Parking Management in Downtown Norfolk

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A study was conducted in Norfolk, Virginia, in response to a significant loss of downtown retailing to suburban areas caused in part by congested downtown traffic and inadequate short-term parking. The study focused on parking and consisted of an assessment of the existing parking conditions in downtown Norfolk, establishment of new parking strategies, and monitoring of the results of the implementation of these strategies. The assessment of the existing parking system indicated that short-term parking was inadequate to satisfy the existing and future demands. Therefore, the overall parking strategy along the major routes of downtown was changed, and a restricted parking program was established. The program implemented 1-hr free parking in the retail area and metered parking in the financial district. Moreover, transit bus operations went through a dramatic change, and the bus company restructured its downtown routes. The implementation of the new program began in January 1992 and was completed in 1 month. The usage of the parking spaces has been continuously monitored since then. A gradual increase in parking turnover and a decrease in parking duration have been observed. Strict enforcement was established to reduce the negative impacts of illegally parked vehicles. A downtown advisory committee composed of city and business representatives was established to regularly discuss the parking issues. The impact of the new program on parking usage is discussed in detail.

Downtown Norfolk, Virginia, has gone through a tremendous improvement process during the last two decades. Modern traffic arterials were constructed, entertainment and cultural centers were built, hotels were added, and a new financial and business district of high-rise office buildings was formed. While these activities were taking place, loss of downtown retailing to the suburbs continued during the last decade. One of the city's planning goals for downtown Norfolk for 2000 is to expand the depth and variety of downtown retail activities. The city therefore has intensified its efforts to reactivate retailing. The availability of short-term, on-street parking is one of the key issues to achieve this goal. The objective of this study was to assess the existing on-street parking conditions in the downtown area and to evaluate strategies for increasing its capacity.

STUDY AREA

Downtown Norfolk covers an area of about 1.5 million m^2 of land use as shown in Figure 1. This study is focused on the core area highlighted in the figure. Office and retail space total 330 000 m^2 and 81 400 m^2, respectively.

The area houses approximately 26,700 employees. The area to the south of City Hall Avenue, which runs east-west and divides downtown into approximately equal portions, is generally referred to as the financial district. It primarily houses the major office buildings. The rest of downtown is referred to as the northern district and is composed primarily of retailers and restaurants.

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ASSESSMENT OF EXISTING CONDITIONS

This part of the study includes an extensive survey of the existing conditions in terms of land use, on-street and off-street parking inventories, and traffic circulation, with particular emphasis on transit bus operation.

Land Use Survey

On the basis of surveys conducted in 1991, the total retail space in downtown is 81 400 m^2. Total office space covers an area of 330 000 m^2. The distribution of office space by streets is given in Table 1. In downtown Norfolk, approximately 40 percent of the retail space is vacant. According to the same survey, 88 percent of this vacant space is along one of the major north-south corridors, Granby Street. Along the corridor, 60 percent of the retail space is vacant.

Parking Survey

There were a total of 116 available on-street parking spaces. These spaces were composed of 1-hr free parking, metered parking, and handicapped parking. Most of the 1-hr parking spaces were on Granby Street. In addition, 184 loading spaces were available, and 47 percent of them were located along Granby Street. The demand for on-street parking to support the occupied retail space exceeds the supply. Table 2 demonstrates the on-street parking demand/supply ratio for some of the major streets. This finding is based on an industry standard of 4 spaces per 1,000 ft^2 of retail space, which is confirmed by observation in the area.

Off-street parking accounts for about 99 percent of the total parking in downtown. The available off-street parking is shown in Table 3. The supply of off-street parking (lots and garages) exceeds the demand. The finding is based on an industry standard of 3 spaces per 1,000 ft^2 of office space.

Traffic Circulation/Transit Survey

The survey analyzed the existing street pattern in the downtown area and the operation of the transit service. Because of the limited right-of-way, some of the side streets in the downtown area have been designated as one-way streets. This configuration sometimes confuses motorists unfamiliar with the area and is viewed as having

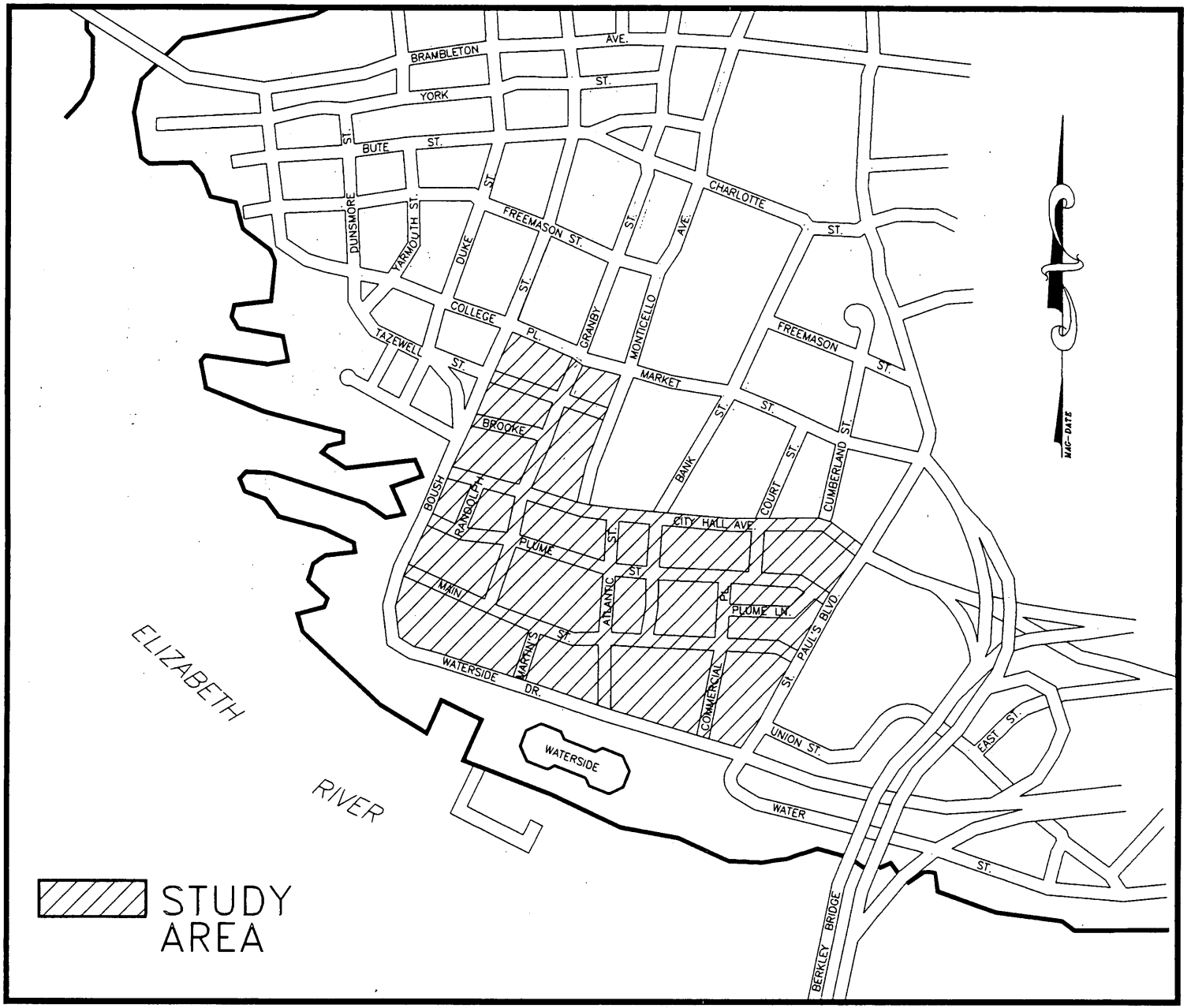

FIGURE 1 Downtown Norfolk.

TABLE 1 Downtown Norfolk: Land Use (Before) (m^2)

	Retail		Office	
Street	Floor Area	Percent	Floor Area	Percent
Granby St	51708	63.53	75528	22.90
Main St	8510	10.46	26198	7.94
Waterside Dr	6187	7.60	39947	12.11
Monticello Av	4311	5.30	23411	7.10
Freemason St	2406	2.96	279	0.08
Brooke Av	1858	2.28	344	0.10
Atlantic St	1839	2.26	418	0.13
Boush St	1301	1.60	17001	5.15
College St	948	1.16	864	0.26
Plume St	743	0.91	20122	6.10
York St	715	0.88	6410	1.94
Duke St	530	0.65		
Charlotte St	334	0.41		
City Hall Av			2833	0.86
Commercial Pl			69183	20.98
Plume La			11046	3.35
St Paul Blvd			34206	10.37
Tazewell St			2025	0.61
Total	81390		329814	

Total Vacant Retail Space: 35047 sq meters (43%)
Granby Street Vacant Retail Space: 30858 sq meters (88%)
Percentage of Vacant Retail Space on Granby Street: 60%

a negative impact on the area's overall development. Careful study of the operation of these streets indicated that converting these streets from a one-way pattern to two-way pattern would help improve the traffic circulation. The change would have no negative impact on the parking pattern.

The survey of the transit service indicated that Monticello Avenue, which parallels Granby Street, was the most heavily used public transportation corridor (Table 4). About 40 percent of the downtown transit passengers used this corridor, whereas the corresponding percentage for Granby Street was only 7.4 percent.

License Plate Survey

To evaluate the usage of the existing parking spaces, a license plate survey was conducted. The survey indicated that the majority of loading zones were used by all-day parkers. The parking spaces in the financial district showed a higher turnover rate than those in the northern district. The overall results of the survey are summarized in Figure 2. Although Granby Street has the highest available retail space, it also had the highest demand for parking. The corridor was not as heavily used by transit as the other major corridors. The existing on-street parking was not efficiently used. Granby Street had a 36-ft curb-to-curb width, and parking was permitted along its west side. The east side of the street was used for overnight merchandise loading and unloading, and parking on this side was restricted during the daytime. Granby Street, which once was one of the city's most attractive shopping districts, lost its importance to suburban retailers during the 1980s and has been going through difficult times since.

DECISIONS AND IMPLEMENTATIONS

In light of these survey results, the following decisions were made to improve on-street parking conditions in the downtown area:

1. After consultation with the transit operators, it was decided to remove bus service from Granby Street corridor and to make Monticello Avenue the major north-south transit corridor. This arrangement provided more space on Granby Street for additional parking. As a result, transit operators reevaluated the downtown transit operation and created a circular pattern within the downtown area.
2. On-street parking on both sides of the Granby Street corridor, with loading zones of one- or two-car capacity at each block, was established. Transit buses were the only large vehicles using the corridor. The removal of the transit service provided more areas where parking would be provided on both sides of the street. Currently, about 95 percent of the traffic is composed of passenger cars.
3. Loading zones were converted into regular parking zones as much as possible. Because the survey results revealed that most of the loading zones were being used by long-time parkers, it was decided to establish loading zones of one- or two-car capacity at each block and convert the rest of the loading zones into regular parking zones. Loading zones were established according to the location and type of businesses and their needs.

TABLE 2 Downtown Norfolk On-Street Parking: Demand/Supply 1991

	Supply				Demand	Percent
Street	1-hr	MP	HC	Total		
Granby St	27	14	0	41	50	1.21
Freemason St	4	0	0	4	9	2.25
College Pl	0	0	0	0	8	
Tazewell St	0	0	0	0	6	
City Hall Av	0	6	0	6	9	1.50
Plume St	0	22	2	24	31	1.29
Main St	0	19	2	21	15	0.71
Plume La	0	5	0	5	13	2.60
Commercial Pl	0	5	1	6	10	1.66
Atlantic St	0	5	0	5		
Total	31	76	5	112	151	1.35

Total Number of Loading Spaces: 184
Loading Spaces on Granby Street: 86 (47%)

1-hr = 1-Hour Parking
MP = Meter Parking
HC = Handicapped Parking

*Does not Include All Downtown Streets

TABLE 3 Downtown Norfolk Off-Street Parking: 1991

	Public		Private	
	Spaces	Percent	Spaces	Percent
Lots	2847	35	337	11
Garages	5236	65	2692	89
Total	8083		3029	

Total Off-Street Supply: 11,112 spaces

TABLE 4 Downtown Norfolk Transit Bus Passenger Loading

	Passenger			
Corridor	ON	OFF	Total	Percentage
BOUSH				
City Hall-York	91	2	93	1.10
GRANBY				
City Hall-Bute	91	538	629	7.43
Bute-Plume	32	35	97	0.79
MONTICELLO	2319	1495	3814	45.00
ST PAUL'S				
City Hall-Bramb	335	717	1052	12.42
Bramb-Waterside	288	313	601	7.10
Downtown Plaza	280	132	412	4.87
CITY HALL				
Boush-Montc	57	59	116	1.37
Montc-St Paul's	105	50	155	3.63
PLUME				
Waterside-Atlantic	25	71	96	1.13
Atlantic-St Paul's	100	207	307	3.63
MAIN				
Waterside-Atlantic	123	291	414	4.89
Atlantic-St. Paul's	94	83	177	2.09
ATLANTIC	20	18	38	0.45
WATERSIDE	76	74	150	1.77
UNION	225	122	347	4.10

4. Parking spaces were rearranged to increase their number. Most of the parking spaces originally were not painted. With the implementation of the program, each parking space was painted by using the "paired parking" layout. In this layout, parking stalls are marked so that two vehicles park bumper to bumper and pairs of stalls are separated by maneuver areas. This arrangement provided more parking spaces than the regular parking layout.

5. A metered parking zone was established in the financial district, and the rest of the area was posted for 1-hr free parking. This measure was taken to improve the turnover in the financial district and to provide free and convenient customer parking for the retailers.

6. Handicapped zones were kept as they were. Handicapped zones are established through a petition process. A check of the status of the existing handicapped zones indicated that no changes were necessary.

STUDY RESULTS

The parking situations on major corridors were monitored monthly for the first 4 months after implementation of the parking strategies. The surveys are now periodically repeated during the noon peak hours for a 3½-hr period. The survey results, in terms of parked cars, average parking duration, and daily turnover, are presented in Table 5 and Figures 3 through 5.

The results of these surveys indicate a gradual improvement in overall parking conditions:

1. The total on-street parking spaces increased from 116 to 287 (see Table 6). This number was not only sufficient to satisfy the de-

TABLE 5 Parking Surveys: Before and After

Street	Spaces Available	No. of Different Cars Parked	Daily Turnover Veh/Day/Space	Average Duration Min/Veh/Space
Granby Street(1-hr Free Parking Zone)				
Before	104	253	2.43	48.6
February, 92	98	317	3.23	35.2
March, 92	98	314	3.20	39.9
April, 92	98	316	3.22	35.1
May, 92	98	347	3.54	37.3
April, 93	118	357	3.03	44.0
Main Street(Meter Zone)				
Before	32	126	3.94	46.7
February, 92	42	206	4.90	46.6
March, 92	42	168	4.00	48.9
April, 92	42	200	4.76	52.5
May, 92	42	204	4.86	48.8
April, 93	45	216	4.80	46.0

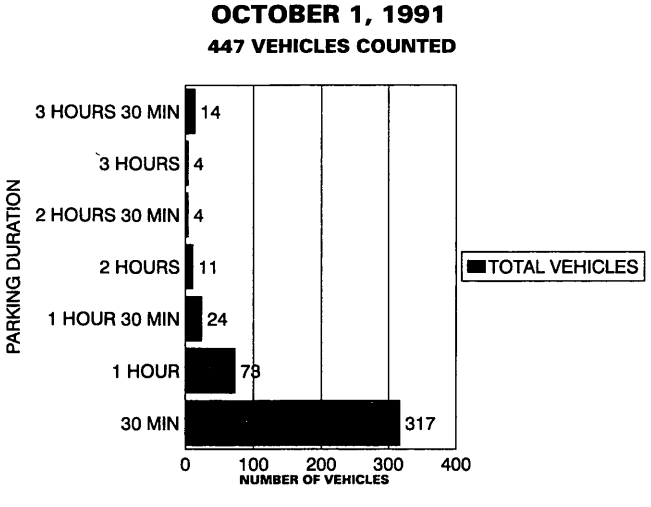

FIGURE 2 Downtown parking usage (before).

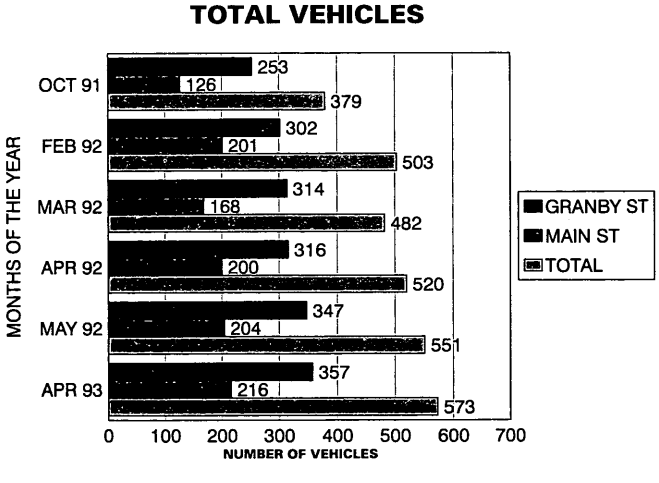

FIGURE 3 Downtown parking study (before and after).

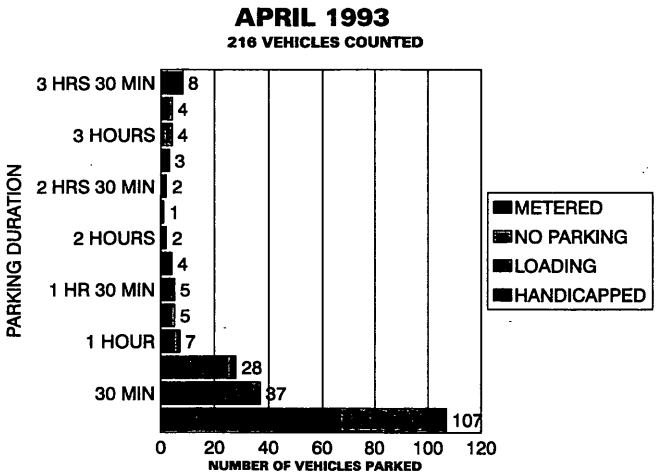

FIGURE 4 Main Street parking usage (before).

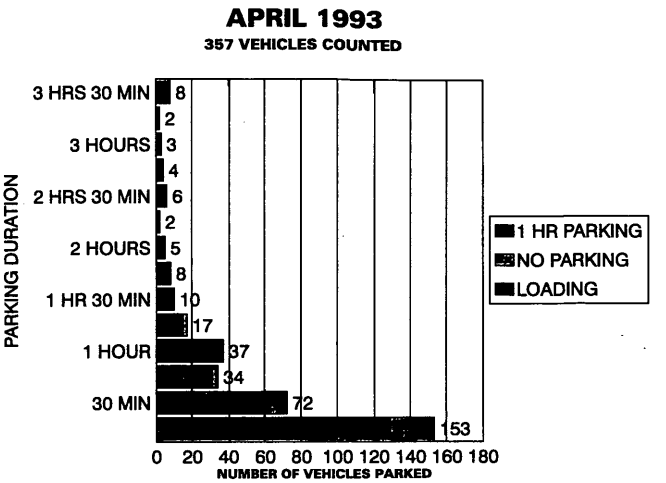

FIGURE 5 Granby Street parking usage (after).

mand for the core area, but it also provided additional spaces for the rest of the downtown area.

2. The number of parked cars has been gradually increasing. This is partially because of the ongoing modification of the parking pattern. More efficient usage of the parking spaces is also a contributing factor.

3. In general, parking turnover is higher than it was before. An increase of 25 percent in parking turnover has been observed in the northern district. Turnover increased 22 percent in the financial district. In particular, financial district (metered parking) surveys show a higher turnover than the free parking zone surveys.

4. Since the implementation of the program, a substantial decrease in parking duration has been observed. As much as 10 min of decrease in the parking duration has been observed along Granby Street.

5. Reports from the parking administration office show a gradual increase in parking meter revenues. Year-to-date revenues through April 1992 increased by $12,453 over the previous year.

PROJECT MONITORING

Effective enforcement is essential to the success of the program. The police department uses its parking enforcement squad to continuously monitor parking conditions. The department also works in close coordination with the city's Transportation Division and Parking Administration.

A downtown parking advisory committee has been established since the implementation of the new parking program. The committee is composed of downtown merchants and appropriate city staff. The primary goal of the committee is to ensure that lines of communication are maintained between the area businesses and the city relative to downtown parking. It is advisory in nature and monitors the status, use of, and policies for on- and off-street parking facilities. The committee is also charged with providing regular status reports to the city council. Overall, the new parking program has been operating successfully and getting very favorable reviews from area businesses.

There is significant new development under way along the Granby Street corridor. As a result, surveys along the corridor were halted until the new construction is complete. An annex to City Hall will be in full operation in 1995. One of the area community colleges will open its downtown campus by the end of 1994. With these new developments and the new parking plan, it is expected that the retail business in the area will grow stronger. Once these new developments are in place, follow-up surveys will be conducted to evaluate any new strategies warranted by the new land use characteristics.

TABLE 6 Parking Implementation Results

	Before				After			
Street	1-hr	MP	LZ	HC	1-hr	MP	LZ	HC
Northern District								
Granby St	27	-	77	-	80	-	18	-
City Hall Av	-	6	3	-	-	6	3	-
Brooke Av	-	-	14	-	19	-	2	4
Tazewell St	-	-	10	-	21	-	2	-
College Pl	-	-	5	-	6	-	5	-
Freemason St	4	-	9	-	15	-	1	-
Market St	-	-	5	-	8	-	-	-
Subtotal	31	6	123	-	149	6	31	4
Financial District								
Main St	-	19	11	2	-	40	-	2
Plume St	-	22	10	2	-	26	6	2
Plume La	-	5	7	-	-	19	7	-
Granby St	-	14	9	-	-	20	3	-
Randolph St	-	3	3	-	-	7	-	-
Commercial St	-	5	9	1	-	5	9	1
Bank St	-	-	8	-	-	-	8	-
Court St	-	-	1	-	-	-	1	-
Atlantic St	-	6	3	-	-	6	3	-
Subtotal	-	74	61	5	-	123	37	5
Total	31	80	184	5	149	129	68	9

1-hr = 1-Hour Parking
MP = Meter Parking
LZ = Loading Zone
HC = Handicapped Parking
- = None Existed

Publication of this paper sponsored by Committee on Transportation System Management.