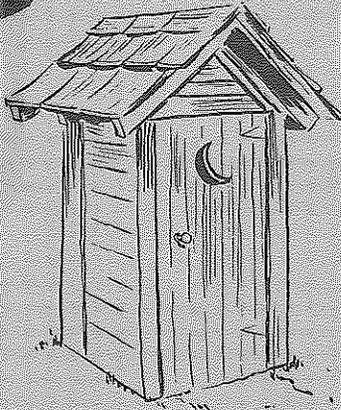
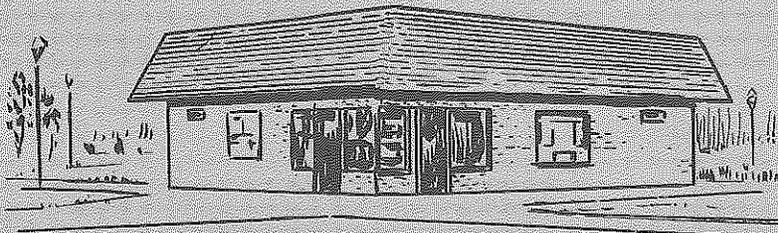


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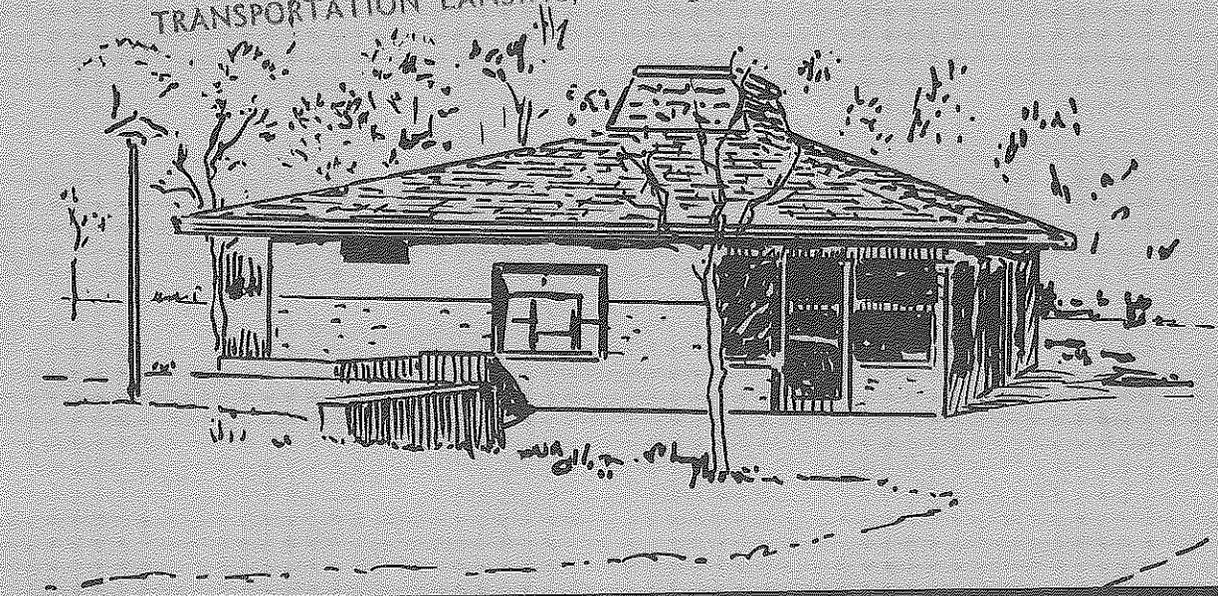


REST AREA NEEDS STUDY



MAINTENANCE DIVISION
January 1977

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TRANSPORTATION LANSING, MICH.



Michigan Department of State Highways
and Transportation

Rest Area Needs Study

JANUARY 1977

**TRANSPORTATION LIBRARY
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TRANSPORTATION LANSING, MICH.**

MAINTENANCE DIVISION



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Abstract

When out-of-state tourists, and even Michigan citizens, stop at a highway rest area it is probably their only opportunity to closely examine a highway facility. Their impression of that facility and how it is maintained will, without a doubt, have a lasting impact on their opinion of the Michigan Department of State Highways and Transportation. If the Department is to continue to enjoy the position of excellence that has been established, it will be necessary to make major changes in the rest area program.

The recommendations in this report involve not only the maintenance of existing rest areas and recommended design changes for future rest areas, but also renovation of the existing modern buildings.

There are 44 modern rest areas in service at the present time (in addition to the nine tourist information centers). Of the 44 modern buildings, twenty-seven are in need of major renovation. Following are some of the items needing attention.

1. Rebuild partitions out of concrete blocks.
2. Cover walls and partitions with tile.
3. Replace wall-hung lavatories with built-ins.
4. Remove remaining towel dispensers and install additional hand dryers.
5. Replace obsolete electric heating fixtures.
6. Remove all female urinals and replace with conventional toilets.
7. Install exterior jug fillers.

Sixteen of the twenty-seven buildings should be rebuilt to accommodate the handicapped.

Twelve of the twenty-seven buildings are already considered to have inadequate facilities to handle the traffic. Three of the twelve need immediate attention.

This needs study notes the following recent design changes which have increased the maintenance demands:

1. Increased size of rest areas;
2. Lawn irrigation systems;
3. Wide use of steps on sidewalks;
4. Extensive landscaping;
5. Advertising plazas; and
6. Interpretive trails.

The report also lists the changes that are necessary in future rest areas and in the renovation of the present rest areas.

1. Dual men's and women's restrooms
2. Tile interior
3. Concrete partitions
4. Simplified landscaping
5. Increased well capacity
6. Discontinuance of towel dispensers
7. Construction of service buildings
8. Use of better soil

A large section of this report deals with maintenance problems which are separated into two sections. Specific recommendations are made for handling special maintenance problems which are listed below.

1. Vending in rest areas
2. Permitted coffee serving
3. Camping
4. Household refuse
5. Social problems (homosexual and prostitution)

The report also examines routine rest area maintenance. Many of the recommendations which are included have already been adopted and the full impact should be apparent by the 1977 summer season.

Introduction

Michigan is believed to have pioneered the idea of roadside facilities some 57 years ago beginning with a few picnic tables and picnic stoves in 1919. After some years, the picnic tables sites were expanded and facilities such as toilets and drinking water were added and the present system of roadside parks was developed.

While the park system was evolving, freeways came into existence and the need for safety rest stops on the limited access freeway system became apparent. Sometime around 1960 the first freeway rest areas were developed.

Today, in addition to the 103 roadside parks, we have 67 freeway rest areas in our system. The present rest areas have evolved from the small rustic roadside parks into large, modern recreational facilities. For the most part, the changes have been minor and have come about gradually. Some of the more significant changes are listed below.

Year	Facility	Size	Landscaping
Before 1960	Roadside parks	3-5 acres	minor
1960-1966	Rustic rest areas	5-8 acres	minor
1966-1972	Modern rest areas	8-12 acres	moderate
1972-	Modern rest areas	20-25 acres	extensive

The maintenance of these facilities has not kept pace with their development. We have attempted to maintain the new modern rest areas with about the same staff and procedures as we did the roadside parks. Each time something has been added, it was absorbed by the personnel and the budget. While there have been increases in the budget, the additional funds have been used to cover rising costs and additional facilities.

This report is intended to identify some of the problems at the rest areas and to make recommendations to correct them. The problems have been grouped into several categories so they can be more easily referred to the proper section for action.

Some of the tables and charts include the nine tourist information centers, but in general this report addresses only rest area problems.

Rest Area Inventory

As of the end of 1976, the Michigan Department of State Highways and Transportation is operating the following tourist facilities.

Tourist Information Centers	9
Modern Rest Areas	
*M-1	16
M-2	11
M-3	12
M-4	<u>5</u>
	44
Rustic Rest Areas	10
Rustic Rest Areas in process of being modernized	<u>4</u>
Total	<u>67</u>

In addition, there are four entirely new rest areas under construction. Two of these will be ready to open in the next few months.

REST AREA BUILDINGS

The buildings in the tourist information centers are designed for the individual site, so there are no two alike. The rest area buildings, however, have been standardized and a number of them appear to be identical. Since the first modern rest area buildings were built, however, they have been changing constantly and even though they appear to be alike, they are quite different.

There are probably no two interiors which are exactly the same, but the exteriors have not been changed as often. There are only four different basic exteriors and the following pages will provide information on each of the four.

Many of the changes of the interior features coincide with exterior change, so the type of exterior reveals a lot about the interior and the equipment.

Four Gable Building (Modern - 1)

The first modern building to be used at conventional rest areas was the four-gable building. There were 16 of these buildings built in the second phase of the rest area program. A picture of the four-gable building and a floor plan are shown in Figure 1.

There is no lobby in this design and the information panels and drinking fountains are on the exterior of the building. This building does not accommodate the handicapped and doesn't appear that it can be readily adapted. The primary reason is that the doors are too narrow for wheel chairs and door widening appears to be a major project.

The women's restroom has five toilet compartments, three of which are urinals. On the men's side there are a total of six, three urinals and three conventional toilets. The women's side has three lavatories and the men's side has two. The lavatories are wall hung and legs have been added for support at most locations.

* Symbol designating the various modern building designs described and explained on the following pages.

The grounds at these earlier rest areas were developed with the same general guidelines as the roadside parks with bumper rail instead of curb, very few sidewalks and limited drainage.

Since all of these buildings are about ten years old, most of them are badly in need of major repairs, especially the men's side of the building. Almost without exception, the partitions on the men's side have been repaired repeatedly and in most cases, completely rebuilt. The women's side at most of the facilities is not as bad, but is in need of renovation.

In general, we are making the following recommendations which are so extensive they are beyond the general scope of maintenance forces and should be handled by contract.

1. Rebuild buildings to accommodate the handicapped, including replacement of exterior doors and changing plumbing so a large toilet compartment can be installed.
2. Rebuild partitions out of concrete blocks.
3. Cover walls and partitions with tile.
4. Replace wall-hung lavatories with built-ins.
5. Replace obsolete electric heating fixtures.
6. Remove remaining towel dispensers and install additional electric dryers where needed.
7. Remove all female urinals and replace with conventional toilets.
8. Install exterior jug filler.

Of the 16 four-gable buildings, there are two which do not have adequate facilities to handle the traffic. These two are:

Bridgeport - I-75, Saginaw County

Northfield - US-23, Washtenaw County

Although they are not considered critical at this time, the following buildings also will need expansion in the years to come, so a suitable expansion design should be developed.

Galesburg - I-94, Kalamazoo County

Oshtemo - I-94, Kalamazoo County

Alma - US-27, Gratiot County

Ithaca - US-27, Gratiot County

Three of the rest areas which have four-gable buildings have had sewage system failures and have already been upgraded.

The sewage system at the Northfield Church rest area on US-23 in Washtenaw County is a borderline operation at the present time and will have to be replaced or expanded in the near future. Also, almost all rest areas of this vintage need grounds development, such as curb and drainage.

Four Gable Building (Modern-1)

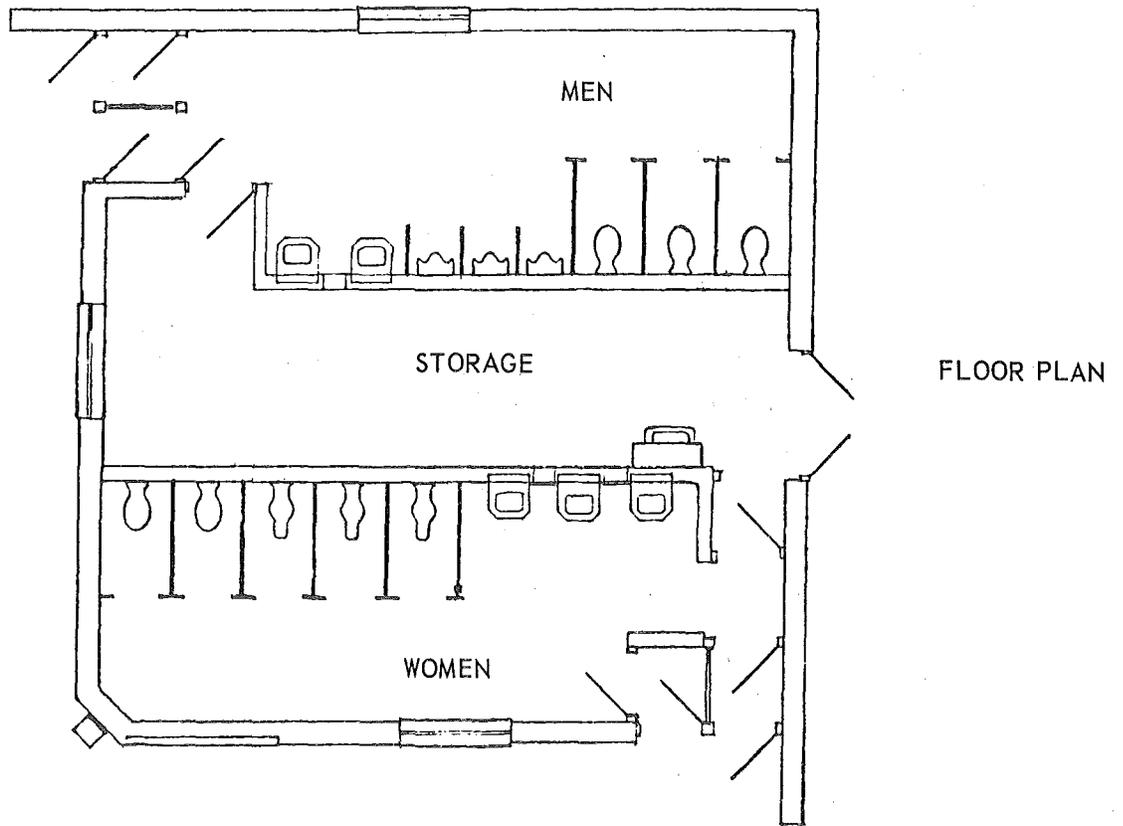
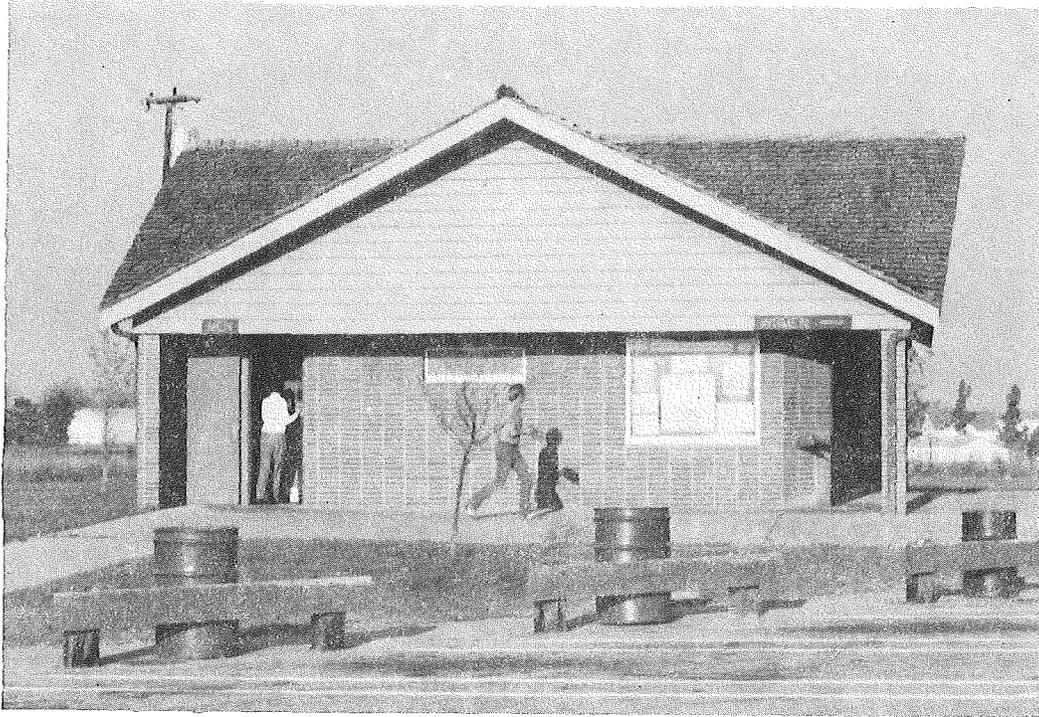


FIGURE 1

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Low Mansard Building (Modern - 2)

The second modern building has a mansard type roof with the roof water draining to the outside. There were 11 of these buildings built and with the exception of two, they were all built on Interstate routes.

Although the floor plan (see Figure 2) is substantially different than the floor plan in the M-1 building, the total number of fixtures is the same. There are five women's toilet compartments, two of which are urinals. There are three urinals and three conventional toilets on the men's side.

This building is equipped with the minimum handicapped facilities. There is a lobby with an interior information board and drinking fountain.

Even though these buildings are not as old as the four-gable buildings, many of them need major repairs. In general, with the exception of the handicapped provision, we are making the same recommendations as for the 16 four-gable buildings.

We have also experienced long lines at several of the rest areas equipped with this building. The men's unit at most of these areas seems to adequately handle the traffic, but the women's unit does not have the capacity. Part of the reason for the tie-ups is the reluctance of some women to use the urinals and that fact, plus the fact that small children cannot use them, causes a backup.

Replacement of the women's urinals with conventional toilets may temporarily solve the problem, but eventually additional toilets will have to be installed.

The one building in particular where we are recommending additional toilets be installed is the Alger rest area on I-75 in Arenac County. It appears there is enough room to put additional toilets in the present building, but installation may require tearing up too much of the building unless it would be possible to go around the outside and come in through the wall with the plumbing.

A design should be developed so it is available when additional toilets are needed at other M-2 buildings. Following is a list of the buildings which may need expansion in the near future:

- Cascade - I-96, Kent County
- Clarkston - I-75, Oakland County
- Grayling - I-75, Crawford County
- Watervliet - I-94, Berrien County
- Fenton - US-23, Genesee County

There is other work to be done at these rest areas which would be identified during a thorough inspection prior to setting up the renovation contract.

Low Mansard Building (Modern-2)

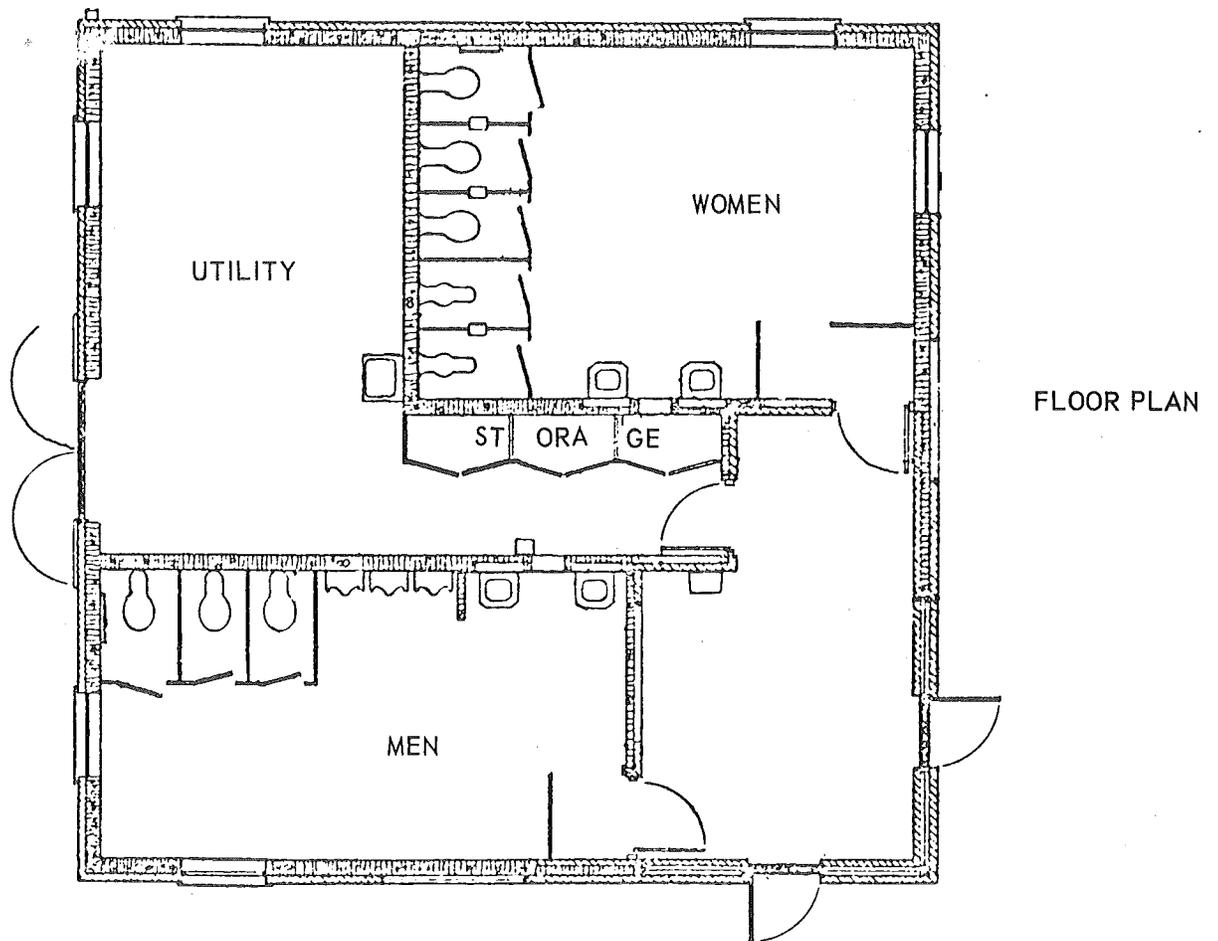


FIGURE 2

High Mansard Building (Modern - 3)

The third modern building built at conventional rest areas was an expanded version of the second building. It has a mansard roof and has a little taller appearing elevation. The higher roof was constructed primarily so the roof water could be drained inward. This is one of the designs now being used. There are 12 of these in service and one under construction.

This building is fully equipped to handle the handicapped and it has a lobby with an interior information board and a drinking fountain.

All of these buildings have eight women's toilet compartments (see Figure 3), a 60 percent increase over the first two buildings. The first high mansard buildings had three urinals and five conventional toilets. Later the ratio was changed to 1 and 7 and the most recent buildings have eight toilets and no urinals. On the men's side there are four urinals and four conventional toilets.

This building came into common use about the time the rest area modernizations began. Eight of the 12 buildings of this type are located on Interstate routes in the southern part of the state.

Most of these buildings are adequately handling the traffic. The only one which is known to consistently have a backup is on southbound I-75 at Clio. That location is one of three that has three women's urinals. The Maintenance Division will switch the women's urinals to conventional toilets. That should correct the problem with the possible exception of only the very busiest periods.

Of course, as time goes on the partitions and painted walls will need attention, but we have no recommendations at this time.

High Mansard Building (Modern-3)

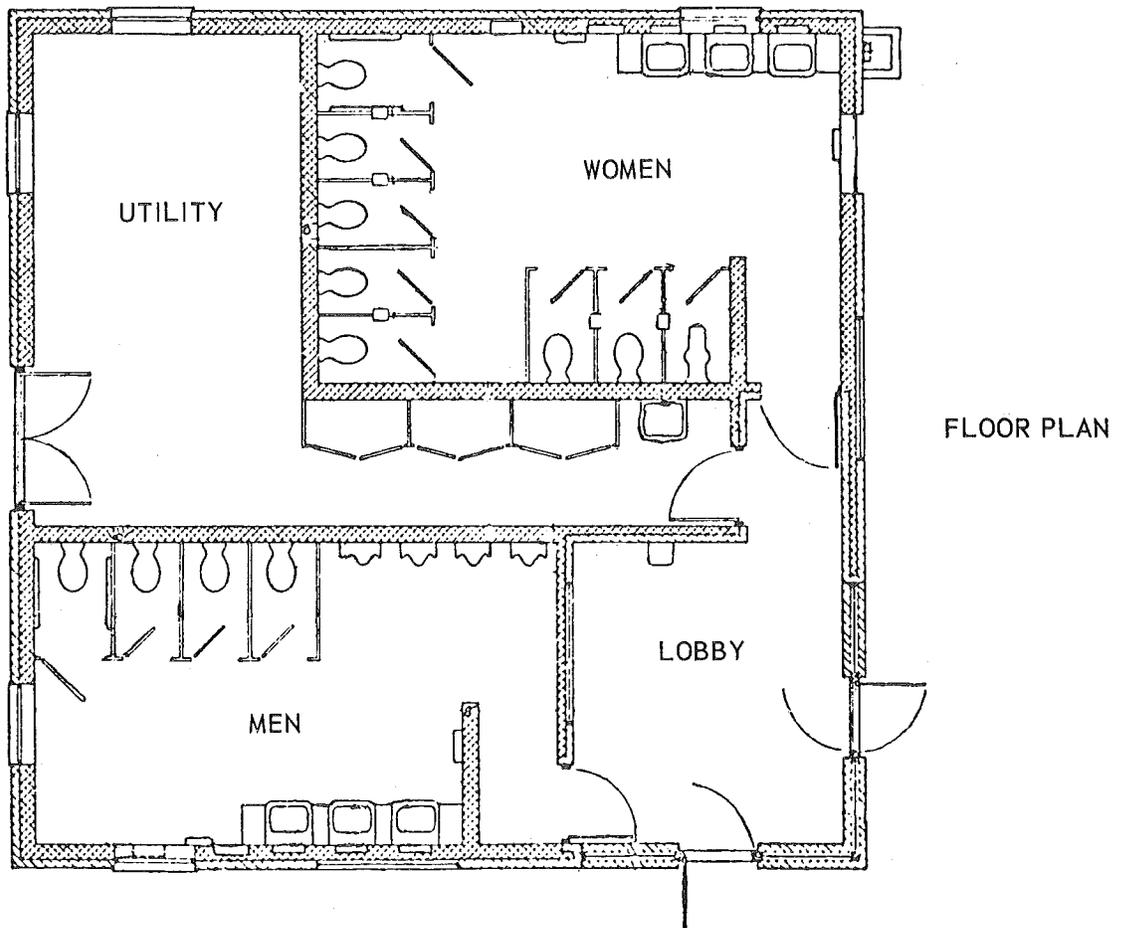
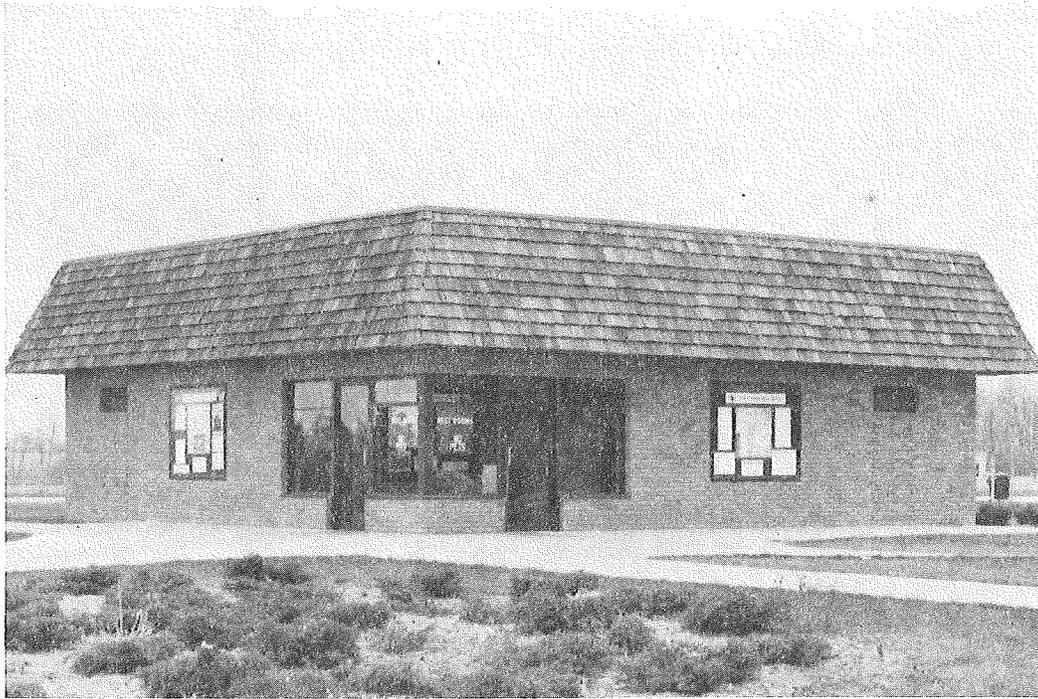


FIGURE 3

Hip-cupola Building (Modern - 4)

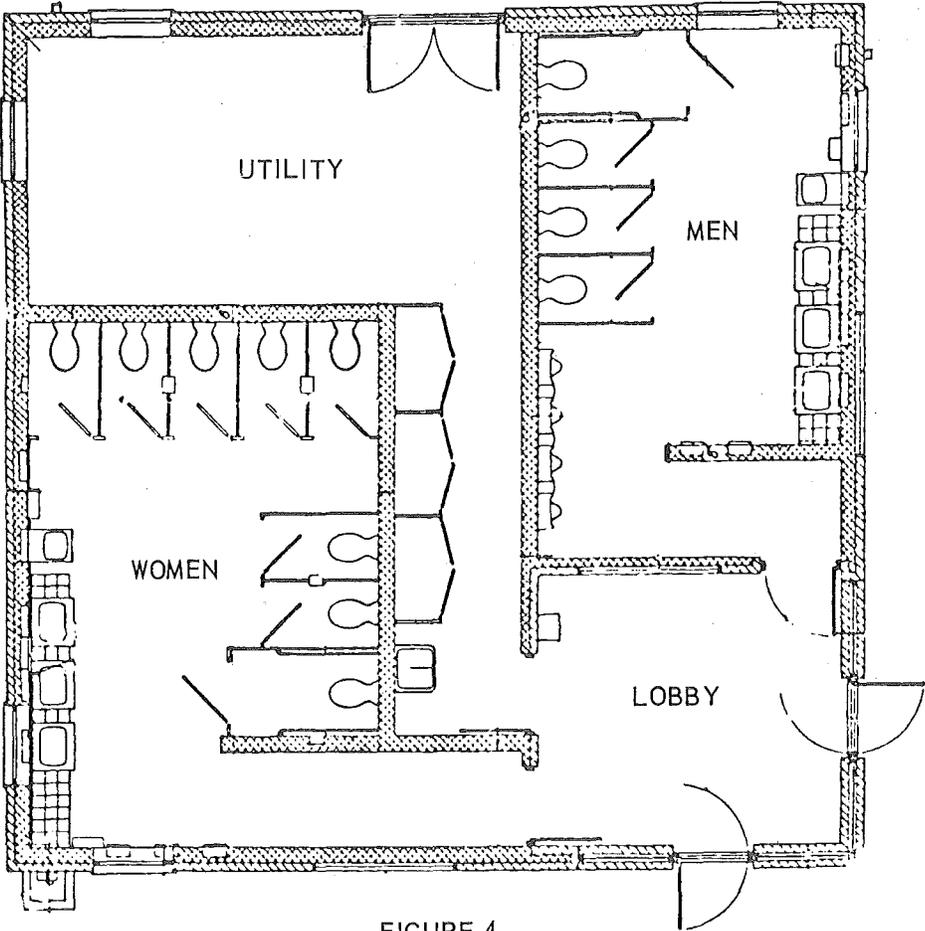
The hip-cupola building (Figure 4) is the fourth to be commonly used in modern rest areas. It has the same floor plan as the high mansard building with a different roof design.

There are five of these buildings in service now with four more under construction.

Only one of the nine buildings in use or under construction has any women's urinals and that one location, at Muskegon, has only one.

Of the nine buildings in service and under construction, seven are located in the northern part of the state.

Hip-Cupola Building (Modern-4)



FLOOR PLAN

FIGURE 4

HANDICAPPED FACILITIES

The first modern rest areas were built without handicapped facilities, but in about 1968 the modern building was redesigned and the handicapped features were included. At this time, 31 of the 53 modern rest areas have accommodations for the handicapped. Of these, three are tourist information centers. The other 28 are conventional rest areas.

Of the 22 modern rest areas, which do not accommodate handicapped, six are tourist information centers and 16 are conventional rest areas. The 16 rest areas are the 16 that have the four gable buildings. The rest area building inventory at the end of this section shows the locations of the buildings with the handicapped facilities.

Generally speaking, the four gable buildings need an interior renovation, so it would follow that the handicapped features be included at that time.

REST AREA WATER SYSTEMS

At the end of this section there is a complete listing of the rest areas and tourist information centers which are in operation. The list includes information on the water systems which is summarized in the following paragraphs.

Water Source

Of the 53 modern rest areas and tourist information centers in operation, the department is purchasing water from a municipality or township at only 7 sites. At the other 43 locations, the water is furnished by deep wells.

We also have wells at all but one of the 14 rustic rest areas and 102 of the 103 roadside parks.

For the most part Michigan is blessed with ample and pure quality ground water supplies. At two of the busier modern tourist facilities, a single well has not supplied sufficient volume and it has been necessary to hook up two wells in parallel to supply the water needed during the peak loads. It may be necessary to do this at other locations in the future as the demand increases.

Water Testing

For the past two years the Maintenance Division has carefully monitored the water at the tourist facilities. Bacteriological tests have been taken on a routine basis. A few water purity problems have been identified through this program and have been quickly corrected.

The monitoring program was started as a requirement of the Federal Highway Administration at Interstate rest areas. When the program was set up it was expanded to all tourist facilities. A recent Michigan Department of Public Health regulation now requires testing of all public drinking water sources. The Maintenance Division's drinking water testing program satisfies both the FHWA and MDPH requirements.

Watering Conditioning

While ample groundwater supplies are available in most every area in Michigan, some of the water supplies have a high mineral content. In those areas where the

mineral content is high it is sometimes necessary to treat the water to eliminate the deposit on the plumbing fixtures.

Of the 53 modern tourist facility sites it has been necessary to install water treatment systems at 30 locations. The type of treatment we are using at most of these locations is a chemical which ties the minerals up in such a way that they do not deposit on either the pipes or the fixtures, but instead flow right on through. In addition to adding the chemical, the water systems are also chlorinated, a Michigan Department of Public Health requirement. The Health Department specifically requires any time a public drinking water source is treated in any way it must also be chlorinated.

Water Meters

A few years ago the Maintenance Division began installing water meters at rest areas because they are a valuable tool in determining rest area use. Now all new rest areas come equipped with water meters and most of the old rest areas have had water meters installed.

At this writing, 42 of the modern sites have water meters and the remaining 11 will have meters installed this coming year.

The meters are read daily by the rest area attendant and the summary sheets transmitted to the Lansing office. By charting the daily water usage the peak rest area use periods can be identified and the maintenance schedule can be adjusted to actual use.

REST AREA SEWAGE TREATMENT

A major difference between the early rustic rest areas and the modern rest areas in service now is need for a sewage treatment system. There wasn't much information available when the first modern rest areas were built and, as a result, several of the early sewage systems failed and have since been replaced.

At present, there are several alternate systems which can be used to treat sewage depending on the conditions at the individual site. Following is a list of the various systems in operation and the number of each type in use.

Hooked into municipal system	9
Septic tank - drain field	28
Waste treatment lagoon	15
Septic tank - multiple pit	1
	<hr/>
	53

The simplest systems to maintain are those which are hooked into a municipal system. Several of these have pumping or lift stations, however, so they are not maintenance-free. The other systems are discussed briefly in the paragraphs below.

Septic Tank - Drain Field

There are a total of 28 septic tank-drain field systems in operation at our facilities at this time. While the basic theory is the same at all of these 28 sites, there are many different configurations in actual construction and operation. The major differences in configuration is in the number of drain fields and the method of switching from one field to another.

Most of the earlier septic tank drain field systems have two fields which switch automatically. There are twenty of these in operation at this time. There were three others at one time but they failed and have been replaced with other systems.

The drain field systems which are being designed and built at the present time have either three or four fields which must be manually switched. In operation at this time there are four with three fields and four with four fields and there are several more under construction.

Of the ten busiest highway tourist facilities in the state, including tourist information centers, four have septic tanks with two drain fields and they are giving adequate service.

Waste Treatment Lagoons

At 15 of the rest areas and tourist information centers in operation, the sewage is being processed in water treatment lagoons. Of the ten busiest highway tourist facilities in the state, including tourist information centers, five have waste treatment lagoons.

Of the entire number of lagoon systems in service there are no two exactly the same, although the maintenance operations are similar. One of the main differences is in the dewatering procedure. Eight of the 15 are dewatered into the groundwater and the other seven are dewatered into a surface water course.

State and federal permits are required for all sewage systems which are dewatered into a surface water course and the chemical and bacteriological levels of the effluent are carefully controlled.

Of the 15 water treatment lagoons in operation, we are experiencing problems of various types at several locations. Some of the lagoons are not functioning in accordance with the intended design primarily because of loose construction specifications. In general, these areas do not cause any particular problems.

Two of the lagoons are not adequate because they were not sized properly for the facility they are servicing. We have been able to keep these systems in operation by giving them special treatment. The Design Division is aware of these problem areas and possible corrections are being evaluated.

A third lagoon system seems to be handling the sewage adequately but we are not meeting the federal maximum on the quality of the effluent. Possible alternate systems are being reviewed for that site.

Septic Tank - Multi-Pit

The septic tank-multi-pit system is closely akin to the septic tank-drain field. The seepage pits can be installed in areas where the ground surface is rolling without clearing or leveling large areas. It also has an advantage where the soil texture is irregular. Each pit requires very little space and can be located in pockets of granular soil. We only have one of these systems in operation but another one is being planned. The one that is in operation is causing some maintenance problems but an expansion of the system is being designed.

Summary

Because of the greater emphasis on water quality, first the surface water, and more recently, the groundwater, various agencies are concerning themselves with the effluent from the sewage disposal systems. For several years permits have been required for sewage systems that were dewatered into surface water courses. Beginning in January 1977, permits will be required for all commercial sized sewage systems which are dewatered into the groundwater.

The next step, which is not far off, is required monitoring of the systems going into the groundwater. At the present time the Maintenance Division is developing the capability to handle this requirement.

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Rest Area Inventory

	ROUTE	Building Type	WOMEN		MEN		Water Source	Sewage	Water Treatment	Water Meter	Handicapped	
			Urinals	Toilets	Urinals	Toilets						
DIST. 1	MENOMINEE	US-41	TIC	0	3	2	1	C	C	N	N	N
	IRONWOOD	US-2	TIC	1	1	2	1	C	C	N	N	N
DIST. 2	SAULT TIC	I-75	TIC	0	2	2	1	C	C	N	Y	N
	SAULT	I-75	M-4	0	8	4	4	W	4F	N	Y	Y
	ST. IGNACE	I-75	R			R	U	S	T	I	C	
DIST. 3	CADILLAC	US-131	M-1	3	2	3	3	W	2F	Y	N	N
	CLARE	US-27	TIC	3	9	6	6	W	LS	N	Y	Y
DIST. 4	MACKINAW	I-75	TIC	0	4	2	2	C	2F	N	N	N
	LEVERING	I-75	R			R	U	S	T	I	C	
	TOPINABEE	I-75	M-4 ⁵		N	E	W	A	R	R	E	A
	VANDERBILT	I-75	M-4		N	E	W	A	R	R	E	A
	GAYLORD	I-75	M-4		N	E	W	A	R	R	E	A
	FREDERICK	I-75	M-2	2	3	3	3	W	2F	N	N	Y
	GRAYLING	I-75	M-2	2	3	3	3	W	2F	N	N	Y
	HIGGINS	US-27	M-3	1	7	4	4	W	3F	N	N	Y
	HOUGHTON	US-27	M-4	0	8	4	4	W	3F	N	N	Y
	9 MILE	I-75	M-3	3	5	4	4	W	4F	N	N	Y
	RAU ROAD	I-75	M-3	3	5	4	4	W	2F	N	Y	Y
DIST. 5	ALMA	US-27	M-1	3	2	3	3	W	LG	Y	Y	N
	ITHACA	US-27	M-1	3	2	3	3	W	SF	Y	Y	N
	CASCADE	I-96	M-2	1	4	3	3	W	4F	Y	Y	Y
	ROCKFORD	US-131	M-2	1	4	3	3	W	LG	Y	Y	Y
	MARNE	I-96	M-2	1	4	3	3	W	LS	Y	Y	Y
	CUTLERVILLE	US-131	M-1	3	2	3	3	W	2F	Y	N	N
	HUDSONVILLE	I-696	M-3	0	8	3	4	W	LG	N	Y	Y
	NUNICA	I-96	M-3	0	8	4	4	W	3F	N	Y	Y
	MUSKEGON	US-31	M-4	1	7	4	4	W	4F	N	Y	Y
	HART	US-31			N	E	W		A	R	E	A
ROTHBURY	US-31			N	E	W		A	R	E	A	
DIST. 6	ALGER	I-75	M-2	2	3	3	3	W	2F	Y	Y	Y
	LINWOOD	I-75	M-3	1	7	4	4	W	LS	Y	Y	Y
	BAY	I-75	R			R	U	S	T	I	C	
	BRIDGEPORT	I-75	M-1	3	2	3	3	W	2F	Y	Y	N
	CLIO	I-75	M-3	3	5	4	4	W	C	Y	Y	Y
	FENTON	US-23	M-2	2	3	3	3	W	C	Y	Y	Y
	MIDLAND	US-10	M-1	3	2	3	3	C	C	N	Y	N

Rest Area Inventory (Continued)

	ROUTE	Building Type	WOMEN		MEN		Water Source	Sewage	Water Treatment	Water Meter	Handicapped	
			Urinals	Toilets	Urinals	Toilets						
DIST. 7	BELLEVUE	I-69	M-3	3	5	4	4	W	LG	Y	N	Y
	MARSHALL	I-94	M-4	P	8	4	4	W	C	N	Y	Y
	BATTLE CR.	I-94	R			R	U	S	T	I	C	Y
	TEKONSHA	I-69	M-3	0	8	4	4	W	3F	N	Y	Y
	COLDWATER	I-69	TIC	3	2	3	3	W	LS	N	Y	Y
	GALESBURG	I-94	M-1	3	2	3	3	W	2F	Y	Y	N
	OSHTEMO	I-94	M-1	3	2	3	3	W	2F	Y	Y	N
	PORTAGE	US-131	M-1	3	2	3	3	W	2F	Y	N	N
	PLAINWELL	US-131	M-4	0	8	4	4	W	2F	N	Y	Y
	WATERYLIET	I-94	M-2	2	3	3	3	W	LS	Y	Y	Y
	COLOMA	I-94	M-3	1	7	4	4	W	LS	Y	Y	Y
	S. HAVEN	I-196	M-1	3	2	3	3	W	2F	Y	N	Y
	NEW BUFFALO	I-94	TIC	3	5	4	4	W	2F	Y	Y	Y
	GLENN	I-196		N	E	W		A	R	E	A	
DIST. 8	GR. LEDGE	I-96	R		R	U	S	T	I	C		
	OKEMOS	I-96	M-3	1	7	4	4	W	C	N	Y	Y
	WILLOUGHBY	US-127	M-1	3	2	3	3	W	2F	Y	N	N
	HOWELL	I-96	M-1	3	2	3	3	W	2F	Y	Y	N
	LAKE CHEMUNG	I-96	R			R	U	S	T	I	C	Y
	NORTHFIELD	US-23	M-1	3	2	3	3	W	LG	Y	Y	N
	WILLIS	US-23	M-1	3	2	3	3	W	2F	Y	N	N
	ANN ARBOR	I-94	R			R	U	S	T	I	C	Y
	YPSILANTI	I-94	R			R	U	S	T	I	C	Y
	GRASS LAKE	I-94	M-3			R	U	S	T	I	C	Y
	PARMA	I-94	M-3	0	8	4	4	W	C	Y	Y	Y
	BERRY	US-127	M-1	3	2	3	3	W	2F	Y	Y	N
	DUNDEE	US-23	M-1	3	2	3	3	W	LG	Y	Y	N
	CARLTON	I-275			N	E	W		A	Y	R	Y
MONROE	I-75	TIC	0	5	2	3	C	LG	N	Y	Y	
DIST. 9	NOVI	I-96	R			R	U	S	T	I	C	Y
	CLARKSTON	I-75	M-2	1	4	3	3	W	PIT	Y	Y	Y
	HOLLY	I-75	R			R	U	S	T	I	C	Y
	ST. CLAIR EB	I-94	M-2	2	3	3	3	W	LS	Y	Y	Y
	ST. CLAIR WB	I-94	M-2	2	3	3	3	W	LS	Y	Y	Y
	PORT HURON	I-94	TIC	1	2	2	1	W	C	2F	N	Y
	BELLEVILLE	I-94	M-4		N	E	W		A	R	Y	Y
	PALMER ROAD	I-275			N	E	W		A	R	Y	Y

Recent Rest Area Design Changes Which Increase the Need for Maintenance

Over the past few years rest areas have slowly but steadily become larger, fancier and more complex. While no particular individual change has significantly increased the demand for maintenance, the combination of the many changes has amounted to a substantial increase.

To a large extent, the rest areas which are being built now are not being maintained in accordance with the intent of the design. Some of the changes in rest area construction in the past few years are listed below.

INCREASED SIZE OF THE REST AREAS

Earlier in this report it was indicated that there has been a significant change in the size of rest areas. In round figures, the new rest areas being built occupy three or four times more area than the first rest areas. The toilet facilities in the present modern buildings have been increased 60 percent over the first modern buildings. Even though there has been no increase in equipment, such as tables and stoves, they are being spread over a larger area. The larger lawn area, increased sidewalk area, etc., translate into more maintenance manhours.

LAWN IRRIGATION SYSTEM

Some of the recently developed rest areas have rather extensive underground lawn irrigation systems. Obviously, the intent of installing the systems is to keep a green area around the rest area building in the heavily used areas.

Experience with the sprinkling systems which are in operation has proven they are subject to a lot of breakdowns and damage. Specific recommendations have been made to Design to correct some of these problems.

In addition to the maintenance of the system itself, the sod areas irrigated require more fertilization and more mowing.

STEPS ON SIDEWALKS

In some areas, because of the natural terrain, it is necessary to install steps on the sidewalk system. However, whenever possible, elevations should be adjusted to eliminate steps. Although steps may add to the aesthetics they also add to the maintenance and the liability.

If sidewalks are ramped, snow can be plowed mechanically. Steps have to be swept and shoveled by hand.

EXTENSIVE REST AREA LANDSCAPING

Landscaping at the earlier rest areas was simple and basic and required very little in the way of maintenance to keep it looking presentable. Several of the rest areas recently landscaped have large patio areas with extensive shrub beds, as shown in Figure 5.

The plant species selected for these beds preclude the use of chemicals for weed control so they must be maintained entirely by hand.

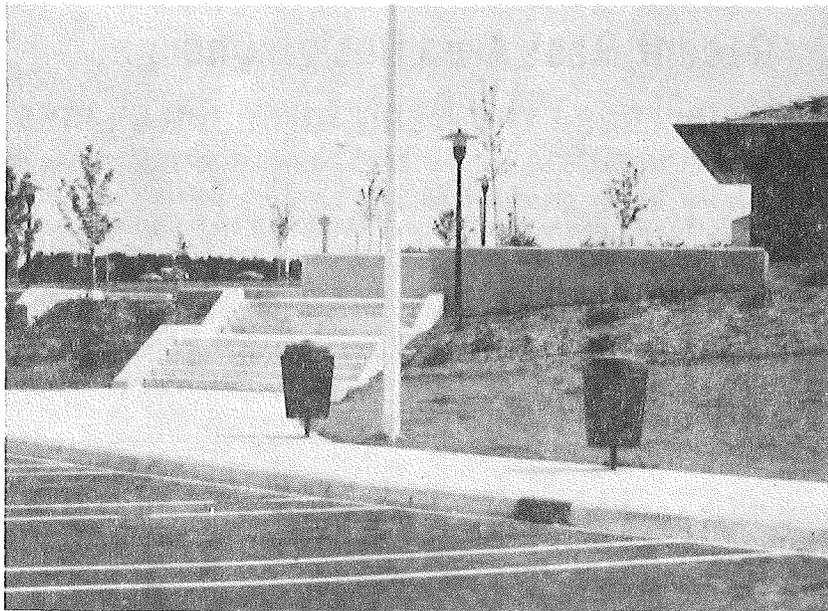


FIGURE 5
I-94 Rest Area
at Marshall

ADVERTISING PLAZAS

Advertising plazas as shown in Figure 6 are either complete or under construction at ten rest area locations. While the materials in these panels are maintained by another highway agency, the panels themselves and the areas around them are maintained by our division. There is not a lot of maintenance involved, but the snow removal, sweeping and cleaning are additional maintenance responsibilities.



FIGURE 6
Advertising Plaza
US-27 Rest Area Near
Houghton Lake

DRINKING FOUNTAINS (Picnic Area)

Most of the recently developed rest areas have drinking fountains in the outlying picnic areas. The additional responsibility with regard to the fountains is care of the water lines and winterizing the line and fountains. Equipment recently installed is poorly designed, and problems have arisen at several sites.

INTERPRETIVE TRAILS

At several of the rest areas and roadside parks interpretive trails have been developed. The trails have been developed under authorization but maintenance is an added responsibility.

Needed Design Changes

An in-depth study should be made to identify all of the design changes that are needed to make the rest areas and rest area buildings more convenient and more easily serviced. The study should be carried out immediately so the recommended changes can be incorporated in the design as soon as possible. The study group should represent a cross-section of people interested in rest areas.

Some of the major changes which are recommended for immediate consideration are as follows.

DUAL MEN AND WOMEN'S RESTROOMS

It is difficult for an attendant to service a restroom even under light traffic and it is impossible to service a restroom under heavy traffic. Four out of five complaints can be pinpointed during heavy traffic periods. The other complaints are mostly off-hour complaints.

Restrooms should be split in some way so part of the facilities can be closed and thoroughly cleaned. If a floor is mopped and completely dried it will stay clean much longer than if people start walking on the wet floor with dirty shoes. A split facility would enable an attendant to make checks during heavy traffic to replenish supplies and spot-clean.

The split unit will also serve the public better when it is necessary to repair a toilet, unplug a drain, or replace a fixture in that the whole facility would not have to be shut down.

A male attendant cannot give a women's restroom proper attention and at the same time keep it in operation.

TILE INTERIOR

With the amount of traffic that goes through one of our facilities, it is impossible to keep the painted walls looking presentable. The entire interior of each restroom should be tiled. Tile would eliminate the graffiti problem and the painting and would greatly reduce the cleaning required.

CONCRETE PARTITIONS

Either reinforced concrete or cement blocks should be used to construct the partition between the toilets in the toilet rooms. These partitions should then be covered with the same tile used on the wall.

If the room can be laid out so there is nothing in front of the toilets, the stalls should not have doors. This will eliminate loitering and drilling holes through the partitions.

SIMPLIFY THE LANDSCAPING

Landscaping at some of the rest areas is getting so extensive that gardeners will be needed to maintain them. Many large beds have been planted with species that cannot be weeded chemically. It is doubtful that the rest area landscaping will ever develop as it was intended.

WELL CAPACITY AND DEPENDABILITY

The water system at some rest areas is not adequate to run the facility during the peak periods. Especially with the underground irrigation systems, the minimum capacity should be raised.

This past year, several rest areas were shut down for extensive periods to repair wells. There were other rest areas that had water shortages during peak periods. In areas where capacity is a problem, a dual well system should be developed so repairs to one well could be made without shutting the rest area down for several days.

DISCONTINUE PAPER TOWEL DISPENSERS

The expensive paper towel dispenser and waste receptacle is in almost every instance vandalized in the men's room. We are recommending that towel dispensers be discontinued in the men's rooms. The dispensers in the women's room are seldom vandalized and there is probably justification in continuing the towels for women to use with small children. The dispensers should be the inexpensive add-on type. The maintenance attendants do not leave towels in the dispensers after hours because of problems they have with intentionally plugged drains.

SERVICE BUILDINGS

A basic design for an equipment building or service building should be available. Many county road commissions could use the storage and would give us better service if equipment could be stored on the grounds.

Without equipment storage buildings, one of two situations often occurs. Either we are paying exorbitant prices to have counties haul equipment back and forth or else the counties are buying small, inadequate equipment so it can be stored in the service room. An example of small, inadequate equipment would be the 42" mowers used by several counties. The doors on the rest area service room will not accommodate larger equipment.

In addition to the space problem, we have been cited in some counties for storing gas and oil in a public building.

BETTER SOIL IN VICINITY OF THE BUILDING

One of the primary problems in maintaining sod in the area immediately around the rest area building is the poor soil on which the sod is laid. There are many rest areas where decent sod simply cannot be maintained because of the poor moisture-retaining qualities of the soil under it.

The topsoil should either be more carefully selected or it should be treated prior to laying the sod.

LAVATORY COUNTERTOP INSPECTION DOORS

The maintenance inspection doors are often quickly vandalized, locks removed and left to swing. Two of the doors shown in Figure 7 can no longer be locked. We recommend either a more substantial door or a different locking arrangement.

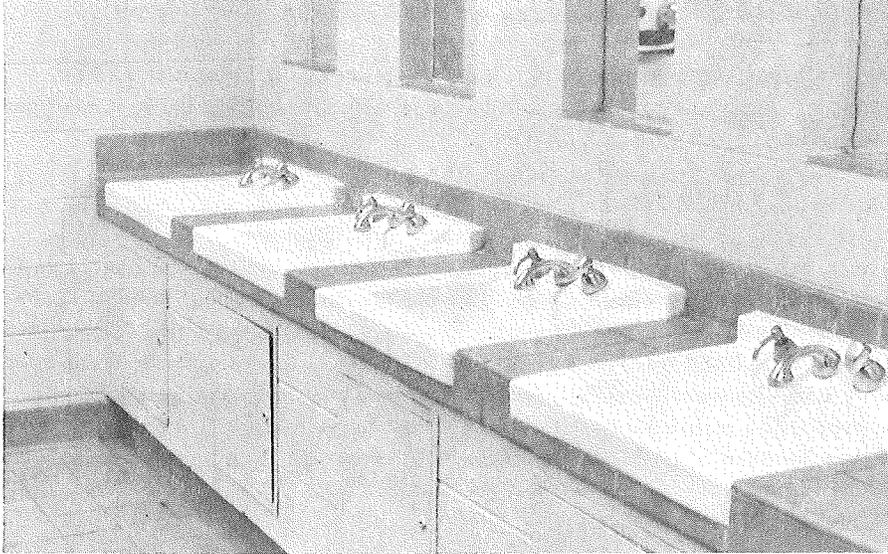


FIGURE 7
Rest Area
Lavatory
Countertop

HEATING AND INSULATION

If for no reason other than in the interest of energy conservation, a long, hard look should be taken at the heating systems in the modern rest area buildings. The building is being heated electrically, which is very poorly designed for electric heat. Heating bills for some rest area buildings in excess of \$500 a month are common during the winter. The present buildings have less than one-half of the recommended ceiling insulation and the sidewalls are virtually uninsulated.

Needed Renovations of Existing Buildings

Rest areas, like other highway facilities, such as ramps, signs and guardrail, become obsolete. Since the first modern rest area buildings were built beginning sixteen years ago a great number of changes have been made. In addition to the need to bring the older rest area buildings up to the present standards, there is also the fact that a lot of the old equipment is worn out.

In the following paragraphs is a partial listing of the items that need renovation.

UPGRADE TO ACCOMMODATE HANDICAPPED

Sixteen of the modern buildings are the four gable roof type. None of these buildings will accommodate handicapped. Since almost every one of the buildings needs major renovation, installation of the handicapped facilities should be considered at the same time. A major problem in upgrading these buildings to accommodate the handicapped will be widening the entrance doors. A number of the other items listed below should be included in the upgrading of these 16 buildings, but they have been listed separately because some of the newer locations also need the changes.

REPLACE TOILET PARTITIONS

The partitions need replacing on the men's side at about half of our modern rest areas. Figure 8 shows the typical metal partitions used in the M-1 and M-2 buildings. While some of these are badly rusted, most of them have been bent and torn up by vandals. The partitions shown in Figure 8 are not bent but the doors are missing.

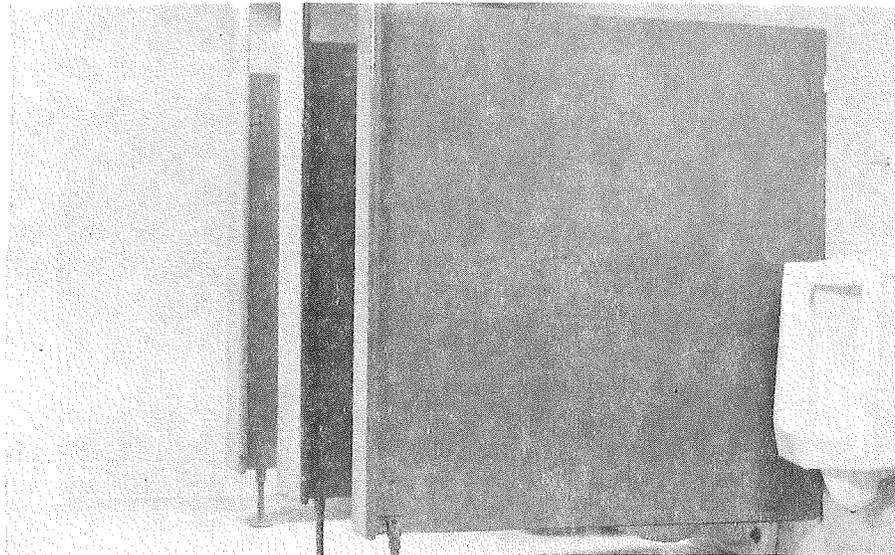


FIGURE 8
Metal
Toilet Partitions

The partitions which are being used in the M-3 and M-4 buildings are a man-made material which does not require paint and does not rust but they are more easily drilled into and are more difficult to repair when vandalized.

It is recommended that a program begin immediately to replace the battered and worn-out partitions and further that they be replaced with partitions constructed of concrete blocks with a tile surface.

TILE INTERIOR

The painted walls which are in our existing rest areas cannot be adequately maintained. A minimum of approximately 50 percent of the total wall area should be tiled if the condition is to be corrected. The tile areas should include the wall area around the hand dryers, lavatories, urinals and toilets.

INCREASE OR CHANGE TOILET FACILITIES

The problem of insufficient toilet facilities is primarily in the women's restrooms. The older buildings have five toilet stalls and the new buildings have eight, which doesn't seem to be a significant spread until two other factors are examined. a) Some of the older buildings receive four or five times as much traffic as some of the new buildings. b) Most of the old buildings have three women's urinals and two toilets and the most recent building designs have eight conventional toilets in the women's restroom. We recommend two actions to correct this problem.

1. Remove all ladies urinals and replace them with conventional toilets;
2. Increase the total number of toilets in certain selected rest areas known to have inadequate facilities to handle the traffic.

REPLACE FREE-STANDING LAVATORIES

A total of 27 of the modern rest area buildings (16 four-gable buildings and 11 low mansard buildings) have wall-hung lavatories as shown in Figure 9.



FIGURE 9

Wall-Hung Lavatories

If the rest area buildings are going to be renovated, the wall-hung units should be replaced with built-in lavatories on counter tops.

REPLACE BUMPER RAIL

At a number of the rest areas, the bumper rails should be replaced with curb and gutter. To do this, it will also be necessary to install a drainage system to handle the surface water.

INSTALL NEEDED SIDEWALKS

A combination of poor drainage and inadequate sidewalks results in tracking mud into the restrooms during wet weather.

We recommend installation of sidewalks in selected areas.

Special Maintenance Problems

There are a number of special problems or situations which have been identified at some rest areas. While not all of them are maintenance problems as such, they are either undesirable activities in rest areas or they reduce service to the motoring public.

The intention of this section is to identify the problems and suggest possible solutions. Some of the solutions can be initiated at the division level; others will require action from management.

VENDORS OPERATING IN ROADSIDE PARKS AND REST AREAS

The vending business at our facilities is very lucrative. Vendors select peak use periods and have a continuous turnover of potential customers. At the busier rest areas the number of potential customers run from several hundred to as many as 1,000 per hour. Figure 10 shows a vendor at one of our rest areas during a busy period.



FIGURE 10
Vendor Operating
in a Rest Area.

The vendor shown in Figure 10 was one of two operating in the rest area at the same time. Both had a constant lineup all the time they were observed. The lines at times numbered as many as 18 persons. When the vendors were approached, they refused to leave, demanding identification and authority for asking them to leave.

There are two general problems created by vendors in rest areas. One, of course, is a litter problem. After a vendor has been in a rest area there are ice cream bar wrappers and candy wrappers scattered all around.

The other problem is a parking problem. Not only do the vending trucks take up parking places, but the average length of stay of the rest area user is increased. For example, if the length of stay is doubled, the available parking spaces per hour are cut in half. Figure 11 shows a rest area where vendors were operating.

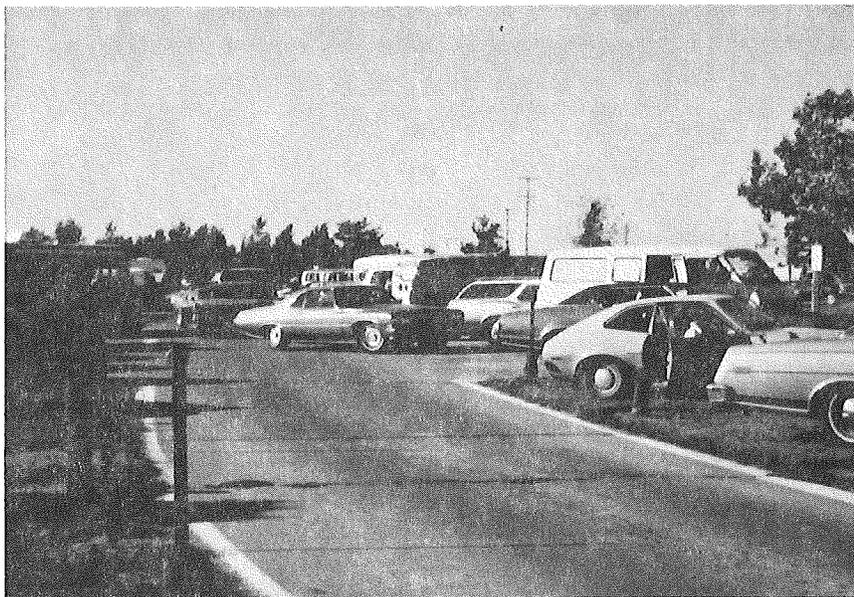


FIGURE 11
Parking on Lawn
at Rest Area Where
Vendors Were Operating

At the time the picture in Figure 11 was taken, there were approximately 15 cars parked outside of the parking lot.

Recommended solution: Vending in public places such as rest areas is illegal. Our rest area attendants have a copy of the law, but reporting the vendor does not very often result in any positive action. If the vendors were ticketed and fined the problem would eventually be solved. A letter to the State Police Director requesting cooperation may be necessary.

PERMITTED COFFEE SERVING IN REST AREAS

The MDSH&T has been pressured into allowing various groups to serve coffee in rest areas and roadside parks under the guise of motorist safety. It happens that in most instances, the real motivation is increased funds in the club's coffers. The majority of the groups openly solicit donations and when the "no donation" rule is enforced, their benevolent, humanitarian feelings seem to dissipate.

A CB (Citizen's Band) Club that operated at one of our rest areas on Labor Day served 600 to 800 cups of coffee, 140 dozen homemade donuts, and a quantity of Kool-aid and cookies. They stated they really enjoyed the club outing. Two or three nights before the holiday they got together to make the donuts and set up the schedule for Labor Day. They claimed that it cost them around \$200 to buy the cups, sugar, cream and make the coffee, donuts, cookies and Kool-aid and that the donations simply covered that expense.

While there doesn't seem to be anything seriously wrong with the clubs recovering their expenses, we do have a self-admitted record of one group which raised \$1,000 in a 24-hour period selling coffee and even sandwiches and beer at one of the rest areas. The newspaper article stated that several sheriff's deputies were among the customers. The amount of money involved may explain why there is so much competition between clubs for the privilege of setting up a coffee at a rest area on a holiday weekend.

Not all of the clubs are in it for the money, however. Figure 12 shows the operation set up by a Lion's Club at a rest area on I-75. They did not use any of our facilities. The coffee was made in one of the club member's homes and brought to the rest area in large thermos urns. They emphatically refused donations and asked people to pick them up when coins were left on the table.



FIGURE 12
Coffee Serving
at Rest Area

At this location there were problems even though the club ran a good operation in accordance with their permit. The main problem was the extended length of stay by rest area users causing a traffic jam in the rest area.

Figure 13 shows motorcycles parking on the lawn.

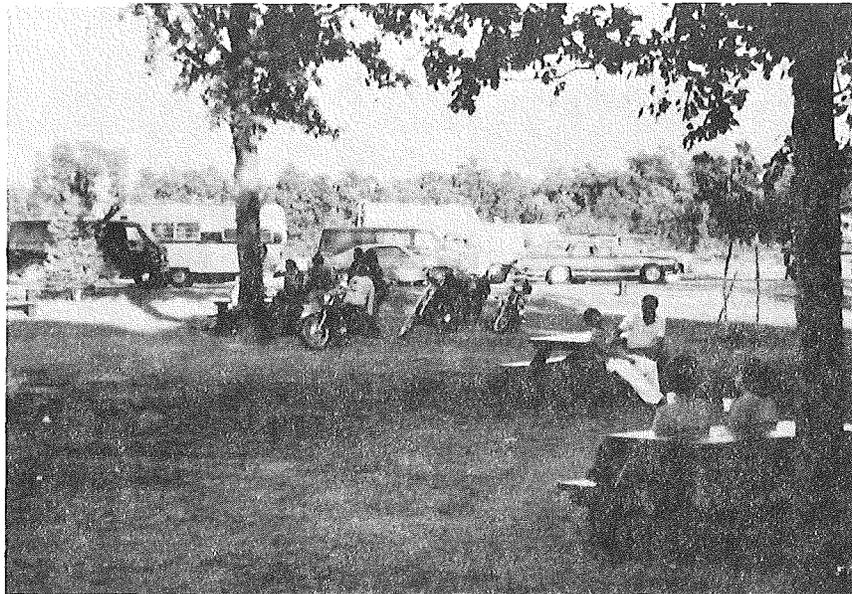


FIGURE 13
Parking on Lawn

At times there were 20 to 25 cars improperly parked and cars passing through without stopping because of the lack of parking.

At another rest area the total parking spaces were reduced from 50 to 42 available to the public because eight spaces were permanently taken by the coffee-serving trailer, with pickup attached, which parked parallel, and the cars

of those who staffed the operation. This reduction in available spaces, with the increased length of stay, reduced the actual rest area capacity to about 50 percent of the designed capacity.

Recommended Solution: Since rest area parking is at present under-designed for peak loads, we recommend that further coffee-serving requests be denied.

CAMPING AND OVERNIGHT PARKING

Camping and overnight parking occurs occasionally at the rest areas and roadside parks, usually with no particular associated problems.

Sleeping overnight in the parking lot in a pickup camper, house trailer or sleeper cab occurs frequently. Many rest areas are completely full throughout the night and the most serious problems are parking lot overcrowding and occasionally someone flushing their toilet on the parking lot.

When the parking lots are full of campers and trailers, often the tent campers think they are within their rights to set up their tents in the picnic areas. At this point, this problem can usually be controlled by asking them to move, but that course of action is not always effective. When the police are called, the first question asked is what law or rule is in violation.

Recommended Solution: The Department should actively pursue legislation which will enable the promulgation of rules and regulations. A couple of years ago such an effort was started but it bogged down when legal problems arose. Whatever the legal problems are, we need the authority to regulate activities at our parks and rest areas so we can control activities such as loitering and camping.

HOUSEHOLD REFUSE

No other agency in the state has felt the adverse effect of the 1965 and 1967 refuse laws to the extent that the MDSH&T has been effected. Dozens of roadside table sites have been discontinued because they were literally buried in garbage. Figure 13a shows one of four piles of garbage which accumulated in the Alger rest area on a typical summer weekend.



FIGURE 13a
Household Garbage
Left at Rest Area

The Department's refuse problem is long standing and too lengthy to discuss in this report. A separate study was conducted on the refuse problem four years ago and that report is on file.

For the purpose of this report, suffice it to say that the Department is still handling large quantities of garbage which should not be dumped at highway facilities. The agencies responsible for handling garbage have been slow to react to the law and in many areas of the state they have not reacted at all.

Recommendation: Continued pressure should be exerted on violators so they will eventually find areas to properly dispose of their garbage. Last summer a survey was conducted at the Alger rest area on a Sunday to determine how the rest area was being used. The presence of the Highway vehicle and the personnel making the survey resulted in a fifty percent reduction in the amount of garbage on that particular weekend. This type of deterrent may be used in selected areas in the future.

SOCIAL PROBLEMS

Highway roadside parks and rest areas, like all other public restroom facilities, have a certain amount of homosexual and prostitution activity.

Prostitutes frequent the rest areas only on an occasional basis and the activity has been normally quite inconspicuous with the exception of two or three occasions. The police quiet the activity down by making a few arrests. We have no known vandalism which we can associate directly with prostitution.

The homosexual activity, on the other hand, is directly connected with several problems at both the roadside parks and rest areas. The activity is present at virtually all of the rest areas and probably 70 percent of the roadside parks.

While many roadside parks and rest areas have only two or three of these questionable characters hanging around, there are reports of 20 to 30 that frequent some of the rest areas on a regular basis. Included on the pages following are copies of newspaper articles which have addressed some of the problems. Articles such as these are getting quite common and often make the front page of the newspaper. Police agencies have made as high as 25 arrests in one night at at least two rest areas.

There are many problems caused by the homosexual activity, but perhaps the most serious is their presence, which is often obvious to other rest area users.

In addition, the walls and partitions are continuously defaced with appointments and obscene writing as shown in Figure 14.



FIGURE 14
Writing on
Restroom Wall

I-96 rest area a pain to Novi police

By JOEL J. SMITH

Chief of Our Oakland County Bureau

Novi has a rest area located on east-bound I-96 between Beck and Taft roads.

But, instead of being a welcome respite for weary motorists, the area has become a giant headache for local police.

The area has been the scene of some ugly experiences for unsuspecting men, women and children.

Novi police call the rest area nothing but a den of iniquity. The police say they have been averaging between 20 and 30 arrests monthly at the rest area for everything from knifings to strong-armed robberies and sexual assaults.

Police say they have assigned extra patrols to the rest area and have stationed undercover officers on the property.

But they admit that, despite the large number of arrests, criminal types continue to use the rest area as a gathering place.

"We've had some problems out there for over 12 years," said Novi Detective Sgt. Gordon Nelson. "But, for the last year or two, things have gotten real bad.

"We're getting calls all the time from motorists who have been robbed or assaulted at that rest area. We've also had reports of children that went in to use a rest room that were assaulted by some man."

Nelson said the biggest problem at the area right now is with homosexuals making advances to motorists using the rest rooms.

He said it has gotten so bad that homosexuals from the Detroit area have

been calling the pay telephone at the area to see if there's any action before driving out.

"It's definitely a gathering place for homosexuals," said Nelson. "Our officers have made repeated arrests there of men approaching other men to engage in homosexual activities.

"But they still come back. It's not uncommon to make eight arrests a night at the rest area."

Nelson said he thinks the roadside park has become a gathering area because it has an easy access. He points out that the rest area is the closest one located to the Detroit area on I-96.

"Most of the people that hang out at the rest area are drifters," said Nelson. "They aren't afraid to do anything out in the open."

Nelson said the police department plans to continue the beefed-up patrols of the area until the criminal elements leave the roadside park.

"We hope the word is getting out," said Nelson. "We've only put a small dent in the problem up to now.

"But we're going to keep at it as long as necessary."

Nelson suggests that motorists wishing to use any rest area in the state should travel in pairs.

He emphasizes that parents never should allow their children to enter a rest-room building by themselves.

Crime hits rest areas

By BUD LANG
Press Staff Writer

Rest areas in the southern portion of Michigan's inter-state highway system — particularly those in the southeastern corner — are being plagued by homosexual rendezvous, accostings and prostitution, according to area police agencies.

The areas, designed and intended to provide a place for weary travelers to take a break, have become havens for such illegal activities because of a lack of police manpower for proper patrols.

"With the possible exception of murder, we have had every conceivable type of violent and non-violent crime occur in these rest areas during the past few years," says Lt. Robert Pifer, commander of the Ypsilanti post of the Michigan State Police.

Pifer, whose agency is charged with patrolling these rest areas, also notes that not just individuals, but often entire families are accosted.

"We have a freeway patrol that goes through these places periodically, and we have occasional plain-clothes officers working around them. But we just don't have the manpower," Pifer says.

"I suppose if we had a crew working out there every night, we could make one or more arrests every night," he says.

Pifer says that while homosexuals usually lurk around the restrooms, they have on occasion approached parked cars and even opened the door and climbed into someone's back seat.

"Sometimes they are pretty open about it," Pifer says.

"But judging from the number of complaints we receive, there seems to be a lot more of that type of activity now than there was five years ago," Pifer explains.

Pifer also says that while they receive an occasional report of illicit sexual activity during the daylight hours, the peak time is after dark — after about 11 p.m.

While there is some type of this activity in most of the rest areas in southern lower Michigan, the facility located on I-94 in the southwest corner of Ypsilanti seems to be the most infamous.

Capt. Dan Heliker of the Ypsilanti Police Department says one of the problems with that particular rest area is the location.

"We have worked it off and on for years, and we usually make arrests. But marked patrol cars are pretty easily spotted, so you almost have to sneak around out there to catch them," Heliker says.

"They cut holes in the rest room

walls so they can see us as we approach, and they have signals they give each other. Besides, with all the other crimes going down around here, it is hard to justify keeping an unmarked unit out there for what some people consider a victimless crime," Heliker says.

While homosexuals hang around the rest areas for dates and chance meetings, the prostitutes actively work the areas.

"The prostitution thing is relatively new to us as far as their working the rest areas," Heliker says.

"They usually work in teams of one or two girls and a procurer, and they usually hit the truck drivers. Often, a proposition turns into an armed robbery. When the woman gets the truck driver into a compromising position, she unlocks the door and her boyfriend enters with a weapon and relieves the victim of his money and other valuables.

"From time to time, we get reports of armed robberies like that, but they often go unreported," Heliker says.

"It's sometimes a touchy situation. If a man is well known in the area, or if he's a family man, he probably doesn't want the publicity associated with filing a complaint and going to court. It can be pretty embarrassing," Heliker explains.

But while prostitutes may work the rest areas, some homosexuals regularly accost motorists trying to use the facilities.

"We get a lot of reports from families who are accosted when they go into a rest area," Pifer says.

"Often, a citizen may not be familiar with the problems in these places, so they send one of their children into the rest rooms alone. But if they (homosexuals) are brazen enough to accost an adult, they certainly wouldn't stop if a child walked in. I wouldn't let my son walk into one of those places alone," Pifer says.

Edward J. Boucher, a spokesman for the Michigan Department of Highways and Transportation, says his agency has not found a solution for problems in the rest areas.

"We don't have any enforcement authority, although if we do see something illegal going on we can stop it. But if the homosexuals and prostitutes in these places see an official vehicle coming, they'll either stop what they're doing, or scatter," Boucher says.

"We know they have a series of signals they make to each other," Boucher adds. "In fact, we have a maintenance man who drives a truck around to these places, and he's afraid to go into them at night

for fear he will accidentally make the wrong sign and be accosted."

While most of the rest areas in southern Michigan have these problems to some extent, Boucher says the one in Ypsilanti and the one on U.S. 23 north of Ann Arbor have the worst reputations.

"It is unfortunate these people decide to frequent this kind of facility and conduct themselves the way they do," Boucher says. "Anybody should be free to go into a rest area at any time and not be bothered."

"The stories, or excuses, these people try to give us when we catch them are pretty funny," Heliker adds.

Heliker says in one incident his officers caught two homosexuals together in a car. One of them said he lived near Detroit, and worked in a plant east of Ypsilanti.

"He said he just stopped by to rest on his way home from work, but the rest area is west of the city," Heliker says.

"A lot of guys tell us they've just had a fight with their wife and are sitting in the rest area to cool off. It doesn't matter what we catch them doing, the excuses are always there," he says.

A major problem in curbing this type of activity, according to Pifer, is in the prosecution of cases.

"Gross indecency, even attempted gross indecency, is a felony. We usually charge them with an attempt, but they go to court, plead guilty to a lesser charge and are back on the street and in the rest areas," Pifer says.

"In this day and age, we just can't afford to prosecute all these cases. There just isn't enough money," Pifer says.

Jay Bastien, another spokesman for the highway department, says about 30 million people per year use Michigan's rest areas.

Bastien also says the I-94 rest area west of Ypsilanti will be closed in the spring, but not because of crime problems.

According to Bastien, using both the rest area and the Michigan Avenue ramps would create traffic problems and hazards.

"Ninety nine per cent of the people use them (rest areas) correctly, it's just a shame that others are ruining it," Bastien says. "It's a shame, but it is nonetheless a fact."

Or as one local police officer who has patrolled rest areas puts it:

"If they want to do that stuff, let them rent a motel room. But if one of my sons walks into a rest area and something happens to him, somebody's going to the hospital

It is a constant challenge for the attendant to try to find soaps or abrasives which will remove the writing done with various types of pens and magic markers. When the writing cannot be removed, the area must be painted over, which usually doesn't blend in with the rest of the wall.

Another problem is the vandalism caused by drilling or cutting holes through the toilet stall partitions. Figure 15 shows where a 2" hole was plugged up with a bolt and two washers, only to have another hole drilled right beside it. Holes are cut in both metal and wood partitions.

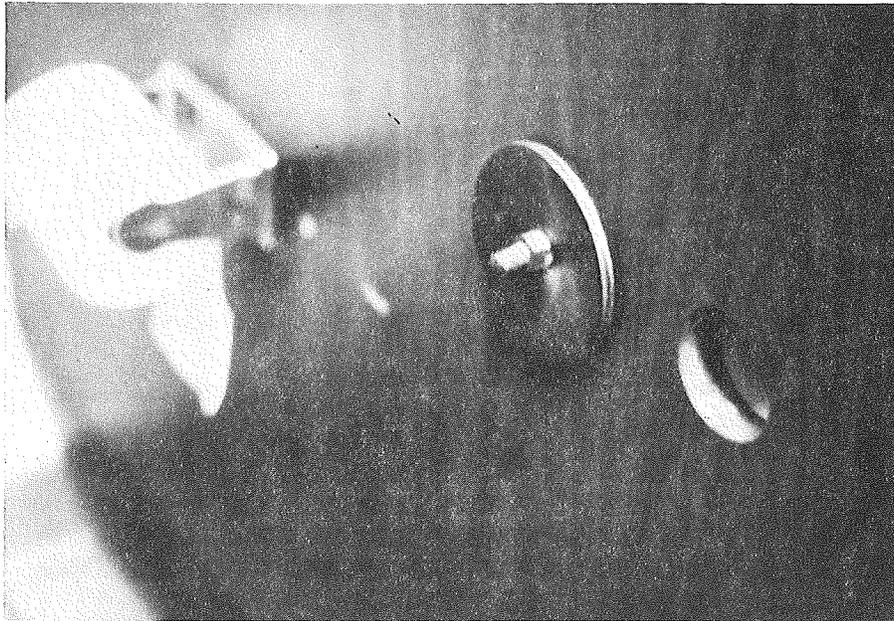


FIGURE 15
Holes Drilled
in Partition

Loitering on the rest area grounds is also prevalent, especially during the summer months. In many rest areas these people have developed their own trails through the adjacent wooded areas. They hang out in the woods and in the picnic area.

Recommendations: We think the social problems at highway tourist facilities have developed to the point that they are critical. The two newspaper articles included in this report are definite evidence of the concern of the public. While it appears these social misfits have all but taken over at some of our rest areas, it may be we have encouraged some of the problems by keeping our maintenance manhours at a minimum.

At a recent District Forester's meeting, this particular problem was discussed at length. Some of the recommendations that came out of this discussion are mentioned in other sections of this report, but a primary reason for the recommended changes is hopefully to curb some of the homosexual activity. Listed below are some of the changes which should be made at our modern rest area buildings to discourage some of the problems that are evident.

- 1. Partitions should be tile covered concrete.**

Tile to prevent the writing and concrete to prevent the cutting of peek holes. Tile has been installed at one of the rest areas where we had a problem with writing on the walls and found that, even though there was still some writing, the walls were more easily cleaned.

We don't have experience with the concrete partitions but we do know that the easier it is to drill through the partitions, the more apt they are to cut holes.

2. The doors on the toilet compartments should be omitted.

We recommend this for all but the handicapped stalls on the men's side only. Rest area attendants tell us that many times these people will lock themselves in a toilet stall and sit for hours watching through the holes drilled in the partitions. With no door and no holes in the partitions, they wouldn't be likely to stay. We realize privacy is desirable, but in this case, it appears that it must be sacrificed.

3. Redesign Interior so Mirrors Do Not Look into Toilet Stalls.

Mirrors should be located in such a way that men using the wash basins cannot see into the toilet stalls. In some rest areas, it may take some redesigning so when the doors are removed from the toilet compartments, the mirrors don't become a problem.

4. Obtain Authority to Promulgate Rules.

Rest area attendants tell us that the same people, cars and license numbers are in the rest areas for hours each day. We have no rule against loitering and no way to enforce a rule if we had one. We cannot keep developing these areas without the power to control the activities.

5. Authoritative-looking Uniforms for the Attendants.

At the present time our attendants look like another "John Public." They may have a mop bucket and a badge but that doesn't always identify them. If we equip the attendants with uniforms they will have an official look about them. We think the uniforms would have a two-fold impact on the situation. First, if the attendants were readily identifiable they would take more pride in their work. And, second, the public might not be so quick to damage something if there was an official-looking person in the rest area.

6. Security Guards

In some instances it will be necessary to employ security guards from private protection agencies to ensure the safety of rest area users. In fact, several of our rest area attendants have stated that they will refuse to work evening hours if asked to. We are of the opinion that as long as we provide a toilet facility for the public, we are obligated to provide a safe toilet facility. With the kind of press we have had, it is obvious they are not safe, so it is up to us to make some changes. Security guards would not be used at all rest areas, only the few where the problem is most serious and then only for intermittent periods.

7. Exterior Lighting

Experience has shown that rest areas with poor exterior lighting are the ones where we have the most serious problems. It is recommended that the lighting be increased at all rest areas where social problems prevail.

8. Get Outside Suggestions

This recommendation is one that perhaps should be at the beginning of this report. We propose that we meet with the State Police and possibly other police agencies to listen to their suggestions before we take steps to make changes. There may be ways of solving the problem without going to some of the extremes we suggest.

9. Engage Outside Professional Help

Someone in the field of psychiatry working with social problems could possibly make suggestions for modification which might be helpful. This may seem to be a rather unusual recommendation, but there could be some obvious thing that we are overlooking that a trained professional could put his finger on.

10. Act Quickly

Our final recommendation is that we immediately renovate one of the worst areas to see what impact the changes have on the problem. Of course, the two articles included in this report are relating incidents at rustic rest areas, but we intend to concentrate our efforts at modern areas since the rustic areas will soon be phased out. There are several modern areas that might be candidates for a pilot program.

Routine Rest Area Maintenance

Routine day to day rest area maintenance is the most important issue to be addressed in this report. We realize that regardless of the design of the rest area, or the material from which it is constructed, if it is properly maintained there will be a minimum of complaints. The design and the choice of material were discussed because they have a definite bearing on the ease of maintenance and that, of course, is an important issue.

If a rest area is to be properly maintained, there are two basic requirements:

1. Maintenance personnel must be available when needed, and
2. They must know what to do and how to do it when they are there.

It has been our experience when checking out complaints over the past years that the complaints would be nearly nonexistent if these requirements were satisfied.

The following paragraphs will thoroughly discuss the two requirements and spell out the steps which will be taken to guarantee the most effective rest area maintenance possible.

REST AREA MAINTENANCE SCHEDULES

Very early in the development of the modern rest area system there was considerable discussion about how the buildings should be manned. Some maintenance managers likened the needs at the rest areas to the movable bridges where 24-hour attendants are necessary. Others thought that considerably less time should be spent at the rest areas and suggested a maximum of one to two hours a day at each rest area.

As it worked out, it soon became apparent that we could neither afford 24-hour coverage nor was it justified in most instances. With funds getting tighter and tighter and rest area maintenance having a rather low priority, our maintenance schedules are more closely aligned with the minimum suggested coverage.

All throughout the years it would be safe to say that in most cases the maintenance scheduling has been adjusted more for the convenience and availability of the employees than to the actual needs at a given rest area. In all fairness, however, the actual needs were difficult to predict and there was no tool available that could be depended upon.

We now have developed a system of projecting maintenance requirements at rest areas. As we gain experience in using this system, we will become more accurate in determining needs and will be better able to schedule maintenance personnel during the critical periods.

It should be noted that this method of scheduling is vastly different from the method being used at the present time and it will require a considerable amount of changing of procedures for the maintaining agencies to put it in practice.

The method which is being inaugurated for determining maintenance schedules is based on the amount of water used at a given rest area during a given period. While we have information to validate some of the premises used in the formula,

others have been accepted as being the best possible information available. The formula can, of course, be adjusted from time to time as more information is acquired.

Over the past year or two, water meters have been installed at the majority of the modern rest areas. Those which do not have a water meter will be having one installed in the next few months. With the water meter readings, a historical record has been developed which makes available the amount of water used at a given rest area for almost any period desired. The record is routinely assembled to show annual and monthly consumption. Daily values are also available which are the most used figures in setting maintenance schedules.

Working with the premise that a modern rest area building is probably in need of maintenance after 400 to 700 (1) persons have used the facility, we have set out to determine the number of cleanings needed per day and the time of day the cleanings should be done.

There are many routine reports available and several rest area studies have been made that supply information used in this determination, but the one report that ties all of this information together and brings it down to the individual rest area is the report of the daily water use.

On several of the following pages are tables which show how the water consumption information is used. Table I (1976 rest area water use) shows the total water use at each modern rest area for 1976, as well as a monthly breakdown.

A total of 53 modern areas are included in this table, 27 of which we have actual water use information for the entire year. At 12 of the rest areas water use information has been available for part of the year. With estimates entered for the remaining months, the water use at the other 14 areas was estimated for the purpose of setting up maintenance schedules. In future years when complete information is available, the schedules can be adjusted.

It can readily be seen that there is a widespread variance in the water use at the tourist facilities. There is a low annual use of somewhere around 100,000 gallons of water at one area and a high of over 2,600,000 gallons at another. More impressive, however, is the variance in the monthly totals with a monthly low of around 2,000 gallons to a high of 415,000 gallons. There can be no question but what there has to be a definite difference in the staffing pattern between rest areas when during a 30-day period there is 207 times more traffic in one rest area over another.

The variance in water usage between rest areas is striking when it is plotted on a graph. Two graphs have been included in this report to show water use patterns. Figure 16 shows the monthly breakdown at five rest areas on east-west freeways and Figure 17 shows the pattern of nine rest areas on north-south freeways. The graphs readily show that the peak loads are during the summer months.

(1) We are working with the wide spread of number uses in our formula, primarily because of the size of the facilities available. Some modern rest areas have 11 toilet units (urinals & conventional stools) while others have 16. In addition to the difference in total number of units, there is also a difference in the ratio of urinals to conventional toilets.

The daily water use between rest areas has the most significant variances. Several areas use only 150 to 200 gallons a day during the winter months. This is quite a contrast to the daily record of 37,500 gallons used in one day at the Linwood rest area on I-75 in Bay County.

It should be pointed out that all of these figures have been adjusted to represent the water actually used in rest area facilities. Water used for irrigation and water wasted during malfunctions has been deducted.

Figure 18 shows a form which has been developed to analyze the daily water consumption at a given rest area. It can readily be seen that the rest area shown is busier on Friday and Saturday than any other days of the week. Being aware of this pattern is important in setting maintenance schedules.

Although daily water use is a helpful aid in evaluating maintenance needs, it is of more value to know how many people are being served and when. To get this information, we have used the results of studies which have been done at rest areas over the past few years.

Repeated studies have shown that the average rest area visitor uses just under 2.4 gallons of water. Using this conversion factor, we can immediately convert total water use into total rest area visitors. Similarly, we can convert monthly water use values and daily water use values into numbers of visitors. If a rest area water record shows 1200 gallons of water for a given day, it can be converted to 500 rest area visitors who have used the facilities (1) by dividing 1200 gallons by 2.4.

A rest area which used 19,000 gallons of water in a single day has had 8,000 visitors using the facilities (1).

Another factor which is important in determining maintenance needs is knowing how the rest area use is spread during the day. Here again several rest areas have been studied to determine the turn-in ratio and the turn-in numbers for each hourly period during the day and for each day of the week. By using information from these studies, along with the daily water totals, we can come up with a projected number of people per day and for each hour of the day. Figure 18 is a breakdown for the Grayling rest area on NB I-75 in Crawford County for the month of July.

The rest area visitor estimate (Figure 19) shows when to expect the heaviest use in this rest area. It can readily be seen that Friday and Saturday are busy days at the example rest area. It also is a graphic explanation of the reason for complaints in a northbound rest area on a Friday night. Over 3,500 people use the example rest area on a Friday night between the normal quitting time and the normal starting time Saturday morning on an average weekend in July. It isn't any wonder that they run out of toilet tissue.

Proper staffing at rest areas has been further complicated because of the apparent inability of some county road commissioners to work personnel outside regular work hours without paying overtime. Even in instances when it is known that rest area maintenance demands are during periods other than the regular work day or work week there has been resistance to making changes. The unions recognize the off hours as overtime periods and want time and a half.

(1) Only 2 out of 3 rest area visitors use the toilet facilities.

TABLE 1
1976
REST AREA WATER USE
By Month in 1000/gal.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
Menominee	2	2	2	4	5	20	50	45	14	6	4	3	157	est
Ironwood	2	2	2	4	5	29	71	68	19	10	7	4	223	est
Sault TIC	5	6	5	10	13	47	136	114	30	16	14	7	403	
Sault	-	-	-	8	11	45	120	100	26	15	11	-	336	est
Cadillac	9	12	12	18	27	33	54	54	27	24	18	12	300	est
Clare	76	80	92	127	244	252	388	387	207	167	113	93	2,226	
Mackinaw	3	3	3	6	6	21	53	50	14	8	6	3	176	
Frederick	21	21	28	28	56	77	133	155	63	56	28	28	694	est
Grayling	50	50	50	92	165	251	385	348	189	139	94	70	1,883	partial
Higgins	12	12	16	16	32	44	76	88	43	35	24	17	415	partial
Houghton	24	22	22	37	67	90	155	141	84	91	35	27	795	partial
9 Mile	25	25	35	32	68	89	160	179	80	64	36	24	817	
Rau Rd.	39	50	40	76	139	173	317	281	142	110	79	57	1,503	
Alma	33	34	32	53	76	78	116	115	71	58	41	36	743	
Ithaca	46	34	40	66	100	135	204	170	118	93	90	43	1,139	
Cascade	48	64	64	96	143	183	269	289	200	168	96	64	1,684	partial
Rockford	8	11	11	17	25	31	50	50	25	22	17	11	278	partial
Marne	13	18	22	31	40	46	71	66	45	36	27	22	437	partial
Cutlerville	14	14	14	25	36	36	65	65	36	29	22	18	374	est
Hudsonville	14	17	19	27	46	57	91	82	64	30	20	16	483	
Nunica	13	14	17	26	36	56	67	68	55	30	18	15	415	
Muskegon	18	20	22	32	61	176	240	200	78	43	22	17	929	
Alger	57	55	52	90	132	203	281	308	103	83	63	35	1,462	
Linwood	58	65	68	138	186	239	411	346	217	184	121	91	2,124	
Bridgeport	73	83	81	142	202	179	294	349	181	146	103	71	1,904	
Clio	104	114	115	172	239	275	411	415	253	234	167	104	2,601	
Fenton	42	49	54	87	123	159	213	190	141	126	95	67	1,346	
Midland	18	18	21	76	83	123	132	132	93	89	61	20	866	
Bellevue	12	16	17	25	37	44	74	74	37	33	25	16	410	est
Marshall	54	72	90	126	162	144	257	356	96	70	54	41	1,522	partial
Tekonsha	14	14	14	25	36	36	65	65	36	29	22	18	374	est
Coldwater	30	28	42	62	69	92	126	128	65	52	38	35	767	
Galesburg	50	56	77	114	108	137	176	174	114	92	69	56	1,223	
Oshtemo	35	38	52	72	87	110	154	154	99	76	56	48	981	
Portage	18	18	18	32	45	45	72	72	45	36	27	18	446	est
Plainwell	19	19	26	39	96	75	75	82	60	53	35	27	606	partial
Watervliet	50	54	66	104	131	172	239	218	139	118	68	68	1,427	
Coloma	24	25	35	57	65	91	134	125	76	59	41	30	762	
South Haven	13	18	18	26	40	48	79	80	40	35	26	18	441	est
New Buffalo	50	53	78	132	169	237	358	338	189	146	91	68	1,909	

TABLE 1 (Cont'd.)
1976
REST AREA WATER USE
By Month in 1000/gal.
(Continued)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
Okemos	31	33	42	60	91	102	184	142	100	85	66	55	991	
Willoughby	18	18	18	32	45	45	72	72	45	36	27	18	446	est
Howell	18	24	30	42	54	63	82	102	55	47	37	29	583	partial
Northfield	44	54	60	104	142	201	202	203	92	94	79	63	1,338	
Willis	28	30	32	52	75	75	117	116	57	37	29	24	672	est
Parma	45	60	75	105	135	133	194	216	115	83	66	52	1,279	partial
Berry	14	18	18	28	41	88	83	124	48	36	26	18	542	partial
Dundee	29	30	45	69	105	150	168	152	66	58	49	34	955	
Monroe	48	64	64	96	140	171	290	290	140	130	96	64	1,593	est
Clarkston	48	51	66	99	120	126	177	173	120	144	85	54	1,263	
St. Clair EB	20	27	34	47	61	75	104	99	73	54	41	34	669	partial
St. Clair WB	13	18	22	31	40	47	67	66	48	36	27	22	437	partial
Pt. Huron	19	24	30	47	62	128	177	236	81	60	26	32	922	

partial = partial reading available

est. = estimate for entire year

MONTHLY WATER USE
EAST AND WEST BOUND
REST AREAS

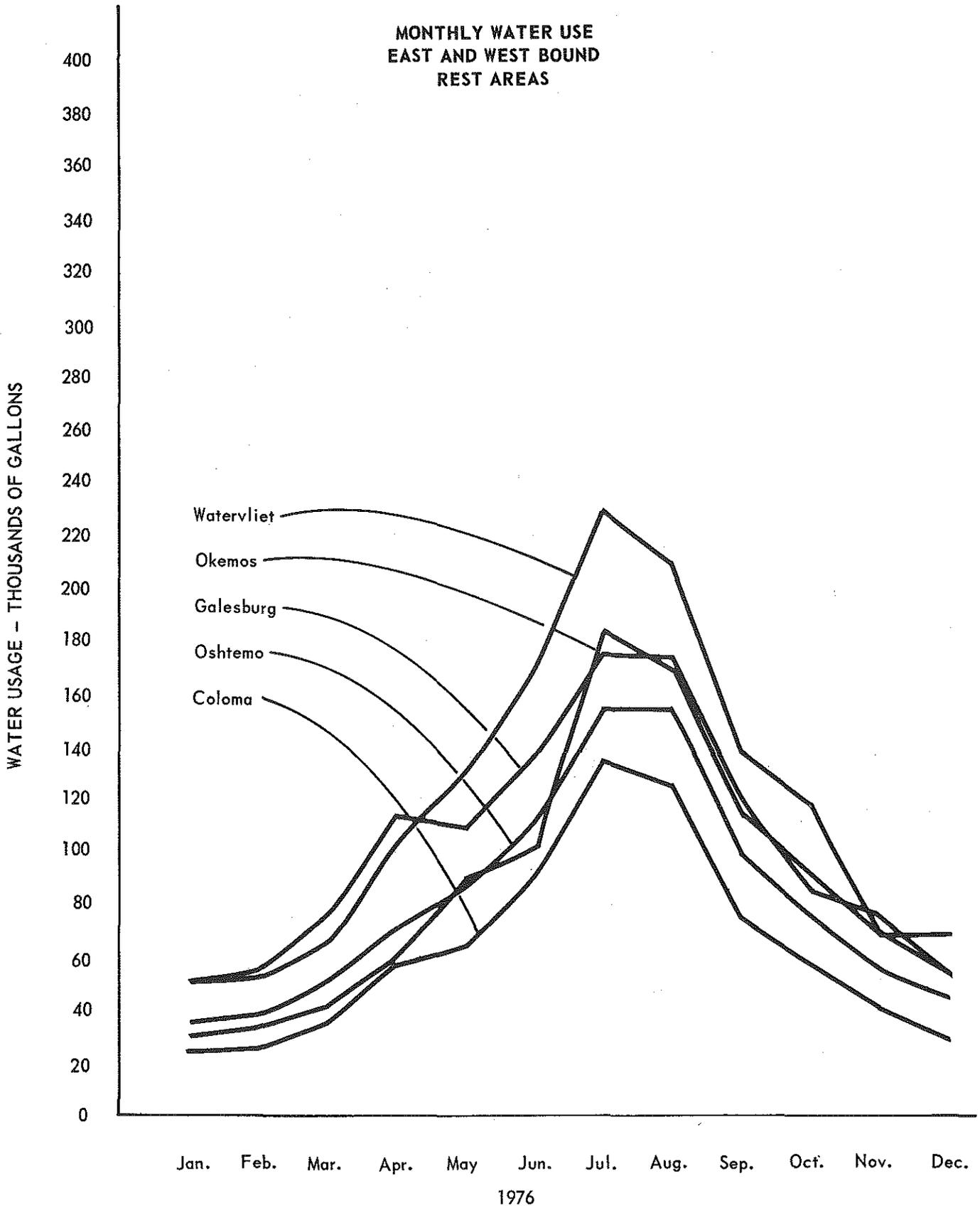
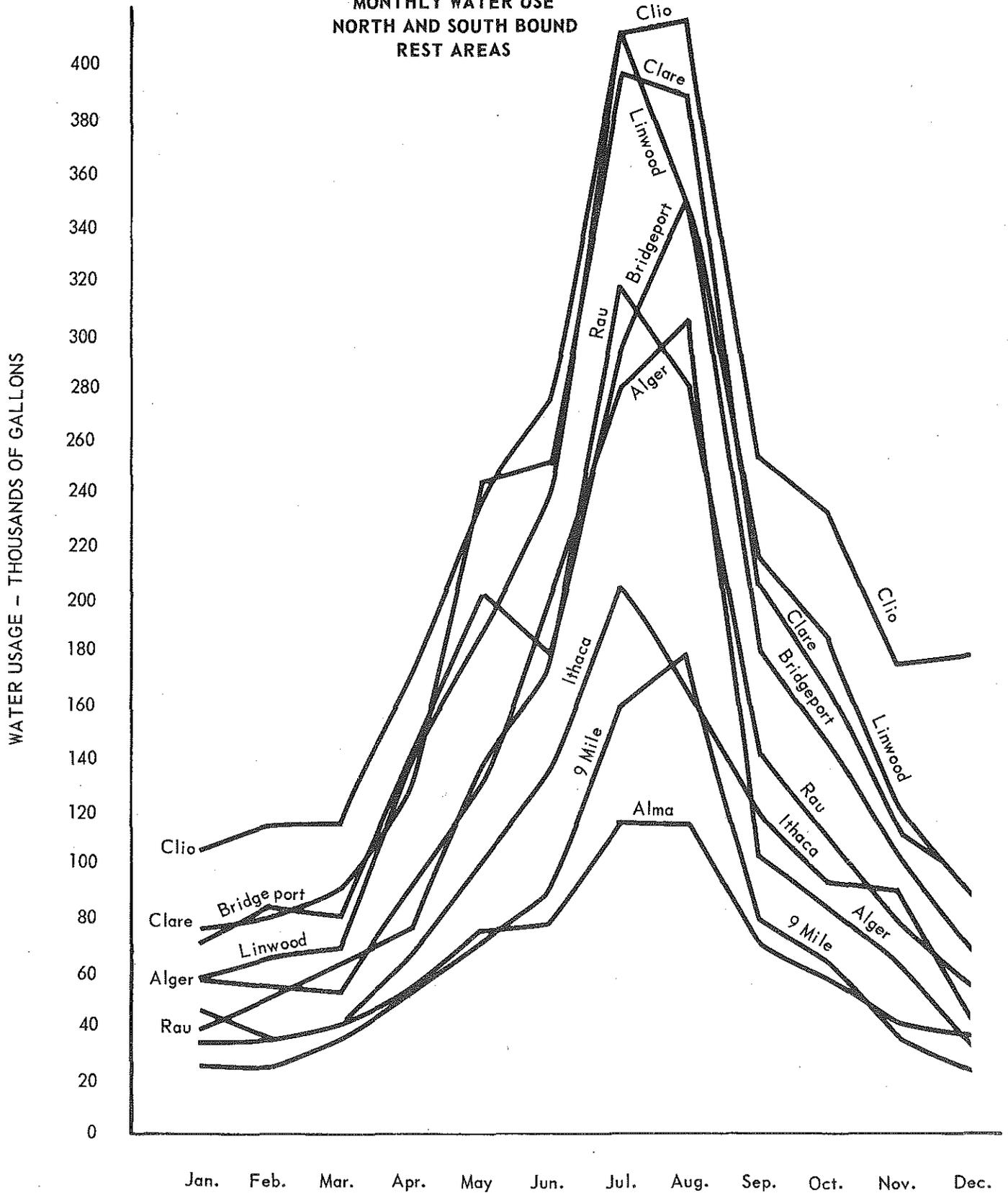


FIGURE 16

MONTHLY WATER USE
NORTH AND SOUTH BOUND
REST AREAS



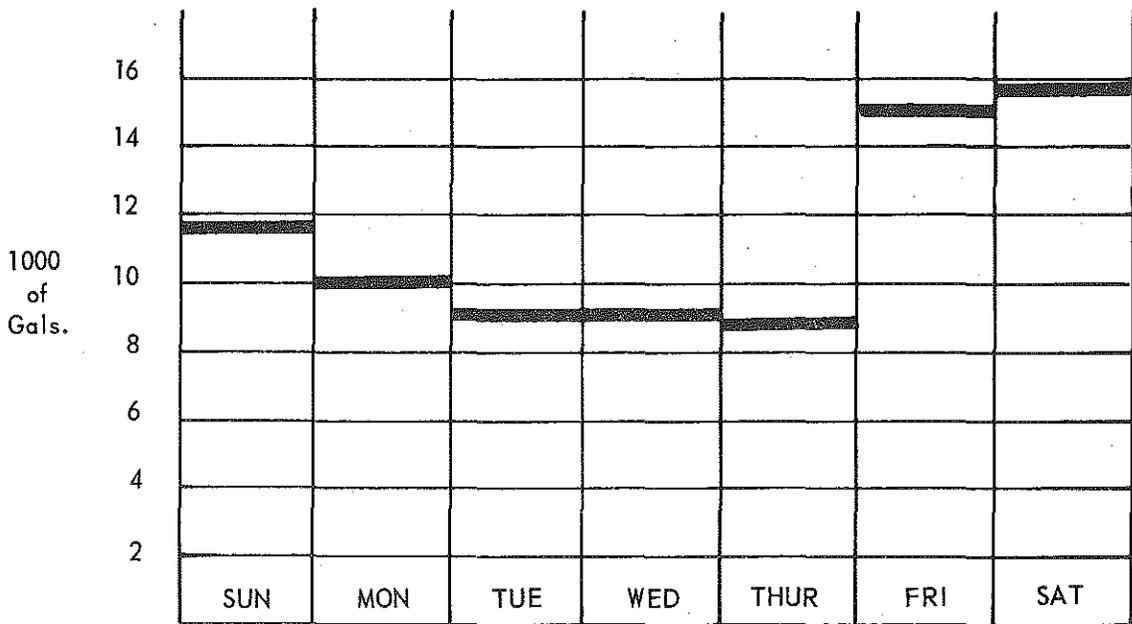
1976
FIGURE 17

**REST AREA WATER USAGE REPORT
BREAKDOWN BY DAY OF WEEK**

REST AREA Grayling NB

MONTH July

	SUN	MON	TUE	WED	THUR	FRI	SAT
100 Gals Water Used					110 (1)	26 (1)	214 (1)
	91 (1)	85	93	100	87	60	141
	101	98	83	82	79	162	192
	118	100	97	84	89	201	143
	126	119	92	91	98	177	
Total Gals	345	402	365	357	353	600	476
Avg. Gals	115	100	91	89	88	150	158



(1) NOT USED BECAUSE OF THE INFLUENCE OF THE HOLIDAY WEEKEND

FIGURE 18

**REST AREA VISITOR ESTIMATE
EXPRESSED AS TOTAL
NUMBER PER HOUR**

REST AREA Grayling (NB)
PERIOD July 1976

	SUN	MON	TUE	WED	THUR	FRI	SAT
12-1	48	43	38	37	37	62	132
1-2	48	43	38	37	37	62	132
2-3	48	43	38	37	37	62	132
3-4	48	43	38	37	37	62	132
4-5	48	43	38	37	37	62	132
5-6	48	43	38	37	37	62	132
6-7	48	43	38	37	37	62	198
7-8	96	86	76	74	74	124	198
8-9	192	172	152	148	148	186	396
9-10	288	258	228	222	222	186	528
10-11	480	433	380	370	370	372	660
11-12	624	568	494	481	481	434	660
12-1	576	519	456	444	444	434	528
1-2	480	433	380	370	370	434	528
2-3	432	390	342	333	333	434	396
3-4	384	433	302	296	296	434	396
4-5	240	215	190	185	185	372	396
5-6	192	172	152	148	148	372	264
6-7	96	86	76	74	74	372	132
7-8	96	86	76	74	74	372	132
8-9	96	86	76	74	74	372	132
9-10	96	86	76	74	74	310	132
10-11	48	43	38	37	37	310	66
11-12	48	43	38	37	37	248	66
TOTALS	4800	4410	3798	3700	3700	6200	6600

HOURS OF 'DAY

FIGURE 19

Overtime pay might be acceptable if the man was in a janitorial position but overtime at the equipment operator's pay is rather costly for the work they are doing.

Conclusion

In past years discussion with the people at the county level responsible for rest area maintenance has lacked concrete evidence of staffing needs. With the information now available, there is a strong case for breaking union traditions and adjusting work weeks to the individual rest area needs.

Some specific action has been taken and several other possibilities will be investigated to circumvent the problem. They are as follows:

1. In direct maintenance areas we are hiring new employees in special positions with the understanding that they work weekends so overtime is not paid to them for weekend work.
2. Joint meetings have been held in some counties with management and employees who can speak for the union so they fully understand the problem.
3. Once again we are looking into the possibility of contract maintenance at some rest areas and we also are giving some consideration to older couples as opposed to a janitorial firm.
4. We will be asking counties for more seasonals, temporary, and part time employees so the labor hours can more closely blend with the rest area maintenance requirements.

REST AREA ATTENDANT TRAINING

Rest area maintenance is totally unlike anything else in highway maintenance business. When a new rest area is thrust upon a foreman who has never had one before, he not only normally does not have a trained man to put in the rest area, but he doesn't have the knowledge to train one. As simple as it might seem, the maintenance of a modern rest area building, if done properly, takes some training.

Second to the lack of knowledge, a primary reason for poor maintenance is lack of interest. Many of the rest area attendants are hired for highway maintenance and they are not interested in working in a rest area. The lack of interest is not limited to just the attendant. There are many foremen who have no interest in rest area maintenance.

There is no intention of covering the many aspects of routine maintenance in this report except to acknowledge the problem and to state that we feel that it is of such importance that we are making a concentrated two-fold effort to correct the problem.

First, a Rest Area Maintenance Manual is being drafted which will give thorough instructions for each maintenance operation, both in the building and on the grounds of the rest area. The manual will be largely pictorial and is being written specifically for the attendant.

The second change that is being initiated is combination training and inspection effort at the district level. As it stands now, there are many people

from the county, district and Lansing levels that have responsibilities in the rest areas. With this division of responsibility there is no one person who has complete knowledge of the total rest area system and, therefore, no one who feels totally obligated to make sure the areas are properly run.

Under the proposed new system, the rest area attendant will continue to be assigned directly by the county and will be under the county maintenance foreman. The district rest area inspector-trainer will be responsible for training new attendants and bringing other attendants up to date on new procedures. In addition, the inspector-trainer will transport specialized equipment, such as litter vacuums and floor scrubbers from one rest area to another as they are needed.

The rest area inspector-trainer will be responsible for fixing all malfunctioning equipment such as door closers and flush valves, or in the case of more complicated equipment, an inspector-trainer will bring the problem to the attention of the proper organization.

In addition, while on the routine inspection trips the inspector-trainer will do all the necessary testing such as chemical and bacteriological testing of the sewage systems as required by the Water Resources Commission, and managing of the water treatment system, such as testing for chlorine content as required by the Michigan Department of Public Health.

Also included will be routine switching of lagoons and drain fields, ordering special supplies, and new parts; and keeping water use records.

Conclusion

Rest area attendant training and maintenance inspectors are considered to be the key to a higher standard of rest area maintenance. These programs are being initiated immediately and should be in full operation for the 1977 tourist season.