# COMMISSION, WALWORTH COUNTY BOARD ADOPT WALWORTH COUNTY JURISDICTIONAL HIGHWAY SYSTEM PLAN

At its regular quarterly meeting on March 1, 1973, held at the Walworth County Courthouse, the Regional Planning Commission adopted a jurisdictional highway plan for Walworth County. This plan constitutes a refinement of, and amendment to, the previously adopted regional transportation plan as that plan applies to Walworth County.

The plan was also adopted by the Walworth County Board at its regular meeting on April 17, 1973, but with one amendment. The amendment states that the State Trunk Highway facility through the Village of East Troy, proposed to run along N. Church Street and Grove Alley between E. Main Street and E. North Street, be rerouted along E. Main Street between Church Street and Division Street and along N. Division Street between Main Street and North Street.

The plan as adopted not only recommends jurisdictional responsibility for each of the individual facilities that together comprise the total arterial street and highway system for Walworth County, but also recommends right-of-way and pavement widths for each arterial facility, together with the type of improvement that will be required to serve land use and transportation needs within the county to the year 1990. The preparation of jurisdictional highway system plans for each county in the Region was recommended as an important plan



implementation action in the adopted regional transportation plan. In addition to the Walworth County plan now completed and the Milwaukee County plan which was adopted June 4, 1970, such plans are under preparation at the specific request of the respective county boards for Ozaukee, Racine, and Waukesha Counties. All of the county jurisdictional highway system plans are being cooperatively prepared by the county involved; the Wisconsin Department of Transportation, Division of Highways; the U. S. Department of Transportation, Federal Highway Administration; the Regional Planning Commission; the county highway committees; and the local units of government—cities, villages, and towns—concerned.

The jurisdictional highway planning program in Walworth County was begun in response to a County Board resolution adopted on March 19, 1968. Technical work was completed in October 1972 by an interagency staff with representatives from the Wisconsin Department of Transportation, Division of Highways; Walworth County; and the Regional Planning Commission. Technical policy direction was provided by a Technical Coordinating and Advisory Committee, with representation from the Federal Highway Administration, the Wisconsin Department of Transportation, the Regional Planning Commission, Walworth County, and the 12 representatives of local units of government and interested citizens from Walworth County. The membership of the Committee is set forth below:

Milton R. Reik	•	•	Citizen Member, City of Lake Geneva
Chairman			
Wilmer Lean	•	•	County Highway Commissioner
Secretary			Walworth County
Anthony F. Balestrieri	•	•	Consulting Engineer, City of Elkhorn
			Commissioner, SEWRPC
William E. Barth	•	•	. Citizen Member, Town of Walworth
Kurt W. Bauer	•	•	Executive Director, SEWRPC
Schuyler W. Case		•	Citizen Member, Town of Sharon

#### WALWORTH COUNTY JURISDICTIONAL PLAN-continued

Vincent V. Casey	Citizen Member, Town of Linn
Theodore Casper	Citizen Member,
	Village of Williams Bay
Werner Christian	Chairman, Town of Whitewater
Frank Cline	Citizen Member, Town of East Troy
Oliver W. Fleming	Alderman, City of Delavan
George Gunderson	Chief of Statewide Planning,
	Division of Planning,
	Wisconsin Department of Transportation
G. F. Hill	City Manager, City of Whitewater
Emil Johnejack	Mayor, City of Lake Geneva
Herbert E. Johnson	Consulting Engineer, City of Elkhorn
Thomas R. Kinsey	District Engineer, District 2,
	Division of Highways,
	Wisconsin Department of Transportation
Martin J. Monahan	Assistant Planning & Research Engineer
	Federal Highway Administration
	U. S. Department of Transportation

The regional transportation plan adopted in 1966 is a "functional" highway system plan and, as such, consists of recommendations concerning the general location, type, capacity, and service levels of the arterial street and highway facilities required to serve the Region to the year 1990, without regard to which level of government-federal, state, county, or local-should be responsible for the construction, operation, and maintenance of each of the various facilities which together form the arterial street and highway system. The Walworth County jurisdictional highway system plan contains specific recommendations as to which level of government should be responsible for the construction, operation, and maintenance of each of the various arterial facilities contained Thus, the jurisdictional highway system plan in the functional plan. provides for integrated state trunk, county trunk, and local trunk highway subsystems and for realignment of the supporting federal aid highway systems.

The assignment of jurisdiction to the various arterial facilities was done through the application of criteria prepared for this purpose. The criteria deemed most significant to the classification were related to three basic characteristics of the arterial facilities: 1) trip service, 2) land use service, and 3) the operational characteristics of the facilities themselves. Detailed criteria relating to each of these characteristics were prepared and the criteria applied to develop the recommended jurisdictional highway system plan. The criteria are summarized in Table 1.

The arterial street and highway system recommended to serve the growing traffic demand within Walworth County through the plan design year 1990 as shown on Map 1 totals approximately 489 route-miles of facilities, or about 34 percent of the estimated 1,440 route-miles of facilities expected to comprise the total street and highway system within the county in 1990. Of this total arterial system, 217 route-miles, or about 44 percent, are proposed to comprise the Type I (state trunk) system, an increase of 26 route-miles over the present system. This system may be expected to carry approximately 74 percent of the arterial travel demand and approximately 68 percent of the total travel demand expected to be generated within Walworth County by the year 1990. The state trunk system as recommended includes all of the committed and proposed freeway facilities within the county as well as certain important surface arterials, and as such, comprises the basic framework of the total highway transportation system in the county.

The recommended plan further proposes a Type II (county trunk) highway system consisting of 258 route-miles, or an additional 53 percent, of the total arterial mileage required to serve the county in the plan design year of 1990. This system represents an increase of 64 route-miles over the present system. It is intended to complement the recommended state trunk highway system, and together with that system, to include all major arterial facilities having areawide significance. The county trunk highway system may be expected to carry 24 percent of the arte-

4

#### Table |

#### SUMMARY OF FUNCTIONAL CRITERIA FOR JURISDICTIONAL CLASSIFICATION OF ARTERIAL HIGHWAYS IN WALWORTH COUNTY

		Arterial Type							
S	Criteria	I (State Trunk)	It (County Trunk)	III (Local Trunk) <sup>1</sup>					
Tr rv ii Pc e	Average Trip Length (Miles)	<u>Urban<sup>2</sup> and Rural<sup>3</sup></u> More than 21	<u>Urban<sup>2</sup> and Rural<sup>3</sup></u> 10 to 21	<u>Urban²</u> 2 to 10					
L a n d U s e S e r v i c e	Transportation Terminals	Urban and Rurai Connect and serve interregional rail, bus, and major truck terminals; and air-carrier airports	Urban and Rural Connect and serve freeway inter- changes, general aviation airports, pipeline terminals, major intraregional truck terminals, and rapid transit and modified rapid transit system loading and unloading points not served by Type I arterials	<u>Urban</u> Connect and serve truck terminals gen- erating 50 or more truck trips per av- erage weekday, and off-street parking facilities having a minimum of 50 parking spaces not served by Type I and II arterials					
	Recreational Facilities	Urban and Rural Connect and serve all state parks having a gross area of 500 acres or more	<u>Urban and Rural</u> Connect and serve regional parks and special recreational use areas of county-wide significance	Urban Connect and serve community parks not served by Type I and II arterials					
	Commercial Centers	Urban and Rural Connect and serve major retail and service centers	Urban and Rural Connect and serve community retail and service centers not served by Type I arterials	Urban Connect and serve neighborhood retail and service commercial centers not served by Type I and II arterials					
	Industrial Centers	Urban and Rural Connect and serve major regional industrial centers	<u>Urban and Rural</u> Connect and serve major community industrial centers not served by Type I arterials	Urban Connect and serve minor community industrial centers not served by Type I and II arterials					
	Institutional	Urban and Rural Connect and serve universities, county seats, and state institutions	<u>Urban and Rural</u> Connect and serve county institutions; accredited, degree-granting colleges; public vocational schools; and com- munity hospitals not served by Type I arterials	Urban Connect and serve city and village halls and high schools not served by Type I and II arterials					
	Urban Areas	Rural Connect and serve urban areas of 2,500 or more population	Rural Connect and serve developed areas of 500 or more population						
	System Continuity	Urban and Rural Interregional or regional continuity comprising total systems at the regional and state level	Urban and Rural Intermunicipality and intercounty con- tinuity comprising integrated systems at the county level	<u>Urban</u> Intracommunity continuity comprising an integrated system at the city, village, or town level					
0 a p r	Spacing	Urban and Rural Minimum 2 miles	Urban and Rural Minimum 1 mile	Urban Minimum 0.5 mile					
ecteriosti natics	Vołume	Urban and Rural Minimum 3,000 vehicles per average weekday (1990 forecast)	<u>Urban and Rural</u> 800 to 3,000 vehicles per average week- day (1990 forecast)	<u>Urban</u> Less than 800 vehicles per average weekday (1990 forecast)					
	Traffic Mobility	Urban Average overall travel speed <sup>4</sup> 30 to 70 miles per hour Rural Average overall travel speed 40 to 70	Urban Average overall travel speed <sup>4</sup> 25 to 50 miles per hour Rural Average overall travel speed 30 to 60	<u>Urban</u> Average overall travel speed <sup>4</sup> 20 to 40 miles per hour					
		miles per hour	miles per hour						
	Land Access Control	Full or partial control of 5, 6 access	Partial control of access <sup>6</sup>	Minimum control of access/					

A rural subcategory for Type III Arterials is not provided. "Urban arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is avail-able within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served – Type I Arterial facility. I mile; "Puel I Arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is avail-able within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served – Type I Arterial facility. I mile; "Aural arterial facility. I mile; the III Arterial actinty. O served is a served or the following maximum over-the-road distances from the main vehicular entrance to the land use to be served – Type I Arterial facility. Z mile; "Avail arterial facility. I mile; the following maximum over-the-road distances from the main vehicular entrance to the land use to be served – Type I Arterial facility. Z mile; "Average overall travel speed is defined as the sum of the distances travelled by all vehicles using a given section of highway during an average weekday divi-ded by the sum of the actual travel times including traffic delays. "Full control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to movement of through traf-fic by providing access connections only a stelected public roads via grade-separated interchanges. "Partial control of access is defined as the exercise of eminent domain or police power to control access os as to give preference to the movement of through traffic to adgree that, in addition to access connections at selected public roads there may be some direct access to abutting tand uses with generally one point of access shall be exercised.

be exercised. Minimum control of access is defined as the exercise of eminent domain or police power to regulate the placement and geometrics of direct access roadway connections as necessary for safety.

Source: SEWRPC.

Map I ADOPTED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WALWORTH COUNTY: 1990



rial travel demand and 22 percent of the total travel demand expected to be generated within Walworth County by the year 1990.

Finally, the plan recommends a Type III (local trunk) highway system consisting of the remaining 14 route-miles of arterial facilities, or about 3 percent of the total arterial mileage proposed to serve Walworth County in the plan design year 1990. This system, comprising an integral part of the total arterial street and highway system, represents a decrease of 49 route-miles over the present system and is intended to serve primarily local arterial street and highway needs.

The Technical Coordinating and Advisory Committee also recognized the need for the designation, marking, and signing of a system of scenic drives within the county. The Committee, however, believed that the delineation of such a system would be best accomplished by a broad-based committee of Walworth County citizens involved with the preservation of cultural, historic, scenic, and scientific areas within the county.

One of the most important objectives of the jurisdictional highway planning process is to attain the most effective use of the total public resources in the provision of highway transportation by focusing the appropriate resources and capabilities on corresponding areas of need. That the recommended jurisdictional highway system plan accomplishes this objective is indicated by the fact that the proposed state trunk arterial system may be expected to carry approximately 1.91 million of the 2.58 million arterial miles of travel anticipated to occur daily within Walworth County by 1990. Thus, approximately 44 percent of the total arterial street and highway mileage within the county may be expected to carry approximately 74 percent of the total arterial travel demand. The proposed county trunk arterial system may be expected to carry an additional 630,000 arterial vehicle miles of travel. Thus, an additional 53 percent of the total arterial street and highway mileage may be expected to carry an additional 24 percent of the total arterial travel demand. The remaining 40,000 arterial vehicle miles of travel, or 2 percent of the total demand, would be carried on the proposed local trunk arterial system. The proposed Type I and Type II systems combined may be expected to carry approximately 98 percent of the total arterial vehicle miles of travel expected to take place within the county by the year 1990, leaving only 2 percent to be carried by Type III arterials. This concentration of travel demand on the various arterial subsystems is indicated in Figure 1.

About 2.81 million vehicle miles of travel are expected to occur daily on all streets and highways within Walworth County by the year 1990. The proposed jurisdictional system plan thus clearly focuses the available resources on the areas of greatest need, and the adoption and implementation of the plan should serve to relieve the local units of government of much of the cost attendant to the movement of heavy volumes of fast, through traffic of areawide importance.

A careful analysis was made of the financial feasibility of the recommended jurisdictional highway system plan. Total plan construction and maintenance costs were estimated and compared to anticipated revenues over a 20-year plan implementation period and the costs tabulated for each municipality within the county. It was found that the plan, if followed, could be fully implemented at the present rate of public expenditures for highways. The financial analysis also carefully explored the effect of proposed changes in the jurisdictional highway systems on supplemental aids and allotments received by each municipality within the county.

Specific procedures for implementation of the recommended plan are set forth in the plan report. The most important of these include formal plan adoption by the federal, state, and local units of government concerned; realignment of the state trunk, county trunk, and federal aid systems to conform with the adopted plan; elimination of the connecting street concept; assumption of full maintenance responsibilities by the Figure |



state for all state trunk highways and by the county for all county trunk highways; integration of the recommended plan into the construction and programming procedures of the Wisconsin Department of Transportation and the Walworth County Highway Department; and adoption of common, uniform construction aid formulas and policies for all state and county trunk highways which would limit the local share of the cost of the construction of these facilities to 15 percent of the total cost, which would be determined on the basis of clearly defined eligible participating work items. The report also recommends certain actions by the state, county, and local units of government to protect needed rights-of-way from development, including the adoption of appropriate official maps, and to protect the capacity of the arterial highway facilities through the control of marginal access. The plan also includes a recommended staging for the improvement of the state and county trunk highway systems within Walworth County.

Not all of the arterial facilities comprising the functional system considered in the jurisdictional classification will be open to traffic by 1975. In order to accommodate traffic demand in corridors to be served by freeways proposed for construction after 1975, it is recommended that certain arterial facilities which should ultimately be designated as county trunk highways be maintained as state trunk highways until such time as the paralleling freeways intended to serve the corridors are constructed. Upon completion of these freeways, the interim state trunk highways would revert to county trunk highways. This staged development, in addition to providing improved traffic service, would facilitate system continuity and arterial route marking during the interim plan implementation period.

The proposed state trunk highway system is recommended to include 197 route-miles of facilities in 1975, and the proposed county trunk highway system, 228 route-miles. Thus, the total mileage for the combined state and county trunk systems in 1975 is 425 miles, somewhat less than the proposed 1980 and 1990 equivalent mileages. In 1980 the

## WALWORTH COUNTY JURISDICTIONAL PLAN-continued

proposed state trunk system is recommended to include 198 route-miles of facilities, complemented by a proposed county trunk system comprised of 244 route-miles of standard arterials. With the completion of the recommended freeway system by 1990, the proposed state trunk system is recommended to include 217 route-miles of facilities and the proposed county trunk system is recommended to include 258 routemiles of facilities. Maps 2 and 3 show the 1975 and 1980 stages.

The plan not only contains recommendations with respect to the logical jurisdictional classification of each segment of the total system, but recommendations concerning the type of improvement, the typical cross section required to meet probable future traffic demand, and the level of service which the improvement and cross section will provide. This level of detail permits the plan to be used as a basis for official mapping to reserve needed rights-of-way. The means by which this detail is shown on the plan is illustrated in Figure 2. Adoption and implementa-

Adoption and implementation of the recommended jurisdictional highway system plan will provide Walworth County with a highway transportation system which will not only effectively serve future travel demand at an adequate level of service, but which will also concentrate appropriate resources on corresponding areas of need, assuring more effective use of public resources in the provision of highway transportation services, and which will provide a more equitable distribution of highway improvement, operation, and maintenance costs among the various levels and agencies of government concerned. The plan as adopted by the Commission and the County Board has been formally certified to the local governments in Walworth County, as well as to all concerned areawide, state, and federal agencies for adoption and implementation. It is extremely desirable that the plan be adopted by all of the units and agencies of government concerned to assure common understanding among neighboring communities and county, areawide, state, and federal agencies involved concerning the desirable pattern of highway system development in Walworth County and to enable work to proceed on plan implementation in a coordinated manner.

Map 2 ADOPTED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WALWORTH COUNTY: 1975 STAGE



2000

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Source: SEWRPC

Map 3 ADOPTED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WALWORTH COUNTY: 1980 STAGE



13





#### PART OF THE ADOPTED JURISDICTIONAL HIGHWAY SYSTEM PLAN FOR WALWORTH COUNTY: 1990

As shown on the above portion of the Walworth County jurisdictional highway system plan, a threedigit arterial code has been assigned to each link in the proposed 1990 arterial system designating the type of improvement required, the cross section recommended to meet the forecast travel demand, and the level of service provided by the recommended cross section. Examples of these codes circled on the map are 3-2-B and 3-8-B. The first digit identifies the recommended type of improvement: 3 Reconstruction With Same Capacity. Other types of improvement coded in the plan are: Resurfacing Only, Construction of New Facility, Reconstruction for Additional Capacity, and No Work Required. The second digit identifies the recommended arterial cross section: 2 Typical Cross Section No. 2 (see below) and 8 Typical Cross Section No. 8 (see below). There are a total of 18 typical cross sections recommended in the plan for various kinds of two, four, and six lane arterials. The letter following the two digits identifies the level of service provided by the recommended cross section under forecast traffic volumes. Levels of service range from A, or free flow operation at low volumes, high speeds, and most desirable operation conditions, through F, or forced flow operation at very low speeds and very undesirable operating conditions.



#### COMMISSION PLANNING PROGRAM CITED AS ONE OF TOP U. S. ENGINEERING ACHIEVEMENTS

The comprehensive planning program undertaken by the Southeastern Wisconsin Regional Planning Commission since 1961 has been cited by the National Society of Professional Engineers (NSPE) as one of the nation's top 10 engineering achievements of 1972. It is the first time that a planning program, in contrast to engineering projects resulting in actual constructed works, has received such a national award. The Commission's planning program, which was nominated for the award by the Wisconsin Society of Professional Engineers, is also the first engineering project in Wisconsin to be cited as one of the top 10 engineering achievements by NSPE. Selection of the top achievements was made during Engineer's Week, February 19 to 23, and was announced on February 27, 1973.

The Society stated that the "Southeastern Wisconsin Plan was cited as an outstanding engineering achievement because of its use of fundamental systems engineering skills and sound engineering judgement to create a design which is complex and thorough in format, yet understandable and workable by lay persons responsible for the plan's implementation. Many of the plan's elements (detailed soil surveys, base mapping based on monumented survey control, extensive stream water quality and flow monitoring, integrated transportation, land use, and natural resource conservation plans, local planning guide publications, economic and population studies, public utility and natural resource base studies, land use and zoning studies, and the assembly of an automated planning data bank) are unprecedented in other regional areas in the United States. The comprehensive plan, carried out by the Southeastern Wisconsin Regional Planning Commission, provides the necessary framework for coordinating and guiding growth and development within a multijurisdictional urbanizing Region having essentially a single community of interest."

The comprehensive plan, based on application of sound engineering principles for solutions to areawide environmental and developmental problems such as traffic congestion, air and water pollution, flooding and rapidly changing land use is the result of over a decade of work by the Commission.

An engraved award plaque will be formally presented to the Commission at the annual meeting of the Wisconsin Society of Professional Engineers on May 11, 1973, in Madison. In a letter of response to the Society, the Commission Executive Director pointed out that, "The Commission is particularly pleased with the unusual recognition because the regional planning effort in southeastern Wisconsin was, in a very real sense, the work of not just the Commission and its staff, but of the many governmental officials and business and civic leaders who have, over the years, contributed unselfishly of their time and experience to the preparation of the various regional plan elements through the Commission's Advisory Committee structure. Professional engineers as a group within the Region have made a particularly outstanding contribution to the preparation of the regional plan and from the very inception of the Commission have been among the staunchest supporters of the concept of a comprehensive, areawide approach to the developmental and environmental problems of this rapidly urbanizing Region."

The National Society of Professional Engineers Outstanding Engineering Achievements Committee selected the 1972 engineering accomplishments from 33 nominations by state and local chapters. The other nine projects of 1972 that were honored by the Society are: the North Cascades Highway in Washington, the culmination of the transition of the 160-year old route through the Cascades from a footpath used by trappers and gold-seeking prospectors to a horse trail, then a wagon road, and finally a modern highway; the Kansas City International Airport; the Geysers Power Plant in California, America's only commercial producer of electricity generated with geothermal steam; the Muskegon County, Michigan Wastewater Management System; the Personal Rapid Transit System linking the far-flung campuses of West Virginia University in Morgantown, West Virginia; the "Prairie Plan," conceived by the Metropolitan Planning District of Greater Chicago, whereby nutrients contained in wastewater are returned to the land; the Houston Ship Channel Bridge, the largest ever built in Texas and the nation's longest strutted-girder bridge; the new Baggage Handling System at Seattle-Tacoma International Airport, an airport-owned, high-speed, automated baggage handling system serving all airlines; and a unique oil-water separator developed by and used at four General Electric plants in Pittsfield, Massachusetts to eliminate the problem of oil from plant waste drains reaching the nearby Housatonic River.

#### EPA APPROVES MILWAUKEE RIVER WATERSHED PLAN

The U. S. Environmental Protection Agency (EPA) has approved the Milwaukee River watershed plan as the interim water quality management plan for the Milwaukee River Basin and Milwaukee County. The plan has also been adopted and endorsed by numerous other levels and agencies of government, including the Wisconsin Natural Resources Board. Adoption by the Board constituted state recognition of the plan as the official basin water quality plan for the Milwaukee River watershed, and the Board subsequently certified the plan to the EPA for its review and approval.

EPA approval of the plan is necessary before federal funds can be made available for construction of needed sewerage facilities in the watershed. Such funding is particularly important to help resolve the combined sewer overflow problems in the City of Milwaukee.

The EPA in its approval said that the plan, as developed by the Southeastern Wisconsin Regional Planning Commission, "is certainly without equal in the State of Wisconsin with respect to comprehensiveness and quality of planning."

#### NEW ISSUE OF TECHNICAL RECORD PUBLISHED

The progress of freeway flyer service in southeastern Wisconsin, the development of equations for rainfall intensity-duration-frequency relationships, and a brief history of the American automobile and automobile registrations are discussed in Volume 3, No. 5 of the <u>Technical Record</u> which has been published by the Commission.

As noted by Sheldon W. Sullivan in the first article, "Freeway Flyer Service in Southeastern Wisconsin—A Progress Report: 1964-1971," freeway flyer service has prospered in the more than eight years since it was established in southeastern Wisconsin despite a large decline in the use of all other forms of mass transit in the Region. Mr. Sullivan, who is Chief of Data Collection for the Commission, noted that ridership on the freeway flyer service increased from about 81,000 revenue passengers on a single route in 1964 to about 675,000 revenue passengers on seven routes in 1971.

Data were also collected on various freeway flyer routes for 1964, 1966, and 1969 regarding the number of persons who switched from auto driver to freeway flyer passenger, the number of freeway flyer passengers who were licensed auto drivers and who had automobiles available at the time they made their freeway flyer trip, freeway flyer trip characteristics, and the principal areas of attraction on the various freeway flyer routes.

The second article, "Development of Equations for Rainfall Intensity-Duration-Frequency Relationships" by Stuart G. Walesh, Water Resources Engineer for the Commission, describes two analytic techniques—a graphical method and a computer-assisted mathematical curve fitting method—used to develop mathematical equations expressing point rainfall intensity as a function of recurrence interval and duration.

The final article, "The American Automobile: A Brief History of the Development of the American Automobile and the Growth of Automobile

Registrations in the United States, Wisconsin, and the Southeastern Wisconsin Region: 1896-1970, "was also written by Mr. Sullivan.

The tremendous growth in the number of automobile registrations since 1896, reportedly the beginning of the automobile industry in America, is noted in the article. In 1896, 16 automobiles were reported to have been registered in the United States. By 1910 the number reached 458,000, and by 1970 it totaled 89 million. Within the Region, the number of registered automobiles increased from 22,000 in 1915 to almost 736,000 in 1970.

Copies of the <u>Technical Record</u> are available from the Commission for \$1 inside the Region and \$2 outside the Region.

# SOCIOECONOMIC DATA CONTAINED IN THIRD VOLUME OF COMMUNITY PROFILE SERIES

The third volume of a five-volume Community Profile series for each of the 146 cities, villages, towns, and seven counties in the Region has been published by the Commission.

The third volume contains 12 data tables which provide socioeconomic characteristics of the resident population of each community as extracted from the 1970 U. S. Census of Population and Housing computer tape files. The tables contain population information for each minor civil division, relating the population to country of origin or nativity, number of persons of Spanish language, means of transportation to work, school enrollment, labor force status, occupation, income, and information on the year in which those persons being enumerated moved into their dwelling units.

The five-volume series will result in a demographic and economic profile of each community in the Region. The series was initiated by SEWRPC to disseminate data from the 1970 Federal Census as quickly as possible to the local units of government, as well as to make available certain planning and engineering data compiled by the Commission as part of its ongoing work programs.

Additional volumes in the series will contain more detailed 1970 census information as it becomes available. Each volume in the series will be available on an individual community basis from the Commission for \$1 per volume for each community and \$10 per volume for each county.

#### AROUND THE REGION

## DNR BEGINS PROGRAM REQUIRING REPORTS ON DISCHARGES TO AIR. WATER

The Wisconsin Department of Natural Resources has begun implementation of a program to require that persons discharging industrial wastes, toxic and hazardous substances, or air contaminants submit a report on these discharges to the Department.

Authorization for the air and water quality monitoring program is Chapter NR 101 of the Wisconsin Administrative Code, which was adopted by DNR in January 1973 and which sets forth specific rules for the conduct of the program. Section 144.54 of the Wisconsin Statutes, created by Chapter 125 of the Wisconsin Laws of 1971, directed that the Department require that the discharge of wastes be reported. The law specifically exempts municipalities from these rules, and also establishes an annual monitoring fee to provide for the cost of the program.

The Department has notified all persons who may be required to report discharges from their firms. Persons are required to file an effluent report with the Department if:

- 1. Treated or untreated effluent is discharged directly to surface waters of the state.
- 2. At least 10,000 gallons of effluent per day, one or more days during the year, are discharged to a land disposal system or to a municipal sewerage system.
- 3. Less than 10,000 gallons of effluent per day are discharged to a land disposal system or municipal sewerage system, when the Department finds that surveillance by the state is required to protect the environment.
- 4. More than one million British thermal units are contributed per day, one or more days during the year, to the effluent discharged to surface waters.

Certain discharges are exempted from reporting, primarily if the discharge contributes none of the industrial wastes or toxic and hazardous substances listed in the code. Agricultural land runoff from land used exclusively for crop production also need not be reported.

Information required in the effluent reports includes general facility information; specific locations where effluent is being discharged into surface waters, a sanitary sewerage system, or a land disposal system; estimates of both the annual and average daily quantities of effluent discharged; concentrations and quantities of industrial wastes or toxic and hazardous substances contributed to the effluent in excess of required reporting levels; temperatures and volumes of thermal discharges to surface water; pH range of effluents; and a brief description of the manner and amount of raw materials used which produce the wastes being reported.

Persons are required to file emission reports with the Department if:

## AROUND THE REGION—continued

- 1. A daily reporting level of 0.25 tons per day of operation is established for particulates, sulfur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons, or oxidants.
- 2. Emission of any toxic or hazardous substance listed in the code is permitted at or above concentration or emission reporting levels listed in the code.
- 3. Emission into the ambient air of any substance or combination of substances is permitted in such quantities as to constitute a malodorous emission under NR 154.18.

Specific information is required in the air emission reports for persons whose emission of contaminants into the air is the result of fuelcombustion, manufacturing activities, incineration, toxic and hazardous substances, and malodorous emissions.

The reporting and monitoring system does not constitute a licensing or permit system, however. Persons discharging such effluents or emissions must continue to meet federal, state, and local pollution control requirements, and remain subject to any rules and general or special orders issued by the authority of the Department. The program will provide for the first time data necessary for the preparation of comprehensive air and water quality management plans that become the basis upon which effluent and emission discharge permits are issued.

#### FREEWAY FLYER ROUTE REESTABLISHED

A freeway flyer route between the Bay Shore shopping center in the City of Glendale and the Milwaukee central business district (CBD), which was discontinued in August 1972 because of lack of adequate parking facilities at the shopping center, has been reestablished as a result of the construction of new public parking facilities adjacent to the shopping center. AROUND THE REGION—continued



NORTH SHORE FREEWAY FLYER TRANSIT PARKING STATION

The Bay Shore Freeway Flyer route, which had been established in November 1965 as the second freeway flyer route in Milwaukee County, was discontinued after August 11, 1972. To fill the void left by discontinuance of the service, a new service was established on August 14, 1972, between the Northland Shopping Center in the City of Milwaukee and the Milwaukee CBD. It included an additional loading and unloading point near the Bay Shore shopping center where no special parking spaces were provided.

In late 1972, however, the U. S. Department of Transportation-Federal Highway Administration, the Wisconsin Department of Transportation, and Milwaukee County funded the construction of a new surface parking lot located on excess freeway right-of-way adjacent to the Bay Shore shopping center. The construction of the lot enabled the reestablishment on January 2, 1973, of the former Bay Shore route as the North Shore Freeway Flyer route.

Combined average weekday passenger volume on the Northland and North Shore routes in April 1973 was about 585, compared to an average weekday ridership in 1972 of 571 on the former Bay Shore route, according to figures of the Milwaukee and Suburban Transport Corporation which operates freeway flyer service in Milwaukee County. When the North

#### AROUND THE REGION-continued

Shore route was reestablished, average weekday volume on the Northland route dropped from 418 persons in 1972 to about 280 in January 1973. Average weekday ridership on the North Shore route in January 1973 was about 290 persons, for a combined total of 570. This total is expected to increase, however, as riding habits are adjusted to the revised service.

#### TRANSIT PARKING STATION PLANNED

The Wisconsin Department of Transportation Division of Highways plans to build a transit parking station in the Goerkes Corners interchange, located along the west side of CTH SS between IH 94 and USH 18 in the Town of Brookfield. The Division has requested \$65,000 in federal aid, or 90 percent of the total \$72,000 cost. The proposed station implements the adopted regional transportation plan as amended by the Milwaukee Area Transit Plan. This plan specifically recommends construction of a park and ride and transfer facility with parking in the immediate area of the IH 94 interchange with USH 18. Wisconsin Coach Lines is the only transit carrier currently operating in this corridor. Until regular transit service is available at this transit parking station, the area will likely be used for car pools.



PROPOSED GOERKES CORNERS TRANSIT PARKING STATION

# AROUND THE REGION-continued

#### TOWN OF BELGIUM

One community's attempt to protect itself from urban sprawl is described in the article on page 26 by Loren H. Osman, reprinted from the March 12, 1973 issue of <u>The</u> Milwaukee Journal.

BROOKFIELD, MENOMONEE FALLS FORM MENOMONEE SOUTH SEWERAGE COMMISSION

The Village of Menomonee Falls and the City of Brookfield have formed a joint sewerage commission to provide for the construction, operation, and maintenance of a sanitary interceptor sewer along Butler Ditch.

The Menomonee South Sewerage Commission was jointly created by contract between the two municipalities. Two representatives from each municipality were recently appointed by the governing bodies to serve on the commission, which is one of three such commissions in the Region. The other two are the Underwood Sewer Commission jointly created by contract between the City of Brookfield and the Village of Elm Grove, and the Delafield-Hartland Water Pollution Control Commission.

The creation of these commissions is an example of how communities can work together to help meet an areawide need, without having to create a separate government agency to meet that need.

# HANDBOOK PUBLISHED ON EROSION, SEDIMENT CONTROL PROGRAMS FOR URBANIZING AREAS

A 226-page handbook containing guidelines, standards, and specifications for controlling soil erosion and sediment in urbanizing areas has been published by the U. S. Department of Agriculture, Soil Conservation Service office in Madison.

The handbook is designed primarily to help planners, township and municipal officials, engineers, developers, and others involved in urban development minimize erosion and sedimentation in Wisconsin. The handbook, entitled Minimizing Erosion in Urbanizing Areas, notes that

# Town of Belgium Fights Urban Sprawl

#### By Loren H. Osman of The Journal Staff

Belgium, Wis. - Can a rural town, rich in agricultural land a nd other natural resources, protect itself from the ravages of urban sprawl?

For the town of Belgium, midway between the burgeoning Sheboygan and Milwaukee areas, the major test is still to come.

But zoning steps the town took nearly seven years ago a re working, and providing benefits to farmers and others, according to officials. The moves were highly regarded by other urbanizing areas. Some now have similar actions underway themselves.

Stretching westward from Lake Michigan in Ozaukee County, the town is a handsome pocket with high producing farms, scattered woods and lowlands, a state park, only one incorporated area (the village of Belgium, with about 800 population) and a few crossroads communities gathered around rural churches.

The 1970 census showed 119 farms with a total of 19,800 acres, just over a quarter section in average farm size. The Kewaunee type soil is product i v e, if given drainage, said County Agent Michael Drozd. On most farms, there are dairy herds.

With such assets, there was an urge to preserve good land and to head off helter-skelter subdividing, especially where tight soils would cause sewage problems, according to Town Chairman John W. Krier. He and Supervisors Alfred Buchholz and Arthur Schmitz have farm ties.

Yet in 1966, Ozaukee County h a d no overall zoning and still doesn't, although it since has adopted a stringent sanitary code that governs septic tank installations in unincorporated areas. It also has shoreland and floodplain zoning, a requirement of the state, which regulates development of 1,000 feet inland along the lake. Both town a n d county codes follow soil types to restrict septic tank installations.

Krier was on the County Board seven years ago, and pushed for county zoning, without success.

So the help of Southeastern Wisconsin Regional Planning Commission (SEWRPC) was enlisted. Its experts helped draw up a zoning map and ordinance for the town of Belgium alone. It provided for agricultural and conservancy districts.

The agricultural district permitted dwellings only for resident owners, or their laborers. Operations allowed included dairving, floriculture, forestry, horticulture, nurseries and stables, on a minimum farm size of 20 acres. That size, noted Building Inspector Sylvester Weyker, also could bring "rural home" subdivisions, but so far there has been no problem - presumably because the lot size makes the cost prohibitive. If it comes, it could subtract from the farm land resource.

The conservancy district covered fishing areas, floodways, hunting areas, woods, stream banks, wildlife preserves and scenic, historic and scientific areas. Much of such space lies within boundaries of farms, so grazing, wild crop harvesting and orchards are allowed.

But there is to be no cultivation, dumping, soil or peat removal. The ban on cultivation, in effect, prevents farmers from breaking up natural areas for crops.

The SEWRPC planner saw no objection to homesites on higher, buildable conservancy land. This would require rezoning to residential, since only structures related to the principal or conditional use now are allowed. So far, none has been proposed.

In three unincorporated residential areas in the town — Dacada along the Sheboygan County line, Holy Cross and' Lake Church — floor space requirements we re for 1,000 square feet. Along the lake shore and in a small settlement near a dairy plant, zoning require d 1,200 square foot homes. In both districts,  $1\frac{1}{2}$ acre lots were required.

The town set up an industrial zone around the dairy plant, and a "planned industrial district" adjacent to the Lake Church community. The latter

has brought no industries so existing development, rather far.

Before the code was adopted, the town held a series of public meetings.

"But I don't think the residents fully understood the importance," Krier said. "Occasionally, we hear grumbling, from the person whose land is involved, but in general people l i k e the map as an overall guideline."

Because farmers need n ot fear a sudden spurt of subdividing by their neighbor, they are more willing to make long range capital commitments to their land, such as costly silos and buildings, Krier said. Because it is frozen into agriculture (unless rezoned), it continues to be ta x e d as farmland, not at its potential for subdividing.

Conversely, Weyker pointed out, land prices have stabilized because speculators have besitated to come in and submit to the town's stiff standards. A few had bought land before the ordinance was on the books. Their farms still are producing crops, not homes.

The effect is to channel new building to areas adjacent to

existing development, rather than have it scattered across the landscape, Krier said. Both county sanitary code and the town ordinance use soil types to govern septic systems.

With Harrington  $B \in a ch$ State Park developing along the lake shore, the town, which now has about 1,600 population, may begin to feel pressures of recreational activity. Also ahead is the effect of possibly converting Highway 141 to a freeway However, it would have only one exit in the town — at County Trunk D, which leads into the village.

The pioneer in farmland zoning in the seven county SEWRPC area, the town of Belgium provided the lead for other towns to adopt similar ordinances.

Recently, Columbia County set up agricultural zoning and either the county or the town involved can block a rezoning request. Walworth County is working on an elaborate new zoning ordinance, with an agricultural class having a minimum of 35 acres. It also will based on soil types.



The lettered portions, including those along the Lake Michigan shore, are areas where residential building is permitted. Other areas are zoned either agricultural or conservancy to protect natural resources.

# AROUND THE REGION—continued

soil erosion from urbanizing areas may be 10 to 100 times greater than erosion on agricultural land of equal size, slope, and soil type, adding that prudent use and conservation of soil, water, natural vegetation, and related resources should be included in all urban development plans.

Additional information about the handbook may be obtained from local soil and water conservation district offices.

#### QUESTION BOX

WHY WERE THE RAINFALL INTENSITY-DURATION-FREQUENCY EQUATIONS DEVELOPED WHEN THE COMMISSION HAD ALREADY PUBLISHED RAINFALL INTENSITY-DURATION-FREQUENCY CURVES?

Until very recently, urban storm water drainage systems were designed manually, generally using the "rational method." The rainfall intensityduration-frequency data required for application of this method were read manually off of curves prepared for this purpose, such as those prepared by the Commission and published in Volume 2, No. 4 of the Technical Record. Municipal engineers within the Region are beginning to apply automated design techniques employing electronic computers to storm sewer design. Such techniques, however, require that this rainfall intensity-duration-frequency data be available in the form of a mathematical equation which can be used directly with a digital computer, and for this reason the equations were developed. Although the equations were developed in direct response to a request from the City Engineer of the City of Racine, they are applicable throughout the Region, and can be made available to any municipal engineer or engineering consultant who may wish to apply them in automated storm drainage design.

