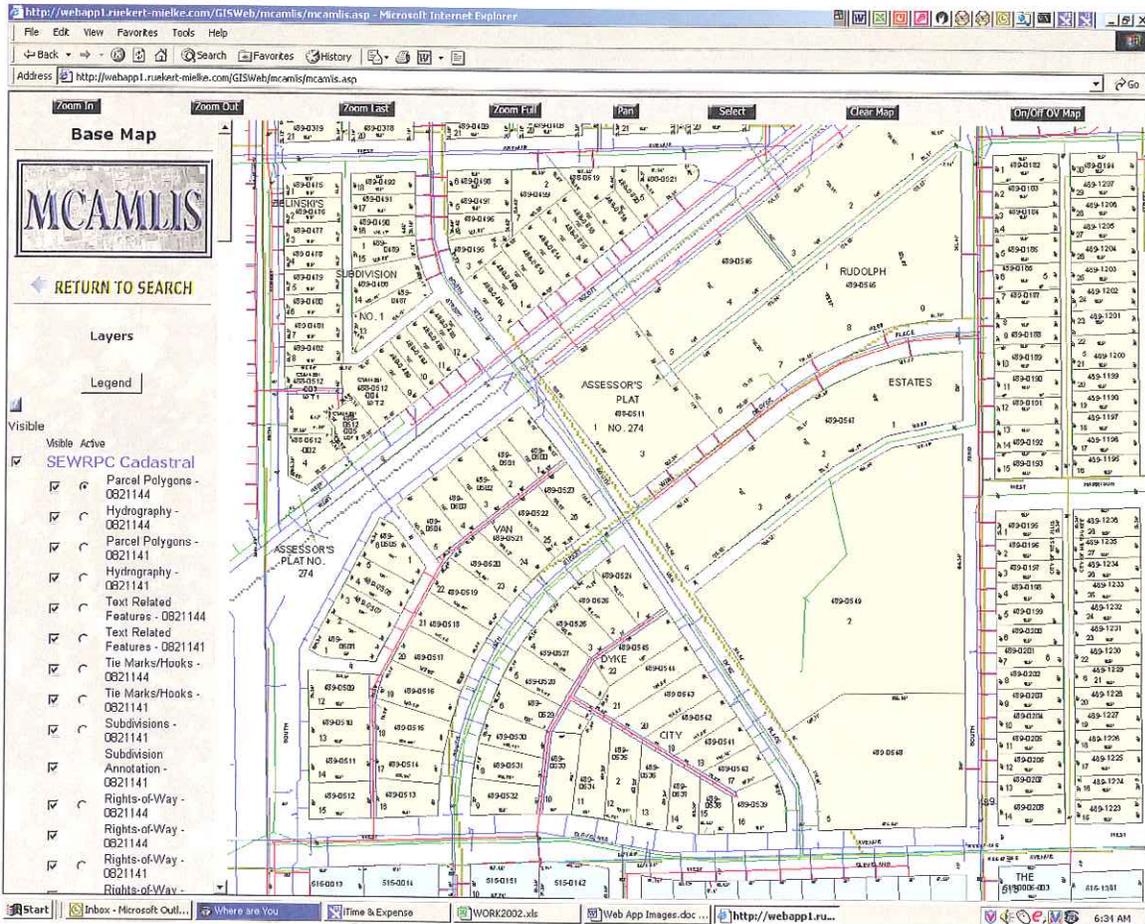
## Search Results Page



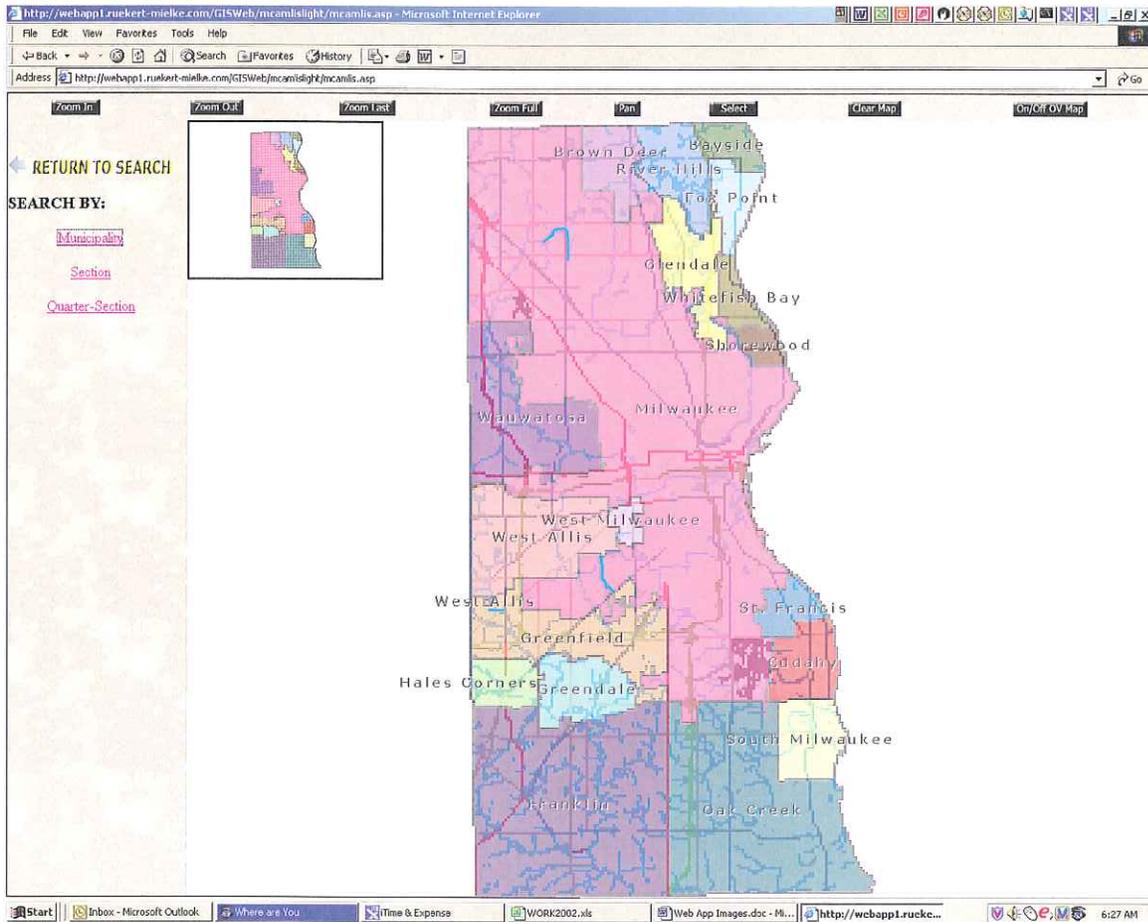
Option 1: ArcMap Server (Converted Data) – Search Page



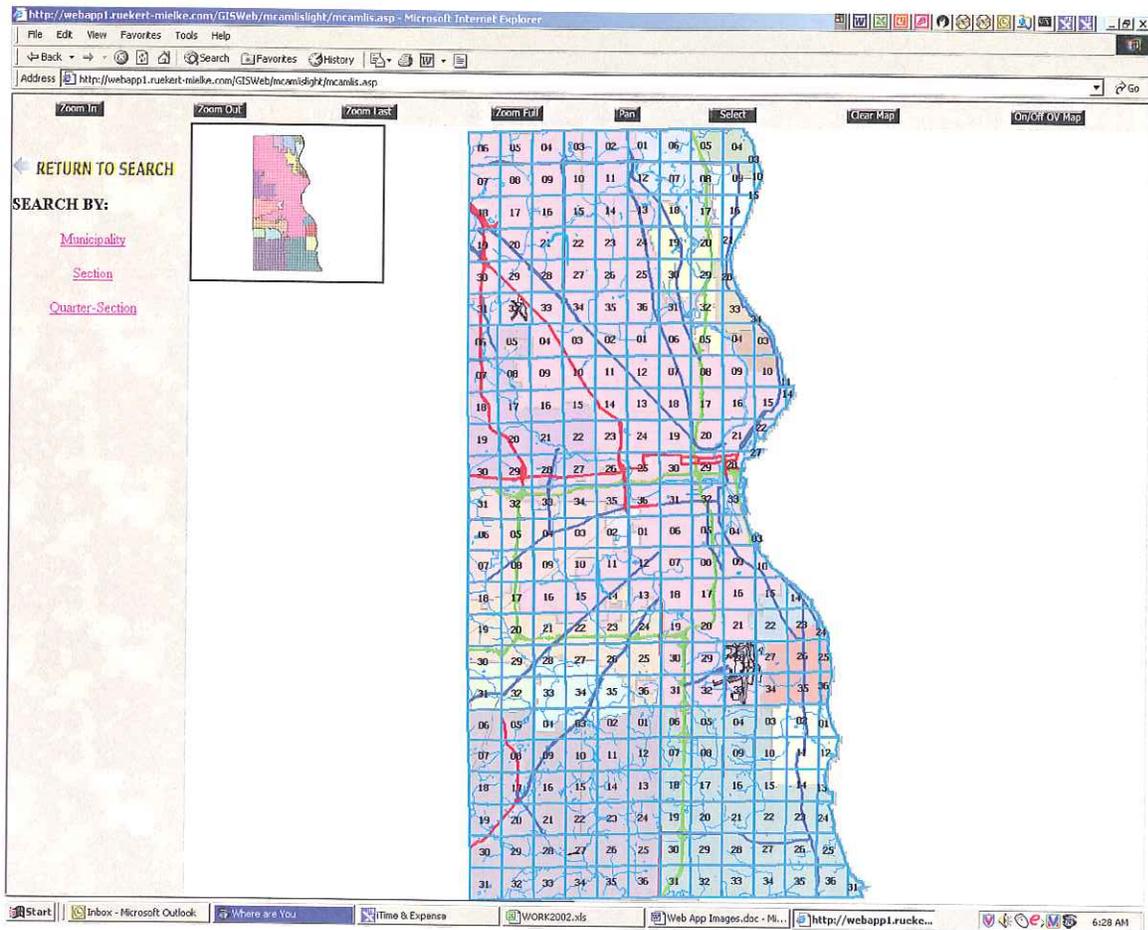
Option 1: ArcMap Server (Converted Data) – Display Base Map Features



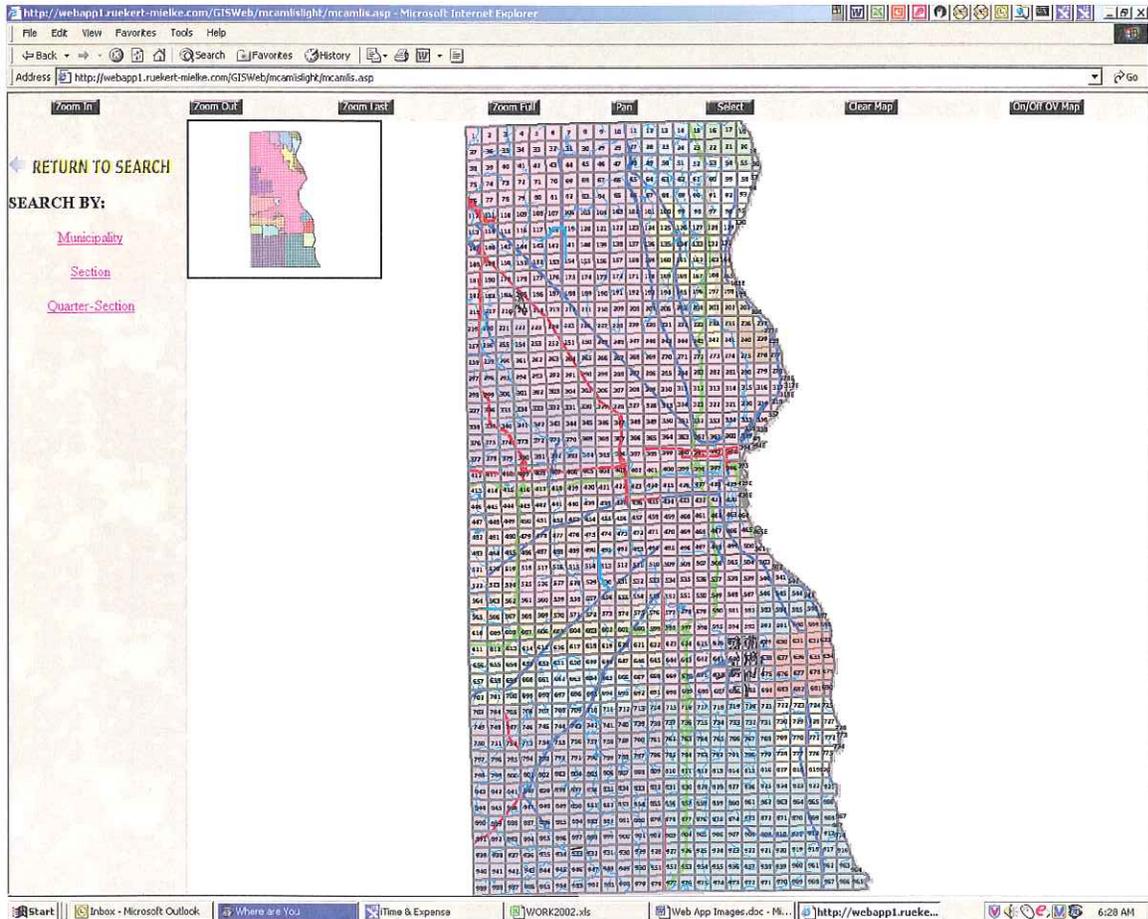
Option 1: ArcMap (Converted Data) – Zoom-in and Display Cadastral & West Allis Utility Data



Option 2: ArcIMS (Database Extract) – Search by Municipality, Section, or One-quarter Section



Option 2: ArcIMS (Database Extract) – Search by: Section - Display U.S.P.L.S.S. Section Lines



Option 2: ArcIMS (Database Extract) – Search by: One-section - Display U.S.P.L.S.S. One-Quarter Section Lines



MCAMLIS Search By Map Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Address http://webapp1.ruekert-mielke.com/GISWeb/mcamlis/frame.asp




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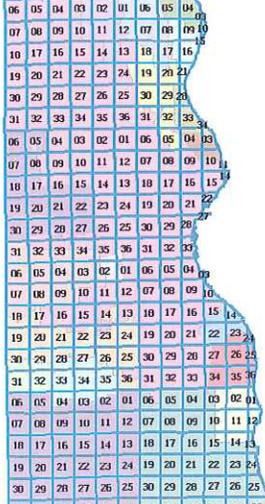
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SEARCH BY:

[Municipality](#)

[Section](#)

[Quarter-Section](#)



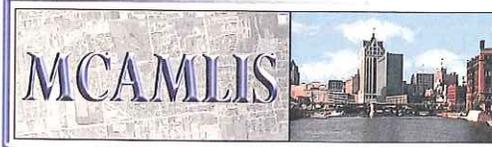
Start | Inbox - Microsoft Outlook | Where are You | Time & Expense | WORK2002.xls | Web App Images.doc - M... | MCAMLIS Search By M... | 6:19 AM

Option 3: Image (HTML Document) – Search by: Section

MCAMLIS Search By Map Page - Microsoft Internet Explorer

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Address http://webapp1.ruekert-mielke.com/GISWeb/mcamlisframe.asp



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SEARCH BY:

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[Section](#)

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Option 3: Image (HTML Document) – Search by: One-quarter Section

## IDENTIFY/RESOLVE PROTOTYPE ISSUES – SET STANDARDS

### Data Integration

As noted previously, one of the challenges for the prototype will be the merging of data from different organizations that are using different software and have mapped their facilities to a different land base.

Ruekert/Mielke loaded all of the available digital files into an ESRI ArcMap document. Since the Technical Advisory Committee members were more interested in point and vector data (utility features and main segments) than attribute data, the conversion of the available digital files was fairly straightforward. Initial concerns about intelligent ties between land information and facility features, such as the address or parcel identification linked to the corresponding service valve, were no longer relevant. ArcMap can import most of the file formats provided by the participants, thereby eliminating any need for conversion. The latest release of ArcIMS, version 4.0, is capable of reading directly from ArcMap documents, thereby eliminating any need to convert text features as previously required with version 3.1. Since We Energies' gas operations converted their SmallWorld files (which cannot be imported into ArcMap) into ArcInfo Interchange files, all of the participants' data were loaded and made accessible.

The digital one-quarter section cadastral and topographic files provided the greatest challenge. Due to the quantity (approximately 1,000) and size (range) of these files, the load time was extremely slow (2 minutes). The preparation of seamless, or larger tiled areas, will decrease the load time.

The varying naming conventions for feature definitions, such as the layer name or level number of the sanitary sewer mains, increased the quantity of viewable layers. All members of the Technical Advisory Committee indicated that the creation of a common specification for municipal utility features would be cumbersome and impractical. Most participants indicated they were willing and able to receive and deal with the specification issues internally. Since most of the Technical Advisory Committee has personnel that have successfully dealt with conversion issues, their recommendation may not coincide with other municipalities that do not employ technically skilled personnel.

### Data Tiling

Most of the data provided for the prototype was tiled into U.S.P.L.S.S. one-quarter section survey files. Exceptions included the City of Milwaukee, Village of Brown Deer's public utility maps, and the We Energies gas data. The City of Milwaukee's water and sanitary sewer system datasets were tiled into much smaller geographic areas than one-quarter section survey files. If these data sets are not converted or recompiled into larger geographically tiled areas, the performance and display of this information in the web-based application will be significantly slower, especially for end users not having high speed internet connections.

The Village of Brown Deer's sanitary sewer, storm sewer, and water distribution facilities currently reside as individual Village-wide files, covering the entire village incorporated area. Therefore, this information cannot be easily displayed in smaller geographic areas. The We Energies' gas and electric data are stored in a much larger regional tile. The gas data is in one contiguous data set, which can be extracted into one-quarter section, municipality, or county-wide file sizes. The electric data is stored in smaller map-based tiles. Both gas and electric data can be extracted into U.S.P.L.S.S. one-quarter section, section, municipality, countywide or whatever file size that is determined to optimize the land-sharing scheme.

### Recommendation

- Since most of the municipalities either currently maintain, or would like to obtain, community-wide tiled base maps for engineering, planning, and other mapping purposes, we recommend that MCAMLIS, at a minimum, recompile the digital one-quarter section cadastral maps into larger tiled areas. From a maintenance standpoint, the larger the tiled area the better. With current technology and computer processor speeds exceeding 2 gigahertz (GHz), the digital cadastral maps could be re-compiled into a County-wide coverage and exported into municipal sized files. However, since the City of Milwaukee and other MicroStation users are not currently using MicroStation V8, which supports file sizes over 32 megabytes (MB), County-wide file sizes may be too large. Additionally, since municipal boundaries do not follow other coincident geographic boundaries, such as one-quarter section or section lines, anything smaller than a County-wide coverage would require each municipality to re-compile multiple tiled area maps. Hence, MCAMLIS, or a web hosting consultant, may need to re-compile individual municipal-wide digital maps before posting on the web server. Each municipal file would require a minimal amount of data from the adjacent municipality. Preparing these files from County-wide coverages would require minimal effort - approximately 4-6 hours. On the other hand, a custom utility could be developed that would automate and simplify this process, effectively reducing the time spent to less than an hour. The cost to prepare an automated tool is estimated to be \$3,000 - \$5,000. Assuming Milwaukee County updates and posts the digital cadastral map files on a monthly basis, the cost of the automation tool would pay for itself within the first year.

The following is a scope of services, cost estimates, and deliverables to prepare larger tiled digital cadastral and topographic maps:

### SCOPE OF SERVICES

#### Cadastral Maps

1. Remove redundant and duplicate text and line features.
2. Reposition text labels, wherever possible, to make them more legible and recognizable.
3. Recreate parcel polygons.

### Topographic Maps

1. Remove redundant and duplicate text and planimetric line features.
2. Reposition text labels, wherever possible, to make them more legible and recognizable.
3. Reconnect planimetric features such as building outlines, walls, pavement edges, walks, etc.
4. Dissolve overlapping contour lines.
5. Create building polygons.

The majority of the cleanup effort for both types of digital maps is along the one-quarter section lines.

### Deliverables

1. A single County-wide digital map file for each of the individual map layers or coverages.
2. A single County-wide digital map file for each of the individual map layers or coverages.

Due to the size and amount of information contained in digital topographic map files, we would recommend that the digital topographic map files be prepared in government township (or other smaller geographic area) files. Cost estimate for this effort would not be affected by the geographic area of the deliverable product.

**Cadastral Map Cost Estimate: \$40,000 - \$45,000**

**Topographic Map Cost Estimate: \$35,000 - \$40,000**

### Coincidence & Redundancy

Several of the pilot project data sets, provided by the participants, exhibited some level of coincidence or redundancy in their respective datasets. Similar layers, such as street right-of-way lines, street names and parcel lines, were defined and named differently within the various files. Importing these files, without initially removing the redundant data layers, will seriously impede the performance of any GIS or related web-based application. Additionally, it is obvious that each of these entities is maintaining similar land base information that could be reduced or eliminated if MCAMLIS could provide these services in a more timely manner.

One of the data redundancy issues addressed in Report No. 2, has been the independent evolution of the MCAMLIS and private utility land base maps. The most noticeable anomaly resulting from this replication is the compilation of data using different standards for layer specifications, geodetic control, and accuracy. After completing the coordinate transformation referenced

below, the data submitted by We Energies displayed minor deviations from the MCAMLIS cadastral information as expected. However, in the opinion of the Technical Advisory Committee, this deviation was well within acceptable limits based on their uniform desire to only approximately locate the private utility facilities for general usage.

There is redundancy in the content and display of public utility related data, particularly with regards to sewer mains under the jurisdiction of MMSD. Data sets provided by the Village of Brown Deer, City of West Allis, and the City of Milwaukee all contained MMSD Metropolitan Interceptor System (MIS) manholes and pipe segments immediately adjacent to, or connected with, their respective utility sewer facilities. It is unclear if all of the local communities maintain these MMSD features. If so, this would be another data set involving redundant maintenance efforts. Assuming the MCAMLIS Land Information and Utility data sharing and web application are implemented, the duplication of data and maintenance efforts could be eliminated.

#### Numerous Digital File Specifications

(i.e. layers, levels, object types, symbols and text fonts).

The City of West Allis utility dataset takes advantage of a custom font instead of using point features for their utility structures (i.e. a hydrant is denoted as the letter H, valves by the letter V). Because this has been developed as a custom font native to the MicroStation software environment it will not be able to be displayed properly in other GIS software programs. Since the Technical Advisory Committee has determined that associated attribute data will not be included due to potential compromises in security, this will not be a major concern. Possible solutions include recreating the font so that it can be used in the web environment, conversion of the text features to appropriate point features, or eliminating the text from the available data set. Similarly, digital files provided by the MMSD, has revealed that this may also be the case for their four CAD datasets.

The Technical Advisory Committee, consisting of experienced land and utility information experts, felt that the conversion of available digital map products should be the responsibility of the individual user. Although this makes sense for experienced GIS personnel, it may be a problem for other local units of government, which may not have technical staff, or if they do, they may have limited conversion experience. The feedback provided by other municipalities (see Survey Results), validates our concern.

#### Recommendation

Therefore, we believe this issue should be reevaluated and discussed within the next two years as more municipalities utilize the available digital products and develop as sense of how MCAMLIS could improve the usefulness of the digital information.

#### Map Projection

The MCAMLIS standard for map projection is Wisconsin State Plane, South Zone, North American Datum of 1927. Because the MCAMLIS cadastral maps are often the base maps other municipal datasets are built on, this lends itself well to most of the data involved in this study. However, because of the variable land base systems in place with the private utility companies,

there are some data transformation issues to be dealt with. For the purposes of this study the We Energies gas and electric datasets were required to be converted from Wisconsin State Plane, Central Zone, NAD 1983 and UTM, Zone 16, NAD 1927 to the MCAMLIS standard respectively. Since We Energies services a much larger region outside of Milwaukee County that encompasses much of the State of Wisconsin and the Upper Peninsula of Michigan, it is not practical for them to use a map projection centered on Southern Wisconsin. If the We Energies datasets were to be provided for Internet distribution in a known and documented projection, most of the participants would be able to re-project the data for their own use. However, some of the smaller local municipalities that lack the technical staff or knowledge, or utilize CAD, rather than GIS software, may not be able to perform the re-projection. Hence, in order to ensure the widest possible use among potential participants, we recommend that the We Energies data be re-projected before being made available for distribution in an Internet web-based application. The re-projection could be performed by We Energies or MCAMLIS staff. In the event MCAMLIS determines that the web application and data should be hosted by a third party service provider, the selected service provider could also re-project the necessary data.

#### MCAMLIS License Agreement

The existing MCAMLIS licensing agreement restricts use and distribution of available digital map data and does not have provisions for continuous distribution of updated digital map products without an additional cost, nor does it allow for the redistribution of the digital map products. Since the digital cadastral maps are being updated on a regular basis, each delivery of the digital files may be obsolete the moment they are distributed. Additionally, the digital cadastral and topographic maps are used extensively within municipal engineering and planning departments and are often shared and distributed to outside consultants. The digital files can save a tremendous amount of time and effort, and have a significant value for engineering and planning related projects to all communities in Milwaukee County. Numerous other County Land Information Offices throughout Wisconsin, including Waukesha, Racine, Kenosha, and Ozaukee counties, share their digital land bases with local units of government at little or no cost. It does not seem practical, nor financially feasible, for local units of government to make regular requests, sign license agreements, or pay additional fees for the monthly updates.

The Wisconsin Land Information Program (WLIP), built on an idea of data integration and cooperation, between and within multiple levels of government, has provided some of the funding for products included in the Internet prototype web application. Furthermore, the salary for the GIS position, and the associated cost for digital cadastral map maintenance are being paid from retained fees collected in the Milwaukee County Land Information Office and generated from an increase in the document recording fees as part of legislation enacted in 1990 to help fund Land Records Modernization. Any type of cost recovery for the MCAMLIS products from local units of government would seem to defy the mission of the WLIP.

#### Recommendation

Thus, the Technical Advisory Committee recommends that the MCAMLIS license agreement is eliminated from future use and does not become a part of the Internet Land and Utility Web Application.

## Metadata

Since the Wisconsin Land Information Association has approved and recommended the use of the FGDC (Federal Geographic Data Committee) standard for digital information throughout Wisconsin, we recommend that metadata be compiled, maintained, updated, and posted on the web application. However, the FGDC format is very difficult to read and understand. Therefore, we also recommend that a simplified version be compiled and posted. The following is a sample of cadastral metadata as posted on the Waukesha County GIS Map Server:

1. Description	Tax ownership polygons and legal information.
2. Data Source	Waukesha County
3. Date of Mapping	1992 to present
4. Mapping Scale	1:1200 (1"=100') Menomonee Falls, New Berlin, Muskego and City of Oconomowoc. All other areas 1:2400 (1"=200').
5. Mapping Sources	Subdivision plats, CSM, Condominium and deed documents and County tax rolls. Structure outlines, where they exist, were compiled from existing, analog topographic maps at the scale of the cadastral mapping for that area.
6. Map Accuracy	+/- 3.3 feet in Menomonee Falls, New Berlin, Muskego and City of Oconomowoc. All other areas +/- 6.6 feet.
7. Map Currency	Maps current to 3/31/2002. Structures mapped date anywhere from 1967 to 1999.
8. Parcel Data Currency	Tax Parcel Data Current to 3/31/2002.
9. Coverage	Waukesha County

## OTHER ISSUES

The following is a list of other data sharing issues identified in Report No. 2 and recommendations based on participant feedback and the development of the prototype web application:

### Maintenance Schedule

Until recently, there wasn't a coordinated maintenance schedule for cadastral updates.

### Recommendation

- Milwaukee County has reported that the digital cadastral maps for the entire county will be updated by the end of 2002. Therefore, Milwaukee County should continue to maintain the digital cadastral files for all other municipalities and distribute the updated files to these municipalities on a mutually agreed upon schedule. Some municipalities, who desire more frequent updates, may continue to maintain their set of digital cadastral maps as indicated in the survey responses. Although their reasons may be valid, the duplicate and redundant maintenance efforts increase the cost to the local taxpayers. Milwaukee County should continue to evaluate ways to satisfy the needs of those communities by increasing the frequency and distribution of the digital cadastral map updates.

## Distribution System

There continues to be a limited awareness of the distribution system or published process to acquire updates.

In order to increase the awareness of the MCAMLIS efforts and associated map products, Ruekert/Mielke conducted separate demonstrations of related GIS web applications for numerous communities with Milwaukee County throughout the course of this study. The following is a list of communities and individuals that attended the demonstrations:

NAME/ORGANIZATION	TITLE	GIS INTRODUCTION	GIS DEMONSTRATION
<b>AMERITECH</b>			
Paulette S. Conerton	Design Office Manager	X	X
Dextra Hadnot	Director - External Affairs	X	
Ricky B. Wicklund	Telecommunications Specialist	X	X
<b>CITY OF CUDAHY</b>			
Craig Faucett, P.E.	Director of Engineering	X	X
Steve Miner	Assessors Office	X	X
<b>DIGGERS HOTLINE</b>			
Ben Zweifel	Executive Director	X	X
<b>CITY OF GLENDALE</b>			
Todd M. Stuebe, P.E., AICP	Director of Community Development	X	
<b>VILLAGE OF HALES CORNERS</b>			
Michael Martin, RLS,PE	Director of Public Works	X	X
<b>MILWAUKEE COUNTY</b>			
Kathleen A. Bach	Geographic Information Technician	X	X
Walter R. Barczak	Register of Deeds	X	X
Kevin Bruhn	Infrastructure Coordinator	X	X
Gary E. Drent	Fiscal & Budget Manager (A&E)	X	X
Gregory G. High, P.E.	Director, Department of Public Works	X	X
Paul Mika	Register of Deeds Office	X	X
Ignatias Niemczyk	Register of Deeds	X	X
Kevin White	GIS Supervisor, Public Works Department	X	X
<b>CITY OF OAK CREEK</b>			
Leslie A. Flynn	GIS Technician	X	X
Michael J. Sullivan, P.E.	Design Engineer	X	
<b>CITY OF ST. FRANCIS</b>			
Jack Schultz, P.E.	City Engineer, Director of Public Works	X	

NAME/ORGANIZATION	TITLE	GIS INTRODUCTION	GIS DEMONSTRATION
<b>CITY OF SOUTH MILWAUKEE</b>			
Jack Zader	Director of Planning and Inspections	X	X
<b>CITY OF WAUWATOSA</b>			
Christopher Bennett	Engineering Technician	X	X
William A. Kappel	Director of Public Works	X	X
<b>CITY OF WEST ALLIS</b>			
Patrick Walker	Geographic Information Systems Coordinator	X	X
<b>VILLAGE OF WHITEFISH BAY</b>			
Mary Jo Lange, PE	Director of Public Works/Engineer	X	

Recommendation

The MCAMLIS Steering Committee should officially announce, through the ICC representatives, the maintenance schedule and distribution process to all local units of government, with special attention to the appropriate GIS or technical staff. Since many of the local communities utilize CAD software for engineering and planning projects, and exhibit preparation, the announcement should also be directed to the Engineering and Planning departments, and to local engineering and planning consultants providing services to these municipalities. An article in each local newspaper, as well as the Milwaukee Journal Sentinel, may prove to be very beneficial.

Numerous File Formats and GIS Software Platforms

The recommended Internet Prototype Web Application provides the means for users to download available digital files in their native format. The end user will be responsible for conversion, including map projection, symbology, text fonts, etc. Although GIS software vendors have progressively worked towards standardizing data storage and feature definitions, the effort can still be extensive, depending on the source and desired file formats. The Open GIS Consortium, Inc (OGC), an international industry consortium of more than 220 companies, government agencies and universities, is participating in a consensus process to develop publicly available geoprocessing specifications. Open interfaces and protocols defined by OpenGIS® Specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT, and empower technology developers to make complex spatial information and services accessible and useful with all kinds of applications. This consortium, and the participating software vendors, are working on ways to ultimately resolve the data exchange issues.

Based on current investments in their existing data conversion efforts, and the amount of time and expense it would potentially take to convert to a new format, the Technical Advisory Committee did not think it was practical or fiscally responsible at this time, to develop a standard file format. Existing GIS software generally stores geographic data (points, lines, and polygons)

in a proprietary format, and attributes in either proprietary tables or in external databases. Technological advances in data storage, the latest being geodatabases, store geographic and attribute data in a single database, such Oracle, Microsoft Access, or Microsoft SQL Server. As each of the participants begin evaluating their plans to convert to this technology, the opportunity to discuss and develop a standard file format will arise.

### Recommendation

A local user group, consisting of all interested municipalities and public utility companies, should be formed. The existing Technical Advisory Committee members could facilitate the group and continue the discussion and evaluation of a standard file format. Working together, understanding each other's goals and objectives, and recognizing the vast opportunities data sharing can provide in productivity gains and cost savings, the group will be able to develop a set of standards that all participants can live with. This is no small task and will require a significant amount of cooperation, appreciation, and upper level management from all participants.

### Incomplete Data Sets

The City of Milwaukee is still uncertain of their willingness to provide, and have distributed, digital water distribution facilities over the Internet. We Energies, until recently, also reserved their right to determine the viability and practicality of providing their digital files for the MCAMLIS Land and Utility Information System Internet Prototype. At the same time this report and Internet Prototype were being developed, We Energies began implementing an agreement that includes facility locations and a limited number of attributes. The following is an excerpt from their agreement.

We Energies Test Data for Kenosha County  
This data is owned by We Energies, C. 2002  
This data is for test purposes only and is not to be re-distributed  
We Energies Electric GIS projection info:  
UTM (Universal Transverse Mercator) Zone 16  
Spheriod is "Clark 1866"  
Units = Decimeters

Data set includes 3 ESRI Shapefiles

1. KE\_Poles is a point coverage of We Energies pole locations in test area  
The data field "Id\_Number" is the pole tag physically attached to the pole.
2. KE\_3ph is a line coverage for primary electric conductor
3. KE\_12ph is a line coverage for primary electric conductor  
Both of the line coverages include a data field "Installtyp" which describes the type of conductor:  
OH = Overhead conductor  
DB = Buried conductor  
CM = Conduit Manhole conductor

Please contact Tim Marquardt at We Energies with questions 414-221-4783

Although this is more information than provided for in the Internet Prototype, We Energies would still like to limit or restrict access to their data by having the person or organization requesting the data contact their office directly. We Energies staff would be responsible for executing agreement, compiling data, and distributing on the appropriate media. This decision dramatically affects the anticipated content and benefits of the MCAMLIS Land and Utility Information System Internet Prototype.

### Transactional Updates

Some participants would like to receive incremental updates while others would replace their entire digital land base map with the updated MCAMLIS files.

Currently, Milwaukee County intends to update and post the digital cadastral files every 60-90 days. Some participants have indicated they would only want updated files every 6 months. The Internet Prototype Web Application was designed to include multiple data sets for each feature. Each set of updated digital cadastral files will be logged in the data server and made available to the end user. The results of their data search will list each of the available data sets posted by the data provider. Periodically, the available data sets could be reduced to include only those files posted over the last 1-2 years. The Technical Advisory Committee determined that the digital cadastral files were the only data set that should be posted in a manner that will allow the end user to see the incremental changes from the previous set of posted files. The GIS software industry has been developing database designs and software solutions that will track historical changes, in particular the cadastral land base, which will solve this issue. Since Milwaukee County is still in the process of updating the digital cadastral files and plans to continue maintaining these files for the majority of the Milwaukee County municipalities, now is the time for MCAMLIS to incorporate specifications and procedures that will support the creation of the incremental data sets.

The following information includes conceptual designs for the development and use of geodatabases for the digital cadastral maps and transactional processing for incremental updates. ESRI has announced that ArcMap, currently being used by Milwaukee County staff for storage and maintenance of the digital cadastral and topographic maps, will no longer support coverage editing with the release of ArcGIS 8.3. Therefore, the transaction to geodatabases, which are fully supported in ArcGIS 8.3, is inevitable.

We have investigated the opportunity to link transactional data with the existing MCAMLIS data. We concluded, based on the results of our research efforts, that there are three (3) potential options that could be incorporated into the maintenance process to prepare the necessary transactional data. The three options are presented in Table 1.

There are advantages and disadvantages to each of the three options. Option 1 is a simple approach - when a parcel, CSM, subdivision, or condominium is created, modified, or removed, it would be added to a list of cadastral updates that are stored in a separate database table. The feature identifier (tax key number, CSM number, subdivision name, or condominium name) would be added to the transaction table. This option would not require any changes to the existing cadastral data structure, and would result in only a small amount of additional effort for the County during data maintenance. However, the original geometry of removed or modified

features would not be preserved, and a moderate effort would be required to create a map showing the cadastral updates. The County would provide the municipalities with the updated GIS data and the separate database of cadastral transactions.

If Option 1 is selected, updated parcel polygons could be programmatically identified using the tax key numbers from the list of updates. However, there would be no way to systematically identify the updated CSM's, subdivisions, and condominiums using the current cadastral data model because none of the features contain the CSM number, subdivision name, or condominium name as an attribute.

Option 2 differs from Option 1 in that the GIS features would be added to a separate transactions data layer, instead of only a feature identifier being added to a tabular database. When a parcel, CSM, subdivision, or condominium is created, modified, or removed, the polygon or line, and the associated text would be added to transaction layer. As with Option 1, no changes would be needed to the existing cadastral data structure and there would be a minimal increase in the County's maintenance effort.

Option 2 has the additional benefit of making it possible to create a map of cadastral updates with minimal effort. Since the actual GIS features are preserved, it would be possible to identify the updated CSM's, subdivisions, and condominiums, as well as the parcels. During each maintenance period, a new transaction layer would be created for each of the four cadastral features being included in the transactions - parcels, CSM's, subdivisions, and condominiums. The County would provide the municipalities with the updated GIS data and the set of transaction layers.

With Option 3, the original cadastral feature is always maintained within the data, and a status code is used to differentiate between current and historical features. For example, if a parcel is split into two new parcels, the original parcel's status code is changed to "Historical", and the two new parcels are created and given a "Current" status code. The historical features can be hidden from any display or hardcopy map by only displaying features that have a status code of "Current."

Option 3 provides the added benefit of being able to query both current and historical parcels within a single data layer. It also makes it possible to create a "snapshot" of the cadastral data for any date since the transactions started being recorded. Implementing Option 3 would require modification of the cadastral data model in order to support overlapping polygons. This could be accomplished with a geodatabase, or with region features within an ArcInfo coverage. Additionally, the status, transaction date, and transaction description attributes would need to be added to the parcel, CSM, subdivision, and condominium features.

Regardless of the method selected, the recorded transaction information should include a way to identify the feature, the date of the transaction, and a description of the type of transaction (e.g. parcel split, new CSM). Alternatives and our recommendation are discussed in the following section.

**TABLE 1: OPTIONS FOR TRANSACTIONAL UPDATES**

Option	Method	Maintenance Efforts (County)	Preserves Geometry	Able to Create "Snapshot" Map	Maintenance Efforts (Municipalities)	Changes to MCAMLIS Database Design
<b>1. Separate Transaction Database</b> - Simple Solution - Minimal functionality	<ul style="list-style-type: none"> <li>• Cadastral features are added, deleted, or modified in the GIS data</li> <li>• For each transaction, the tax key, CSM, Subdivision or Condo name is added to a database file</li> <li>• Date and description of transaction also recorded</li> <li>• Provide municipalities updated GIS data and transaction database.</li> </ul>	Minimal	No	No	Significant	No changes to existing database design. Create new, separate DBMS file e.g. MS Access
<b>2. Separate Transaction Layers</b> -Moderate complexity -Moderate functionality	<ul style="list-style-type: none"> <li>• New and modified features are copied to a separate transaction layer.</li> <li>• Associated text is also copied to transaction layer</li> <li>• Provide municipalities with updated GIS data and a set of data layers for each maintenance period</li> </ul>	Minimal	Yes	Limited	Moderate	No changes to existing database design  Create new transaction layers "
<b>3. Integrated Transaction Features</b> -Complex data model -Potential for more applications	<ul style="list-style-type: none"> <li>• Features are not deleted from cadastral GIS layers</li> <li>• Updated features are saved in existing data layer and given a status code – Active, Historical, Proposed Date Field used to create snapshot in time of cadastral map</li> <li>• Comments describe reason for update (new CSM, parcel split, etc.)</li> <li>• Provide municipalities with updated GIS data that includes features and text involved in transactions</li> </ul>	Moderate	Yes	Yes	Moderate	Use ArcInfo coverage* regions or a geodatabase to support overlapping polygons. Add status, date, description attributes to features

\*ESRI has announced that ArcMap will no longer support coverage editing with the release of ArcGIS 8.3. ArcEdit, which is a module within ArcInfo Workstation, is the only application that will continue to support coverage editing.

## Conceptual Database Designs

In order to support transactional updates, we have also prepared conceptual database designs for each of the options described above. The three options and their associated conceptual database designs are shown in Table 2.

<b>OPTION</b>	<b>CONCEPTUAL DATABASE DESIGNS</b>	
<b>1. Separate Transaction Database</b>	<b>Design 1A: Separate Database Tables</b>	
	Parcel transaction table	
	Subdivision transaction table	
	CSM transaction table	
	Condominium transaction Table	
<b>2. Separate Transaction Layers</b>	<b>Design 2A: Geometry Layers</b>	
	Transaction Line Layer	
	Transaction Text Layer	
	Transaction Polygon Layer	
	<b>Design 2B: Feature/Geometry Layers</b>	
	Cadastral Feature	Transaction Layers
	Parcel	Parcel Line, Polygon, and Text
	Subdivision	Subdivision Line and Text
	CSM	CSM Line and Text
	Condominium	Condominium Line and Text
<b>Design 2C: Match MCAMLIS Layers</b>		
<b>3. Integrated Transaction Features</b>	<b>Design 3A: Add Attributes to GIS Data Layers</b>	
	<b>Design 3B:</b> Store transaction attributes in separate table GIS data, which joins to transaction table using a transaction ID	

A cadastral transaction involving a parcel, subdivision, CSM, or condominium could impact several different data layers. For each of these four cadastral features, Table 3 shows which type of GIS layers from the current MCAMLIS database design could be affected by a cadastral transaction.

<b>Cadastral Feature</b>	<b>Affected Layers</b>
Parcel	Parcel Line, Parcel Area, Parcel Dimension, Parcel ID Number, Tie Mark Line, Text Related Line, Note Text
Subdivision	Subdivision Line, Subdivision Text, Text Related Line, Note Text
CSM	CSM Line, CSM Text, Text Related Line, Note Text
Condominium	Condominium Line, Condominium Text, Text Related Line, Note Text

Regardless of the method used for preserving cadastral transactions, there are several pieces of information, or attributes, that should be recorded. These attributes are listed in Table 4.

<b>TABLE 4: Attributes of Cadastral Transactions</b>
Feature identifier (tax key number, CSM number, subdivision name, or condominium name)
Transaction date
Transaction description
Name/initials of person who performed the transaction edits
PLSS location (section and quarter-section, or quarter-section map number)

### **Option 1**

If Option 1 were selected as the method for preserving cadastral transactions, information about the transactions would be added to set of database tables, then the features would be removed from the GIS data. A separate table would be created for each type of cadastral feature, so there would be a parcel table, a subdivision table, a CSM table, and a condominium table. Each table would store the attributes listed in Table 4.

### **Option 2**

With Option 1, none of the GIS features from the layers affected by cadastral transactions (as shown in Table 2) would be saved. If Option 2 were chosen, the affected GIS features would be stored in separate transaction layers. The transaction layers would include the same information as in the database table with Option 1, but would also preserve the GIS data of the affected features.

The transaction layers could be designed three different ways:

- Design 2A. One transaction layer for each type of geometry (line, polygon, text)
- Design 2B. One set of transaction layers for each of the four cadastral features: parcel, subdivision, CSM, and condominium. A set of layers would consist of a line layer and a text layer. Parcels would also have a polygon layer.
- Design 2C. Create a matching transaction layer for each layer in the current MCAMLIS database design.

## Design 2A

The transaction features would be stored in one layer for each type of geometry. This would result in the following three transaction layers:

Transaction Line layer  
Transaction Text layer  
Transaction Polygon layer

The Transaction Line layer would contain all line features involved in transactions. The Transaction Polygon layer would contain all affected polygons, and the Transaction Text layer would contain all affected text. A new set of these three transaction layers would be created during each maintenance period. The original attributes of each line, polygon, and text element would be saved, so the individual feature types could be identified. For example, the parcel lines could be distinguished from the subdivision lines, and the condominium text could be distinguished from the CSM text. This is a simple design that would minimize the effort required to preserve transaction information during data maintenance. However, this design does not follow the current MCAMLIS specifications, which may make it difficult to use with the existing cadastral data.

## Design 2B

Create a separate data layer for each type of cadastral feature. This would require the nine separate layers listed in Table 5. For example, all line features involved in a "combine parcels" transaction would be stored in the Parcel Line transaction layer. This would include parcel lines, tie lines, tie mark lines, and text related lines. The Parcel Text transaction layer would include parcel dimension text, parcel ID number text, and any note text associated with the affected parcels.

<b>Cadastral Feature</b>	<b>Transaction Layers</b>
Parcel	Parcel Line, Parcel Polygon, Parcel Text
Subdivision	Subdivision Line, Subdivision Text
CSM	CSM Line, CSM Text
Condominium	Condominium Line, Condominium Text

Creating a greater number of separate transaction layers could increase the work effort required to record transaction information during data maintenance. Design B has a somewhat higher degree of complexity than Design A, since there are more data files that need to be edited and managed. This design is closer to the existing cadastral specifications than Design 2A. However, the remaining deviations from existing design may still cause problems for users of the data.

## Design 2C

The third design option would create a matching transaction layer for each layer in the current MCAMLIS database design. This would require approximately fourteen different transaction layers. The larger number of transaction layers could make it more difficult to view, edit, and manage the transaction information. However, the advantage of this design is that the transaction data follows the same specification as the cadastral data, which may be very helpful to people who are familiar with the cadastral data.

## **Option 3**

The biggest difference between the first two options and Option 3 is that Option 3 does not remove the modified or replaced features from the GIS data. Instead, historical information is stored within the existing layers. A "status" attribute is added to each layer to define features as either "current" or "historical". For example, if a parcel is replaced by a subdivision, the original parcel is not deleted, but its status is changed from current to historical. The new subdivision and its associated parcels would have a "current" status.

## Design 3A

In addition to the status attribute, each of the attributes listed above in Table 4 would be added to each of the layers listed in Table 3. The transaction attributes could be used to display only the current cadastral data, or only the transactions that have been recorded since a certain date. A status of "proposed" could also be used to identify cadastral features, such as subdivisions and condominiums that have been planned but not yet created.

In order to implement Option 3, the cadastral database design needs to be modified to support overlapping polygons. This can be accomplished by using region features within ArcInfo coverages, or by using a geodatabase. Using a geodatabase is the recommended approach, for several reasons:

- The GIS industry as a whole is moving toward geodatabase technology, and away from proprietary data formats such as coverages
- ESRI's software development strategy is focused on geodatabases
- ArcInfo coverages can no longer be edited with ArcMap - ArcInfo workstation is required

The recommended geodatabase design for implementing Option 3 would replicate the current MCAMLIS database structure as much as possible. It would have essentially the same data layers, the same attributes (e.g. TAG), and would support creation of the same types of hardcopy map products. The only changes would be:

- Conversion to geodatabase format
- Addition of status attribute and the attributes listed in Table 4 to the layers associated with parcels, subdivisions, CSM's, and condominiums.

### Design 3B

An alternative to adding all of the transaction attributes directly to the cadastral features is to store the transaction attributes in a separate, related table. Each cadastral feature would still receive a status code of current or historical, and they would also be assigned a unique transaction ID number. In a separate database table, a corresponding record for each transaction ID would store the transaction information for that cadastral feature.

### Recommendation

Based on the combined needs and resources of the MCAMLIS participants, Ruekert/Mielke recommends Option 2 and database design 2C as a solution for maintaining a record of cadastral transactions. Option 1 does not make it possible to easily view the updated features, which is important for both the County and the municipalities. Option 3 requires substantial changes to the current MCAMLIS cadastral data model and would only provide a marginal increase in benefits. Option 2 provides the ability to view the features affected by maintenance and does not require any changes to the current cadastral data model. Design 2C, which corresponds to the existing cadastral specifications, will minimize the complexity of preserving and using transactional records. Our recommendation is also based on the preparation of larger tiled digital cadastral maps as discussed in the "Data Tiling" section of this report. The cost to implement the recommended procedures and database design is estimated between \$6,000-\$8,000.

The cost to convert the existing digital cadastral maps to the recommended specifications is estimated between \$20,000-\$30,000. Unfortunately, due to existing digital cadastral map specifications, the original exterior boundaries of subdivision and condominium plats, and certified survey maps are not maintained if subsequent development created new, or combined parcels. The conversion cost does not include re-establishing the original exterior boundaries. Should MCAMLIS decide to proceed with the recommended development of larger tiled digital cadastral maps, this effort could be completed at the same time and would reduce the cost estimate by approximately \$5,000.

Regardless of the selected option or database design used for transactional updates, we strongly recommend the following changes to the MCAMLIS cadastral database design:

- Maintain cadastral data as seamless county-wide layers
- Represent subdivisions, CSM's, and condominiums as polygons with attributes for subdivision name, CSM name, and condominium name and phase.

## SUMMARY

Based on the review and recommendations made by the Technical Advisory Committee of the Internet Prototype Web Application, the implementation of a Land and Utility Information System Web Application will provide useful benefits for data sharing and distribution purposes. While most of the issues were resolved to the satisfaction of the Technical Advisory Committee, there are a couple of issues that need to be addressed and resolved. The key issues include:

- File formats and specifications
- Incremental updates

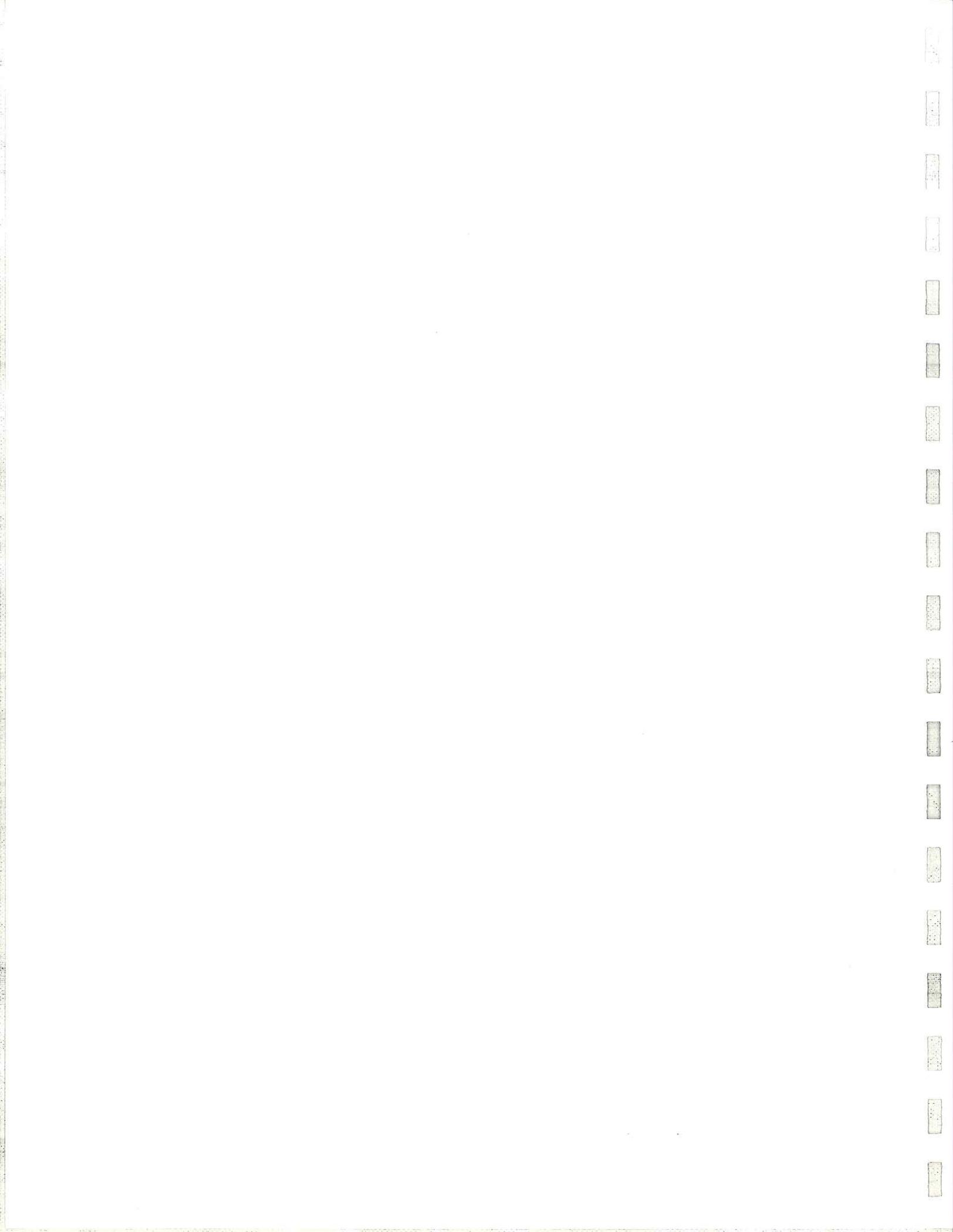
Both of these issues will require an extensive amount of time by all interested parties. File formats and specifications could be accomplished by the creation of a separate Technical Committee or by extending the responsibilities to the Technical Advisory Committee assigned to this project. It should include all other local units of government currently utilizing, or intending to utilize, the digital cadastral map files for base map purposes. As noted, current software advances in database design and data storage, may have an effect on existing participants, and their plans for conversion. Since these items were included in the scope of this project, Ruckert/Mielke should be responsible for conducting the necessary research and assisting in the development of standard file formats and specifications, and for assisting Milwaukee County with the implementation of procedures for maintaining and deploying incremental digital cadastral updates.

The following are other Technical Advisory Committee recommendations that require formal action by the MCAMLIS Steering Committee:

- Elimination of MCAMLIS license agreement for the use of MCAMLIS digital cadastral and topographic products.
- Preparation and maintenance of larger tiled digital cadastral and topographic files. Total cost for the preparation of larger tiled digital cadastral and topographic file was estimated to be between \$75,000 - \$85,000.
- Data conversion tool. The total cost to develop an automated tool to systematically prepare the required municipality tiled digital cadastral maps from county-wide coverages was estimated to be between \$3,000 - \$5,000.
- Implement procedures and database design recommendations to support transactional updates. Cost estimate: \$26,000-\$38,000.

Finally, Report No. 4 will include a summary of all information collected and will include an analysis of the project results and estimated costs.

**APPENDIX A – PARTICIPANT QUESTIONNAIRES**



**MCAMLIS Inventory Questionnaire**

Organization: \_\_\_\_\_ Date: \_\_\_\_\_

Completed by: \_\_\_\_\_

Define the extent of the geographic area for which you use, or would use, the MCAMLIS products:

\_\_\_\_\_

**SECTION A: MCAMLIS PRODUCTS**

1. Do you use MCAMLIS products:  Yes  No

Please describe your department or organization's use of the following MCAMLIS products, including both hard copy and digital:

<b>Cadastral</b>	Hard Copy:	
<b>Topographic</b>	Hard Copy:	

**SECTION A: MCAMLIS - Cadastral Files**

1. Do you update the digital cadastral files: Yes  No

If yes, please answer the following:

In what department: \_\_\_\_\_

By how many employees: \_\_\_\_\_

Individual responsible for updates: \_\_\_\_\_

How often: \_\_\_\_\_

2. Would you like to see MCAMLIS update the cadastral files more often? Yes  No

If yes, how often

Daily  Weekly  Bi-monthly  Monthly  Quarterly  Yearly

If yes, please explain which cadastral features need to be provided:

Delivered in what software? \_\_\_\_\_

3. Do you use custom tools Yes  No

If yes, who developed tools? \_\_\_\_\_

In what software or macro language was tool developed? \_\_\_\_\_

4. Explain process of obtaining source materials

5. Is it important to track the history of updates

Yes  No

6. Do you think updates could be handled by an outside agency? Yes  No

If no, please explain reason(s)

7. If updates were supplied by an outside agency, could you maintain your organization's information in a separate file?

Yes  No

8. Have you successfully integrated or imported digital information from other software into the digital cadastral maps?

Yes  No

If yes, what software File format (*Please describe information that was integrated or imported*)

Were custom tools developed?

Yes  No

If yes, please explain \_\_\_\_\_

9. Have you compiled a seamless map of the digital cadastral maps?

Yes  No

If no, would you like to have this done by MCAMLIS?

Yes  No

If yes, what would be the desired extent of your seamless map? \_\_\_\_\_

**SECTION A: MCAMLIS – Topographic Files**

1. Do you update the digital topographic files: Yes  No

If yes, please answer the following:

In what department: \_\_\_\_\_

By how many employees: \_\_\_\_\_

Individual responsible for updates: \_\_\_\_\_

How often: \_\_\_\_\_

2. Would you like to see MCAMLIS update the topographic files more often? Yes  No

If yes, how often

Daily  Weekly  Bi-monthly  Monthly  Quarterly  Yearly

If yes, please explain which topographic features need to be provided:

\_\_\_\_\_

Delivered In what software: \_\_\_\_\_

3. Do you use custom tools Yes  No

If yes, who developed tools? \_\_\_\_\_

In what software or macro language was tool developed? \_\_\_\_\_

4. Explain process of obtaining source materials

\_\_\_\_\_

5. Is it important to track the history of updates Yes  No

6. Do you think updates could be handled by an outside agency? Yes  No

If no, please explain reason(s)

\_\_\_\_\_

7. If updates were supplied by an outside agency, could you maintain your organization's information in a separate file? Yes  No

8. Have you successfully integrated or imported digital information from other software into the digital topographic maps? Yes  No

If yes, what software File format (*Please describe information that was integrated or imported*)

\_\_\_\_\_

Were custom tools developed? Yes  No

If yes, please explain \_\_\_\_\_

9. Have you compiled a seamless map of the digital cadastral maps? Yes  No

If no, would you like to have this done by MCAMLIS? Yes  No

If yes, what would be the desired extent of your seamless map? \_\_\_\_\_

**SECTION B: SOFTWARE**

Do you use CAD or GIS software: Yes  No

If yes, please list software products, operating system, your staff's expertise with each, and, if applicable, what MCAMLIS product is used with each software:

Software	OS	Expertise 1(low)-3(high)	MCAMLIS Product

**SECTION C: INTERNET**

Do you have internet access: Yes  No

If no, do you have plans to obtain access? Yes  No

If yes, how soon?

1-3 months  3-6 months  6-12 months  1-2 years  more an 2 years

If yes, what type and speed of an internet connection do you have:

56 K  128 KB  Cable  DSL  T1  Other  Connection Speed \_\_\_\_\_

If yes, what type of internet browser do you use: \_\_\_\_\_

Please return to:

Thomas J. Tym  
Ruekert/Mielke  
W233 N2080 Ridgeview Parkway  
Waukesha WI 53188-1020  
[tjtym@ruekert-mielke.com](mailto:tjtym@ruekert-mielke.com)

By:

Friday, October 5, 2001

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Milwaukee County  
Dept. of Public Works

