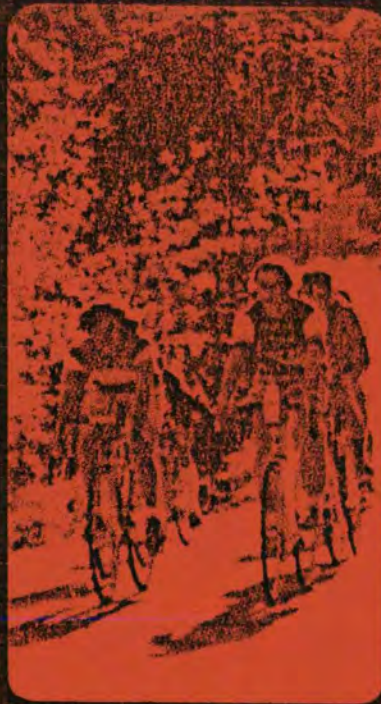
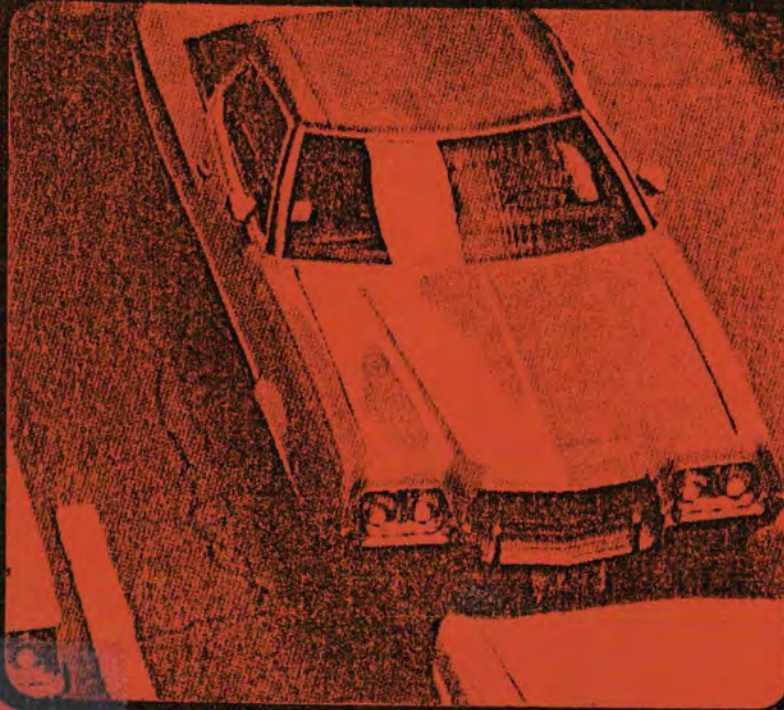


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Des Moines  
Urbanized Area



**TRANSPORTATION  
IMPROVEMENT PROGRAM**

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Fiscal Year 1977-1981  
TRANSPORTATION IMPROVEMENTS PROGRAM

FOR THE

DES MOINES URBANIZED AREA

Clive, Des Moines, Johnston,  
Pleasant Hill, Polk County,  
Urbandale, West Des Moines,  
Windsor Heights

June 1976

The Transportation Improvements Program for the Des Moines Urbanized Area was prepared under the direction of the Des Moines Urban Area Transportation Policy Committee by the Transportation Technical Committee and supported by the staff of the Central Iowa Regional Association of Local Governments.

The preparation of this report has been financed in part through grants from the U.S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended, and the Federal Highway Administration.

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TRANSPORTATION IMPROVEMENTS PROGRAM FEDERAL REQUIREMENTS

- The urban transportation planning process shall include development of a transportation improvements program including an annual element.
  
- The program shall be a staged multi-year program of transportation improvements projects consistent with the transportation plan.
  
- The transportation improvements program shall consist of improvements recommended from the transportation systems management and long-range elements of the transportation plan.
  
- The program shall cover a period of not less than three (3) years, but may at local discretion cover up to five (5) years or more.
  
- The transportation improvements program shall be developed and updated annually under the direction of the Metropolitan Planning Organization (MPO) in cooperation with: (1) State and local officials; (2) Regional and local transit operators; (3) Recipients authorized under Section 5 (b) (2) or (3) of the UMT Act (49 U.S.C. 1604 (b) (2) or (3)); and (4) Other affected transportation and regional planning and implementing agencies.

DEVELOPMENT OF THE TRANSPORTATION IMPROVEMENTS PROGRAM

The Transportation Improvements Program (TIP) for the Des Moines Urbanized Area (FY 1977-1981) is the programming document for implementing projects recommended from the short-range and long-range elements of the total transportation plan. The Des Moines Urbanized Area Transportation Systems Management (TSM) Plan in conjunction with the Des Moines Area Transit Development Program (TDP) serves as the short-range element of the Area's transportation plan, while the Revised Initial 1990 Des Moines Urbanized Area Transportation Plan serves as the long-range element.

The TSM was adopted by the Des Moines Urban Area Transportation Policy Committee on March 12, 1976. Development of the TSM is a new requirement of the urban transportation planning process, and replaces the need for submission of a separate Transit Development Program. However, due to constraints on the amount of time available for development of the TSM, extensive analysis of the Area's transportation system needs could not be performed. Therefore, the TDP, which was adopted by the Policy Committee on August 11, 1975, has been utilized to serve with the TSM as the short-range element of the Area's transportation plan.

The projects contained in the TSM are designed to meet the short-range needs of the transportation system. The inclusion in the TIP of projects recommended from the TSM is a condition of the Urban Mass Transportation Administration program

approvals for all projects proposed for implementation with Federal Assistance under Sections 3 and 5 of the Urban Mass Transportation Act of 1964, as amended, in all urbanized areas having a population of 200,000 or more. In accordance with this federal requirement, projects recommended from the TSM have been programmed into this TIP.

The Revised Plan was adopted by the Des Moines Urban Area Transportation Policy Committee on July 3, 1974 and was reaffirmed on December 5, 1975. As part of the adoption process of the Revised Plan, the improvements necessary to implement it were divided into three (3) priority stagings by the Des Moines Urban Area Transportation Technical Committee.

1. First Priority Staging (FY 1975-1979)
2. Second Priority Staging (FY 1980-1984)
3. Third Priority Staging (FY 1985-1990)

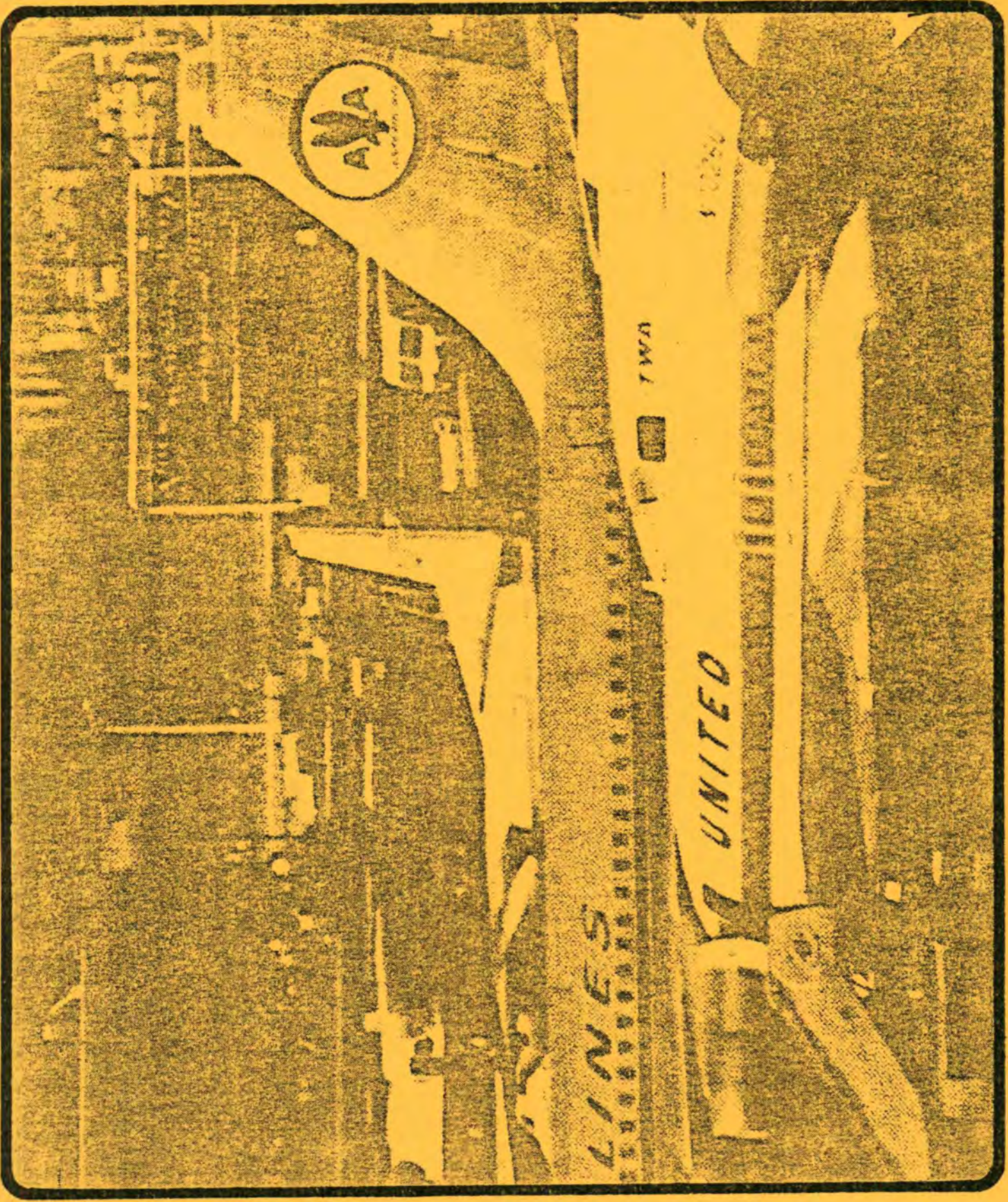
These priority stagings are intended to serve as a guide to member governments in the preparation of their individual transportation short-range capital improvements (CIP) programs. In the development of these programs, individual member governments look at areas of immediate need (problem areas such as congested or high accident areas) as well as the long-range needs of their transportation system. Many of the immediate needs of the transportation system can be met by actions recommended through the short-range planning process while long-range projects are drawn from the long-

range plan. Thus, the TIP is a mergence of projects recommended from the short-range planning process (TSM), and also from the long-range planning process (Revised Plan).

On an annual basis, the TIP for the Des Moines Urbanized Area will show the progress being made toward implementation of the total transportation plan. Projects recommended from the TSM and the Revised Plan have been programmed for implementation during a specific year covered by the TIP, depending on the priority of that project. Where information was available, estimated project costs and proposed funding sources have been submitted for each project by the participating jurisdictions in order to establish a budget which reflects maximum utilization of available local and federal funds. The projects programmed for implementation during the first year of the TIP are included in the annual element.

To continue the process of implementation of the total transportation plan, local officials will have to consider the remaining projects for inclusion in ensuing TIP's. A TIP will be developed annually for the Des Moines Urbanized Area based upon the input and priorities of each member government through the continuing urban transportation planning process. It should be noted that the priority of certain upcoming projects may vary due to changing conditions in the Urbanized Area, or the local government's financial capability to implement specific projects.





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### FUNDING FOR AIRPORT PROJECTS

On June 30, 1975 federal funds available under the Federal Aviation Agency's Airport Development Aid Program (ADAP) expired. The purpose of ADAP was to provide financial assistance for the development of a nationwide system of airports. Grants were made available for the purpose of general airport development as well as for establishing and improving air navigation facilities. To be eligible for funding under ADAP an airport had to be designated as part of the national airport systems. These funds were exclusively for use by publicly owned airports.

At this time no federal funds are available to assist in airport improvement projects. However, the Airport and Airway Development Act Amendment (HR 9771) is in committee in Congress at this time; which, if passed would release Federal funds to assist in airport improvement projects.

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES AIRPORT		TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION / DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	CIP	1977	Airport Terminal Bldg.-Interior Renovation		RC					L			130,000	130,000
	CIP	1977	Airport Master Plan		ST					FAA	206,250		68,750	275,000
2	CIP	1977-78	Airport Parking Expansion		C					L			675,000	675,000
	CIP	1977-80	Runway/Taxiway Improvements		P					FAA	5,097,750		1,699,250	6,797,000
3	CIP	1978	Emergency Generator-Concourse		IN					L			30,000	30,000
4	CIP	1978	Northeast Service Road		P					FAA	131,500		43,500	175,000
5	CIP	1978	Air Cargo Apron-expansion		C					FAA	151,500	25,250	25,250	202,000
6	CIP	1978	G.A.D.O. Apron Paving		P					FAA	19,000	3,000	3,000	25,000
7	CIP	1978	F.B.O. Apron Paving Overlay		RS					FAA	261,000	43,500	43,500	348,000
	CIP	1978-81	Airport Drainage Study & Construction		ST					L			190,000	190,000
8	CIP	1979	South Service Road		C					FAA	187,500	31,250	31,250	250,000
9	CIP	1979	Landing aids-12L/30R (lighting system)		IN					FAA	439,500	73,250	73,250	586,000
10	CIP	1981	Water Main Loop		C					L			150,000	150,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project location.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVISED PLAN
- TSM - TRANSPORTATION SYSTEM MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TDP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

- ARS - AIRPORT SIGNALS
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CORRELATION
- G - GRADING
- GR - GRAVEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- M - MASHING
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- RM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STAFF
- TL - TURNING LANES
- M - MASHING

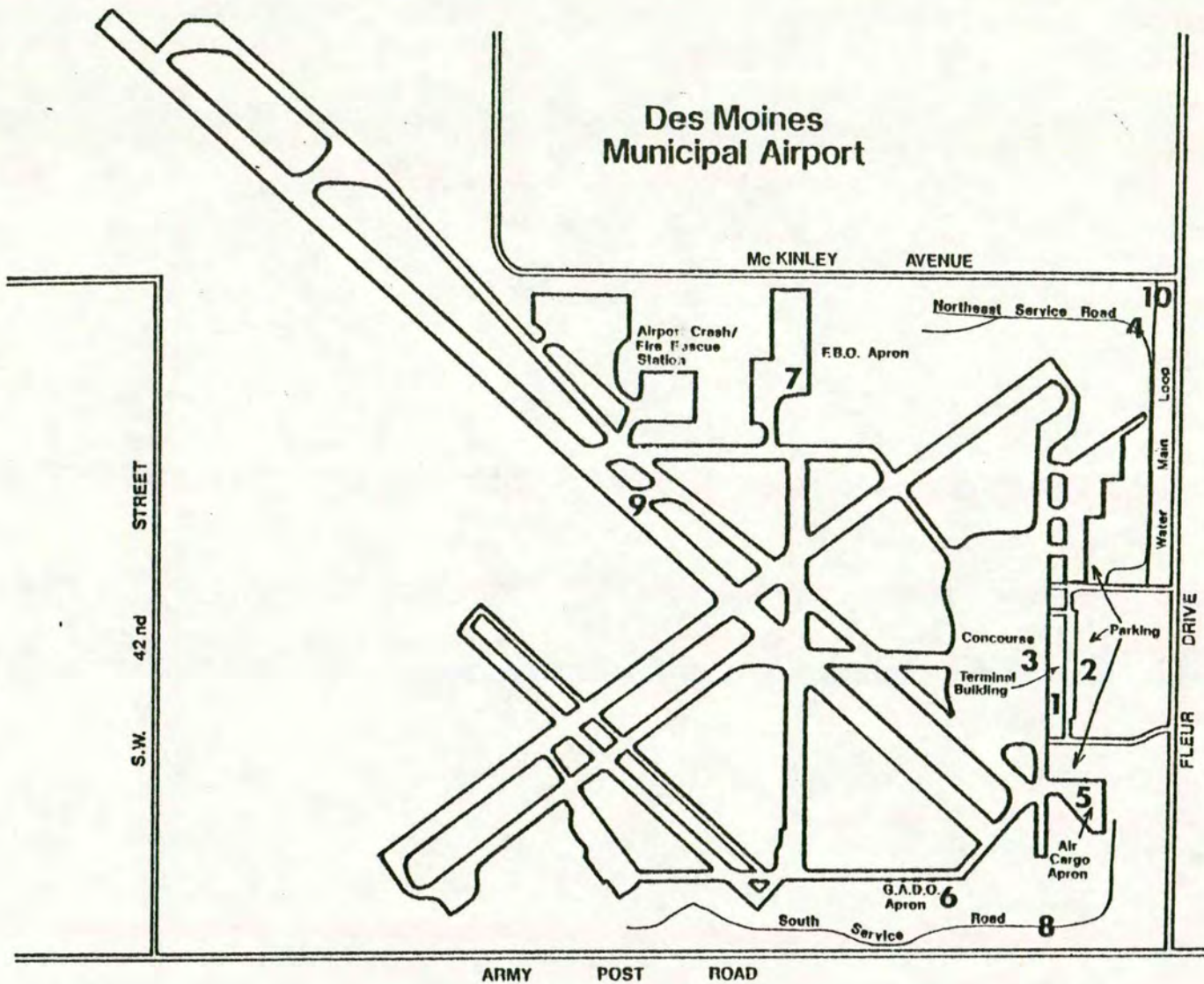
NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

- FA - PRINCIPLE ARTERIAL
- PA - HIGH ARTERIAL
- C - COLLECTOR
- L - LOCAL

FUNDING TYPE

- FAI - FEDERAL AID INTERSTATE
- FAP - FEDERAL AID PRIMARY
- FAUS - FEDERAL AID URBAN SYSTEM
- FAS - FEDERAL AID SECONDARY
- FPI - FARM-TO-MARKET
- T 2 - TITLE II
- IRD - DEPARTMENT OF REVENUE AND URBAN INVESTMENT
- SEC. 3 - URBAN SECTION 3
- SEC. 5 - URBAN SECTION 5
- SEC. 10 - URBAN SECTION 10
- BOB - BUREAU OF OUTDOOR RECREATION
- FAA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL

# Des Moines Municipal Airport



No Scale





## FUNDING AVAILABLE FOR BICYCLE/PEDESTRIAN PROJECTS

### I. FEDERAL-AID HIGHWAY ACT OF 1973

The Federal-aid Highway Act of 1973 did not create a separate fund to finance bicycle and pedestrian projects. Bicycle and pedestrian projects can be eligible for Federal-aid highway funds when used on or in conjunction with a Federal-aid highway project. Projects proposed for Federal-aid funding on the Interstate, Primary and Secondary systems are selected by the appropriate State Transportation agency with consideration of State and local needs and desires. Urban System (FAUS) funds may be used for projects located in urban and urbanized areas which are selected by local elected officials acting through the metropolitan planning agency. The projects must have the specific concurrence of the State transportation agency.

Bicycle and pedestrian projects proposed for Federal-aid funding can be eligible for up to 70% participation by Federal funds when built independently of other highway construction projects. Bicycle or pedestrian facilities build concurrently with a Federal-aid highway construction project may be financed with the same type of Federal-aid funds used for the highway project.

### II. FEDERAL-AID HIGHWAY AMENDMENTS OF 1974 ACT

The Bikeway Demonstration Program was established under Section 119 of the Federal-aid Highway Amendment of the 1974 Act. Its purpose is to provide additional funding for bikeway projects of national interest in promoting bicycling as a safe alternate mode of transportation for commuter and/or recreational use. Any urban area (5,000 + population) is eligible to apply. However, Federal-aid bikeway projects currently advanced to the "authorization to proceed" stage and projects eligible for funding as incidental features to Federal-aid highway construction projects are not eligible for funds under this Demonstration Program. Funding is also not available for facilities in rural areas.

Funds will be provided to the State and local communities on an 80% Federal and 20% local participation basis for the eligible total cost of the project.

### III. BUREAU OF OUTDOOR RECREATION (BOR)

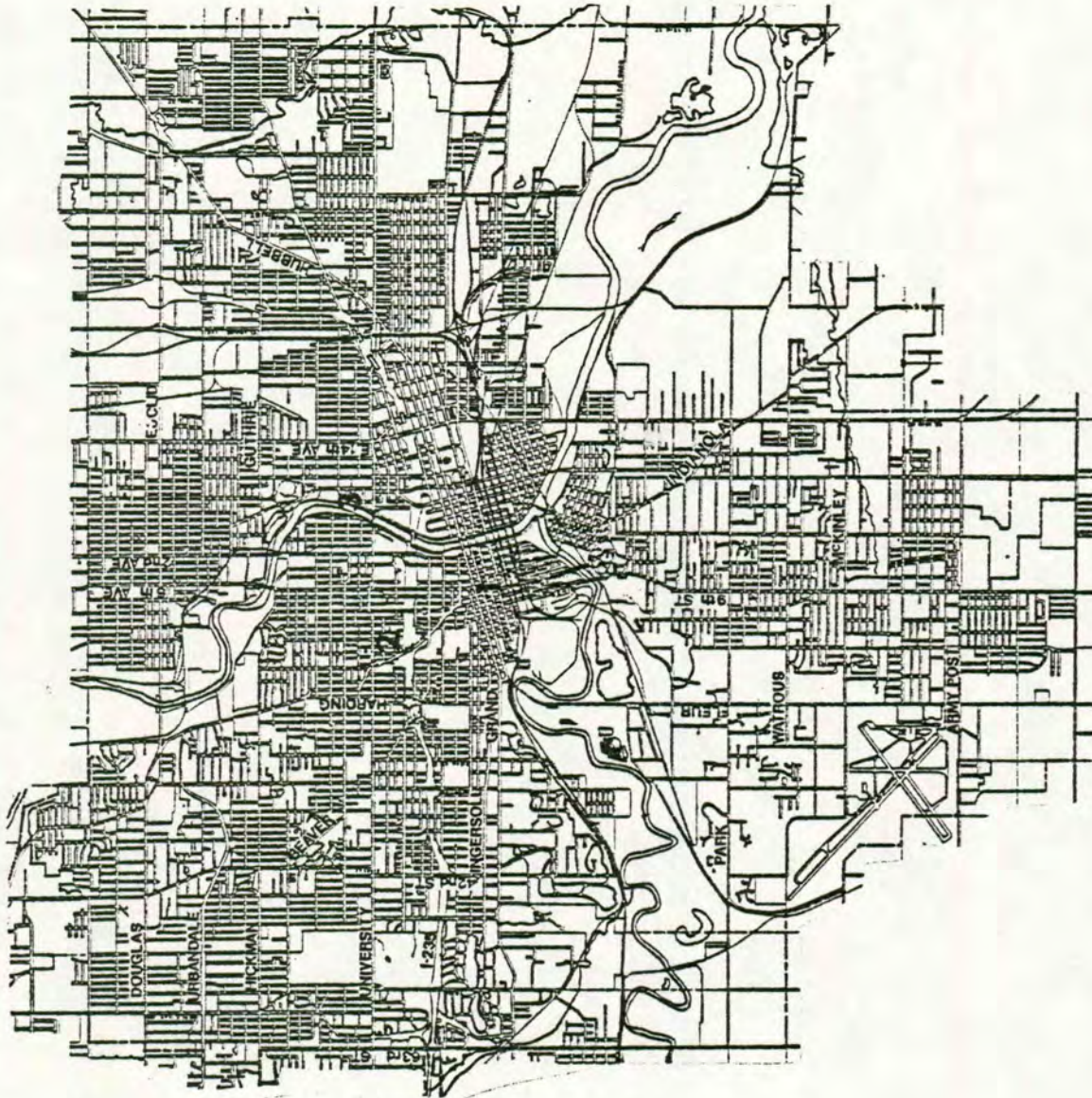
Bicycle projects can be eligible for BOR funding when they are to serve a recreational function. 40% of these funds are apportioned to each state equally; the remaining 60% is apportioned according to the relative need of each state for such funds. Bicycle projects can be eligible for up to 50% participation by Federal funds under the BOR program.

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES BICYCLE / PEDESTRIAN		TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			EXISTING	PROPOSED			FEDERAL	STATE			LOCAL	TOTAL		
	TSM	1977	Street & Curb Intake Renovation (for bikes)		RC	--				T2	111,000		27,000	138,000
1	RP	1977-81	Downtown Skywalk System		C	--				FAUS	1,687,000		723,000	2,410,000
2	CIP	1977-79	Grass Roots Sidewalks		C	--				HUD	268,000			268,000
	CIP	1977-81	City-wide Sidewalk Program		C	--				L			350,000	350,000
3	TSM	1977-81	Bike Trails		C	--				BOR	220,000		220,000	440,000

<b>PROJECT IDENTIFICATION NUMBER</b>  These project numbers correspond with the numbers on the map of improvements showing the project location.	<b>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</b>  RRP - BRIDGE REPLACEMENT C - CONSTRUCTION CH - CURB/SEALANT G - GRADING GR - GRAVEL I - INTERSECTION IMPROVEMENTS IL - INTERSECTION LIGHTING IN - INSTALLATION M - MESHING P - PAVING R - REALIGNMENT RC - RECONSTRUCTION RS - RETAIN	<b>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</b>  RM - RIGHT-OF-WAY ACQUISITION RS - RESURFACING S - SIGNALIZATION ST - STUMP TL - TURNING LANES M - MESHING  <b>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</b> FA - FUTURE ARTERIAL MA - MAJOR ARTERIAL C - COLLECTOR L - LOCAL	<b>FUNDING TYPE</b>  FBI - FEDERAL AID INTERSTATE FAP - FEDERAL AID PRIMARY FAUS - FEDERAL AID URBAN SYSTEM FAS - FEDERAL AID SECONDARY FBI - FEDERAL AID BUREAU T 2 - TITLE II IBD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  SEC. 3 - URBAN SECTION 3 SEC. 5 - URBAN SECTION 5 SEC. 10 - URBAN SECTION 10 IOR - BUREAU OF OUTDOOR RECREATION FAA - FEDERAL AVIATION ADMINISTRATION S - STATE D.O.T. L - LOCAL
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BICYCLE/PEDESTRIAN



No Scale



## FUNDING AVAILABLE FOR HIGHWAY AND STREET PROJECTS

### I. FEDERAL-AID HIGHWAY ACT OF 1973

Funding categories for highway and street projects are the Federal-aid interstate, Federal-aid primary, Federal-aid urban systems and Federal-aid secondary programs as provided for by the Federal-aid Highway Act of 1973. When properly programmed, approved and documented, projects authorized under Title 23, U.S.C. can be eligible for up to 70 percent participation with Federal-aid highway funds, except in the case of Federal-aid interstate funds which have a 90% Federal participation. All capital projects in urban areas of more than 50,000 population must be based on a continuing, cooperative, comprehensive planning process in order to be eligible for Federal-aid highway funding.

Federal-aid highway funds are apportioned to the state at least six (6) months prior to the beginning of the fiscal year of the apportionment and remain available for three years following the apportionment year.

Following are explanations of each type of funding under the Federal-aid highway program.

#### A. Federal-aid Interstate (FAI)

Federal-aid interstate funds are available for interstate routes inside and outside of urbanized areas on FAI designated routes. FAI funds are apportioned to each state in the ratio which the Federal share of the estimated cost of completing the interstate system in such state bears to the sum of the estimated cost of the Federal share of completing the interstate system in all the states. FAI projects can be eligible for up to 90% participation.

#### B. Federal-aid Primary (FAP)

Federal-aid primary funds are available for rural arterial routes and their urban extensions, on FAP routes designated by each state through its state highway department, and where appropriate, in accordance with the comprehensive urban transportation planning process. FAP funds are

apportioned to each state 1/3 on the basis of state land area, 1/3 on population of rural areas, and 1/3 on the mileage of specified mail routes. FAP extension funds are apportioned to each state in the ratio which the total population in municipalities and other urban places of 5,000 or more population in each state bears to the total population in municipalities and other urban places of 5,000 or more in all states. FAP and FAP extension projects can be eligible for up to 70% participation.

C. Federal-aid Urban Systems (FAUS)

Federal-aid urban systems funds are available for urban arterials and collector routes in urban areas on FAUS routes designated by local officials with the concurrence of the state, and, where appropriate, in accordance with the comprehensive urban transportation planning process. FAUS funds are apportioned to each state in the ratio which population in urban areas of each state bears to the population in urban areas of all states. FAUS projects can be eligible for up to 70% participation.

Federal-aid apportionment to Iowa for FAUS funds is based on the ratio of population\* in Iowa urban areas, to the United States population\* in urban areas. The State then allocates FAUS funds to each urbanized area (50,000 + population) on the basis of its population\*. The Des Moines Urban Area Transportation Policy Committee subsequently established population as the basis for allocating FAUS funds to each participating jurisdiction within the Urbanized Area.

FAUS funds are apportioned to the State at least six months prior to the beginning of the fiscal year of the apportionment and remains available for 3 years following the apportionment year. For example, fiscal year 1976 funds were apportioned to the State in January of 1975 and expire on Sept. 30, 1979. Unobligated FAUS funds from fiscal year 1976 apportionments will be reviewed by the Office of Urban Systems of the Iowa Department of Transportation (IDOT) in July, 1977 and reallocated to cities which have an insufficient fund balance for eligible projects ready

\* As of 1970 Census

for obligation or for an area that can develop a project in the remaining time. If it appears that FAUS funds cannot be obligated by an urbanized area within the above prescribed time, the Highway Division of IDOT may elect to transfer FAUS funds to extensions of the Federal-aid primary systems, within the limitations as set forth in Title 23, U.S.C.

The following table shows the allocation of Federal Highway Administration (FHWA) funds for FAUS in the Des Moines Urbanized Area. The table reflects estimated FAUS funds which are expected to be available assuming that two new three year policies will be issued for FAUS funds by Congress and in turn by IDOT on the same level and basis as FY 1974-76. It should be noted that under the IDOT FY 1974-76 FAUS Policy (#2707) it was possible for a community to draw FAUS funds from the total FAUS funds available for the three year period covered by the policy.

Fiscal Year 1976 funds have an availability period extending from January 1975 - Sept. 30, 1979. However, in July, 1977 the Office of Urban Systems will review and reallocate unobligated FY 1976 apportionments to cities which have an insufficient fund balance for eligible projects ready for obligation. Fiscal year 1977-82 funds have an availability period extending from January 1976 - Sept. 30, 1985 with the review of unobligated FAUS funds by the Office of Urban Systems occurring in July, 1983. Although fiscal year 1982 funds availability period extends far past the end of the fiscal period covered by this TIP, they were included because under the present FAUS policy (#2707), these funds would become available in January, 1981, which is six months before the end of the 1981 fiscal year.

## PRESENT AND ESTIMATED FAUS FUNDS FOR THE DES MOINES URBANIZED AREA

JURISDICTION	FY 1974-76 FUNDS (Present FAUS Policy Allocations Yet To Be Expended) <sup>1</sup>			FY 1977-79 FUNDS (Future FAUS Policy Allocations Based Upon Present Policy)			FY 1980-82 FUNDS (Future FAUS Policy Allocations Based Upon Present FMS Policy)		
	70% Fed. Match	30% Local Match	Total	70% Fed. Match	30% Local Match	Total	70% Fed. Match	30% Local Match	Total
CLIVE	51,189	21,938	73,127	45,063	19,313	64,376	45,063	19,313	64,376
DES MOINES*	429,965**	184,271	614,236	3,019,407	1,294,032	4,313,439	3,019,407	1,294,032	4,313,439
JOHNSTON	33,865	14,514	48,379	33,865	14,514	48,379	33,865	14,514	48,379
PLEASANT HILL	23,012	9,862	32,874	23,012	9,862	32,874	23,012	9,862	32,874
POLK COUNTY*	76,900	32,957	109,857	156,555	67,095	223,650	156,555	67,095	223,650
URBANDALE*	0	0	0	216,384	92,736	309,120	216,384	92,736	309,120
WEST DES MOINES*	215,591**	92,396	307,987	246,492	105,640	352,132	246,492	105,640	352,132
WINDSOR HEIGHTS	107,283	45,978	153,261	94,500	40,500	135,000	94,500	40,500	135,000
TOTAL	937,805	401,916	1,339,721	3,835,278	1,643,692	5,478,970	3,835,278	1,643,692	5,478,970

1 - Subject to Policy Committee Action for reallocation of FAUS funds

\* The cities of Des Moines, West Des Moines, and Polk County have already expended a portion of their FY 1976 Funds, while the city of Urbandale has expended all available 1976 funds.

\*\* Estimated Funds due to projects which are very close to letting time.

D. Federal-aid Secondary (FAS)

Federal-aid secondary consists of rural major collector (non-urbanized) routes designated by the state highway department in cooperation with local officials. FAS funds are apportioned to each state 1/3 on the basis of state land area, 1/3 on population of rural areas and 1/3 on the mileage of specified mail routes. FAS projects can be eligible for up to 70% participation.

II. HIGHWAY SAFETY ACT OF 1973 (TITLE II)

Federal funds are available under this program for projects to correct roadway hazards and deficiencies and for demonstration programs and studies. Following, is a description of each program.

A. Rail-highway Crossings

Rail-highway crossing funds are available for projects for the elimination of hazards at railway-highway crossings on any Federal-aid highway system (other than the Interstate System). Rail-highway crossing funds are apportioned to each state 1/2 on the basis of land area, rural population and specified rural mail route miles; and 1/2 by urban population. Rail-highway crossing projects can be eligible for 90% participation.

B. High Hazard Locations

High hazard location funds are available for projects to eliminate or reduce the hazards at specific locations or sections of highways which have high accident experiences or high accident potentials. These funds are available for projects on any Federal-aid system (other than the Interstate System). Funds for high hazard location projects are apportioned to each state 75% on the basis of population and 25% on public road mileage. These funds are eligible for 90% participation.

C. Elimination of Roadside Obstacles

Elimination of roadside obstacle funds are available for projects to correct roadside hazards on any Federal-aid system (other than the Interstate System). Funds for elimination of roadside obstacle projects are apportioned to each state 75% on the basis of population and 25% on public road mileage. These funds are eligible for 90% participation.

D. Bridge Reconstruction and Replacement

Bridge reconstruction and replacement funds are available for projects for special bridge repair and replacement. These funds may be used only for routes on the Federal-aid system. Bridge reconstruction and replacement funds are eligible for 75% participation.

E. Pavement Marking Demonstration Programs

Pavement marking demonstration program funds are available for projects to improve the pavement marking of all highways to provide for greater vehicle and pedestrian safety. These funds may be used for projects on all highways whether on or off of the Federal-aid system (other than the Interstate System). High priority is given to projects located on Federal-aid rural secondary roads and rural local roads. Pavement marking demonstration program funds are eligible for 100% participation and are available on a first come - first serve basis.

F. Safer Road Demonstration Programs

Safer road demonstration program funds are available for projects to correct safety hazards (removal of roadside obstacles, elimination of hazards at railroad-highway grade crossings, and proper marking and signing of highways) on all public roads not on the Federal-aid system. These funds are apportioned to each state 75% on the basis of population and 25% on public road mileage. Safer road demonstration program funds are eligible for 90% participation.



### III. FARM-TO-MARKET

Farm-to-Market funds are available from the State for county road projects located on farm-to-market designated routes. Farm-to-market road funds are designated from the road use tax fund at a rate of 9% monthly. Road use tax funds are made up of proceeds from the registration and fuel tax or license fees of motor vehicles, revenues derived from use tax on motor vehicles, trailers, accessories and equipment, and any other funds which may by law be credited to the road use tax fund. 40% of the farm-to-market road funds are allotted to each county on the basis which the area of each county bears upon the total area of the whole state; the remaining 60% is allotted to each county on the basis which the needs of the farm-to-market roads in each county bears to the total needs of farm-to-market roads in the state. Farm-to-market funds remain available for expenditure in each county for three years after the close of the fiscal year during which they are allocated. Farm-to-market projects can be eligible for up to 100% participation.

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	CLIVE HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	TSM	1977	Traffic Signals - 86th & Univ. Blvd.	S	--	--	--	PA	FAUS	17,500		7,500	25,000
2	RP	1979	Widening of University Avenue	W	2	2	4	PA	FAUS	157,500		67,500	225,000*
3	RP	1980	100th & University	S	--	--	--		FAUS	17,500		7,500	25,000*
4	CIP	1980	90th & University (Possibly 92nd or 94th)	S	--	--	--		L			25,000	25,000
5	RP	1980	86th & Harbach (or Alice)	S	--	--	--		L			25,000	25,000
6	RP	1980	86th & Hickman	I, S	--	--	--		FAUS	30,100		12,900	43,000**
7	RP	1981	100th Street	BC	--	0	4	PA	FAUS	315,000		135,000	450,000
8	RP	1981	100th St. Bridge to Hickman	C	0.3	0	4	PA	L			43,700	43,700
			* Joint Project by Clive & West Des Moines										
			**Joint Project by Clive & Urbandale										

PROJECT IDENTIFICATION ABBREVIATIONS

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

R.P. - REVISED PLAN

TSM - TRAFFIC SIGNAL SYSTEM MANAGEMENT

CIP - LOCAL TRANSPORTATION SHIPMENT CAPITAL IMPROVEMENTS PROGRAM

TIP - TRAVEL DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

AS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENT" SYMBOLS (CONTINUED)

BRP - BRIDGE REPLACEMENT

C - CONSTRUCTION

CH - CURBWISELIZATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

M - MEDIAN

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

"TYPE OF IMPROVEMENT" SYMBOLS (CONTINUED)

ROW - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STUMP

TL - TURNING LANES

W - WEARING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

PA - PRINCIPLE ARTERIAL

MA - MINOR ARTERIAL

C - COLLECTOR

L - LOCAL

FUNDING TYPE

FBI - FEDERAL AID INTERSTATE

FPI - FEDERAL AID PRIMARY

FUS - FEDERAL AID URBAN SYSTEM

FSS - FEDERAL AID SECONDARY

FTH - FARM-TO-MARKET

T 2 - TITLE II

HRD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SEC. 3 - UFGA SECTION 3

SEC. 5 - UFGA SECTION 5

SEC. 10 - UFGA SECTION 10

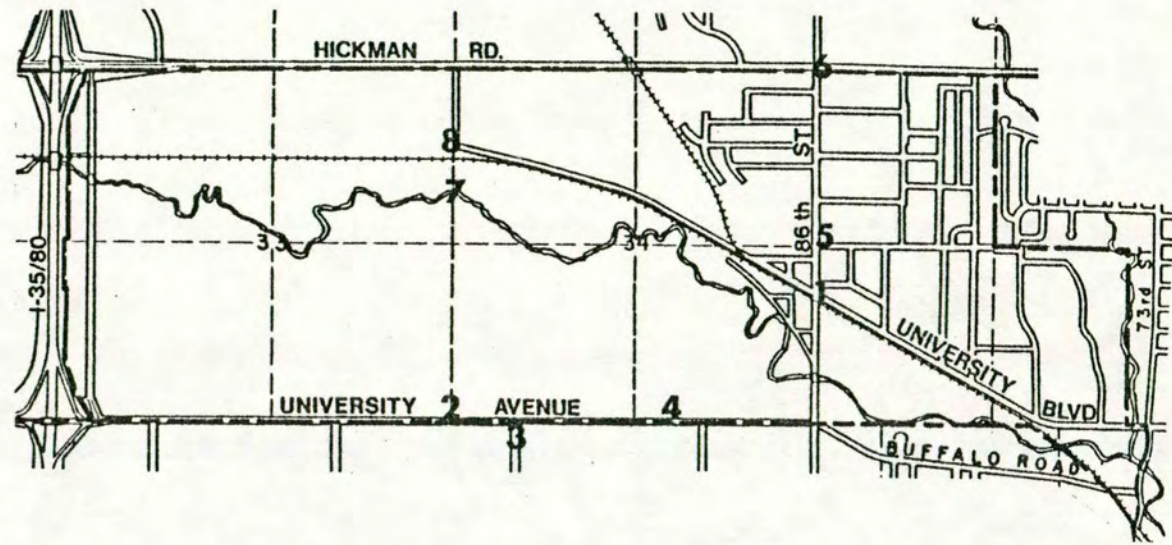
DOR - BUREAU OF OUTDOOR RECREATION

FVA - FEDERAL AVIATION AGENCY

S - STATE D.O.T.

L - LOCAL

# CLIVE



No Scale



PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	CIP	1977	Central Place Streets	ROW, P	--	--	--		L			185,000	185,000
2	CIP	1977	Dixon St.-E. Hull Intersection	I, ROW	--	--	--		L			95,000	95,000
3	RP	1977	Douglas Ave.-59th to 62nd St.	W, CH	0.2	4	4	PA	L			104,000	104,000
4	RP	1977	9th St.-Center to University	W	0.3	2	4	C	L			376,000	376,000
5	RP	1977	Euclid Ave.-30th to Douglas	W, I, S	0.1	2	3	PA	L			49,000	49,000
6	RP	1977	Army Post Road-SE 5th to SE 14th	W, CH, S	0.3	4	4	PA	L			408,000	408,000
7	RP	1977	Hickman Rd.-Merklin Way & Merle Hay Intersection	S, I	--	--	--	PA	L			41,500	41,500
8	CIP	1977	South Union St.-Yeader Creek Bridge	C	--	2	2	C	L			53,000	53,000
9	RP	1977	2nd Ave.-Des Moines River & Birdland Bridges	C	--	--	--	PA	L			70,000	70,000
10	CIP	1977	SE 5th St.-Yeader Creek Bridge	C	--	2	2	MA	L			18,000	18,000
11	RP	1977	SE 6th St. Bridge	C	--	0	4	--	FAUS	320,000			320,000
	CIP	1977	Pavement Marking Program		--	--	--	--	T2	120,000			120,000
	CIP	1977	Minor intersection improvement and signalization upgrading	S, I	--	--	--	--	FAUS/S	177,450	24,000	52,050	253,500
12	CIP	1977	Scott Avenue Bridge	C	--	2	4	MA	L			788,000	788,000
13	RP	1977	Guthrie Avenue Viaduct	C	--	0	4	MA	FAUS	1,350,000		950,000	2,300,000
	CIP	1977	City-wide Bridges	C	--	--	--	--	L			140,000	140,000
14	CIP	1977	Court Avenue Bridge	C	--	4	4	MA	L			50,000	50,000
	TSM	1977	City-wide traffic signals, channelization and school crossing protection program	S, CH	--	--	--	--	S		25,000	75,000	100,000
	CIP	1977	Parking Meter Replacement	IN	--	--	--	--	L			75,000	75,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

R.P. - REVISED PLAN

TSM - TRANSPORTATION SYSTEMS MANAGEMENT

CIP - LOCAL TRANSPORTATION SHORT-TERM CAPITAL IMPROVEMENTS PROGRAM

TDP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

AIS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

BR - BRIDGE REPLACEMENT

C - CONSTRUCTION

CH - CHANNELIZATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

H - MEDIAN

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

ROW - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STUMP

TL - TURNING LANES

W - WEEDING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

FA - PRINCIPLE ARTERIAL

MA - MINOR ARTERIAL

C - COLLECTOR

L - LOCAL

FUNDING TYPE

FAI - FEDERAL AID INTERSTATE

FAP - FEDERAL AID PRIMARY

FAUS - FEDERAL AID URBAN SYSTEM

FAS - FEDERAL AID SECONDARY

FTH - FARM-TO-MARKET

T2 - TITLE II

HAB - FUNDAMENTAL OF HOUSING AND URBAN DEVELOPMENT

SEC. 3 - URBAN SECTION 3

SEC. 5 - URBAN SECTION 5

SEC. 10 - URBAN SECTION 10

BOR - BUREAU OF OUTDOOR RECREATION

FMA - FEDERAL AVIATION AGENCY

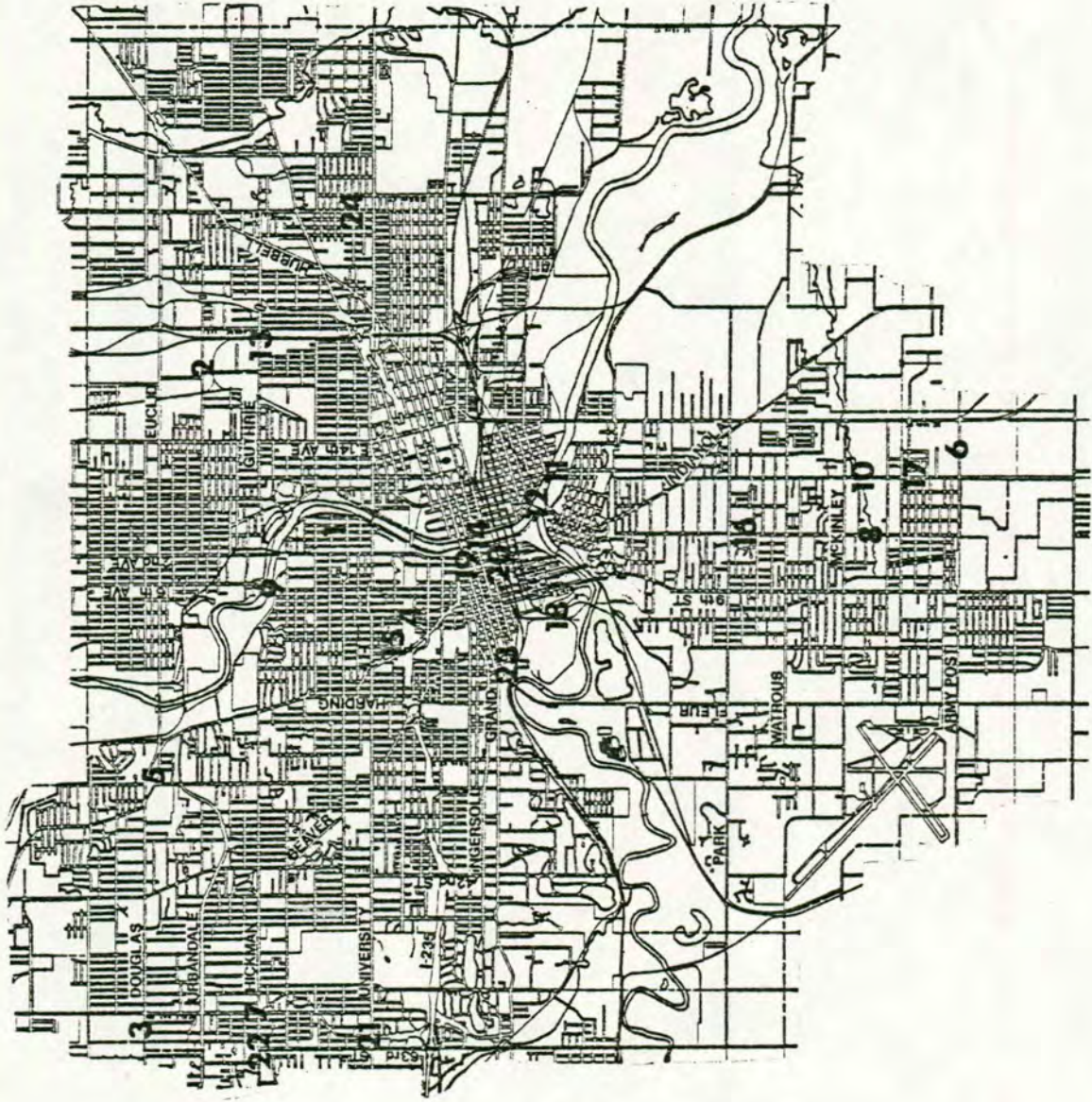
S - STATE D.O.T.

L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
15	CIP	1977	Grass Roots Paving	C, RC	--	--	--	--	L			271,000	271,000
16	CIP	1977	South Union-Indianola to Army Post Road	C	0.5	2	2	C	L			305,000	305,000
17	CIP	1977	SE 5th-E. McKinley to Army Post Road	C	1.0	2	2	MA	L			180,000	180,000
	CIP	1977	Curb, Median Island & Pavement Replacement	C	--	--	--	--	L			298,900	298,900
	CIP	1977	City-wide Paving Program	P	--	--	--	--	L			2,830,000	2,830,000
18	RP	1977	Industrial Hwy-Fleur Dr. to SE 14th	ROW	--	--	--	PA	L			200,000	200,000
	CIP	1978	Parking Utilization Control System	IN	--	--	--	--	L			30,000	30,000
19	CIP	1978-79	2nd Ave. Parking Facilities	C	--	--	--	--	L			1,750,000	1,750,000
20	CIP	1978-79	3rd St.-Court to K... K... K...	W,RS,ROW	0.1	4	4	PA	FAUS	560,000		240,000	800,000
21	RP	1979	63rd St.-University Ave. Intersection	I, S	--	--	--	PA	L			224,000	224,000
22	RP	1979	63rd St.-Hickman Rd. Intersection	I, S	--	--	--	PA	L			69,000	69,000
23	RP	1979-81	15th-Walnut to Woodland	C	0.2	2	4	PA	FAUS	700,000		677,000	1,377,000
	CIP	1979-81	Construction & Repair-Various Bridges	C	--	--	--	--	L			1,470,000	1,470,000
24	RP	1980-81	E. 30th St.-University to Easton	ROW,S,P	0.9	2	2	PA	L			350,000	350,000
	TSM	1980-81	Signal System Reconstruction-CBD	S	--	--	--	--	FAUS	476,000		204,000	680,000
	CIP	1980-81	Parking Lots Resurfacing	RS	--	--	--	--	L			100,000	100,000

PROJECT IDENTIFICATION NUMBER	"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)	"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)	FUNDING TYPE
These project numbers correspond with the numbers on the map of Improvements showing the project locations.	BR - BRIDGE REPLACEMENT	RM - RIGHT-OF-WAY ACQUISITION	FAT - FEDERAL AID INTERSTATE
	C - CONSTRUCTION	RS - RESURFACING	FAP - FEDERAL AID PRIMARY
	CH - CHANNELIZATION	S - SIGNALIZATION	FAUS - FEDERAL AID URBAN SYSTEM
"PROJECT SOURCE DOCUMENT" SYMBOLS	G - GRADING	ST - STUDY	FAS - FEDERAL AID SECONDARY
R.P. - REVISED PLAN	GR - GRAVEL	TJ - TURNING LANES	FBI - FIRM-TO-MARKET
TSM - TRANSPORTATION SYSTEMS MANAGEMENT	I - INTERSECTION IMPROVEMENTS	W - WIDENING	T 2 - TITLE II
CIP - LOCAL TRANSPORTATION SHORT-TERM CAPITAL IMPROVEMENTS PROGRAM	IL - INTERSECTION LIGHTING		IBD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
TOP - TRANSIT DEVELOPMENT PROGRAM	IN - INSTALLATION	NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS	SEC. 3 - URBAN SECTION 3
	M - MEDIAN	PA - PRINCIPAL ARTERIAL	SEC. 5 - URBAN SECTION 5
	P - PAVING	PA - MINOR ARTERIAL	SEC. 10 - URBAN SECTION 10
"TYPE OF IMPROVEMENT" SYMBOLS	R - REALIGNMENT	C - COLLECTOR	DOR - BUREAU OF OUTDOOR RECREATION
AS - AUTOMATIC RAILROAD SIGNALS	RC - RECONSTRUCTION	L - LOCAL	FVA - FEDERAL AVIATION AGENCY
BC - BRIDGE CONSTRUCTION	RE - REPAIR		S - STATE D.O.T.
			L - LOCAL

DES MOINES



No Scale

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	IOWA DOT <b>HIGHWAY AND STREET</b> PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	CIP	1977	Modification of University & U.S. 6 Interchanges - I-35	RC, ROW	--	--	--	PA	FAP	349,000	150,000		499,000
2	CIP	1977	U.S. 69 - Median crossover 1/2 mile N. of Warren Co. line	C	--	--	--	PA	S		9,000		9,000
3	CIP	1977	I-235-Reimbursement to W.D.H. for Construction at 35th St.	C	--	--	--	PA	S		140,000		140,000
4	CIP	1977	I-235 Bridge at Keo Interchange	RE	--	--	--	PA	FAI	6,300	700		7,000
5	CIP	1977	I-35-Modification at E. 14th Interchange	RC	--	--	--	PA	FAI	277,000	31,000		308,000

**PROJECT IDENTIFICATION NUMBER**  
 These project numbers correspond with the numbers on the map of improvements showing the project locations.

**"PROJECT SOURCE DOCUMENT" SYMBOLS**

R.P. - REVISED PLAN  
 TSM - TRANSPORTATION SYSTEMS PROGRAM  
 CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM  
 TDP - TRAVEL DEVELOPMENT PROGRAM

**"TYPE OF IMPROVEMENT" SYMBOLS**

ARS - AUTOMATIC RAILROAD SIGNALS  
 RC - BRIDGE CONSTRUCTION

**"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)**

BR - BRIDGE REPLACEMENT  
 C - CONSTRUCTION  
 CR - CURBIZATION  
 G - GRADING  
 GR - GRAVEL  
 I - INTERSECTION IMPROVEMENTS  
 IL - INTERSECTION LIGHTING  
 IN - INSTALLATION  
 M - MEDIANS  
 P - PAVING  
 R - REALIGNMENT  
 RC - RESTRICTION  
 RE - REPAIR

**"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)**

RM - RIGHT-OF-WAY ACQUISITION  
 RS - RESURFACING  
 S - SIGNALIZATION  
 ST - STAFF  
 TL - TURNING LANES  
 W - WIDENING

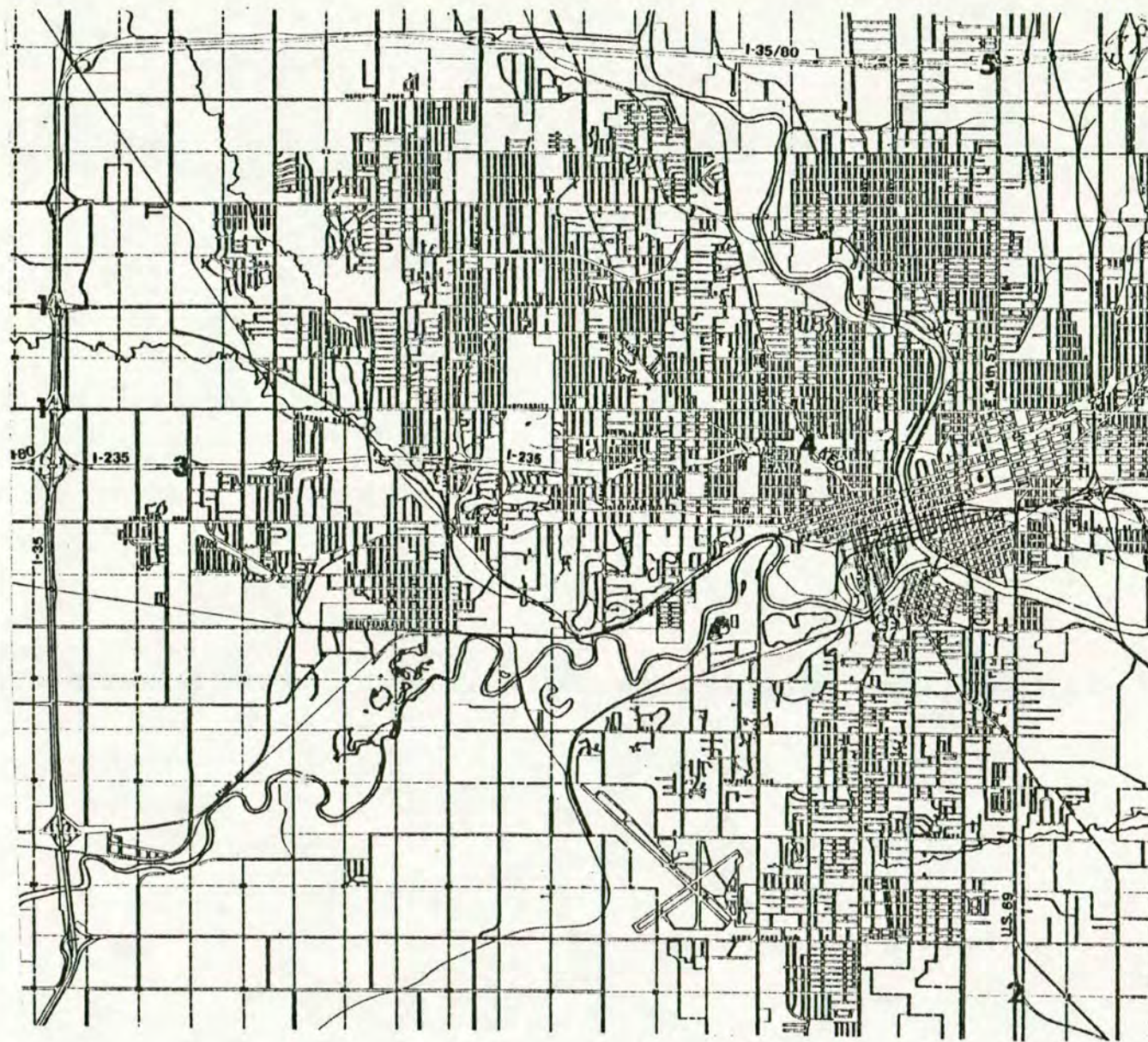
**NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS**

PA - PRINCIPAL ARTERIAL  
 MA - MAJOR ARTERIAL  
 C - COLLECTOR  
 L - LOCAL

**FUNDING TYPE**

FAI - FEDERAL AID INTERSTATE  
 FAP - FEDERAL AID PRIMARY  
 FMS - FEDERAL AID MAJOR SYSTEM  
 FAS - FEDERAL AID SECONDARY  
 FTI - FARM TO MARKET  
 T 2 - TITLE II  
 HD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
 SEC. 3 - UMDA SECTION 3  
 SEC. 5 - UMDA SECTION 5  
 SEC. 10 - UMDA SECTION 10  
 DOR - DEPARTMENT OF OUTDOOR RECREATION  
 FAA - FEDERAL AVIATION AGENCY  
 S - STATE D.O.T.  
 L - LOCAL

IDOT



No Scale





PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	JOHNSTON HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	CIP	1977	NW 66th Ave., Merle Hay Rd. to NW 54th St.		RS	0.28	2	2	L	L			15,000	15,000
	CIP	1978	"City-wide" Paving Program - Phase I		RS	0.42	2	2	L	L			18,500	18,500
2	CIP	1978	NW 62nd Ave. Bridge over Beaver Creek		Bridge RC	0.05	2	2	L	L			306,250	306,250
3	CIP	1978	NW 62nd Ave., from Merle Hay Rd. to Urban Area Boundary		RS	0.53	2	2	C	FAUS	16,170		6,930	23,100
	CIP	1978	"City-wide" Paving Program - Phase II		RS	1.50	2	2	L	L			66,000	66,000
4	CIP	1979	Merle Hay Rd. at NW 62nd Ave.-Intersection Improvement, including CH/IL/IN/P/RC/ROW		I	0.20	2	4	C/A	FAUS	175,000		75,000	250,000
5	CIP	1980	NW Beaver Dr., SCLB to NW 62nd Ave.		RS	1.50	2	2	A	FAUS	46,200		19,800	66,000
6	CIP	1981	NW Beaver Dr., NW 62nd Ave. to NW 66th Ave. (Kenpton Rd.)		RS	0.49	2	2	L	L			22,000	22,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

R.P. - REVISED PLAN

TSR - TRANSPORTATION SYSTEMS MANAGEMENT

CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM

TDP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

ARS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

BRP - BRIDGE REPLACEMENT

C - CONSTRUCTION

CH - CURB/REGULATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

M - MEDIAN

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

ROW - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STUDY

TL - TURNING LANES

W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

PA - PRINCIPLE ARTERIAL

MA - MAJOR ARTERIAL

C - COLLECTOR

L - LOCAL

FUNDING TYPE

FAI - FEDERAL AID INTERSTATE

FAP - FEDERAL AID PRIMARY

FAS - FEDERAL AID URBAN SYSTEM

FAS - FEDERAL AID SECONDARY

FTH - FARM-TO-MARSH

T 2 - TITLE II

IRD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SEC. 3 - URBAN SECTION 3

SEC. 5 - URBAN SECTION 5

SEC. 10- URBAN SECTION 10

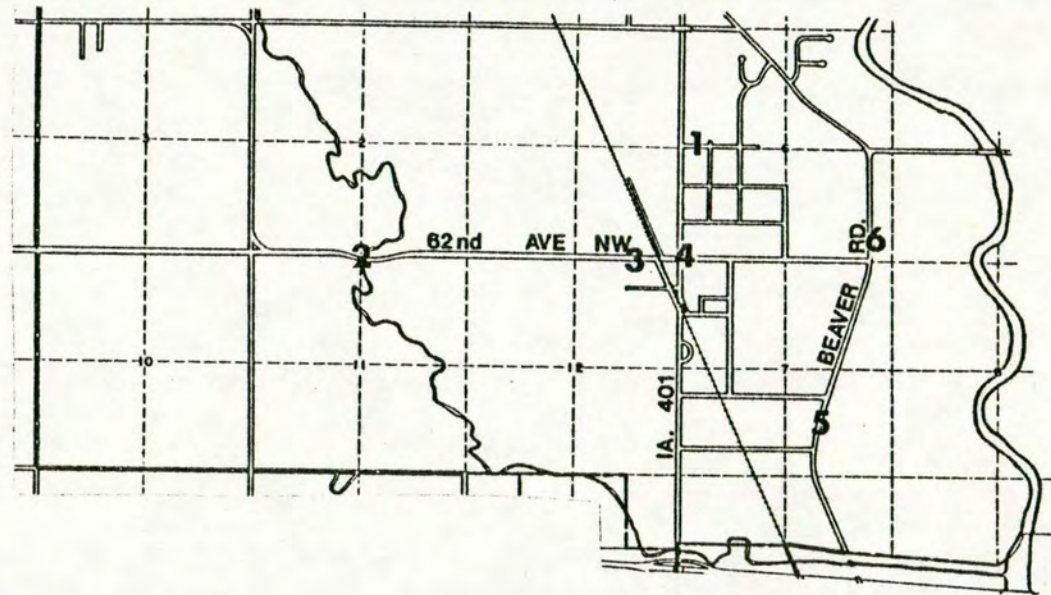
BOR - BUREAU OF OUTDOOR RECREATION

FVA - FEDERAL AVIATION ADMIN.

S - STATE D.O.T.

L - LOCAL

# JOHNSTON



\* Map shows only the part of Johnston that lies within the transportation study area boundary.

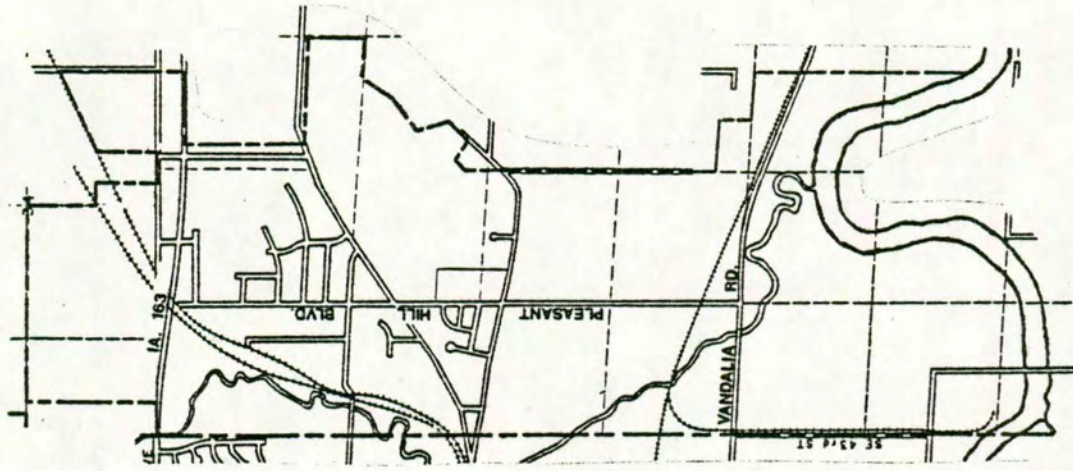
No Scale



PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	PLEASANT HILL HIGHWAY AND STREET	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION / DESCRIPTION			EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
CIP		1977-81	City Wide Resurfacing Project	RS	12	--	--	--	L			25,000/yr	125,000

<p><u>PROJECT IDENTIFICATION NUMBER</u></p> <p>These project numbers correspond with the numbers on the map of Improvements showing the project locations.</p> <p><u>"PROJECT SOURCE DOCUMENT" SYMBOLS</u></p> <p>R.P. - REVISED PLAN</p> <p>TRM - TRANSPORTATION SYSTEMS IMPROVEMENT</p> <p>CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM</p> <p>TDP - TRANSIT DEVELOPMENT PROGRAM</p> <p><u>"TYPE OF IMPROVEMENT" SYMBOLS</u></p> <p>AS - AUTOMATIC RAILROAD SIGNALS</p> <p>BC - BRIDGE CONSTRUCTION</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>BRP - BRIDGE REPLACEMENT</p> <p>C - CONSTRUCTION</p> <p>CH - CHANNELIZATION</p> <p>G - GRADING</p> <p>GR - GRASS</p> <p>I - INTERSECTION IMPROVEMENTS</p> <p>IL - INTERSECTION LIGHTING</p> <p>IN - INSTALLATION</p> <p>M - MEDIAN</p> <p>P - PAVING</p> <p>R - REALIGNMENT</p> <p>RC - RECONSTRUCTION</p> <p>RE - REPAIR</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>ROW - RIGHT-OF-WAY ACQUISITION</p> <p>RS - RESURFACING</p> <p>S - SIGNALIZATION</p> <p>ST - STUDY</p> <p>TL - TURNING LANES</p> <p>M - MISCUEING</p> <p><u>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</u></p> <p>FA - PRINCIPLE ARTERIAL</p> <p>MA - MINOR ARTERIAL</p> <p>C - COLLECTOR</p> <p>L - LOCAL</p>	<p><u>FUNDING TYPE</u></p> <p>FBI - FEDERAL AID INTERSTATE</p> <p>FAP - FEDERAL AID PRIMARY</p> <p>FAG - FEDERAL AID URBAN SYSTEM</p> <p>FAS - FEDERAL AID SIDEWALK</p> <p>FTH - FARM-TO-MARKET</p> <p>T 2 - TITLE II</p> <p>HRD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT</p> <p>SEC. 3 - URBAN SECTION 3</p> <p>SEC. 5 - URBAN SECTION 5</p> <p>SEC. 10 - URBAN SECTION 10</p> <p>IOR - BUREAU OF OUTDOOR RECREATION</p> <p>FVA - FEDERAL AVIATION AGENCY</p> <p>S - STATE D.O.T.</p> <p>L - LOCAL</p>
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PLEASANT HILL



No Scale

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	POLK COUNTY HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	TSM	1977	RR "X" on NW Morningstar Drive	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000
2	CIP	1977	RR "X" on NE 58th Ave.	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000
3	TSM	1977	Hwy 69 & NE 52nd Intersection	IL	--	2	2	L	L			1,800	1,000
4	TSM	1977	Hwy 65 & NE 46th Ave. Intersection	IL	--	2	2	MA	FAUS			2,400	2,400
5	CIP	1977	RR "X" on 42nd St.	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000
6	CIP	1977	RR "X" on SE 44th Ave.	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000
7	CIP	1977	Morningstar Dr. - Aurora to North Urbanized Area Boundary	P	3.0	2	2	MA	FAUS	200,000	FTM 84,000		284,000
8	CIP	1977	University-I-35/80 to 1/2 mile West	ROW,G,P	0.5	2	2	MA	FAUS	135,000		85,000	PoCo/WDM 220,000
9	TSM	1977	RR "X" on N.W. Beaver	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000
10	CIP	1977	Hoffman Lane -Hwy 415 to NW 6th Ave	RS	0.2	2	2	C	L			1,500	1,500
11	CIP	1977	Douglas Ave-DM City Limits to NE 46th St.	RS, RC	0.4	2	2	MA	FAUS	10,500	4,500		15,000
12	CIP	1977	Douglas Ave-NE 46th St. to NE 56th St.	RS,RC	1.0	2	2	MA	FAUS	28,000	12,000		40,000
13	RP	1977	SE 64th Ave-Hwy 5 to E Urbanized Area Boundary	RS	0.25	2	2	L	FAS	7,000	3,000		10,000
14	RP	1978	NE 46th Ave-Hwy 415 to NE 22nd St.	RS,RC	2.0	2	2	MA	FAUS	143,500	61,500		205,000
15	CIP	1978	SW 48th Ave-SW 63rd St. to DM City Limit	RS,W,ROW	1.5	2	2	MA	FAUS	45,500	19,500		65,000
16	CIP	1978	NE 38th St.-Aurora to Broadway	RC	0.5	2	2	C	FAUS	12,600		5,400	18,000
17	CIP	1978	NE 38th St-Broadway to North/ Urbanized Area Boundary	RC	0.5	2	2	MA	FAUS	15,400		6,600	22,000
18	CIP	1978	NE 38th St. Bridge #6012	BRP	--	2	2	MA	FAUS	21,100		9,000	30,000
19	CIP	1978	NE 38th St Bridge #6013	BRP	--	2	2	MA	FAUS	21,000		9,000	30,000

PROJECT IDENTIFICATION NUMBER	"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)	"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)	FUNDING TYPE
These project numbers correspond with the numbers on the map of improvements showing the project locations.	BRP - BRIDGE REPLACEMENT	ROW - RIGHT-OF-WAY ACQUISITION	FBI - FEDERAL AID INTERSTATE
"PROJECT SOURCE DOCUMENT" SYMBOLS	C - CONSTRUCTION	RS - RESURFACING	FAP - FEDERAL AID PRIMARY
R.P. - REVISED PLAN	CH - CHANNELIZATION	S - SIGNALIZATION	FMS - FEDERAL AID URBAN SYSTEM
TSM - TRANSPORTATION SYSTEMS MANAGEMENT	G - GRADING	ST - STAFF	FAS - FEDERAL AID SECONDARY
CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM	GR - GRAVEL	TL - TURNING LANES	FTM - FARM-TO-MARKET
TIP - TRANSIT DEVELOPMENT PROGRAM	I - INTERSECTION IMPROVEMENTS	W - WEEDING	T 2 - TITLE II
"TYPE OF IMPROVEMENTS" SYMBOLS	IL - INTERSECTION LIGHTING		IBD - IMPROVEMENT OF BUSINESS AND URBAN INVESTMENT
ARS - AUTOMATIC RAILROAD SIGNALS	IN - INSTALLATION	NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS	SEC. 3 - URBAN SECTION 3
RC - BRIDGE CONSTRUCTION	H - MEDIAN	PA - PRINCIPLE ARTERIAL	SEC. 5 - URBAN SECTION 5
	P - PAVING	MA - MAJOR ARTERIAL	SEC. 10 - URBAN SECTION 10
	R - REALIGNMENT	C - COLLECTOR	IBR - IMPROVEMENT OF OUTSIDE RECREATION
	RS - RESTRICTION	L - LOCAL	FVA - FEDERAL AVIATION AGENCY
	RE - REPAIR		S - STATE D.O.T.
			L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	POLK COUNTY HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
20	RP	1978	NE 46th St. Douglas to Broadway		RS,RC	1.0	2	2	MA	FAUS	35,000	15,000		50,000
21	CIP	1978	SW Little-SW 30th St.-South of Army Post		RS	0.2	2	2	L	L			12,000	12,000
22	RP	1979	NE 46th Ave-NE 22nd St. to Hwy 65		RS	3.3	2	2	MA	FAUS	175,000	75,000		250,000
23	TSM	1979	NE 46th Ave.-Bridge over 4-Mile Creek Urbanized Area Boundary-South		BRP	--	2	2	MA	FAUS	210,000	90,000		300,000
24	RP	1980	NE 56th St.-North/Urbanized Area Boundary		RS	3.5	2	2	MA	FAUS	105,000	50,000		155,000
			NW 54th-Morningstar to NW 6th St.		RC, BRP	1.3	2	2	MA	FAUS	210,00	90,000		300,000
			NW 54th-NW 6th St. to U.S. 69		RC	1.4	2	2	MA	FAUS	57,400	24,600		82,000
			SW 48th Ave & SW 63rd St. Intersection		S	--	2	2	MA	FAUS	3,500		1,500	5,000
			NW Meredith Drive Bridge #4880		BRP	--	2	2	MA	FAUS	63,000		27,000	90,000
			NE 47th Place Bridge #5465		BRP	--	2	2	L	L			35,000	35,000
			Avon-SE 62nd St. Bridge #8454		BRP	--	2	2	L	L	21,000		9,000	30,000
			SE 80th Ave. Bridge #7813		BRP	--	2	2	L	L			50,000	50,000
			SE 80th Ave. Bridge #7814		BRP	--	2	2	L	L			80,000	80,000
			Grandshire Plat		RS	--	2	2	L	L			50,000	50,000
			SE 57th St. Ia #46 to SE 36th St.		RC,ROW	1.0	2	2	C	FAUS	119,000	51,000		170,000
			SE 36th St. Ia #5 to SE 34th St.		RC,ROW	1.0	2	2	C	FAUS	59,500	25,500	85,000	170,000
			SE 44th St. Ia #46 to SE 34th St.		RC,ROW	1.5	2	2	C	FAUS	119,000	51,000	85,000	255,000
			SW McKinley Ave-US 69 to Indianola		RS	0.75	2	2	MA	FAUS	18,400		7,900	26,300
			NE 49th Ave-Cornell to 2nd Ave.		RC	0.2	2	2	L	L			34,000	34,000

(CRITICAL NEEDS - will be done as funds are made available)

**PROJECT IDENTIFICATION NUMBER**

These project numbers correspond with the numbers on the map of Improvements showing the project locations.

**"PROJECT SOURCE DOCUMENT" SYMBOLS**

- R.P. - REVISED PLAN
- TSM - TRANSPORTATION SYSTEMS PROGRAM
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TLP - TRNGIT DEVELOPMENT PROGRAM

**"TYPE OF IMPROVEMENT" SYMBOLS**

- RS - RAILROAD SIGNALS
- RC - BRIDGE CONSTRUCTION

**"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)**

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CI - CURBIZATION
- G - GRADING
- GR - GRAVEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- M - MEDIAN
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

**"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)**

- RM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STUDY
- TL - TURNING LANES
- M - MEDIAN

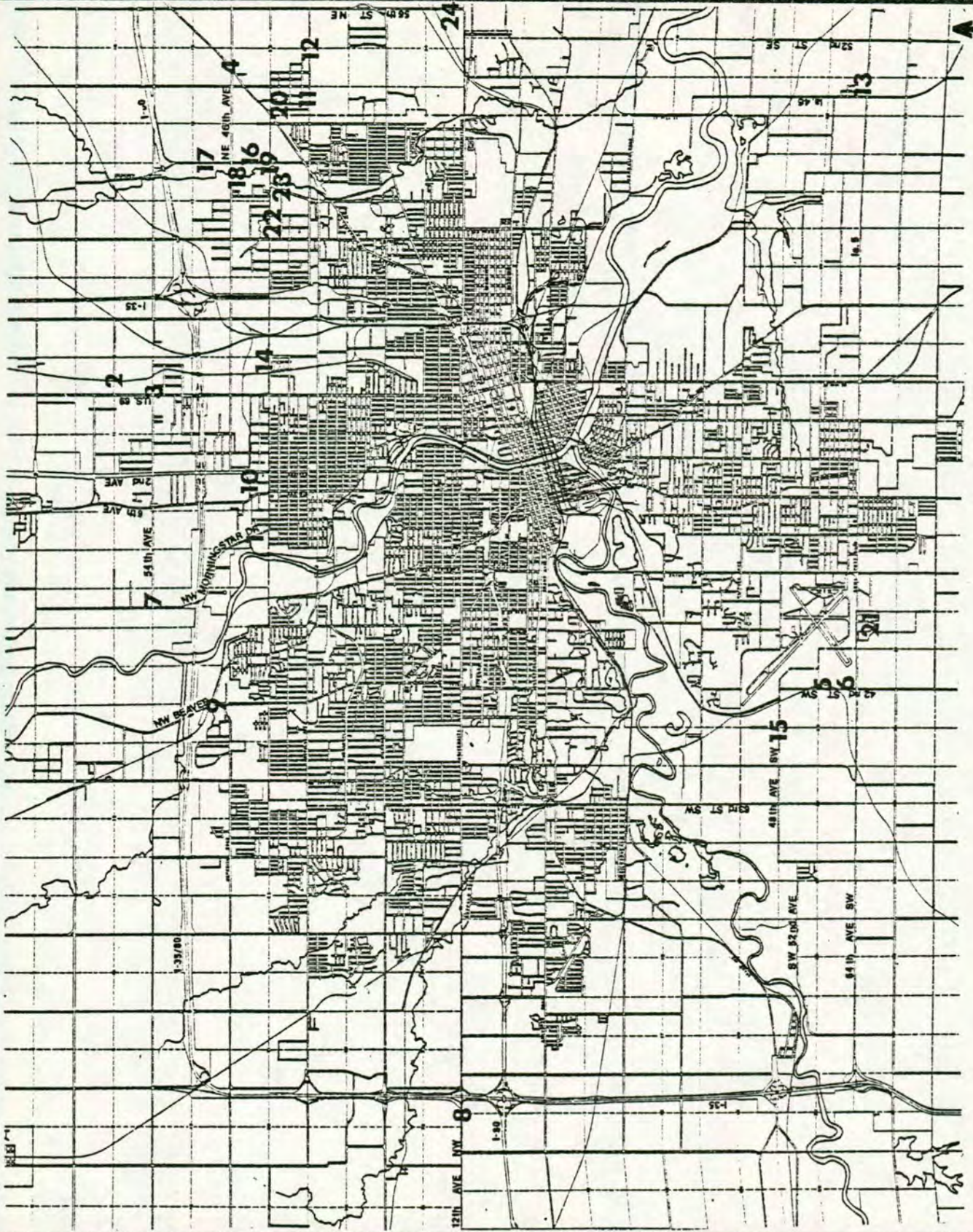
**NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS**

- PA - PRINCIPLE ARTERIAL
- MA - MINOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

**FUNDING TYPE**

- FBI - FEDERAL AID INTERSTATE
- FPI - FEDERAL AID PRIMARY
- FMS - FEDERAL AID URBAN SYSTEM
- FSS - FEDERAL AID SECONDARY
- FPI - FARM-TO-MARKET
- T 2 - TITLE II
- RD - DEPARTMENT OF HIGHWAYS AND URBAN DEVELOPMENT
- SEC. 3 - IHA SECTION 3
- SEC. 5 - IHA SECTION 5
- SEC. 10 - IHA SECTION 10
- DOE - BUREAU OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL

POLK COUNTY



No Scale

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	URBANDALE HIGHWAY AND STREET PROJECT LOCATION / DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	RP	1977	Aurora-79th St. to 82nd St.	G,P	0.25	0	4	MA	L			135,000	135,000
2	CIP	1977	78th-Hickman to Benton	G,P	0.30	0	2	L	L			233,648	233,648
3	RP	1978	72nd & Douglas Intersection	CH,S	--	-	-	PA	L			175,000	175,000
4	RP	1978	100th - Dennis to Douglas	ROW	0.15	0	4	PA	L			125,000	125,000
4	RP	1978	100th - Dennis to Douglas	G,P	0.15	0	4	PA	T2 or FAUS	20,000		115,000	135,000
5	RP	1979	Meredith-78th to 86th	G,P	0.60	2	2	PA	L			285,000	285,000
6	RP	1979	100th - Dennis to Hickman	G,P	0.85	0	4	PA	L			595,000	595,000
7	CIP	1979	104th - Douglas to 1000' South	W,P	0.20	2	4	L	L			65,000	65,000
8	RP	1900	86th - Douglas to Hickman	W,P	1.0	2	4	PA	FAUS	610,000		265,000	875,000
9	RP	1981	Meredith - 67th to 72nd	W,P	0.45	2	4	PA	FAUS	90,000		40,000	130,000
10	CIP	1981	Douglas - 78th to 86th	W,P	0.55	2	4	PA	T2 or FAUS	75,000		35,000	110,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVISED PLAN
- TSM - TRANSPORTATION SYSTEMS MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TIP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

- ARS - AUTOMATIC RAILROAD SIGNALS
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CURB/RELIATION
- G - GRADING
- GR - GROWEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- M - MEDIANS
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- ROW - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STAFF
- TL - TURNING LANES
- W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

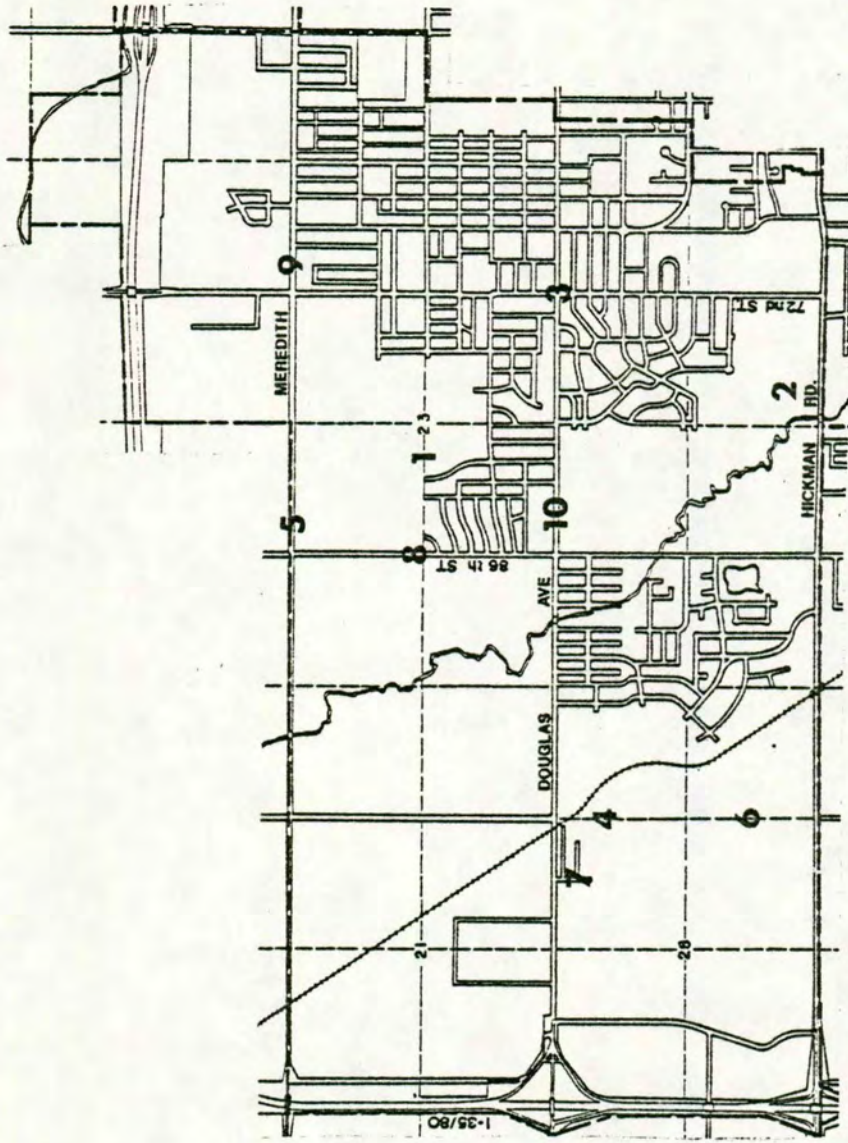
- PA - PRINCIPLE ARTERIAL
- MA - MAJOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

FUNDING TYPE

- FBI - FEDERAL AID INTERSTATE
- FAP - FEDERAL AID PRIMARY
- FAUS - FEDERAL AID URBAN SYSTEMS
- FAS - FEDERAL AID SECONDARY
- FBI - FARM-TO-HOUSE
- T 2 - TITLE II
- HD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
- SEC. 3 - URBAN SECTION 3
- SEC. 5 - URBAN SECTION 5
- SEC. 10 - URBAN SECTION 10
- DOR - BUREAU OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL



URBANDALE

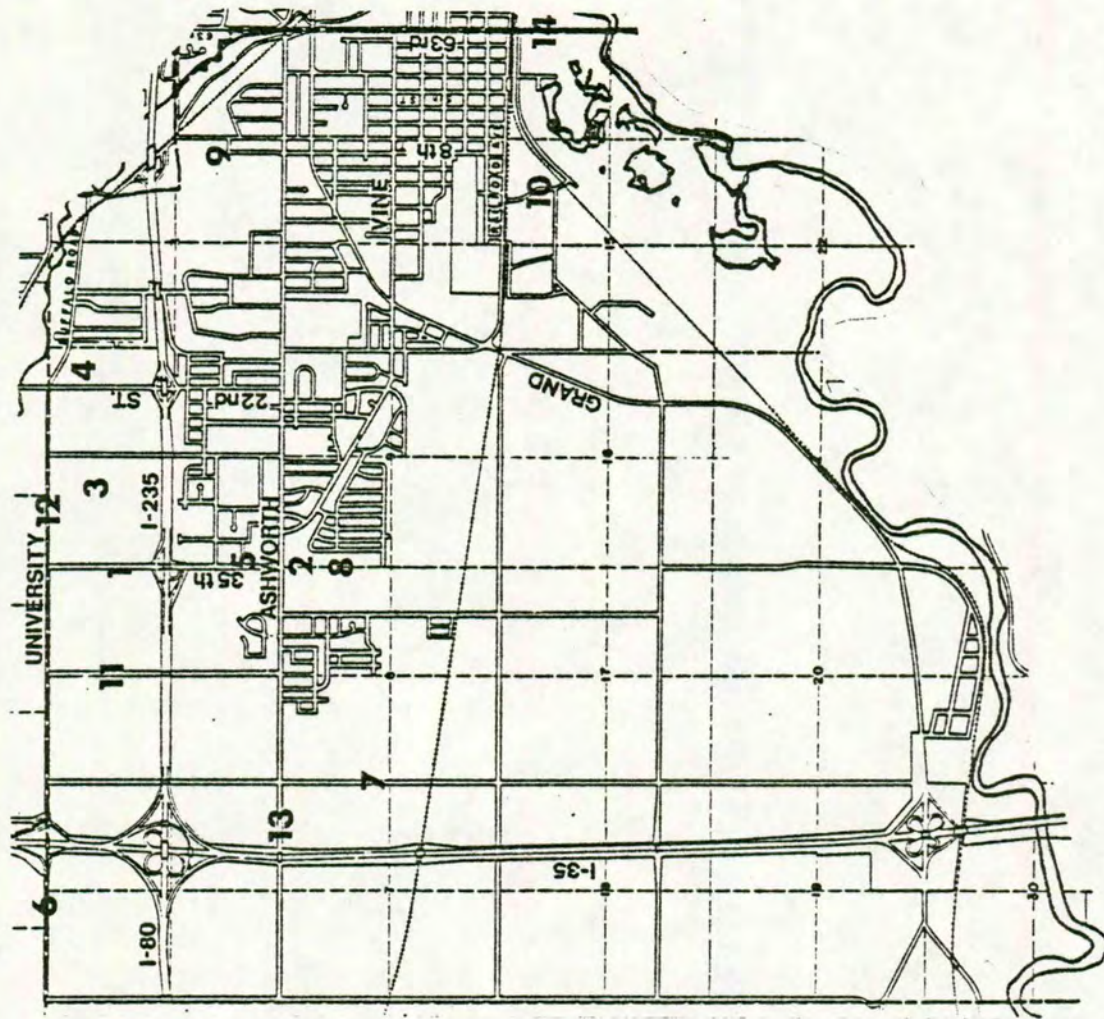


No Scale

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	WEST DES MOINES HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	TSM	1977	35th Street - I-235 to University		W, CH	0.5	4	4	PA	S		136,000	365,000	501,000
2	RP	1977	35th Extension-Ashworth to Brookview		P	0.1	2	4	PA	L			51,600	51,600
3	CIP	1977	31st Street- University to Westown		P	0.5	0	4	L	L			160,000	160,000
4	CIP	1977	Westown Pkwy-19th Pl to 22nd		P	0.2	0	4	C	L			70,000	70,000
5	TSM	1977	35th St. & I-235 & 35th & Valley West		S	--	4	4	PA	FAUS	64,050		27,450	91,500
6	CIP	1977	University Ave. I-35/80 West 1/2 mile		ROW,G,P	.5	2	2	MA	FAUS	135,000		85,000	PoCo/WDM 220,000
7	CIP	1978	50th St. - Ashworth to QNW HWY		P	0.75	2	2	C	L			320,000	320,000
8	RP	1978	35th St. - Brookview to Giles		P	0.5	0	4	PA	L			250,000	250,000
9	CIP	1978	Office Park & 8th St.		S	--	4	4	PA	FAUS	70,000		30,000	100,000
10	CIP	1979	So. 11th - Railroad to Lincoln		P	0.25	2	2	L	L			110,000	110,000
11	CIP	1979	42nd - Westown to University		P	0.30	2	2	C	L			150,000	150,000
12	RP	1979	University -22nd to 50th		W,CH	2.0	2	4	PA	FAUS	157,500		67,500	225,000 225,000City
13	RP	1980	Ashworth Rd. - I-35 to 60th St.		W	0.65	2	2	PA	L			130,000	130,000
14	RP	1981	1st St. Grand to Raccoon River		W, CH	1.5	2	4	PA	FAUS	500,000		500,000	1,000,000*
			*Item 13 to be matched by Des Moines											

<p><u>PROJECT IDENTIFICATION NUMBER</u></p> <p>These project numbers correspond with the numbers on the map of improvements showing the project locations.</p> <p><u>"PROJECT SOURCE DOCUMENT" SYMBOLS</u></p> <p>R.P. - REVISED PLAN</p> <p>TSM - TRANSPORTATION SYSTEM MANAGEMENT</p> <p>CIP - LOCAL TRANSPORTATION SURVIVANCE CAPITAL IMPROVEMENTS PROGRAM</p> <p>TDP - TRANSIT DEVELOPMENT PROGRAM</p> <p><u>"TYPE OF IMPROVEMENT" SYMBOLS</u></p> <p>ARS - AUTOMATIC RAILROAD SIGNALS</p> <p>BC - BRIDGE CONSTRUCTION</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>BRP - BRIDGE REPLACEMENT</p> <p>C - CONSTRUCTION</p> <p>CH - CURBIZATION</p> <p>G - GRADING</p> <p>GR - GRAVEL</p> <p>I - INTERSECTION IMPROVEMENTS</p> <p>IL - INTERSECTION LIGHTING</p> <p>IN - INSTALLATION</p> <p>M - MEDIAN</p> <p>P - PAVING</p> <p>R - REALIGNMENT</p> <p>RC - RECONSTRUCTION</p> <p>RS - REPAIR</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>RM - RIGHT-OF-WAY ACQUISITION</p> <p>RS - RESURFACING</p> <p>S - SIGNALIZATION</p> <p>ST - STUMP</p> <p>TI - TURNING LANES</p> <p>W - WIDENING</p> <p><u>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</u></p> <p>PA - PRINCIPLE ARTERIAL</p> <p>MA - MAJOR ARTERIAL</p> <p>C - COLLECTOR</p> <p>L - LOCAL</p>	<p><u>FUNDING TYPE</u></p> <p>FAI - FEDERAL AID INTERSTATE</p> <p>FAP - FEDERAL AID PRIMARY</p> <p>FMS - FEDERAL AID MAJOR SYSTEM</p> <p>FAS - FEDERAL AID SECONDARY</p> <p>FTH - FARM-TO-MARSH</p> <p>T 2 - TITLE II</p> <p>IRD - IMPROVEMENT OF HEARING AND HEARING IMPAIRMENT</p> <p>SEC. 3 - UMDA SECTION 3</p> <p>SEC. 5 - UMDA SECTION 5</p> <p>SEC. 10 - UMDA SECTION 10</p> <p>OR - OFFSHORE OF OUTDOOR RECREATION</p> <p>FAA - FEDERAL AVIATION AGENCY</p> <p>S - STATE D.O.T.</p> <p>L - LOCAL</p>
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WEST DES MOINES



No Scale



PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	WINDSOR HEIGHTS <b>HIGHWAY AND STREET</b>  PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
1	CIP	1977-81	Resurfacing Various Streets in City	RS	--	-	-	L	L			125,000	125,000
			Expect to continue program from year to year										

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of Improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVERSED PLAN
- TEM - TRANSPORTATION SYSTEMS MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TEP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENTS" SYMBOLS

- ARS - AUTOMATIC RAILROAD SIGNALS
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CEMENTIZATION
- G - GRADING
- GR - GRAVEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- M - MEDIANS
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- RM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STREET
- TL - TURNING LANES
- W - WIDENING

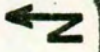
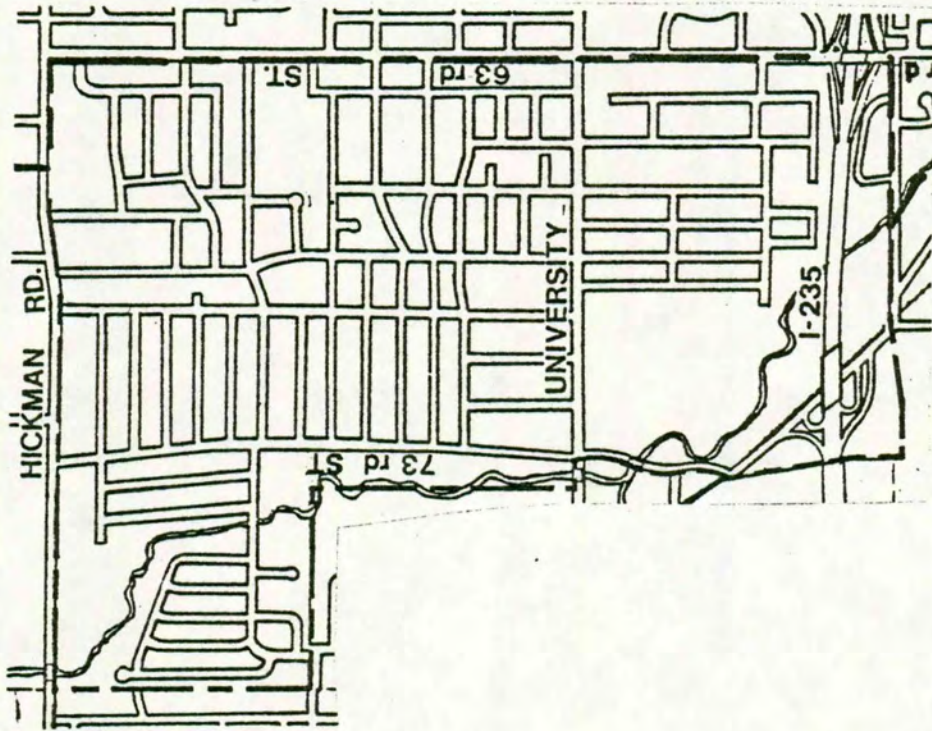
NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

- PA - PRINCIPLE ARTERIAL
- MA - MINOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

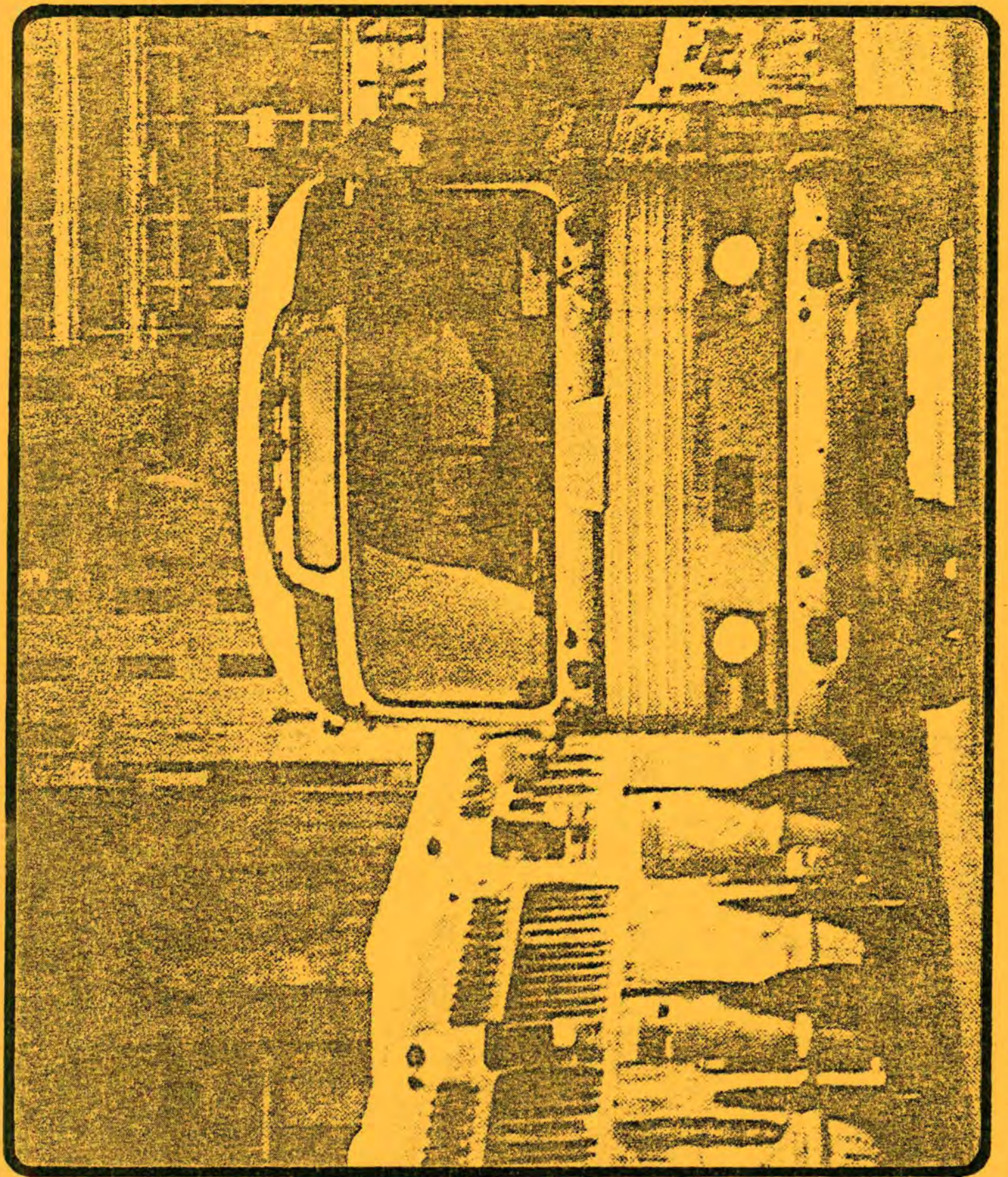
FUNDING TYPE

- FAI - FEDERAL AID INTERSTATE
- FAP - FEDERAL AID PRIMARY
- FAS - FEDERAL AID STATEWAY
- FBS - FEDERAL AID BRIDGEWAY
- FBI - FARM-TO-MARKET
- T 2 - TITLE II
- RD - DEPARTMENT OF HIGHWAY AND URBAN DEVELOPMENT
- SEC. 3 - URMIA SECTION 3
- SEC. 5 - URMIA SECTION 5
- SEC. 10 - URMIA SECTION 10
- OR - BUREAU OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL

WINDSOR HEIGHTS



No Scale



## FUNDING AVAILABLE FOR PUBLIC TRANSPORTATION PROJECTS

### I. NATIONAL MASS TRANSPORTATION ACT OF 1974, URBAN MASS TRANSPORTATION ADMINISTRATION (UMTA)

UMTA Section 5 funding under the National Mass Transportation Act of 1974, is apportioned to urbanized areas according to a formula under which one-half is proportional to urbanized area population and one-half is proportional to population weighted by a factor of density. Funds for urbanized areas of 200,000 + population are apportioned directly to the urbanized areas for use by recipients designated by the Governor, responsible local officials and public transit operators in accordance with a single program of projects for the urbanized area. Funds apportioned in each year of the program are available for project approval through the end of the second fiscal year following the fiscal year in which they are apportioned. The development of projects in urbanized areas utilizing UMTA funds must be based upon a continuing, cooperative, and comprehensive urban transportation planning process.

#### A. UMTA Section 3 Funds for Transit Capital Assistance Projects

Section 3 funding can only be utilized after all Section 5 funds allocated to the urbanized area have been expended. UMTA Section 3 funds are eligible for 80% participation for capital assistance projects.

#### B. UMTA Section 5 Funds for Transit Capital and Operating Assistance Projects

Section 5 funds utilized for capital assistance projects are eligible for 80% participation, while for operational assistance projects participation shall not exceed 50% of the operating expense. The amount of Federal assistance requested under Section 5 cannot exceed the apportioned funds available to the urbanized area.

The Metropolitan Transit Authority has been designated by the Governor of the State of Iowa and by the responsible local officials as the recipient of UMTA Section 5 funds for the Des Moines Urbanized Area. The following chart shows the UMTA Section 5 funding allocation for the Des Moines Urbanized Area for FY 1977-1980. At this time no allocation has been made for FY 1981 UMTA funds.

<u>FISCAL YEAR</u>	<u>AMOUNT</u>
1977	\$ 1,083,573
1978	1,291,953
1979	1,416,980
1980	1,500,332
1981	<u>Unallocated</u>
<b>TOTAL</b>	<b>\$ 5,292,838</b>

Source: Federal Register, January 13, 1975

C. UMTA Section 10 Funds for Transit Management Training

Section 10 funds are used for the training of employees of any state or local body involved in urban mass transportation activities and are eligible for 75% Federal participation.

II. FEDERAL-AID HIGHWAY ACT OF 1973

For information on the Federal-aid highway Act of 1973, see the funding portion under highway and street section.

A. Federal-aid Interstate (FAI)

FAI funds may be used to fund non-highway public mass transit projects for the construction of fixed rail facilities or the purchase of passenger equipment including rolling stock for any mode of mass transit or both under certain required conditions. Among these are:

1. Responsible local officials of the urbanized area notify the State highway department that their needs require a non-highway public mass transit project.
2. The State determines that the project is in accordance with the planning process under Section 134 of the Federal-aid Highway Act of 1973 and is entitled to priority under such planning process.



3. The Secretary determines that the route or portion thereof on the Interstate System in the urbanized area is not essential to completion of a unified and connected Interstate System. FAI funds for transit capital assistance projects can be eligible for 80% participation.

B. Federal-aid Urban Systems (FAUS)

At the discretion of local officials, FAUS funds may be utilized for public transit capital assistance projects. FAUS funds for transit capital assistance projects can be eligible for 70% participation.

CAPITAL EXPENDITURES

All Section 3 capital expenses as listed on the following chart for 1977 are included in either of two grants presently approved by UMTA. Under grant #IA-03-0012 are approved expenditures for 1,600 bus stop signs, 20 public passenger shelters and 25 paved loading areas. Under grant #IA-03-0016 the line items approved are the purchase of 30 transit coaches and the construction of the new transit facility.

Grant #IA-03-0016 has been approved up through and including advertisement for bids for the construction of the new facility. Thus, land acquisition, final engineering, design and bid letting may now take place without further UMTA approval. Prior to the award of the construction contract and the actual construction, a grant amendment will be necessary. It is anticipated that UMTA approval of this phase of the grant will occur in late summer or early fall of 1977.

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	MTA: CAPITAL EXPENSES PUBLIC TRANSPORTATION				TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
	TDP	1977	Bus stop signs (1,600)									Sec. 3	44,800		11,200	56,000
1	TDP	1977	20 public passenger shelters									Sec. 3	65,600		16,400	82,000
2	TDP	1977	25 paved loading areas									Sec. 3	11,600		2,900	14,500
	TDP	1977	30 transit coaches									Sec. 3	1,632,000		408,000	2,040,000
3	TDP	1977	Land acquisition - new facility									Sec. 3	113,600		28,400	142,000
3	TDP	1977	Final engineering & Design - new facility									Sec. 3	176,694		44,174	220,868
3	TDP	1977	Construction of parking & maintenance apron - new facility									Sec. 3	52,720		13,180	65,900
	---	1977	Implementation of FARE Accounting Procedure									Sec. 3	8,000		2,000	10,000
	---	1977	Management Training N. Eastern Univ. Service & office center (Construction & Equipment)									Sec. 10	6,000		2,000	8,000
3	TDP	1978	25 transit coaches (35' - 38 - 42 passenger)									Sec. 3	3,367,400		841,850	4,209,250
	TDP	1978	Bus stop signs (2,500)									Sec. 3	1,520,000	380,000		1,900,000
	TDP	1978	25 public passenger shelters									Sec. 3	70,000		17,500	87,500
	TDP	1978	10 transit coaches (35' - 38 - 42 passenger)									Sec. 3	82,000		20,500	102,500
	TDP	1979	Service cars & trucks									Sec. 3	608,000	152,000		760,000
	TDP	1979	Express center shelters (heated & unheated)									Sec. 3	24,458		6,114	30,572
	TDP	1980	10 transit coaches (35' - 38 - 42 passenger)									Sec. 3	80,000		20,000	100,000
	TDP	1980	10 fareboxes & communication devices									Sec. 3	640,000	160,000		800,000
	TDP	1980	10 fareboxes & communication devices									Sec. 3	34,400	8,600		43,000
	TDP	1981	Bus stop signs (1,000)									Sec. 3	28,000		7,000	35,000

**PROJECT IDENTIFICATION NUMBER**

These project numbers correspond with the numbers on the map of Improvements showing the project locations.

**"PROJECT SOURCE DOCUMENT" SYMBOLS**

R.P. - REVISED PLAN

TSM - TRANSPORTATION SYSTEMS MANAGEMENT

CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM

TDP - TRANSIT DEVELOPMENT PROGRAM

**"TYPE OF IMPROVEMENT" SYMBOLS**

ARS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

**"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)**

BRP - BRIDGE REPLACEMENT

C - CONSTRUCTION

CI - CURBELIZATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

N - NIDING

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

**"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)**

ROM - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STUMP

TL - TURNING LANES

M - MILDERING

**NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS**

PA - PRINCIPLE ARTERIAL

PA - HIGH ARTERIAL

C - COLLECTOR

L - LOCAL

**FUNDING TYPE**

FBI - FEDERAL AID INTERSTATE

FAP - FEDERAL AID PRIMARY

FAS - FEDERAL AID URVAN SYSTEM

FNS - FEDERAL AID SECONDARY

FPI - FARE-TO-MARKET

T 2 - TITLE II

IRD - INVESTMENT OF HEADING AND URBAN DEVELOPMENT

SEC. 3 - URBAN SECTION 3

SEC. 5 - URBAN SECTION 5

SEC. 10 - URBAN SECTION 10

IOR - BUREAU OF OUTDOOR RECREATION

FVA - FEDERAL AVIATION AGENCY

S - STATE D.O.T.

L - LOCAL

OPERATING EXPENSES

The Section 5 operating expenses shown on the following chart for 1977 are actual budget projections as made by the MTA. Total operating expenses as projected in the budget figures \$3,160,583. Revenue is projected to reach \$1,719,000 in 1977; thus, leaving a total operating expense less revenue at \$1,591,583. Under Section 5 of the Urban Mass Transit Act all monies of the \$1,591,583 that qualify will be subject to a 50 percent deficit funding from UMTA. It is projected that both the UMTA and local share of the operating deficit will be \$795,791.50.

Within the operating budget are certain planning functions that are to be completed in 1977 with implementation of the findings to be in either 1977 or 1978.

These functions are as follows:

- System Wide Route Analysis
- Latent Demand & Route Feasibility Study for the Near West Crosstown
- Feasibility Study & Implementation of Sunday and/or Evening Service
- Study & Implement Zone Fare (West Des Moines & Urbandale)
- Non Ridership Survey
- Elderly & Handicapped Service (Study & Implement)
- Uniform Scheduling
- Southside Service Improvements
- Expansion of Elderly & Handicapped Service
- Increase Route Frequencies
- Near West Crosstown (Implementation)

Operating expenses for 1978 and 1979 are projected at this time to only show the total operating budget anticipated. Due to the difficulty in accurately projecting revenue from year to year, MTA has not attempted to do so in this TIP. It should be pointed out, however, that current statistics indicate that revenue is on the upswing and this upward trend should continue through 1978 and 1979.

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	MTA: OPERATING EXPENSES PUBLIC TRANSPORTATION		TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
TDP		1977	Projected Transportation Expense											1,805,005
TDP		1977	Projected Operating & Maintenance Expense											611,445
TDP		1977	Projected Administrative Expenses											894,133
TDP		1977	Total Projected Operating Expenses											3,310,583
TDP		1977	Projected Operating Revenue											1,719,000
TDP		1977	Total Projected Operating Expense less Revenue						Sec. 5	795,791.50		795,791.50		1,591,583
		1978	Total Projected Operating Expenses*											3,603,065
		1979	Total Projected Operating Expenses*											3,963,371
			*Operating Expenses remaining after revenue qualify for Section 5 funding											

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVISED PLAN
- TR - TRANSPORTATION SYSTEMS MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TEP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

- AS - AUTOMATIC RAILROAD SIGNALS
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BR - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CHANNELIZATION
- G - GRADING
- GR - GRAVEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- M - MEDIANS
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- ROM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STUDY
- TL - TURNING LANES
- W - WIDENING

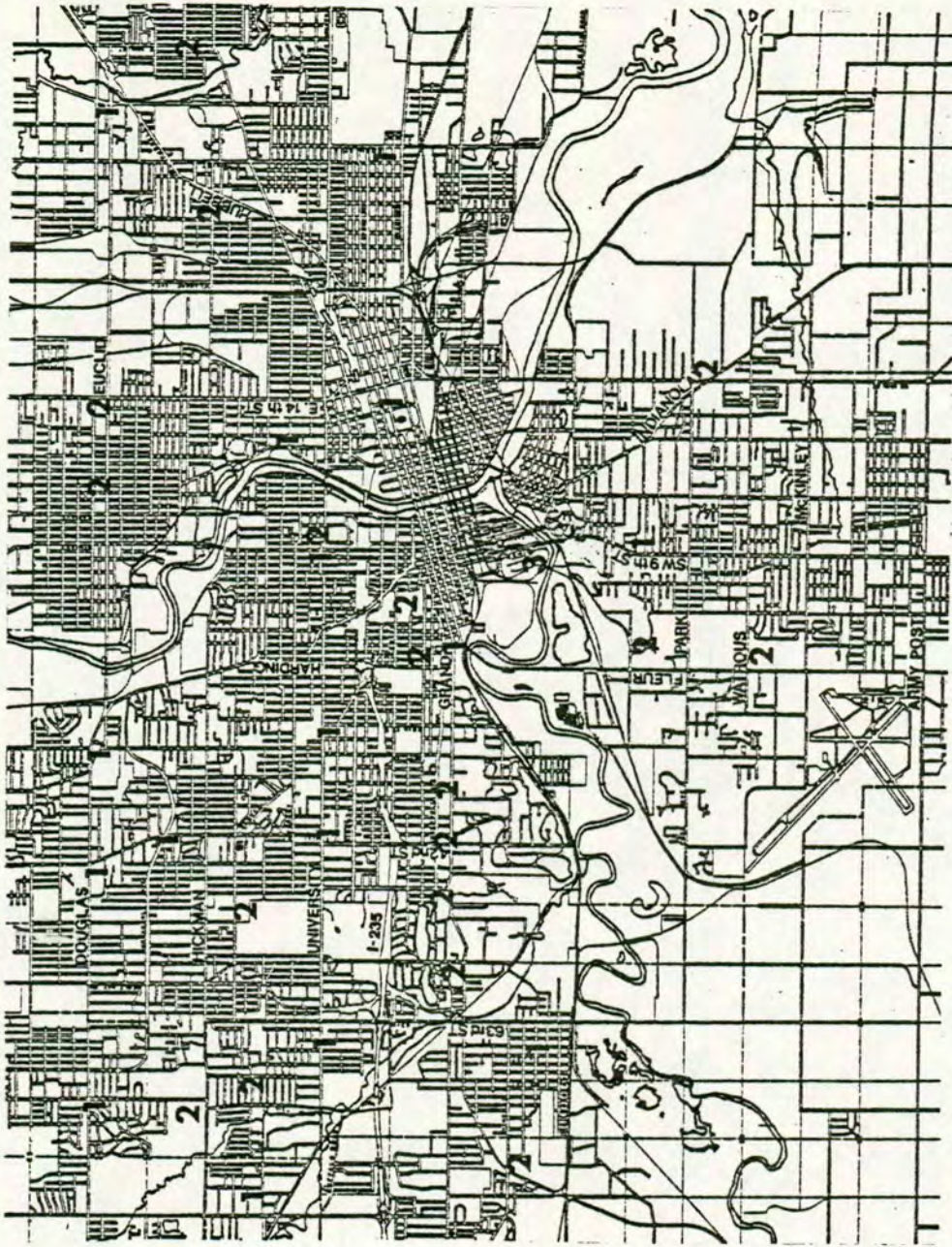
NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

- FA - PRINCIPLE ARTERIAL
- MA - MAJOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

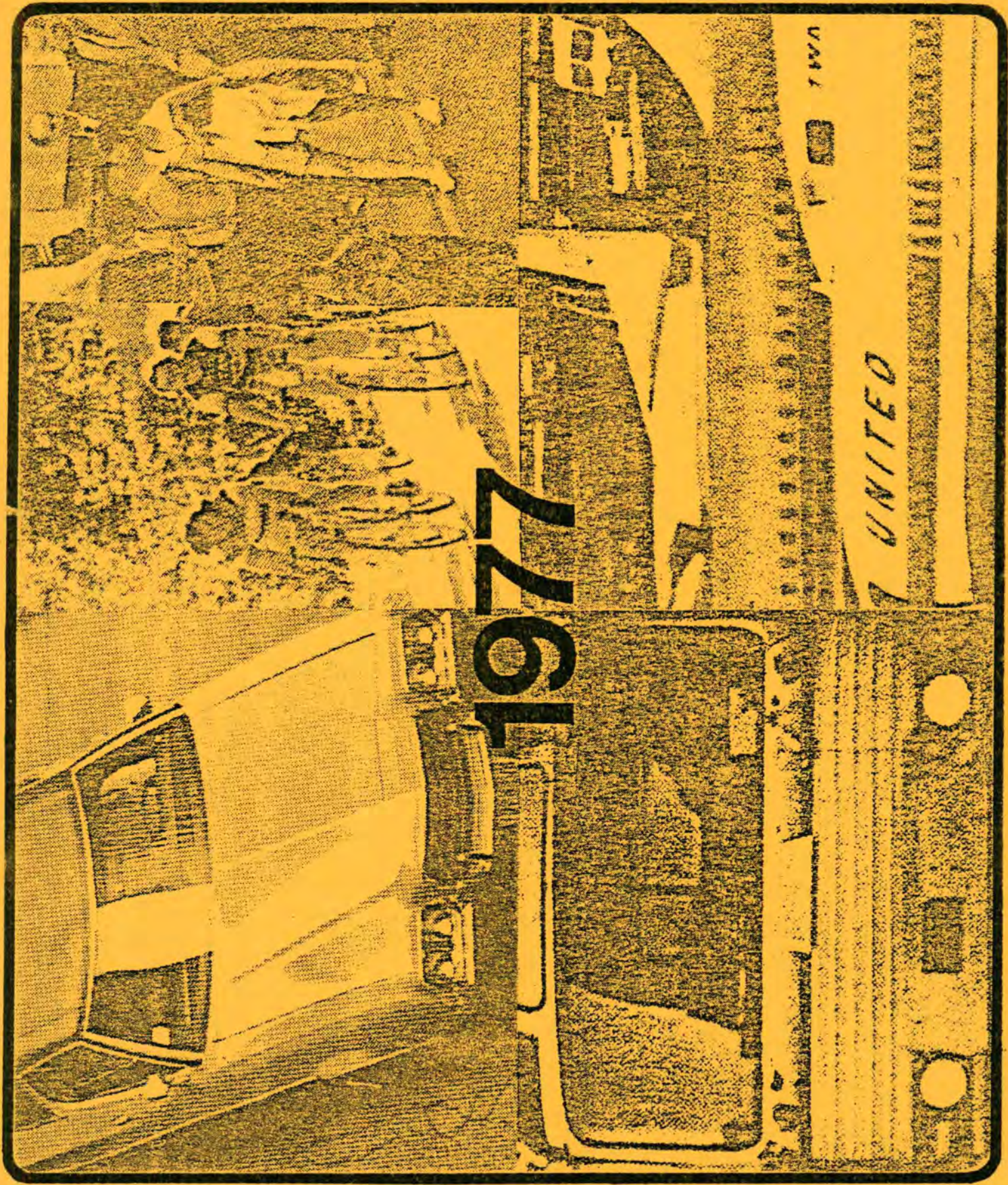
FUNDING TYPE

- FBI - FEDERAL AID INTERSTATE
- FPI - FEDERAL AID PRIMARY
- FUS - FEDERAL AID URBAN SYSTEM
- FSS - FEDERAL AID SECONDARY
- FTH - FARM-TO-MARSH
- T 2 - TITLE II
- IBD - DEPARTMENT OF BUSINESS AND URBAN DEVELOPMENT
- SEC. 3 - UMTA SECTION 3
- SEC. 5 - UMTA SECTION 5
- SEC. 10 - UMTA SECTION 10
- DOB - BUREAU OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL

MTA



No Scale



ANNUAL ELEMENT

The annual element is a list of transportation improvement projects proposed for implementation during the first program year and should be reasonably consistent with available federal funding for that year. This annual element includes projects to be completed during FY 1977. In the event that additional funds become available for FY 1977, projects will be shifted from the 5-year program to the annual element.

The following chart shows the total amount of expenditures estimated for transportation improvement projects for Fiscal Year 1977 in the Des Moines Urbanized Area. Total estimated expenditures are broken down by jurisdiction and by funding source.



SUMMARY OF ESTIMATED EXPENDITURES BY LOCAL JURISDICTIONS,  
THE METROPOLITAN TRANSIT AUTHORITY, AND THE IOWA DEPARTMENT  
OF TRANSPORTATION (FISCAL YEAR 1977)

	CLIVE	DES MOINES	IDOT	JOHNSTON	MFA	PIFASANT HILL	POLK COUNTY	URBANDALE	WEST DES MOINES	WINDSOR HEIGHTS	TOTAL
FAI			283,300								283,300
FAP			349,000								349,000
FAUS	17,500	1,917,450					458,500		199,050		2,592,500
FAS							7,000				7,000
TITLE II		231,000									231,000
HUD		170,000									170,000
FARM TO MARKET							84,000				84,000
UMTA SEC. 3					2,105,014						2,105,014
UMTA SEC. 5					795,791.50						795,791.50
UMTA SEC. 10					6,000						6,000
EBR		140,000									140,000
FMA		3,384,750									3,384,750
STATE		49,000	330,700				19,500		136,000		535,200
LOCAL	7,500	9,498,800		15,000	1,324,045.50	25,000	100,700	368,648	759,050	25,000	12,123,743.50
TOTAL	25,000	15,391,000	963,000	15,000	4,230,851	25,000	669,700	368,648	1,094,100	25,000	22,807,299

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES AIRPORT PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
		1977	Airport Terminal Bldg.-Interior Renovation	RC					L			130,000	130,000
		1977	Airport Master Plan	ST					FAA	206,250		68,750	275,000
		1977	Airport Parking Expansion	C					L			260,000	260,000
		1977	Runway/Taxiway Improvements	P					FAA	3,178,500		1,059,500	4,238,000
			<b>TOTAL</b>										4,903,000

<p><b>PROJECT IDENTIFICATION NUMBER</b></p> <p>These project numbers correspond with the numbers on the map of improvements showing the project locations.</p>	<p><b>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</b></p> <p>BR - BRIDGE REPLACEMENT</p> <p>C - CONSTRUCTION</p> <p>CH - CHANNELIZATION</p> <p>G - GRADING</p> <p>GR - GRAVEL</p> <p>I - INTERSECTION IMPROVEMENTS</p> <p>IL - INTERSECTION LIGHTING</p> <p>IN - INSTALLATION</p> <p>M - MEDIANS</p> <p>P - PAVING</p> <p>R - REALIGNMENT</p> <p>RC - RECONSTRUCTION</p> <p>RE - REPAIR</p>	<p><b>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</b></p> <p>RM - RIGHT-OF-WAY ACQUISITION</p> <p>RS - RESURFACING</p> <p>S - SIGNALIZATION</p> <p>ST - STRIP</p> <p>TL - TURNING LANES</p> <p>W - WEARING</p> <p><b>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</b></p> <p>FA - PRINCIPLE ARTERIAL</p> <p>MA - MAJOR ARTERIAL</p> <p>C - COLLECTOR</p> <p>L - LOCAL</p>	<p><b>FUNDING TYPE</b></p> <p>FAI - FEDERAL AID INTERSTATE</p> <p>FAP - FEDERAL AID PRIMARY</p> <p>FAS - FEDERAL AID STATE</p> <p>FAS - FEDERAL AID SECONDARY</p> <p>FBI - FARM-TO-MARKET</p> <p>T 2 - TITLE II</p> <p>IRD - IMPROVEMENT OF HIGHWAY AND URBAN DEVELOPMENT</p> <p>SEC. 3 - UNIA SECTION 3</p> <p>SEC. 5 - UNIA SECTION 5</p> <p>SEC. 10- UNIA SECTION 10</p> <p>BOR - BUREAU OF OUTDOOR RECREATION</p> <p>FVA - FEDERAL AVIATION AGENCY</p> <p>S - STATE D.O.T.</p> <p>L - LOCAL</p>
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PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
CIP	1977	Central Place Streets	ROW, P	--	--	--	--	L				185,000	185,000	
CIP	1977	Dixon St.-E. Hull Intersection	I, ROW	--	--	--	--	L				95,000	95,000	
RP	1977	Douglas Ave.-59th to 62nd St.	W, CH	0.2	4	4	PA	L				104,000	104,000	
RP	1977	9th St.-Center to University	W	0.3	2	4	C	L				376,000	376,000	
RP	1977	Euclid Ave.-30th to Douglas	W, I, S	0.1	2	3	PA	L				49,000	49,000	
RP	1977	Army Post Road-SE 5th to SE 14th	W, CH, S	0.3	4	4	PA	L				408,000	408,000	
RP	1977	Hickman Rd.-Merklin Way & Merle Hay/ Intersection	S, I	--	--	--	PA	L				41,500	41,500	
CIP	1977	South Union St.-Yeader Creek Bridge	C	--	2	2	C	L				53,000	53,000	
RP	1977	2nd Ave.-Des Moines River & Birdland Bridges	C	--	--	--	PA	L				70,000	70,000	
CIP	1977	SE 5th St.-Yeader Creek Bridge	C	--	2	2	MA	L				18,000	18,000	
RP	1977	SE 6th St. Bridge	C	--	0	4	MA	FAUS	320,000				320,000	
CIP	1977	Pavement Marking Program		--	--	--	--	T2	120,000				120,000	
CIP	1977	Minor intersection improvement & signalization upgrading	S, I	--	--	--	--	FAUS/S	177,450	24,000	52,050		253,500	
CIP	1977	Scott Avenue Bridge	C	--	2	4	MA	L				140,000	140,000	
RP	1977	Guthrie Avenue Viaduct	C	--	0	4	MA	FAUS	1,350,000			950,000	2,300,000	
CIP	1977	City-wide Bridges	C	--	--	--	--	L				140,000	140,000	
CIP	1977	Court Avenue Bridge	C	--	4	4	MA	L				50,000	50,000	
TSM	1977	City-wide traffic signals, channelization and school crossing protection program	S, CH	--	--	--	--	S		25,000	75,000		100,000	
CIP	1977	Parking Meter Replacement	IN	--	--	--	--	L				75,000	75,000	

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the top of improvements showing the project location.

"PROJECT SOURCE DOCUMENT" SYMBOLS

R.P. - REVISED PLAN

TSM - TRANSPORTATION SYSTEMS IMPROVEMENT

CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM

TIP - TRAVEL DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

AS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

BRP - BRIDGE REPLACEMENT

C - CONSTRUCTION

CH - CHANNELIZATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

M - MEDIANS

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

ROW - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STAFF

TL - TURNING LANES

W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

PA - PRINCIPAL ARTERIAL

MA - MAJOR ARTERIAL

C - COLLECTOR

L - LOCAL

FUNDING TYPE

FAI - FEDERAL AID INTERSTATE

FAP - FEDERAL AID PRIMARY

FAUS - FEDERAL AID URBAN SYSTEM

FAS - FEDERAL AID SECONDARY

FTH - FARM-TO-MARKET

T 2 - TITLE II

IRD - IMPROVEMENT OF IRRIGATION AND URBAN INFRASTRUCTURE

SEC. 3 - UMTA SECTION 3

SEC. 5 - UMTA SECTION 5

SEC. 10 - UMTA SECTION 10

BOR - BUREAU OF OUTDOOR RECREATION

FAA - FEDERAL AVIATION AGENCY

S - STATE D.O.T.

L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	DES MOINES HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
CIP	1977	Grass Roots Paving	C, RC	--	--	--	--	L				271,000	271,000	
CIP	1977	South Union-Indianola to Army Post Road	C	0.5	2	2	C	L				305,000	305,000	
CIP	1977	SE 5th-E. McKinley to Army Post Road	C	1.0	2	2	MA	L				180,000	180,000	
CIP	1977	Curb, Median Island & Pavement Replacement	C	--	--	--	--	L				298,000	298,000	
CIP	1977	City-wide Paving Program	P	--	--	--	--	L				2,830,000	2,830,000	
RP	1977	Industrial Hwy-Fleur Dr. to SE 14th	ROW, C, S	--	--	--	PA	L				200,000	200,000	
		TOTAL											9,630,000	

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of Improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVISED PLAN
- TRM - TRANSPORTATION SYSTEMS MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-TERM CAPITAL IMPROVEMENTS PROGRAM
- TIP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

- ARS - AUTOMATIC RAILROAD SIGNALS
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CHANNELIZATION
- G - GRADING
- GR - GRAVEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- H - MEDIAN
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- ROM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STUDY
- TL - TURNING LANES
- W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

- PA - PRINCIPAL ARTERIAL
- MA - MAJOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

FUNDING TYPE

- FBI - FEDERAL AID INTERSTATE
- FPI - FEDERAL AID PRIMARY
- FMS - FEDERAL AID MAJOR SYSTEM
- FSS - FEDERAL AID SECONDARY
- FTH - FARM-TO-MARKET
- T 2 - TITLE II
- HUD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
- SEC. 3 - URBAN SECTION 3
- SEC. 5 - URBAN SECTION 5
- SEC. 10 - URBAN SECTION 10
- DOR - DEPARTMENT OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	IOWA DOT HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
CIP	1977		Modification of University & U.S. 6 Interchange-I-35	RC, ROW	--	--	--	PA	FAP	349,000	150,000		499,000
CIP	1977		U.S. 69 Median Crossover 1/4 mile north of/ Warren Co. on 35th	C	--	--	--	PA	S		9,000		9,000
CIP	1977		I-235 Reimbursement to WDM for Construction	C	--	--	--	PA	S		140,000		140,000
CIP	1977		I-235 Bridge at Keo interchange	RE	--	--	--	PA	FAI	6,300	700		7,000
CIP	1977		I-35 Modification of E. 14th Interchange	RC	--	--	--	PA	FAI	277,000	31,000		308,000
			TOTAL										963,000

PROJECT IDENTIFICATION NUMBER	"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)	"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)	FUNDING TYPE
These project numbers correspond with the numbers on the map of Improvements showing the project locations.	BR - BRIDGE REPLACEMENT	ROW - RIGHT-OF-WAY ACQUISITION	FAI - FEDERAL AID INTERSTATE
"PROJECT SOURCE DOCUMENT" SYMBOLS	C - CONSTRUCTION	RS - RESURFACING	FAP - FEDERAL AID PRIMARY
R.P. - REVISED PLAN	CI - CURB/RETAINMENT	S - SIGNALIZATION	FAS - FEDERAL AID URBAN SYSTEM
TSM - TRANSPORTATION SYSTEMS MANAGEMENT	G - GRADING	ST - STUDY	FAS - FEDERAL AID SECONDARY
CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM	GR - GRAVEL	TL - TURNING LANES	FBI - FARM-TO-MARKET
TDP - TRANSIT DEVELOPMENT PROGRAM	I - INTERSECTION IMPROVEMENTS	W - WIDENING	T 2 - TITLE II
"TYPE OF IMPROVEMENT" SYMBOLS	IL - INTERSECTION LIGHTING		IND - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AS - AUTOMATIC RAILROAD SIGNALS	IN - INSTALLATION	NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS	SEC. 3 - URBAN SECTION 3
BC - BRIDGE CONSTRUCTION	H - MEDIAN	PA - PRINCIPLE ARTERIAL	SEC. 5 - URBAN SECTION 5
	P - PAVING	PA - MINOR ARTERIAL	SEC. 10 - URBAN SECTION 10
	R - REALIGNMENT	C - COLLECTOR	BOR - BUREAU OF OUTDOOR RECREATION
	RC - RECONSTRUCTION	L - LOCAL	FVA - FEDERAL AVIATION AGENCY
	RE - REPAIR		S - STATE D.O.T.
			L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	JOHNSTON HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
	CIP	1977	NW 66th Ave., Merle Hay Rd. to NW 54th St.	RS	0.28	2	2	L	L			15,000	15,000
			TOTAL										15,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the markers on the top of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

R.P. - REVISED PLAN

TSM - TRANSPORTATION SYSTEMS MANAGEMENT

CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM

TEP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

ARS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

BRP - BRIDGE REPLACEMENT

C - CONSTRUCTION

CI - CURB/RELIZATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

H - PAVING

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

RM - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STUMP

TL - TURNING LANES

W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

PA - PRINCIPLE ARTERIAL

MA - MAJOR ARTERIAL

C - COLLECTOR

L - LOCAL

FUNDING TYPE

FBI - FEDERAL AID INTERSTATE

FAP - FEDERAL AID PRIMARY

FAS - FEDERAL AID URBAN SYSTEM

FAS - FEDERAL AID SECONDARY

FTH - FARM-TO-MARKET

T 2 - TITLE II

IRD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SEC. 3 - URBAN SECTION 3

SEC. 5 - URBAN SECTION 5

SEC. 10 - URBAN SECTION 10

DOR - BUREAU OF OUTDOOR RECREATION

FAA - FEDERAL AVIATION AGENCY

S - STATE D.O.T.

L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	PLEASANT HILL HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
CIP	1977	City-wide Resurfacing Project	RS	--					L			25,000	25,000
			TOTAL										25,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVISED PLAN
- TSM - TRANSPORTATION SYSTEM MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TDP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

- ARS - AUTOMATIC RAILROAD SIGNALS
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CURBRELIZATION
- G - GRADING
- GR - GRAVEL
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- II - INSTALLATION
- M - MEDIANS
- P - PAVING
- R - REALIGNMENT
- RC - RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- RCM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STUDY
- TL - TURNING LANES
- W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

- FA - PRINCIPLE ARTERIAL
- MA - MINOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

FUNDING TYPE

- FBI - FEDERAL AID INTERSTATE
- FPI - FEDERAL AID PRIMARY
- FMS - FEDERAL AID URBAN SYSTEM
- FAS - FEDERAL AID SECONDARY
- FTH - FARE-TO-PARKET
- T 2 - TITLE II
- HUD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
- SEC. 3 - URBAN SECTION 3
- SEC. 5 - URBAN SECTION 5
- SEC. 10 - URBAN SECTION 10
- BOR - BUREAU OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL



PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	POLK COUNTY HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
TSM	1977		RR "X" on NW Morningstar Drive	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000	
CIP	1977		RR "X" on NE 58th Ave	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000	
TSM	1977		Hwy 69 & NE 52nd Intersection	IL	--	2	2	L	L			1,800	1,800	
TSM	1977		Hwy 65 & NE 46th Ave Intersection	IL	--	2	2	MA	FAUS			2,400	2,400	
CIP	1977		RR "X" on 42nd St.	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000	
CIP	1977		RR "X" on SE 44th Ave	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000	
CIP	1977		Morningstar Dr.-Aurora to North Urbanized/ Area Boundary	P	3.0	2	2	MA	FAUS/S	200,000	FIM 84,000		284,000	
CIP	1977		University-I-35/80 to 1/2 mile West	ROW,G,P	0.5	2	2	MA	FAUS	135,000		85,000	220,000	
TSM	1977		RR "X" on NW Beaver	ARS	--	2	2	MA	FAUS	17,000		2,000	19,000	
CIP	1977		Hoffman Lane-Hwy 415 to NW 6th Ave.	RS	0.2	2	2	C	L			1,500	1,500	
CIP	1977		Douglas Ave-DM City Limits to NE 46th St.	RS,RC	0.4	2	2	MA	FAUS/S	10,500	4,500		15,000	
CIP	1977		Douglas Ave-NE 46th St. to NE 56th St.	RS,RC	1.0	2	2	MA	FAUS/S	28,000	12,000		40,000	
RP	1977		SE 64th Ave.-Hwy 5 to East Urbanized/ Area Boundary	RS	0.25	2	2	L	FAS/S	7,000	3,000		10,000	
			TOTAL										669,700	

PROJECT IDENTIFICATION NUMBER	"TYPE OF IMPROVEMENT" SYMBOLS (CONTINUED)	"TYPE OF IMPROVEMENT" SYMBOLS (CONTINUED)	FUNDING TYPE
These project numbers correspond with the numbers on the map of improvements showing the project locations.	BIP - BRIDGE REPLACEMENT	RM - RIGHT-OF-WAY ACQUISITION	FBI - FEDERAL AID INTERSTATE
<u>"PROJECT SOURCE DOCUMENT" SYMBOLS</u>	C - CONSTRUCTION	RS - RESURFACING	FAP - FEDERAL AID PRIMARY
R.P. - REVISED PLAN	CI - CURB/RETENTION	S - SIGNALIZATION	FMS - FEDERAL AID URBAN SYSTEM
TSM - TRANSPORTATION SYSTEMS MANAGEMENT	G - GRADING	ST - STUMP	FAS - FEDERAL AID SECONDARY
CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM	GR - GROWL	TL - TURNING LANES	FBI - FARM-TO-MARKET
TIP - TRAVEL DEVELOPMENT PROGRAM	I - INTERSECTION IMPROVEMENTS	W - WIDENING	T 2 - TITLE II
<u>"TYPE OF IMPROVEMENT" SYMBOLS</u>	IL - INTERSECTION LIGHTING	<u>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</u>	IRD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
ARS - AUTOMATIC RAILROAD SIGNALS	IN - INSTALLATION	PA - PRINCIPLE ARTERIAL	SEC. 3 - URBAN SECTION 3
BC - BRIDGE CONSTRUCTION	M - MEDIAN	MA - MAJOR ARTERIAL	SEC. 5 - URBAN SECTION 5
	P - PAVING	C - COLLECTOR	SEC. 10 - URBAN SECTION 10
	RC - RECONSTRUCTION	L - LOCAL	BOB - BUREAU OF OUTDOOR RECREATION
	RE - REPAIR		EVA - FEDERAL AVIATION ADMIN.
			S - STATE D.O.T.
			L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	URBANDALE HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH ( IN MILES )	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
RP		1977	Aurora-79th St. to 82nd St.	G,P	0.25	0	4	MA	L			135,000	135,000
CIP		1977	78th - Hickman to Benton	G,P	0.30	0	2	L	L			233,648	233,648
			TOTAL										368,648

<p><u>PROJECT IDENTIFICATION NUMBER</u></p> <p>These project numbers correspond with the numbers on the map of improvements showing the project locations.</p> <p><u>"PROJECT SOURCE DOCUMENT" SYMBOLS</u></p> <p>R.P. - REVISED PLAN</p> <p>TSR - TRANSPORTATION SYSTEMS MANAGEMENT</p> <p>CIP - LOCAL TRANSPORTATION SURFACE CAPITAL IMPROVEMENTS PROGRAM</p> <p>TDP - TRANSIT DEVELOPMENT PROGRAM</p> <p><u>"TYPE OF IMPROVEMENT" SYMBOLS</u></p> <p>MS - METROPOLITAN RAILROAD SIGNALS</p> <p>BC - BRIDGE CONSTRUCTION</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>BR - BRIDGE REPLACEMENT</p> <p>C - CONSTRUCTION</p> <p>CH - CHANNELIZATION</p> <p>G - GRADING</p> <p>GR - GRAVEL</p> <p>I - INTERSECTION IMPROVEMENTS</p> <p>IL - INTERSECTION LIGHTING</p> <p>IN - INSTALLATION</p> <p>M - MENDING</p> <p>P - PAVING</p> <p>R - REALIGNMENT</p> <p>RC - RECONSTRUCTION</p> <p>RE - REPAIR</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>RM - RIGHT-OF-WAY ACQUISITION</p> <p>RS - RESURFACING</p> <p>S - SIGNALIZATION</p> <p>ST - STUMP</p> <p>TL - TURNING LANES</p> <p>W - WIDENING</p> <p><u>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</u></p> <p>PA - PRINCIPLE ARTERIAL</p> <p>MA - MAJOR ARTERIAL</p> <p>C - COLLECTOR</p> <p>L - LOCAL</p>	<p><u>FUNDING TYPE</u></p> <p>FBI - FEDERAL AID INTERSTATE</p> <p>FNP - FEDERAL AID NATIONAL</p> <p>FMS - FEDERAL AID MASSIVE SYSTEM</p> <p>FAS - FEDERAL AID SECONDARY</p> <p>FBI - FARM-TO-MARKET</p> <p>T 2 - TITLE II</p> <p>IRD - FEDERAL AID INTERSTATE AND RURAL DEVELOPMENT</p> <p>SEC. 3 - URBAN SECTION 3</p> <p>SEC. 5 - URBAN SECTION 5</p> <p>SEC. 10 - URBAN SECTION 10</p> <p>DOR - BUREAU OF OUTDOOR RECREATION</p> <p>FVA - FEDERAL AVIATION AGENCY</p> <p>R - STATE D.O.T.</p> <p>L - LOCAL</p>
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PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	WEST DES MOINES HIGHWAY AND STREET		TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION/ DESCRIPTION				EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
TSM	1977	35th Street Widening & Channelization	W,CH	0.5	4	4	PA	S			136,000	365,000	501,000	
RP	1977	35th St. Extension-Ashworth to Brookview	P	0.1	2	4	PA	L				51,600	51,600	
CIP	1977	31st St.-University to Westown	P	0.5	0	4	L	L				160,000	160,000	
CIP	1977	Westown Pkwy-19th Pl to 22nd	P	0.2	0	4	C	L				70,000	70,000	
TSM	1977	35th St. & I-235 & 35th & Valle/ West	S	--	4	4	PA	FAUS	64,050			27,450	91,500	
CIP	1977	University Ave.-I-35/80 to 1/4 mile West	ROW,G,P	0.5	2	2	MA	FAUS	135,000			85,000	220,000	
TOTAL													1,094,100	

<p><u>PROJECT IDENTIFICATION NUMBER</u></p> <p>These project numbers correspond with the numbers on the top of improvements showing the project location.</p> <p><u>"PROJECT SOURCE DOCUMENT" SYMBOLS</u></p> <p>R.P. - REVERSED PLAN</p> <p>TSM - TRANSFORMATION SYSTEMS MOVEMENT</p> <p>CIP - LOCAL TRANSFORMATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM</p> <p>TIP - TRANSIT DEVELOPMENT PROGRAM</p> <p><u>"TYPE OF IMPROVEMENT" SYMBOLS</u></p> <p>RS - RAILROAD SIGNALS</p> <p>BC - BRIDGE CONSTRUCTION</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>BR - BRIDGE REPLACEMENT</p> <p>C - CONSTRUCTION</p> <p>CH - CHANNELIZATION</p> <p>G - GRADING</p> <p>GR - GRAVEL</p> <p>I - INTERSECTION IMPROVEMENTS</p> <p>IL - INTERSECTION LIGHTING</p> <p>IN - INSTALLATION</p> <p>M - MEDIAN</p> <p>P - PAVING</p> <p>R - REALIGNMENT</p> <p>RC - RECONSTRUCTION</p> <p>RE - REPAIR</p>	<p><u>"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)</u></p> <p>RM - RIGHT-OF-WAY ACQUISITION</p> <p>RS - RESURFACING</p> <p>S - SIGNALIZATION</p> <p>ST - STUMP</p> <p>TL - TURNING LANES</p> <p>W - WIDENING</p> <p><u>NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS</u></p> <p>PA - PRINCIPLE ARTERIAL</p> <p>MA - MINOR ARTERIAL</p> <p>C - COLLECTOR</p> <p>L - LOCAL</p>	<p><u>FUNDING TYPE</u></p> <p>FAI - FEDERAL AID INTERSTATE</p> <p>FAP - FEDERAL AID PRIMARY</p> <p>FAUS - FEDERAL AID URBAN SYSTEM</p> <p>FAS - FEDERAL AID SECONDARY</p> <p>FBI - FARM-TO-MARSH</p> <p>T 2 - TITLE II</p> <p>IRD - DEPARTMENT OF REVENUE AND URBAN DEVELOPMENT</p> <p>SEC. 3 - URBAN SECTION 3</p> <p>SEC. 5 - URBAN SECTION 5</p> <p>SEC. 10 - URBAN SECTION 10</p> <p>BOR - BUREAU OF OUTDOOR RECREATION</p> <p>FVA - FEDERAL AVIATION AGENCY</p> <p>S - STATE D.O.T.</p> <p>L - LOCAL</p>
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PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	WINDSOR HEIGHTS HIGHWAY AND STREET PROJECT LOCATION/ DESCRIPTION	TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
	CIP	1977	Resurfacing Various Streets in City	RS	--	--	--	--	L			25,000	25,000
			TOTAL										25,000

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the markers on the map of improvements showing the project location.

"PROJECT SOURCE DOCUMENT" SYMBOLS

- R.P. - REVISED PLAN
- TSM - TRANSPORTATION SYSTEMS MANAGEMENT
- CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM
- TIP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENT" SYMBOLS

- RS - RESURFACING
- BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- BRP - BRIDGE REPLACEMENT
- C - CONSTRUCTION
- CH - CURB/REGULATION
- G - GRADING
- QR - CURVE
- I - INTERSECTION IMPROVEMENTS
- IL - INTERSECTION LIGHTING
- IN - INSTALLATION
- M - MEDIAN
- P - PAVING
- R - REALIGNMENT
- RC - ROAD RECONSTRUCTION
- RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

- RM - RIGHT-OF-WAY ACQUISITION
- RS - RESURFACING
- S - SIGNALIZATION
- ST - STREET
- TL - TURNING LANES
- W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

- FA - PRINCIPAL ARTERIAL
- MA - MAJOR ARTERIAL
- C - COLLECTOR
- L - LOCAL

FUNDING TYPE

- FBI - FEDERAL AID INTERSTATE
- FBI - FEDERAL AID PRIMARY
- FBS - FEDERAL AID URBAN SYSTEM
- FNS - FEDERAL AID SECONDARY
- FPI - FARM-TO-MARKET
- T 2 - TITLE II
- IRD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
- SEC. 3 - URBAN SECTION 3
- SEC. 5 - URBAN SECTION 5
- SEC. 10 - URBAN SECTION 10
- DOE - BUREAU OF OUTDOOR RECREATION
- FVA - FEDERAL AVIATION AGENCY
- S - STATE D.O.T.
- L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	MTA: CAPITAL EXPENSES PUBLIC TRANSPORTATION				TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION / DESCRIPTION	EXISTING	PROPOSED	FEDERAL			STATE	LOCAL			TOTAL			
TDP	1977	Bus Stop Signs (1,600)								Sec. 3	44,800		11,200	56,000		
TDP	1977	20 Public Passenger Shelters								Sec. 3	65,600		16,400	82,000		
TDP	1977	25 Paved Loading Areas								Sec. 3	11,600		2,900	14,500		
TDP	1977	30 Transit Coaches								Sec. 3	1,632,000		408,000	2,040,000		
TDP	1977	Land Acquisition-New Facility								Sec. 3	113,600		28,400	142,000		
TDP	1977	Final Engineering & Desing-New Facility								Sec. 3	176,694		44,174	220,868		
TDP	1977	Construction of Parking & Maintenance Apron-New Facility								Sec. 3	52,720		13,180	65,900		
---	1977	Implementation of FARE Accounting Procceure								Sec. 3	8,000		2,000	10,000		
---	1977	Management Training at N. Eastern Univ.								Sec. 10	6,000		2,000	8,000		
		TOTAL												2,639,268		

PROJECT IDENTIFICATION NUMBER	"TYPE OF IMPROVEMENT" SYMBOLS (CONTINUED)	"TYPE OF IMPROVEMENT" SYMBOLS (CONTINUED)	FUNDING TYPE
These project numbers correspond with the numbers on the map of Improvements showing the project locations.	BRP - BRIDGE REPLACEMENT	RM - RIGHT-OF-WAY ACQUISITION	FBI - FEDERAL AID INTERSTATE
"PROJECT SOURCE DOCUMENT" SYMBOLS	C - CONSTRUCTION	RS - RESURFACING	FPP - FEDERAL AID PRIMARY
R.P. - REVISED PLAN	CH - CHANNELIZATION	S - STABILIZATION	FMS - FEDERAL AID URBAN SYSTEM
TSR - TRANSPORTATION SYSTEMS IMPROVEMENT	G - GRADING	ST - STUDY	FNS - FEDERAL AID STATEWAY
CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM	GR - GRAVEL	TL - TURNING LANES	FPI - FARM-TO-MARKET
TIP - TRAVEL DEVELOPMENT PROGRAM	I - INTERSECTION IMPROVEMENTS	W - WIDENING	T 2 - TITLE II
"TYPE OF IMPROVEMENT" SYMBOLS	IL - INTERSECTION LIGHTING		IBD - IMPROVEMENT OF BUSINESS AND URBAN DEVELOPMENT
ARS - AUTOMATIC RAILROAD SIGNALS	IN - INSTALLATION	NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS	SEC. 3 - URBAN SECTION 3
BC - BRIDGE CONSTRUCTION	M - MEDIAN	PA - PRINCIPLE ARTERIAL	SEC. 5 - URBAN SECTION 5
	P - PAVING	MA - MAJOR ARTERIAL	SEC. 10- URBAN SECTION 10
	R - REALIGNMENT	C - COLLECTOR	BOB - BUREAU OF OUTDOOR RECREATION
	RC - RECONSTRUCTION	L - LOCAL	FVA - FEDERAL AVIATION AGENCY
	RE - REPAIR		S - STATE D.O.T.
			L - LOCAL

PROJECT IDENTIFICATION NUMBER	PROJECT SOURCE DOCUMENT	DATE	MTA: OPERATING EXPENSES PUBLIC TRANSPORTATION				TYPE OF IMPROVEMENT	PROJECT LENGTH (IN MILES)	LANES		NATIONAL FUNCTIONAL CLASSIFICATION	FUNDING TYPE	TOTAL PROJECT COST DISTRIBUTION			
			PROJECT LOCATION / DESCRIPTION						EXISTING	PROPOSED			FEDERAL	STATE	LOCAL	TOTAL
TDP	1977		Projected Transportation Expenses													1,805,005
TDP	1977		Projected Operating & Maintenance Expense													611,445
TDP	1977		Projected Administrative Expenses													894,133
TDP	1977		Total Projected Operating Expenses													3,310,583
TDP	1977		Projected Operating Revenue													1,719,000
TDP	1977		Total Projected Operating Expense less/ Revenue									Sec. 5	791,791.50		795,791.50	1,591,583
			TOTAL													1,591,583

PROJECT IDENTIFICATION NUMBER

These project numbers correspond with the numbers on the map of improvements showing the project locations.

"PROJECT SOURCE DOCUMENT" SYMBOLS

R.P. - REVISED PLAN

TM - TRANSPORTATION SYSTEMS MANAGEMENT

CIP - LOCAL TRANSPORTATION SHORT-RANGE CAPITAL IMPROVEMENTS PROGRAM

TDP - TRANSIT DEVELOPMENT PROGRAM

"TYPE OF IMPROVEMENTS" SYMBOLS

AS - AUTOMATIC RAILROAD SIGNALS

BC - BRIDGE CONSTRUCTION

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

BR - BRIDGE REPLACEMENT

C - CONSTRUCTION

CH - CHANNELIZATION

G - GRADING

GR - GRAVEL

I - INTERSECTION IMPROVEMENTS

IL - INTERSECTION LIGHTING

IN - INSTALLATION

M - MEDIAN

P - PAVING

R - REALIGNMENT

RC - RECONSTRUCTION

RE - REPAIR

"TYPE OF IMPROVEMENTS" SYMBOLS (CONTINUED)

RM - RIGHT-OF-WAY ACQUISITION

RS - RESURFACING

S - SIGNALIZATION

ST - STUDY

TL - TURNING LANES

W - WIDENING

NATIONAL FUNCTIONAL CLASSIFICATION SYMBOLS

FA - PRINCIPLE ARTERIAL

MA - MAJOR ARTERIAL

C - COLLECTOR

L - LOCAL

FUNDING TYPE

FAI - FEDERAL AID INTERSTATE

FAP - FEDERAL AID PRIMARY

FMS - FEDERAL AID URBAN SYSTEM

FNS - FEDERAL AID SECONDARY

FTH - FARM TO MARKET

T 2 - TITLE II

IBD - DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SEC. 3 - UMTA SECTION 3

SEC. 5 - UMTA SECTION 5

SEC. 10 - UMTA SECTION 10

IOR - BUREAU OF OUTDOOR RECREATION

FVA - FEDERAL AVIATION AGENCY

S - STATE D.O.T.

L - LOCAL

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# TRANSPORTATION SYSTEM MANAGEMENT



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APPENDIX



APPENDIX TO  
THE DES MOINES URBANIZED AREA  
TRANSPORTATION SYSTEM MANAGEMENT PLAN  
1977 - 78

The preparation of this report has been financed in part through grants from the U. S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended, and the Federal Highway Administration.

T A B L E   O F   C O N T E N T S

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TSM Objectives	1
TSM Actions	2
The TSM Evaluation Charts	6

## INTRODUCTION

During the FY 1977-FY 1978 Unified Work Program of the Des Moines Urbanized Area, the Transportation Technical and Policy Committees developed a Transportation System Management Plan, which is published under a separate cover. This appendix provides back-up information to the TSM plan and can be used as a tool by local governments for future TSM planning. It outlines the objectives, actions and measures of effectiveness that were used in the plan. The charts which appear after the following definitions indicate the objectives, actions and measures of effectiveness that can be used to evaluate a TSM project.

## TSM OBJECTIVES

The following short range objectives were selected in August of 1977 by the Transportation Technical Sub-Committee to guide TSM planning efforts. These objectives are concerned with the safety of urban travel, the efficiency of the transportation system, the mobility of transportation disadvantaged groups and the environmental effects of transportation.

1. Reduction of injuries, deaths and property damage resulting from traffic accidents.
2. Improve level of service of urban travel.
3. Optimize the person and goods movement capacity of existing transportation facilities.
4. Reduce fuel consumed in urban travel.
5. Encourage alternatives to driving private automobiles.
6. Provide good quality, affordable transportation services to the elderly and handicapped.
7. Reduce automotive emissions and impacts.

## TSM ACTIONS

The Transportation Technical Sub-Committee has also selected a group of TSM actions for consideration in the study area. The selection was based upon funding constraints, technical feasibility, political acceptability and the ability of actions to meet the objectives identified above.

### DEFINITION OF TSM ACTIONS

#### 1. Variable Work Hours - Staggered Work Hours

Under this system the employee's starting and quitting times occur more frequently than usual (e.g. 10 min., 15 min., rather than 30 min. intervals) and either before or after the normal peak period. A staggered work hour program, however, does not change the hours or the number of days the employees work.

#### Flexible Work Hours

Employees adjust their working schedules to fit their preferences. The hours worked include a block of time within which all employees must be present. This core time would be, for example, from 10:00 A.M. - 12:00 P.M. and from 1:00 P.M. - 3:00 P.M. Under a flex time arrangement, the work week remains at 40 hours. (The State Department of Transportation is presently using this system.)

#### 2. 4-Day Work Week

4-day, ten hour schedule. Under this option all employees start work one hour earlier and leave one hour later.

4-day schedule in which less than 40 hours are worked per week. There are five scheduling options available under this type program. The options are as follows:

FOUR-DAY WORK SCHEDULE	PERCENT OF FOUR DAY EMPLOYEES WORKING ON A GIVEN DAY					
	M	TU	W	TH	F	S
1. Equally rotated M-F	80	80	80	80	80	-
2. 1/2 M-TH; 1/2 TU-F	50	100	100	100	50	-
3. Equally rotated M-S	67	67	67	67	67	67
4. 1/3 M-TH; 1/3 TU-F; 1/3 W-S	33	67	100	100	67	33
5. 1/2 M-TH; 1/2 W-S	50	50	100	100	50	50

### 3. Peak-Hour Restriction

Trucks are permitted to load and unload only during off-peak travel periods. This action applies only to trucks which provide pick-up and delivery services.

### 4. Higher Parking Cost

A change of the parking rate structure to discourage parking. The parking rates may be structured to discourage long-term parking and encourage short-term parking or vice versa. A parking rate increase can also be used to discourage the use of the private automobile and encourage the use of other means of transportation.

### 5. Reduced Parking Fee for Carpools or Vanpools

Reduction of parking fees for carpools and vanpools for the work trip.

### 6. Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders

Reduction of bus fares during all hours of bus operation for elderly and handicapped. Reduction of bus fares during off-peak periods for non-peak riders.

### 7. Transit Marketing

The direct transit marketing objectives are to increase transit patronage and to gain overall public support for the system. The marketing techniques range from public information service to advertising and promotional programs. The scale of programs depends upon the cost of implementation.

### 8. Transit Route Improvement

This action consists of both operational and physical improvements for the fixed route transit service. Operational improvements include but are not limited to

- (a) bus scheduling,
- (b) schedule reliability,
- (c) route plan and layout,
- (d) loading location.

Physical improvements include but are not limited to

- (a) turning radii at intersections,
- (b) radio service,
- (c) preferential treatment for traffic control purposes.

## 9. Integration of Transit Services

Three different types of integration are possible:

1) Institutional integration-mergers of fixed route and paratransit services.

2) Operational integration:

- (a) a single transit network which avoids, as far as possible, duplication of service
- (b) a common fare structure
- (c) a schedule which ensures that patrons can transfer between vehicles with a minimum of waiting time, and
- (d) an areawide management information system.

3) Physical integration-this includes the standardization of vehicles, fare collection equipment and joint use of rolling stock.

## 10. Carpools, Vanpools

Carpools and vanpools organized by employers through matching programs.

## 11. Removal of On-Street Parking

This action usually is implemented in the CBD. It involves either permanent removal of on-street parking space or restriction of on-street parking during peak-periods.

## 12. One-Way Street System

On a one-way street, all lanes of traffic move in the same direction.

## 13. Traffic Control Improvement

Traffic control on urban or rural streets include the following types of improvements:

- (a) Lane markings
- (b) Lighting projects
- (c) Guardrails
- (d) 2-way stop sign
- (e) 4-way stop sign
- (f) Isolated intersection signal control
- (g) Open network control
- (h) Closed network control

The signal control concepts for (f), (g) and (h) fall into two basic categories:

- (1) pretimed control, and
- (2) traffic-actuated control.

#### 14. Unbalanced Flow

Reversible lanes are set up (during peak hours) to increase the capacity of the roadway in the direction of peak flow.

#### 15. Eliminating Unnecessary Traffic Control Devices

The elimination of traffic control devices, particularly traffic signals and stop signs, that do not meet the warrants for such devices adopted by Federal and State agencies. Frequently unwarranted traffic control devices result from changing traffic patterns.

#### 16. Signal Visibility Upgrading

The modernization of traffic signals by improving the visibility of the signals.

#### 17. Intersection Improvement (Channelization)

The establishment of exclusive right or left turn lanes through painted or physical barriers.

#### 18. Mid-block Improvement (2-way Left Turn Lanes)

Space is provided so that vehicles can pull out of through lanes and wait for an opportunity to turn left.

#### 19. Mid-block Improvement (Access Control)

Barrier type medians that prevent mid-block left turns can be used, although this is not practical where access has already been granted. Another option is to provide access through a street layout that allows drivers to make a right turn properly after circling the block. The most desirable alternative is to provide access from a side street after turning left at an intersection.

#### 20. Intersection Widening

Widening may be achieved by removal of parking, the addition of one or more lanes to provide additional lanes for left and/or right turns and the improvement of intersection geometrics.

#### 21. Pedestrian Walk and Pedestrian/Bicycle Safety Projects

Skywalks provide direct access between buildings, reducing pedestrian/vehicle conflict. The Des Moines Skywalk system will be located within the central business district, in an area bounded by 8th Street, 4th Street, Mulberry Avenue and Grand Avenue.

Bicycle safety projects consist of bikeways which are:

- (a) totally separated from pedestrian and vehicular traffic
- (b) on restricted rights-of-way, or
- (c) on shared rights-of-way with pedestrians and/or vehicles.



## THE TSM EVALUATION CHARTS

The following TSM evaluation charts may be used for:

1. determining which TSM actions can be implemented to achieve a given objective
2. indicating measures of effectiveness (MOE) which may be used to link an objective to related actions
3. determining an action's geographical area of influence
4. suggesting how actions may work to achieve objectives.

The first column of the charts indicate a specific objective. Once an objective has been selected several actions can be used to meet the objective. Actions which impact a particular objective are indicated in the second column of the chart.

The third column of the chart lists measures of effectiveness (MOEs). MOEs are defined as qualitative or quantitative indicators of the effect an action has on related objectives. The MOEs in the charts have been developed so that impacts (both positive and negative) of an action on one or more objectives can be determined.

The fourth column shows an action's geographical area of influence. This area of influence may be confined to a project site or it may extend to the entire study area.

The last column suggests means by which a TSM action possibly affects an objective. This column can be used to determine which action or actions best achieve the objective. A further analysis of a project needs to be made to

determine which of the available action(s) will have the greatest impact on an objective.

These charts were used to evaluate FY 1978 TSM actions (projects) submitted by local governments, the MTA and the Iowa DOT. Future TSM actions of the Des Moines Urbanized Area will be evaluated by using similar charts.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Reduction of injuries, deaths and property damage resulting from traffic accidents	Variable Work Hours 4-Day Work Week	Number of accidents occurring during peak hours	CBD and/or major job centers	These actions may disperse the peak hour travel, decreasing traffic accidents as peak hour congestion is reduced.
	Peak Hour Truck Restrictions	Difficult to quantify	CBD	It is difficult to determine the number of accidents that may result from the presence of trucks in the CBD during peak hours of travel.
	Higher Parking Cost	Number of accidents	CBD	For a sizeable increase in parking cost, the number of CBD oriented automobile trips may be reduced. Such a decrease in trip making may reduce the number of accidents.
	Reduced Parking Fee for Carpools/Vanpools	Number of accidents	Routes traveled from residences to major job centers	This action may be an incentive for the lone automobile driver to shift to carpools, vanpools or transit. The number of accidents may be reduced as less vehicles are on the highways during peak hour (work trip) commuting periods.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Not applicable	----	This action has no affect on accident reduction since most of these individuals are now captive transit riders.
	Transit Marketing	Number of accidents	Transit Routes	Transit marketing could increase transit ridership by automobile users, thus reducing vehicle miles of travel. As vehicle miles of travel is reduced accidents may also be decreased.
	Transit Route Improvements	Number of bus-auto accidents	Transit Routes	The proper location of bus stops and the upgrading of turning radii may reduce the number of bus/automobile conflicts.
	Integration of Transit Service	Difficult to quantify	Areawide	It is difficult to relate accident reductions to coordinated transit service.
	Carpools, Vanpools	Difficult to quantify	Areawide	It is difficult to relate accident statistics to carpool/vanpool programs.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Reduction of injuries, deaths and property damage resulting from traffic accidents	Removal of On-Street Parking	Number of accidents	Arterials	This action may reduce the risk of accidents due to the presence of parked cars.
	One-Way Street System	Number of Accidents	Major arterials	This action would improve safety by reducing the conflicts between turning vehicles.
	Traffic Control Improvements	Number of accidents	Intersection	Depending upon the type of traffic control improvement, the number of traffic accidents may be reduced.
	Unbalanced Flow	Number of accidents	Major arterials	Unbalanced flow decreases lane density. Therefore safety may be improved.
	Elimination of unnecessary traffic control devices	Number of accidents	Intersections	There may be a negative impact as more accidents may result from the implementation of this action.
	Signal visibility upgrading	Number of accidents	Intersection	This action may improve stopping sight distance and therefore improve safety.
	Intersection improvements (channelization)	Number or percent of left turn and/or right turn accidents	Intersection	This action eliminates the conflict between stopped vehicles desiring to turn left or right and those vehicles moving through the intersection.
	Mid-block Improvement (2-Way Left Turn Lanes)	Number of accidents	Arterial or Collector Streets	This action may improve safety by removing the left turning vehicles from the flow of traffic.
	Mid-block Improvement (access control)	Number of accidents	Arterial or Collector Streets	This action reduces the number of rear end collisions due to mid-block left turns.
	Intersection Widening	Number of accidents	Intersection	Intersection widening permits separate left and/or right turn lanes which may reduce accidents.
Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	Number of accidents	Areawide	Pedestrian and bicycle projects may reduce the conflict between bicycles, pedestrians and automobiles.	

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Improve level of service of urban travel	Variable Work Hours 4-Day Work Week	Volume/capacity ratio during peak periods	CBD and/or major job centers	These actions may disperse peak hour travel and thus relieve peak hour congestion.
	Peak Hour Truck Restrictions	Street and intersection delay in seconds per vehicle	CBD	Truck parking maneuvers tend to cause travel time delays in the CBD. Traffic flow may therefore be improved if trucks are restricted from peak period loading and unloading.
	Higher Parking Cost	Volume/capacity ratio	CBD	Sizeable increases in parking cost may decrease traffic volumes (and decrease the volume/capacity ratio) in the CBD.
	Reduced Parking Fee for Carpools/Vanpools	Volume/capacity ratio on work trip routes	Routes traveled from residences to major job centers	The employer's policy on parking cost may encourage more carpool/vanpool use. Since the formation of carpool/vanpools increases auto occupancy the volume/capacity ratio should decrease.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Percent of transit vehicle capacity used during non-peak periods	Transit Routes	This action may shift peak-period demand to off-peak periods.
	Transit Marketing	Difficult to quantify	Transit Routes	The affects of marketing (i.e. information and promotion) are difficult to separate from those of service changes.
	Transit Route Improvements	Waiting time, operating speed and schedule reliability	Transit Routes	Bus route scheduling, frequency changes and route coverage modifications may improve the level of service.
	Integration of Transit Service	Difficult to quantify	Areawide	It is difficult to determine the affect this action has on the objective since the integration of transit services is a relatively new concept. Therefore, the level of service variables are now hard to specify.
	Carpools, Vanpools	Volume/Capacity ratios	Routes traveled from residences to major job centers	Carpools and vanpools may reduce the number of automobiles used for work trips thus reducing congestion.
Removal of On-Street Parking	Volume/Capacity Ratio	Arterials	This action would increase street capacity.	

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Improve level of service of urban travel	One-Way Street System	Delay time in seconds, volume/capacity ratio	Major arterials	This action would reduce the delay time for left turning vehicles at signalized intersections. A one-way street would also increase street capacity. However, additional traffic may be attracted due to better driving conditions.
	Traffic Control Improvements	Delay time in seconds per vehicle; volume/capacity ratio	Intersection	Traffic control improvements (i.e. changes in cycle length, phases and offsets) can minimize the delay time and increase the capacity of an intersection.
	Unbalanced Flow	Volume/Capacity ratio	Major arterials	This action increases the capacity of the roadway in the direction of peak flow. However, additional traffic may be attracted to the facility offsetting the increase in capacity.
	Elimination of unnecessary traffic control devices	Delay time in seconds per vehicle	Intersection	This action may reduce the stops per mile needed when traveling on a given route.
	Signal visibility upgrading	Not applicable	----	This action has no affect on the objective.
	Intersection improvements (channelization)	Delay in seconds per vehicle	Intersection	This action segregates the traffic flow and, when combined with separate signal phasing, reduces left turn delay.
	Mid-block Improvements (2-Way Left Turn Lanes)	Volume/Capacity ratio	Arterial or Collector Streets	This action may improve the level of service by removing left turning vehicles from the flow of traffic.
	Mid-block Improvements (access control)	Volume/Capacity ratio	Arterial and Collector Streets	Access control of the entrance to and exit from driveways at mid-block may improve the vehicle capacity of streets between signalized intersections.
	Intersection Widening	Delay time in seconds per vehicle; intersection capacity	Intersection	The capacity of an intersection would be increased through widening. Separate left turn lanes could also reduce delay time, resulting in greater vehicle flow per cycle.
Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	Difficult to quantify	Areawide	Given the present state of knowledge on bikeway-pedestrian planning, it is difficult to determine the affect which the presence of bikeways and walkways may have on the level of service.	

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Optimize the person and goods movement capacity of existing transportation facilities	Variable Work Hours 4-Day Work Week	Frequency of person trips	Areawide	These actions may have a temporary negative effect on carpool programs due to schedule changes. A more flexible work schedule may also encourage more leisure travel, thereby increasing trips per capita.
	Peak Hour Truck Restrictions	Difficult to quantify	CBD	It is difficult to determine the affect peak hour truck restrictions would have on the goods movement capacity without an extensive study of commodity flows in the CBD.
	Higher Parking Cost	Transit ridership, auto occupancy	CBD	Sizeable increases in parking cost may encourage carpool/vanpool and transit usage which in turn will increase the vehicle occupancy rate for the work trip.
	Reduced Parking Fee for Carpools/Vanpools	Number of former automobile drivers participating in carpool/vanpool program(s)	Routes traveled from residences to major job centers	This action may be an incentive for the lone automobile driver to shift to carpools or vanpools.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Percent of transit vehicle capacity used during peak and non-peak periods	Transit Routes	This action may shift peak-period demand to off-peak periods.
	Transit Marketing	Increase in transit ridership (Passengers per trips)	Transit Routes	Transit marketing could encourage increased transit use.
	Transit Route Improvements	Passengers per trip	Transit Routes	Transit route service improvements may attract additional ridership.
	Integration of Transit Service	Passengers per trip	Areawide	Improved service may attract additional ridership
	Carpools, Vanpools	Auto occupancy	Areawide	Carpools and vanpools may increase average auto occupancy.
	Removal of On-Street Parking	Traffic volumes on street before and after removal of parking	Arterials	This action may attract additional traffic volumes from parallel routes.
One-Way Street System	Vehicle mix (buses-cars using the street before and after the removal of parking)	Major arterials	One-way streets may change the mix of vehicles on the street in question. They could also generate more traffic by shifting automobiles from adjacent streets.	

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Optimize the person and goods movement capacity of existing transportation facilities	Traffic Control Improvements	Service volume	Intersection	Traffic control improvements (i.e. changes in cycle length, phases and offsets) may increase the service volume at affected intersections.
	Unbalanced Flow	Volume/Capacity ratio	Major arterial	This action may increase the vehicular capacity of the roadway thus enabling more individuals and goods to be moved, especially during peak periods of travel.
	Elimination of unnecessary traffic control devices	Service volume	Intersection	This action may increase the capacity of intersections affected.
	Signal visibility upgrading	Not applicable	----	This action has no affect on the objective.
	Intersection improvements (channelization)	Service volume	Intersection	This action, when combined with signal phasing modifications, may allow more vehicles to make left turn movements in a given period of time - one hour, for example.
	Mid-block Improvement (2-Way Left Turn Lanes)	Flow rate in person or tonage units per hour	Arterials or Collector Streets	This action may increase the number of vehicles that can make left turns in a given time period. Thus, the flow rate may be increased.
	Mic-block Improvements (access control)	Flow rate in person or tonage units per hour	Arterial and Collector Streets	This action may increase the flow rate by reducing delay time and increasing the overall travel speed between intersections.
	Intersection Widening	Service volume	Intersection	Widening may reduce average lane density and thus permit a higher service volume to be handled by an intersection.
Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	Difficult to quantify	Areawide	The use of bikeways and walkways for purposeful trip making has just begun in the Des Moines Urban Area. Therefore, it is hard to determine what improvement bikeways and walkways can have on the person movement capacity of the local transportation system.	



TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Reduce fuel consumed in urban travel	Variable Work Hours 4-Day Work Week	Reduction of Vehicle Miles of Travel	Routes from residential areas to major job centers	These actions may decrease vehicle miles of travel during peak periods by diverting peak trips to non-peak hours. However, a potential negative effect may result as leisure travel may increase.
	Peak Hour Truck Restrictions	Overall travel speed	CBD	This action may reduce idling time, increase overall travel speed and thus improve fuel economy.
	Higher Parking Cost	Vehicle miles of travel	Routes traveled from residences to CBD job centers	Sizeable increases in parking cost may encourage changes in mode of travel, decreasing the vehicle miles of travel. This implies a reduction in fuel consumed.
	Reduced Parking Fee for Carpools/Vanpools	Vehicle miles of travel	Routes traveled from residences to major job centers	As lone automobile drivers shift to carpools or vanpools, vehicle miles of travel should be reduced. A decrease in vehicle miles of travel will produce a reduction in fuel consumption.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Not applicable	----	This action will have no affect on fuel consumption, since most of the Elderly, Handicapped and off-peak Riders are not automobile drivers.
	Transit Marketing	Passenger miles of travel per gallon of fuel consumed	Transit Routes	This action may shift automobile drivers to transit. Such an increase in passenger loads will reduce the fuel consumed per passenger carried.
	Transit Route Improvements	Passenger miles of travel per gallon of fuel consumed	Transit Routes	As service improvements attract more riders less fuel is consumed per passenger mile of travel.
	Integration of Transit Service	Vehicle miles of travel	Areawide	Improved service may attract automobile drivers to integrated transit service, thus reducing the vehicle miles of travel.
	Carpools, Vanpools	Vehicle miles of travel	Areawide	Carpool/vanpool programs may decrease the number of vehicles on the road. Therefore, the amount of fuel consumed for the work trip may be reduced
Removal of On-Street Parking	Overall travel speed	Arterials	This action may improve the level of service, thereby increasing overall travel speed.	

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Reduce fuel consumed in urban travel	One-Way Street System	Overall travel speed	Major arterials	This action may increase fuel economy by increasing overall travel speed. However, the additional vehicle miles of travel generated can offset the fuel conserved through improvements in automobile fuel efficiency.
	Traffic Control Improvements	Delay in seconds per vehicle	Intersection	Traffic control improvements (i.e. changes in cycle length, phases and offsets) may reduce delay time. As delay is reduced fuel efficiency is improved.
	Unbalanced Flow	Overall travel speed	Major arterial	This action may increase overall travel speed, resulting in better fuel economy.
	Elimination of unnecessary traffic control devices	Delay time in seconds per vehicle	Intersection	This action may conserve fuel by reducing the number of stops per mile.
	Signal visibility upgrading	Difficult to quantify	Intersection	This action could improve fuel efficiency by reducing acceleration and deceleration time. However, the direct measurement of acceleration and deceleration time requires the use of sophisticated equipment.
	Intersection improvements (channelization)	Delay time in seconds per vehicle	Intersection	The amount of energy saved depends on the extent to which delay is reduced. And the extent to which delay is reduced depends, in turn, on the existing degree of congestion.
	Mid-block Improvements (2-Way Left Turn Lanes)	Delay time in seconds per vehicle	Arterials or Collector Streets	This action may increase the number of vehicles that can make left turns in a given time period. Delay will therefore be reduced and fuel consumption decreased.
	Mid-block Improvements (access control)	Delay time in seconds per vehicle	Arterial and Collector Streets	This action may reduce delay time and thereby improve fuel economy.
	Intersection Widening	Delay time in seconds per vehicle, overall travel speed	Intersection	Intersection widening may reduce delay time and improve overall travel speed, both of which would improve fuel economy.
	Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	Vehicle miles of travel	Areawide	The reduction of vehicle miles of travel may be achieved by shifting lone automobile drivers to bicycling or walking.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Encourage alternatives to driving private automobiles	Variable Work Hours 4-Day Work Week	Difficult to quantify	Areawide	These actions may not encourage the use of alternative modes of travel due to reduced congestion during peak periods.
	Peak Hour Truck Restrictions	Not applicable	----	This action has no affect on the objective.
	Higher Parking Cost	Transit ridership auto occupancy	Routes traveled from residences to CBD job centers	Sizeable increases in parking cost may induce auto drivers to change their mode of travel or to form carpools/vanpools.
	Reduced Parking Fee for Carpools/Vanpools	Number of former automobile drivers participating in carpool/vanpool program(s)	Routes traveled from residences to major job centers	This action may be an incentive for the lone automobile driver to shift to carpools or vanpools.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Not applicable	----	In general, the Elderly, Handicapped and Non-Peak Riders are not automobile drivers.
	Transit Marketing	Number of automobile drivers shifted to transit	Transit Routes	Transit marketing may inform automobile drivers of the transit services available. This could encourage some automobile drivers to ride transit if it fits their needs.
	Transit Route Improvements	Number of automobile drivers shifted to transit	Transit Routes	Transit route improvements may induce automobile drivers to use transit.
	Integration of Transit Service	Automobile drivers shifted to integrated transit	Areawide	Improved levels of service may tend to attract automobile drivers.
	Carpools, Vanpools	Number of lone automobile drivers shifting to carpool/vanpool use	Areawide	Carpool/vanpool programs may reduce the cost of the work trip. This may attract automobile users to ridesharing modes.
	Removal of On-Street Parking	Vehicle Miles of Travel Transit Ridership by Route	Arterials	This action may attract more automobile traffic from other routes as the street capacity is increased, thus increasing vehicle miles of travel. Also, the transit level of service may be increased (due to reduced delay) thus attracting increased ridership.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Encourage alternatives to driving private automobiles	One-Way Street System	Vehicle Miles of Travel Transit Ridership by Route	Major arterials	This action may increase street capacity and thus improve the transit level of service which may attract increased ridership. More automobile traffic may also be attracted after a one-way street is implemented.
	Traffic Control Improvements	Not applicable	----	Traffic control improvements will not encourage mode shifts. In fact, the effect of such improvements may be increased vehicle miles of travel by automobile.
	Unbalanced Flow	Vehicle Miles of Travel Transit Ridership by Route	Major arterial	This action may increase the capacity of the roadway and thus may improve the transit level of service. Therefore transit ridership may be increased. However, due to better driving conditions increased trip making by automobile drivers may result.
	Elimination of unnecessary traffic control devices	Vehicle Miles of Travel	Intersection	This action may reduce delay and thus attract more automobile traffic from other routes. In effect, it may have a negative impact on the objective.
	Signal visibility upgrading	Not applicable	----	This action has no affect on the objective.
	Intersection improvements (channelization)	Not applicable	----	This action has no affect on the objective.
	Mid-block Improvements (2-Way Left Turn Lanes)	Not applicable	----	This action has no affect on the objective.
	Mid-block Improvements (access control)	Not applicable	----	This action has no affect on the objective.
	Intersection Widening	Vehicle Miles of Travel	Intersection	This action may encourage increased trip making by automobile due to an increased level of service.
	Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	The number of bicycle riders and walkers (for other than recreational trips) who previously used automobiles	Areawide	By connecting residential areas with activity (i.e. work shopping) centers some automobile drivers may use bicycle paths and walkways for utility trip making.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Provide good quality, affordable transportation services for the elderly and handicapped	Variable Work Hours 4-Day Work Week	Not applicable	----	Neither of the TSM actions will have an affect on this objective.
	Peak Hour Truck Restrictions	Not applicable	----	This action has no affect on the objective.
	Higher Parking Cost	Not applicable	----	This action has no affect on the objectives.
	Reduced Parking Fee for Carpools/Vanpools	Not applicable	----	This action has no affect on the objective.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Elderly and Handicapped Ridership	Transit Routes	The reduced bus fares may make it possible for more elderly and handicapped to ride transit.
	Transit Marketing	Elderly and Handicapped Ridership	Transit Routes	Promotion and information campaigns may make it easier for the elderly and handicapped to use the transit system.
	Transit Route Improvements	Additional elderly and handicapped riders using the the bus system	Transit Routes	Transit service improvements (i.e. bus stop relocation, improved schedule frequency, etc.) may attract more elderly and handicapped riders.
	Integration of Transit Service	Elderly and Handicapped Ridership	Areawide	Integration of services (i.e. increases in service area, for example) may increase the availability of transportation services to the elderly and handicapped.
	Carpools, Vanpools	Not applicable	----	This action would have no affect on the objective
	Removal of On-Street Parking	Not applicable	----	This action has no affect on the objective.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Provide good quality, affordable transportation service to elderly and handicapped	One-Way Street System	Not applicable	----	A one-way street has no affect on the objective.
	Traffic Control Improvements	Not applicable	----	Traffic control improvements have no affect on the objective.
	Unbalanced Flow	Not applicable	----	This action has no affect on the objective.
	Elimination of unnecessary traffic control devices	Not applicable	----	This action has no affect on the objective.
	Signal visibility upgrading	Not applicable	----	This action has no affect on the objective.
	Mid-block Improvements (2-Way Left Turn Lanes)	Not applicable	----	This action has no affect on the objective.
	Mid-block Improvements (access control)	Not applicable	----	This action has no affect on the objective.
	Intersection improvements (channelization)	Not applicable	----	This action has no affect on the objective.
	Intersection Widening	Not applicable	----	This action has no affect on the objective.
	Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	Not applicable	----	This action has no affect on the objective.

TSM EVALUATION CHARTS

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Reduce automotive emissions	Variable Work Hours 4-Day Work Week	Hourly concentration of pollutants (parts per million)	Areawide	These actions may reduce traffic volumes and increase average travel speeds during peak periods. Thus air pollution concentrations during peak periods may be reduced.
	Peak Hour Truck Restrictions	Hourly pollution concentration (in parts per million)	CBD	This action may reduce automobile idling time and therefore decrease air pollution concentrations during peak periods of travel.
	Higher Parking Cost	Pollution emitted (in parts per million)	CBD	The total amount of pollutants emitted may tend to decrease as vehicle miles of travel are reduced.
	Reduced Parking Fee for Carpools/Vanpools	Vehicle miles of travel	Routes traveled from residences to major job centers	Vehicle miles of travel may be reduced as lone automobile drivers shift to carpools or vanpools.
	Reduced Bus Fares for Elderly and Handicapped and for Non-Peak Riders	Not applicable	----	Because few of the elderly and handicapped are currently automobile drivers their increased use of transit can have little or no affect on automotive emissions.
	Transit Marketing	Pollution in grams	Areawide	Transit marketing could induce automobile drivers to use transit. As a result, vehicle miles of travel may be reduced which implies a reduction of automotive emissions.
	Transit Route Improvements	Number of automobile drivers attracted to transit	Areawide	Service improvements may induce some automobile drivers to leave their cars at home. If, however, these automobiles are driven by household members during the working hours the same amount of, or even more, pollution may result.
	Integration of Transit Service	Vehicle miles of travel	Areawide	This action may improve the level of service of transit and attract automobile drivers out of their cars.
	Carpools, Vanpools	Vehicle Miles of Travel	Areawide	Carpools and vanpools may reduce the number of cars used for the work trip. As a result, the amount of pollution emitted may also be reduced.
Removal of On-Street Parking	Overall Travel Speed	Arterials	This action may increase the overall travel speed on the street in question - a result which improves automobile fuel economy.	

TSM OBJECTIVE	TSM ACTION	MEASURE OF EFFECTIVENESS	GEOGRAPHIC AREA OF INFLUENCE	HOW THE TSM ACTION POSSIBLY AFFECTS THE OBJECTIVE
Reduce automotive emissions	One-Way Street System	Overall travel speed	Major arterials	A one-way street system increases fuel economy by improving overall travel speed. This increased fuel economy may be offset, however, by the additional traffic attracted from parallel streets.
	Traffic Control Improvements	Overall travel speed	Intersection	Traffic control improvements may increase overall travel speed, thereby reducing automobile emissions. However, this reduction in pollution may be offset by the additional traffic attracted to the intersection.
	Unbalanced Flow	Overall travel speed	Major arterial	An increase in overall speed may reduce emissions, but in the long run more pollution may result from the additional traffic volumes that may be attracted to arterial streets.
	Elimination of unnecessary traffic control devices	Delay time in seconds per vehicle	Intersection	This action may decrease delay, thus increasing overall travel speed. As speed increases the pollution emitted decreases.
	Signal visibility upgrading	Difficult to quantify	Intersection	This action could reduce pollution by lowering acceleration and deceleration rates. But the sophisticated equipment needed to measure it is not readily available in the study area.
	Intersection improvements (channelization)	Delay time in seconds per vehicle	Intersection	A reduction in delay time may improve overall travel speed, which in turn reduces the pollution emitted by automobiles.
	Mid-block Improvements (2-Way Left Turn Lanes)	Delay time in seconds per vehicle	Arterial or Collector Streets	By reducing delay time automotive emissions should also be reduced.
	Mid-block Improvements (access control)	Overall travel speed	Arterial and Collector Streets	This action may reduce overall travel speed and in turn reduce auto emission rates.
	Intersection Widening	Delay time in seconds per vehicle	Intersection and Surrounding Streets	Street widening may decrease the delay time per vehicle, which would also reduce automobile emissions.
	Pedestrian-Walk and Pedestrian-Bicycle Safety Projects	Vehicle miles of travel	Areawide	By reducing the vehicle miles of travel, the amount of pollution emitted may also be reduced.



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