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VALIDATION OF THE INCREMENTAL TRANFER MODEL

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Abstract

This report documents our validation effort on the Incremental Transfer (IT) model, which is a macroscopic traffic flow model capable of handling freeway systems with special lanes and priority vehicles. The validation study is performed with field data from a 1.7-mile long freeway segment with a congested off-ramp in Oakland, California. In our study, vehicles exiting the off-ramp of this segment are treated as "regular vehicles" and through vehicles as "special vehicles." By assuming that the exiting or "regular" vehicles must stay on the "near" side lanes, we examine the spatial evolution of separate versus coalesced queues developed in the region resulting from a capacity reduction on the exit ramp. The observed queuing pattern is then compared with that predicted by the IT model.

Qualitatively, the IT model yields a queuing pattern similar to the one observed in the field data. The model predicts the separate versus coalesced queues in a way that no other macroscopic traffic flow models can do. However, the predictions of the exact queue location are not accurate. The errors may be caused by the lack of sufficient input information required by the model and the difference between the unique traffic characteristics of the test site and model assumptions.

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1. BACKGROUND

Freeway systems with special lanes and priority vehicles (e.g., HOV lanes) are conventionally modeled with microscopic models. Microscopic models treat each vehicle as a single entity. The lane changing behavior in these models is governed by car-following theory and gap acceptance functions. Recently, a simple macroscopic traffic flow model, the incremental transfer (IT) model, was developed by Daganzo *et al* (1997). The IT model is capable of handling traffic on freeways with vehicles moving between two sets of lanes, special lanes and regular lanes. It is especially powerful in capturing the temporal and spatial development of separate and coalesced queues on these two sets of lanes.

The IT model is an extension of the cell transmission model (Daganzo, 1994, 1995) in which the classic partial differential hydrodynamic equations are approximated by a set of difference equations. The theoretical foundation for the IT model is the work by Daganzo (1997) which treated freeway systems with special lanes and priority vehicles by the Godunov finite difference approximation method. The mathematical equivalency between the flows yielded by the IT model and the solution from the finite difference approximation method was established in Daganzo *et al* (1997).

The IT model can be applied to a wide range of scenarios that involve inhomogeneous vehicles and roads. Some of the typical scenarios include conventional freeway systems with HOV lanes and regular lanes. The model can also be utilized to study the queue phenomena at a diverge junction resulting from a capacity reduction in one of the diverge branches. Furthermore, the model can be used to describe the queuing behavior on hybrid highway systems, such as the one under the Automated Highway System scenarios with segregated or unsegregated automated lanes.

The objective of this report is to document our validation effort on the IT model. The focus of validation is to examine the extent to which the queuing pattern observed in the field is captured by the model. Specifically, we look for evidence of separate and

coalesced queues on a freeway system with two sets of lanes and two types of vehicles, and quantify the extents of queuing development over time and space.

The remainder of the report is organized into five sections. Section 2 introduces terminology, assumptions, and the basic features of the model. Section 3 discusses the methodology of our validation approach. Sections **4** and 5 describe the data acquisition and reduction process. Section ***6*** describes the results of model validation. Section 7 summarizes the findings from our validation work.

2. THE INCREMENTAL TRANSFER MODEL

This section gives a brief description of the IT model. We start with introducing terminology and notation. We then discuss the assumptions and the rules defined in the model that determine the flow from one segment to another.

2.1 Terminology and notation

As in the cell transmission model, a freeway segment in the IT model is partitioned into cells. Fig. 1 shows a schematic representation of a freeway segment and its cell representation (shown by two cells, cell **i** and cell $i+1$). In each cell, there are two sets of lanes, a set of special lanes and a set of regular lanes, with each set characterized by its own capacity and jam density. On this freeway segment, there are two types of vehicles, priority vehicles and regular vehicles. Priority vehicles are allowed to travel on both lane sets, whereas regular vehicles can travel only on the regular lane. The IT model further assumes that priority vehicles tend to stay on the fast traveling lanes. The resulting steady state traffic state can be classified into "one pipe" or "two pipe," defined as follows:

> **One pipe state** Traffic state in a cell is considered to be in one pipe state if speeds on both special and regular lanes are identical.
>
> **Two pipe state** Traffic state in a cell is considered to be in two pipe state if the speed on priority lanes is lower than that on regular lanes.

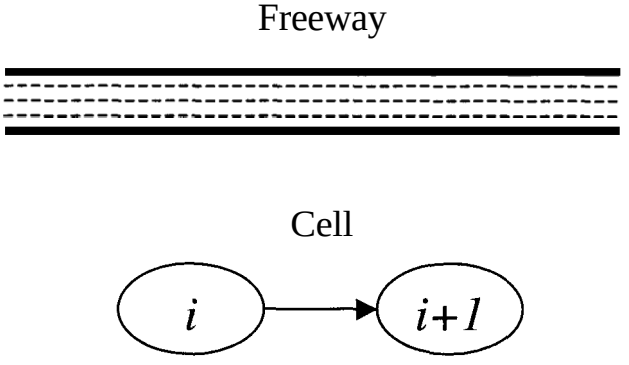


Figure 1: A freeway segment and its cell representation

In the one pipe state, some priority vehicles may coexist with regular vehicles on regular lanes, whereas in the two pipe state, regular and priority vehicles are strictly separated with each of them staying on their own designated lane set.

Consider the two cells in Fig. 1. The following is a set of symbols used to describe how vehicles advance from cell i to $i+1$. Note that symbols below are all cell specific.

$R_{T,i+1}$ = The total amount of vehicle flow that can be admitted into cell $i+1$.

R_{i+1} = The amount of special vehicle flow that can be admitted into cell $i+1$.

r_{i+1} = The amount of regular vehicle flow that can be admitted into cell $i+1$.

$S_{T,i}$ = The total amount of vehicle flow that can be sent from cell i.

S_i = The amount of special vehicle flow that can be sent from cell i.

s_i = The amount of regular vehicle flow that can be sent from cell i.

K_i = Vehicle density for special vehicles in cell i.

k_i = Vehicle density on regular vehicles in cell i.

Q_i = Actual amount of special vehicle flow sent from cell i.

q_i = Actual amount of regular vehicle flow sent from cell i.

M_i = Vehicle capacity for the special lanes.

m_i = Vehicle capacity for the regular lanes.

In the IT model, speed is not an explicit state variable. Speed, however, can be determined by traffic density. Thus, whether the traffic state is in one pipe or two pipe can be essentially distinguished with density alone. When $\frac{K}{k} > \frac{M}{m}$, traffic is in one-pipe state. When $\frac{K}{k} < \frac{M}{m}$, traffic is in two-pipe state.

2.2 The IT Model

The vehicle advancement in the IT model is governed by a set of rules summarized herein. For the freeway segment described in Fig. 1, flow moving from cell i to cell $i+1$ can be determined in two steps.

Step 1 determination of potential sending and receiving flow for cells i and $i+1$

If cell i is in the one pipe state, i.e., $\frac{K}{k} > \frac{M}{m}$, then the sending and receiving flows are determined. For simplicity, the subscript i for every symbol in this step is omitted.

$$(S, s) = S_T(K+k)\frac{(K,k)}{K+k}$$

$$(R, r) = R_T(K+k)\frac{(M,m)}{M+m}$$

If cell i is in the two pipe state, i.e., $\frac{K}{k} < \frac{M}{m}$ then

$$(S, s) = (S(K), s(k))$$

$$(R, r) = (R(K), r(k)).$$

When $\frac{K}{k} = \frac{M}{m}$, the two sets of equations would yield the same result.

Here $S_T()$, $S()$, and $s()$ are sending functions. $R_T()$, $R()$, and $r()$ are receiving functions. The sending and receiving functions for a specific cell are functions of the cell itself. They determine the maximum flows that can be sent from or received by a cell based on the traffic composition and roadway geometry of that cell. The exact form of these functions can be established by the assumed flow-density relationship, which can be calibrated with field data. For details, one can refer to Daganzo ***et*** *al* (1997).

Step 2 determination of actual flow

The actual flow sent from cell i to cell $i+1$ is determined by S_i, si, R_{i+1} and r_{i+1} computed in step 1. Thus once the receiving and sending flows for all cells are determined, one can easily derive the actual flows between any two adjacent cells using the following equations'.

If $\frac{S}{s} \le \frac{R}{r}$,

$$q = \min\{s, r\} \text{ and } Q = \min\{S, R\}$$

If $\frac{S}{s} > \frac{R}{r}$,

$$q = \min\left\{s, \left(\frac{R+r}{S+s}\right)s\right\} \text{ and } Q = \min\left\{S, \left(\frac{R+r}{S+s}\right)S\right\}$$

2.3 *Assumptions*

Like all other continuum traffic flow models, vehicles in the IT model are treated as fluids. The advancement of flow from one segment to another is governed by flow conservation rules, supplemented by an assumed flow-density relationship.

[1] All symbols related to the sending flows should have subscript i and all symbols related to receiving flows should have subscript $i+1$.

Here, we assume that the flow-density relationship for each lane set is a linear function with two waves. The two-wave flow-density relationship can be characterized by three of the four parameters --- free-flow speed, density, capacity, and wave speed, all shown in Fig. 2.

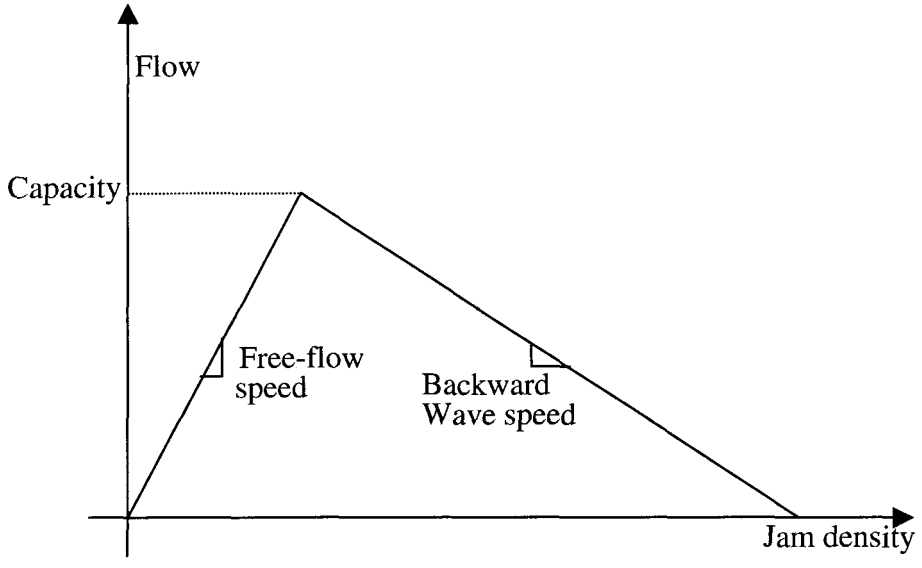


Figure 2: Assumed flow-density relationship

It is also assumed in the model that vehicles will fully comply with the rules for priority and regular vehicles. No regular vehicles will stay on special lanes. In steady state, priority vehicles, which can freely move from one set of lanes to the other, will always travel on the lane set with higher speed. Any vehicles that are required to change lanes by the lane-changing rules will make the change. There is no stochastic effect assumed for the driving behavior of individual drivers.

3. VALIDATION APPROACH

This section describes the scenario for validation, the requirements for site selection, and the inputs and outputs.

3.1 Scenario for Validation

We consider a scenario similar to the example given in Daganzo (1997), a freeway segment with a congested off-ramp where congestion is caused by a reduction in capacity downstream of the off-ramp. For this freeway segment, we consider two traffic streams, one for through vehicles and the other for exiting vehicles. The lanes with only through vehicles are considered as "special" lanes, and all other lanes are considered "regular" lanes. Exit vehicles are treated as "regular" vehicles and through vehicles as "priority" vehicles. By assuming that the "regular" vehicles must stay on the near side lanes, or "regular" lanes, we compare the queuing pattern (i.e., the spatial evolution of separate versus coalesced queues) which occurs in this situation with that predicted by the IT model.

The relationship between demand and capacity in the scenario is time varying. We search data sets with the following characteristics. Initially, the demand of the priority vehicles exceeds the capacity of the special lanes but the total demand, including both priority and regular vehicles, falls below the total capacity. At some point in time, the downstream capacity of the regular lane is reduced to the level below the existing demand for regular vehicles. Consequently, a queue should develop in the upstream direction. The question remaining for validation is how the queue propagates.

For this scenario, the conventional model would predict that at a diverge junction when the flow to one of the branches is reduced, the flow to the other one will simultaneously be reduced as well. The IT model, however, predicts that before capacity collapses, the section upstream the diverge junction should be in the one pipe state. As the off-ramp capacity drops, a queue should build up at the ramp area, propagating in the upstream direction on the lane sets near the off-ramp. This will lead to a two pipe traffic state in the area near the off-ramp. The queue further upstream, however, will coalesce, yielding a one pipe congested state. Moreover, the two pipe region near the junction is not static. It could expand further upstream at a given speed if the demand to exit the off-ramp remains higher than the reduced capacity.

Freeways with this type of traffic pattern can be observed frequently. Unfortunately, very few locations exhibiting this type of traffic pattern are actually instrumented with loop detectors that produce useful data appropriate for validating the IT model.

3.2 Site Selection

To validate the scenario described above, we require that the site used in the validation process contain the following characteristics:

- The site should be a "straight pipe" section with a single active off-ramp that is typically congested during some time of day.
- The site should have only two traffic streams, one for through vehicles and the other for exiting vehicles.
- The site should have a single entrance. The ratio of the through and exiting traffic streams should be distinguishable at the entrance.
- The site should be instrumented with closely spaced loop detectors, preferably less than 1/2 mile apart. The data sampling interval should be less than 5 seconds.

The first three criteria are the geometry requirements for the site that is suitable for validation. The last one is related to the data resolution requirement. If detectors are far apart, one may not be able to observe the type of transient behavior we would like to capture. Likewise, if the sampling interval is very long, the transient behavior might be smoothed out and thus unobservable.

3.3 Input and Output

The input data consist of three parts, the traffic demands, the roadway geometry, and the time-varying capacity constraint for the off-ramp.

The demand data are flows entering the segment from the upstream and the ratio of special and regular vehicles. The roadway geometry data include the capacity, jam density, wave speed, and free-flow speed. The flow-density relationship shown in Fig. 2 needs to be calibrated with these day for the entire section. The ramp capacity constraint for the off-ramp is time-varying. In the absence of congestion, the capacity will be estimated by the geometry of the ramp, independent of the traffic flow. When congestion occurs downstream of the ramp, the ramp capacity is then reduced. The amount of capacity reduction can be estimated by the flow leaving the off-ramp.

Outputs of the IT model required for model validation include counts and occupancies generated at various locations on the freeway segment. They will be compared with the field data obtained from the loop detectors at the same locations.

4. SITE DESCRIPTION

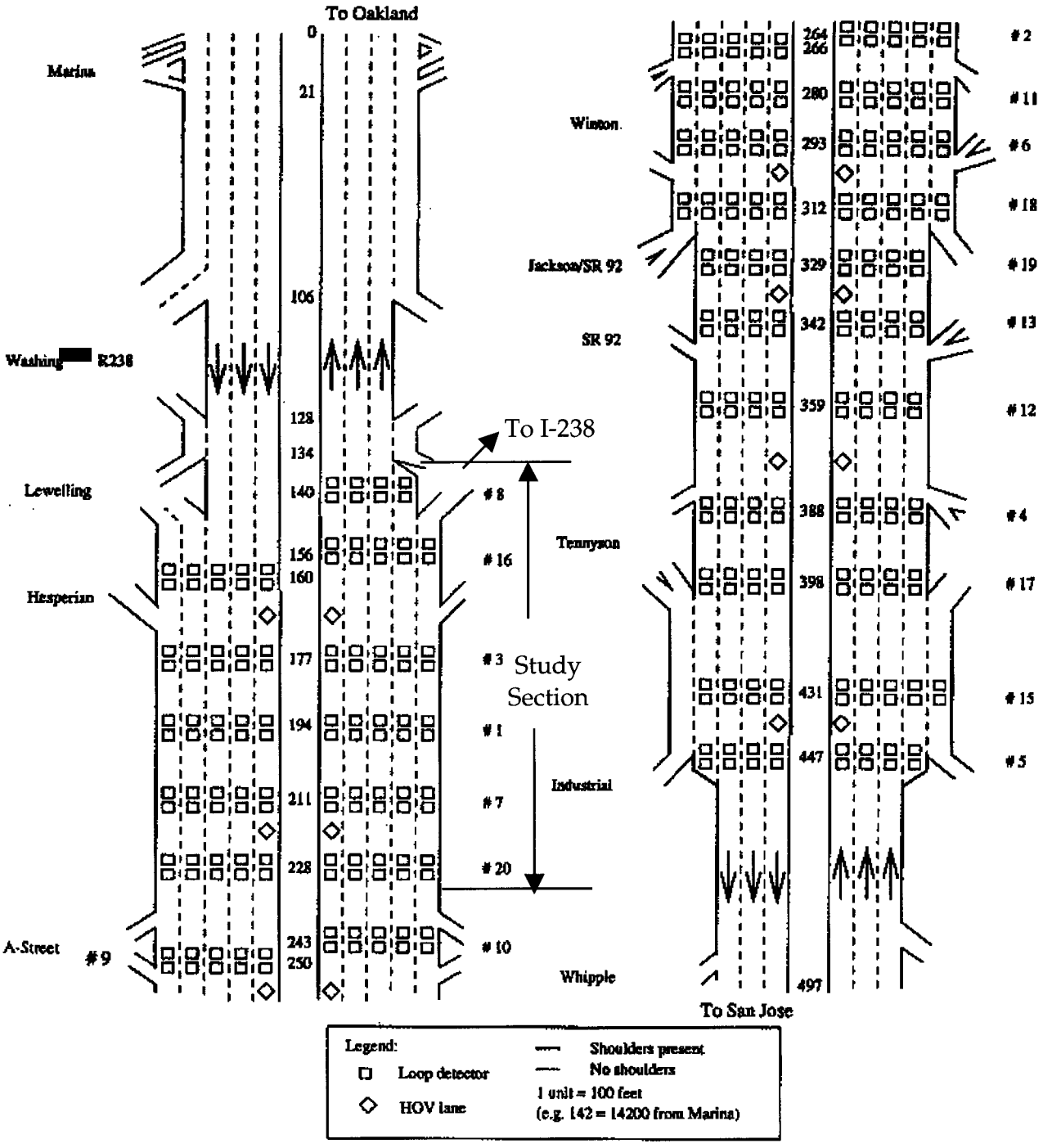
4.1 Location

The site considered was a 7-mile long freeway segment on Interstate 880, or the Nimitz Freeway, in Alameda County, California, between Alverado Niles Road and S/R 238. Interstate 880 is the primary route connecting San Jose and Oakland. A schematic representation of the site, including detector locations, is given in Fig. 3. Traffic data were collected for the Freeway Service Patrol (FSP) program (Skabardonis ***et al***, 1994) in 1993. For the purpose of our validation, we focus on a 1.7-mile segment from A Street to Lewelling Blvd, in the direction to Oakland as shown in the Figure.

4.2 Site Layout

As shown in Fig. 3, the freeway segment under study has up to five lanes. There are five lanes from Station 20 until Station 16. These lanes are numbered 1 to 5 from the median lane to the shoulder lane. Between Stations 16 and 8 the right lane exits, and there is also a lane drop. The median lane is reserved for High-Occupancy Vehicles (HOVs) from far

upstream of Station 20 to downstream of Station **8,** although single-occupancy vehicles have been observed to "sneak" into this lane before it reverts from a HOV lane to a general purpose lane. (This will be discussed further.)


To Oakland
Marina
Washington
R238
Lewelling
Hesperian
A-Street
#9
0
21
106
128
134
140
156
160
177
194
211
228
243
250
#8
#16
#3
#1
#7
#20
#10
To I-238
Study Section
Tennyson
Industrial
Whipple
Winton
Jackson/SR 92
SR 92
264
266
280
293
312
329
342
359
388
398
431
447
497
#2
#11
#6
#18
#19
#13
#12
#4
#17
#15
#5
To San Jose
Legend:
Loop detector
HOV lane
Shoulders present
No shoulders
1 unit = 100 feet
(e.g. 142 = 14200 from Marina)

Detectors, measuring speeds, vehicle counts, and occupancy (i.e., the percentage of time that the detector is occupied by vehicles) are located in all lanes every 1620 to 2150 feet. There are no on-ramps in the freeway segment; the nearest on-ramp is immediately upstream of Station 20. The off-ramp to Interstate 238 (I-238 leads to 1-580) has a detector (Station 8), whereas the off-ramp to Hesperian Blvd. (near Station 16) does not.

4.3 Typical Traffic Conditions

The off-ramp to Interstate 238 is extremely busy. Flow on this ramp is often restricted by congestion on I-238. This factor, and a very high demand of exiting vehicles, causes queues to regularly spill back onto Lane 5 of our study site.

With the exception of the HOV lane at Stations 20 to 16 (where there is little traffic), flow in the freeway segment is moderate to heavy throughout the afternoon peak period. Congestion during the morning peak period did not exhibit the characteristics we sought, and will not be described here.

There is a considerable amount of lane changing in the freeway segment, caused primarily by the exiting lane (Lane 5 at Station 8), the lane drop (Lane **4)** downstream of Station 8, and the reversion of Lane 1 from HOV to general purpose. This gives rise to very "noisy" data and complicates the validation somewhat.

In the majority of data sets analyzed, congestion was observed in the p.m. peak period at the off-ramp to I-238. This congestion was noted to move --- at varying speeds --- upstream past Station 20 in most cases, and at least up to Stations 7, 1 or 3 in other cases. In most cases it was also observed to coalesce over the non-HOV lanes (Lanes 2 to 5). The onset of congestion at the off-ramp of Station 8 usually occurred at a time before 2:00 p.m. and ended at around 3:45 p.m., and lasted between 1 to 3 hours.

5. DATA REDUCTION

5.1 Criteria for Selecting Data Sets

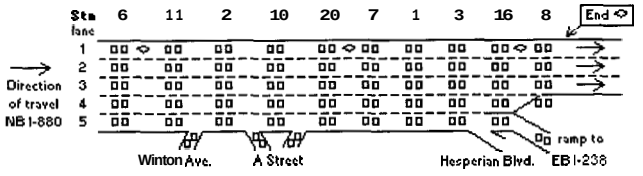
Two primary criteria were used in selecting appropriate data sets for the study: the completeness of the data, and characteristics of congestion. Although data errors can manifest themselves in many ways (see below), it was simple to remove some candidate data sets immediately; For example, data sets which were missing all of the data for any lane of a particular station in the segment were not considered.

Several spatial and temporal characteristics of congestion were sought. First it was important that congestion propagate upstream from only one of the two downstream branches (i.e., either the freeway or the off-ramp to I-238), as this was the case we were attempting to validate. Second, it was desirable for the congestion to proceed upstream at a relatively slow pace, so that the phenomenon of coalescence could be observed in greater detail. Third, the spatial extent of congestion should extend several stations upstream from the diverge, to observe its propagation, but would ideally not extend upstream of Station 20, so that true demands could be measured at that station throughout the time period analyzed.

5.2 Procedure

Initially, a cursory examination of the numerous candidate data sets was carried out to determine which ones should be considered in more detail. "Intensity plots'' of occupancies in each lane for each station were plotted using 2-minute time slices as shown in Fig. 4. The shading intensity in the plot is proportional to the occupancy level. These plots provided an overall (coarse) perspective of the propagation of congestion in time and space during the day in question, and facilitated the selection of data sets to be analyzed in detail. More examples are given in Appendix I.

2-Minute Occupancy Data Northbound I-880, 03/05/93, 14:16 - 15:34



Occupancy			Code
0	to	10	0
10	to	15	1
15	to	20	2
20	to	25	3
25	to	30	4
30	to	40	5
40	andup		6

Shade

Occupancy

Stn	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	8	9	1	4	1	1	8	7
	2	0	0	0	0	13	13	25	14	12	9
14:58:00	3	0	0	0	0	13	13	21	19	11	12
	4	0	0	0	0	15	13	17	20	4	0
	5	0	0	0	0	9	9	2	0	5	4	3	6	3	6
			0		0	0					
	1	0	0	0	0	6	5	6	1	1	1	2	1	3
	2	0	0	0	0	9	10	25	15	14	12
150000	3	0	0	0	0	10	10	10	18	18	17
	4	0	0	0	0	12	12	19	24	15	0
	5	0	0	0	0	8	7	23	44	39	43
			0		0	0					
	1	0	0	0	0	3	2	3	6	6	8
	2	0	0	0	0	8	8	1	3	1	6	1	2	1	1
150200	3	0	0	0	0	8	8	9	12	9	13
	4	0	0	0	0	9	9	8	32	7	0
	5	0	0	0	0	10	8	9	61	3	8	4	2
			0		0	0					
	1	0	0	0	0	3	3	4	5	8	9
	2	0	0	0	0	11	10	16	17	12	9
15:04:00	3	0	0	0	0	9	8	10	15	10	9
	4	0	0	0	0	11	10	10	19	12	0
	5	0	0	0	0	8	8	1	3	6	5	4	7	2	2
			0		0	0					
	1	0	0	0	0	4	4	4	5	5	6
	2	0	0	0	0	10	11	30	13	12	12
150600	3	0	0	0	0	9	9	11	12	11	9
	4	0	0	0	0	12	12	13	13	11	0
	5	0	0	0	0	12	11	39	47	41	41
			0		0	0					
	1	0	0	0	0	5	4	5	5	7	8
	2	0	0	0	0	13	14	27	20	14	9
150800	3	0	0	0	0	12	12	15	17	12	12
	4	0	0	0	0	13	12	18	20	5	0
	5	0	0	0	0	9	8	2	5	6	1	3	5	4	0
			0		0	0					
	1	0	0	0	0	4	5	6	8	6	7
	2	0	0	0	0	11	14	43	25	14	11
151000	3	0	0	0	0	12	14	19	20	13	13
	4	0	0	0	0	12	12	28	52	8	0
	5	0	0	0	0	12	12	47	64	49	44
			0		0	0					
	1	0	0	0	0	6	7	1	0	1	1	7	9
	2	0	0	0	0	13	18	41	23	15	11
151200	3	0	0	0	0	13	16	20	24	14	12
	4	0	0	0	0	13	13	21	28	6	0
	5	0	0	0	0	11	14	49	51	38	32
			0		0	0					
	1	0	0	0	0	7	9	9	1	0	1	0	9
	2	0	0	0	0	12	32	42	18	16	11
15:14:00	3	0	0	0	0	13	27	15	17	17	16
	4	0	0	0	0	11	16	23	25	13	0
	5	0	0	0	0	11	16	49	72	39	31
			0		0	0					
lane										

Shading

Stn	6	11	2	10	20	7	1	3	1	6	8
	1										
	2										
14:58:00	3											14:58:00
	4										
	5										
	1										
	2										
150000	3											15:00:00
	4										
	5										
	1										
	2										
150200	3											150200
	4										
	5										
	1										
	2										
15:04:00	3											15:04:00
	4										
	5										
	1										
	2										
150600	3											15:06:00
	4										
	5										
	1										
	2										
150800	3											15:08:00
	4										
	5										
	1										
	2										
151000	3											15:10:00
	4										
	5										
	1										
	2										
151200	3											15:12:00
	4										
	5										
	1										
	2										
15:14:00	3											15:14:00
	4										
	5										
lane											

Figure 3: Occupancy intensity plot

5.3 Selected Data Sets

Data were obtained from the Caltrans' Freeway Service Patrol **(FSP)** evaluation project in the San Francisco Bay Area (Skabardonis ***et*** *al*, 1994). The data from 03-03-93 and 03-05-93 were (more or less) complete, and most of these data described the characteristics that we were trying to investigate.

The 03-03-93 data indicate that congestion started in Lane ***5*** of Station 8, at approximately 3:44 p.m. It then propagated rather quickly upstream to Station 1, remaining contained to the right lane. Congestion then slowly proceeded upstream to Station **7,** while it coalesced across Lanes 2 to 5. Finally, congestion reached Station 20, where it lasted for approximately 1/2 hour.

The 03-05-93 data indicate that congestion started in Lane 5 of Station 8 quite early in the afternoon, at approximately 2:16 p.m. Congestion then propagated rather quickly upstream to Station 3, remaining contained to the right lane. It then took approximately 40 minutes for this congestion to propagate to the next upstream station (#1), where it coalesced across Lanes 2 through 5. At this point, congestion continued to propagate upstream across all non-HOV lanes, reaching Station 20 at approximately 3:38 p.m. Congestion remained at Station 20 for almost 2 hours, ending close to the same time it had two days prior.

5.4 Data Errors

Many sources of error were noted in the FSP data sets, including missing data, and erroneous data. On occasion, data sets had missing values for a particular station across all lanes for a single time increment **(2** minutes). This rather rare problem was easily resolved by simply averaging the values of the time increments immediately before and after the missing values. **A** more common and devastating error was an entire missing

data series (e.g., all lanes of Station 16 for the entire day, or Lane 4 of Station 16 for the p.m. peak period). Erroneous data resulted from both the inherent limitations of loop detectors, and the possibly improper calibration of detectors in the field. Many of the data sets from March 1993, for example, show that adjacent detector counts (for uncongested flow in the "straight-pipe" section) are routinely off by 3 to 10%. In addition, detector clocks are not coordinated precisely.

6. MODEL VALIDATION

6.1 Parameter Calibration

For the given scenario, the IT model is applied here through a simulation program that implements the rules defined in the model. This section discusses how the input data are prepared for the simulation program.

6.1.1 Roadway Geometry

In the IT model, a freeway segment is represented by a sequence of cells. The length of a cell is related to the length of a time step in the simulation and the free flow travel speed. It is required that it takes a single time step for vehicles to traverse a cell at free-flow speed. Since the IT model is a discretization of a continuum model, the resolution increases with the decrease in time step. For our validation purposes, we would like to see how queues propagate in the upstream direction on the two lane sets and how priority vehicles change lanes to reach a steady state. Therefore, it is desirable to have small cells. We choose the simulation time step to be 2 seconds. For the given free-flow speed estimated at 60 mph, the length of a cell is thus 176 feet. A schematic representation of the freeway segment and its cell representation are given in Fig. 5. As shown in the figure, the freeway segment is represented by a total of 55 cells. The cumulative discrepancy from using cells is about 120 feet over the 1.7-mile segment.

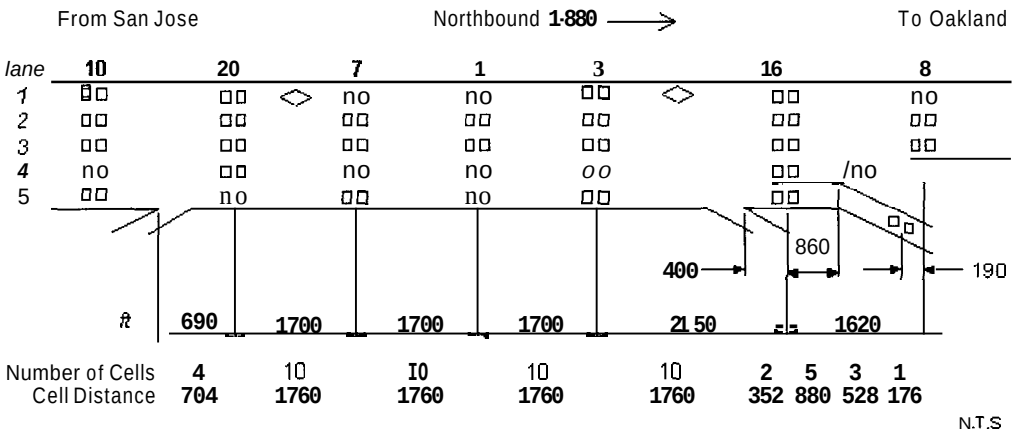


Figure 4: The study site and its cell representation

6.1.2 Special vs. Regular Lanes and Priority vs. Regular Vehicles

On this freeway segment, the lanes with vehicles attempting to access the off-ramp to I-238 are considered to be "regular" lanes and all other lanes are considered to be "special" lanes. All through vehicles are treated as "priority" vehicles and exiting vehicles as "regular" vehicles. Since traffic characteristics on HOV lanes differ significantly from those on non-HOV lanes, we choose to exclude the HOV lane in our study. Only the remaining four lanes, lanes 2 to 5, are considered.

The determination of which lanes are designated as special lanes is based on traffic composition. Initially, we assumed that the rightmost lane was a "regular" lane and that all other lanes were "special" lanes. The data obtained did not seem to support this assumption. The total flow measured at the entrance of these three lanes is higher than that measured at the exit point of these three lanes, suggesting a portion of vehicles entering these lanes may be exiting vehicles. This violates the requirement that "regular" vehicles must stay on the regular lane. To meet this requirement, we then assumed that the right two lanes (lanes numbered 4 and 5 in Fig. 5) were "regular" lanes and the left two lanes (lanes numbered 2 and 3 in Fig. 5) were "special" lanes.

6.1.3 Assumed Flow-Density Relationship

The other assumptions important for our validation are the parameters characterizing the flow-density relationship for each cell.

In calibrating the parameters in the two-wave flow-density relationship assumed earlier, we adopted the results from another validation study conducted on the same site (Lin and Ahanotu, 1995). Capacity in that study was estimated at 1,900 vehicles per hour per lane, and the jam density at 195 vehicles per mile. For the free-flow speed estimated at 60 mph, the backward wave speed is about 15 mph. We assumed here that cells representing the entire segment are homogeneous.

6.1.4 Traffic Demands

For northbound data, lane-specific traffic counts measured from detector station 20 were used as the demands entering the segment. Counts from Station 8 were used as a constraint for vehicles leaving the segment.

The ratio of through and exiting vehicles entering the segment was determined from the average flow rate of the two traffic streams measured at the downstream end of the segment under uncongested traffic. It was assumed that the same ratio applied to the entire time period. Clearly, this assumption is highly restrictive. The true ratio may have varied over time, especially under congested traffic. This was, however, a restriction we have to live with since time-varying proportions of each vehicle type could not be identified from the loop data under congestion. For the data sets used in our study, the ratio of through and exiting vehicles during weekdays was estimated to be between 65:35 and 70:30.

Note that there is an off-ramp between Stations 3 and 16 on the segment with no loop detectors placed on the off-ramp. We estimated that the amount of vehicles leaving the

freeway from this off-ramp by the net difference of the counts from Stations 3 and 16 in the "regular" lane set.

6.2 Model Predction

Several data sets were used in the validation process. Shown below are the traffic patterns produced by the IT model as compared with those measured by the loop detectors for the 03-05-93 data.

The entire simulation run for these data covers a period of one hour and fifteen minutes, starting from 2: 10 p.m. The input data used were 2-second data as previously noted and the final results were aggregated into 2-minute data. The vehicle occupancies from Stations 16, 3, 1, and 7 were compared with those predicted by the IT model at the same locations. The observed and predicted traffic for the time period between 14:52 p.m. and 15:22 p.m., which covers the onset of congestion, is given in the shaded plots in Fig. 6. Qualitatively, the traffic pattern generated by the model exhibits the type of queuing phenomenon similar to the one actually observed at the site. The one pipe and two pipe traffic states are quite visible in both plots for the field data and the results from the model.

More detailed quantitative comparison can also be made based on the plot in Fig. **6.** One can easily identify the discrepancy between the traffic pattern predicted by the model and that observed in the field. For example, the model predicted that queues backed up to Station 3 roughly at 14:58 p.m., whereas in the actual data the first sign of congestion at Station 3 showed at 14:54 p.m. There are also discrepancies on the time when the coalescing queues were formed and the location they were formed. The cause for the discrepancies may be complicated. The density of the queue predicted by the IT model is higher than that observed in the field in the two pipe region. The cause of the discrepancies may be complicated. The following are some specific factors we suspect that could contribute to the observed discrepancies:

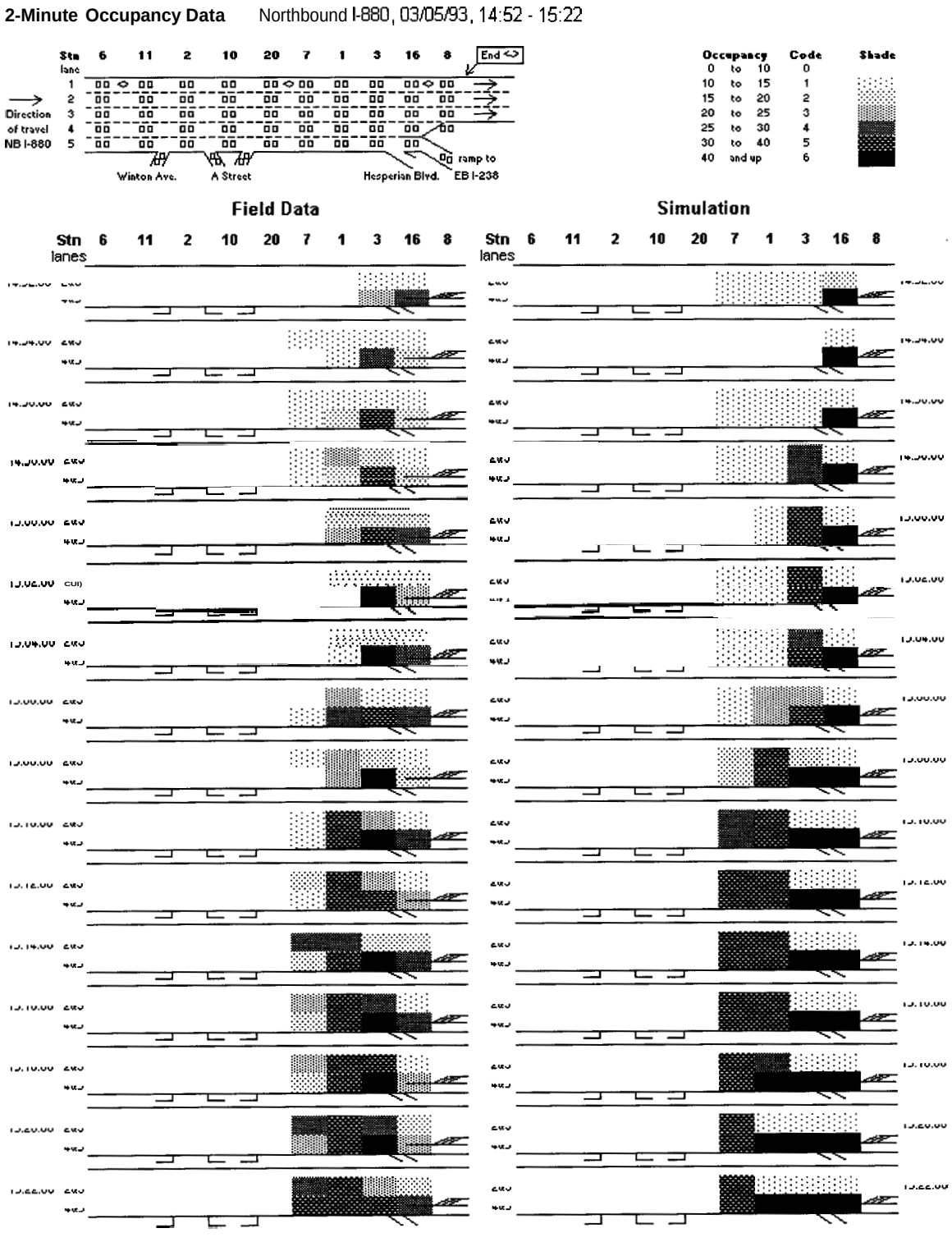


Figure 5: Observed vs. predicted flow pattern (03-05-93 data)

- The model requires time-dependent information about the rate of vehicles exiting the off-ramp between Stations *3* and 16. Since there are no detectors placed in that area, the information is not available to our model. We use the difference between the counts obtained in Stations *3* and 16 to estimate the exiting rate. The estimation will be close only if traffic flow is fully conserved and no vehicles shift between HOV and non-HOV lanes in that area. Further test on the data shows it is not the case. It is difficult to estimate the level of errors the estimated exiting rate is subject to. Therefore, if the rate is estimated much higher than it should be, the queue size could be scaled down. On the contrary, if the rate is estimated too low, then the queue could grow faster than what it should be.

- Some additional assumptions have been made for the flow composition exiting the ramp between stations 3 and 16. If traffic in the region upstream the ramp is in the two pipe state, we assumed that the exiting vehicles from this ramp were all regular vehicles. If traffic is in the one pipe state, we assumed that the exiting vehicles consisted of both priority and regular vehicles. The proportion of two types of vehicles is determined by the vehicle composition in the one pipe region. There is no information available in the data for us to verify if this assumption is reasonable or not.

- It is desirable to know the time-dependent ratio for through and exiting vehicles at the I-238 off-ramp at the entrance of the segment. **As** noted, the ratios used in this study were predicted by the flow composition measured at the downstream end of the segment when traffic was uncongested and the same ratio was then applied to the entire simulation run. This coarse estimate could deviate from the true traffic composition for "regular" and "special" vehicles inside the study site at any given time. **As** congestion occurs, more vehicles are stored in this section. Consequently, the cumulative discrepancies could be very large.

- The HOV lane, excluded from consideration in our study, may also contribute to the noise in the data. The HOV lane ends immediately downstream of the study site.

Traffic on HOV lanes is not well insulated from non-HOV traffic. Our data indicate that some non-HOV traffic moves to the HOV lane before the lane reverts to a regular lane. Though the total number of vehicles illegally shifting to HOV lanes over some long time periods can be assessed, it is difficult to determine the actual number of vehicles over small time intervals.

- Data quality is another issue. Data errors discussed in Section 5.4, such as the lack of conservation between counts from two adjacent detector stations, could also affect the accuracy in model prediction.

- The IT model assumes that priority vehicles (or through vehicles in our study) tend to stay on lanes with a higher speed. The plot of the raw data indicates that the occupancy on "special" lanes is moderately higher than "regular" lanes for some prolonged period of time, suggesting that some through vehicles are not sensitive to the speed difference between the two sets of lanes. It is postulated that some "priority" vehicles might want to stay on the slightly congested "special" lanes toward the downstream end of the segment so as to switch quickly to the HOV lane when it becomes a regular lane. This behavior cannot be captured by the IT model for its assumptions.

7. CONCLUDING REMARKS

The focus of this validation study is on examining how the IT model captures the formation and propagation of queues on a freeway segment with special lanes and priority vehicles. Though the data set we have is among the best of all those are available to us, it is clear that the data set is not ideal for validating the IT model. Nonetheless, our validation study shows that qualitatively the IT model can produce a queuing pattern similar to the one observed from the field data. The model is especially powerful in

capturing the phenomenon of separate versus coalesced queues that cannot be produced by other macroscopic traffic flow models.

The quantitative comparison, however, is inconclusive due to the deficiency in the data. Consequently, the model prediction of the exact location of queues over time does not agree with the field data very well. The disagreement is partially caused by the discrepancy between the model assumption and the behavior of individual drivers in the test site, such as their lane changing decisions. The inaccuracy is also caused by the lack of detailed traffic demand information required by the model, especially the composition of two vehicle types at the entrance and exit of the test site. Future study on model validation depends very much on the availability of data. In fact, some of the data problems can be overcome with the state-of-the-art surveillance systems, such as vehicle re-identification techniques, which might be available in the near future. These techniques can be applied to trace vehicle ODs over a small area, which could be helpful to our validation study.

REFERENCES

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APPENDIX I

Occupancy Intensity Plots For Traffic in the Study Site

(Data sets for 11 days)

Data set 1: Northbound I-880, 03/02/93

Data set 2: Northbound I-880, 03/03/93

Data set 3: Northbound I-880, 03/04/93

Data set 4: Northbound I-880, 03/05/93

Data set 5: Northbound I-880, 03/10/93

Data set 6: Northbound I-880, 03/18/93

Data set 7: Northbound I-880, 03/19/93

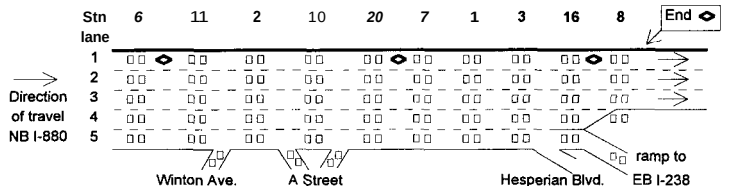
Data set 8: Northbound 1-880, 10/19/93

Data set 9: Northbound I-880, 10/22/93

Data set 10: Northbound I-880, 10/27/93

Data set 11: Northbound I-880, 10/29/93

2-Minute Occupancy Data Northbound 1-880, **03/02/93**, 15:06 - 16:24

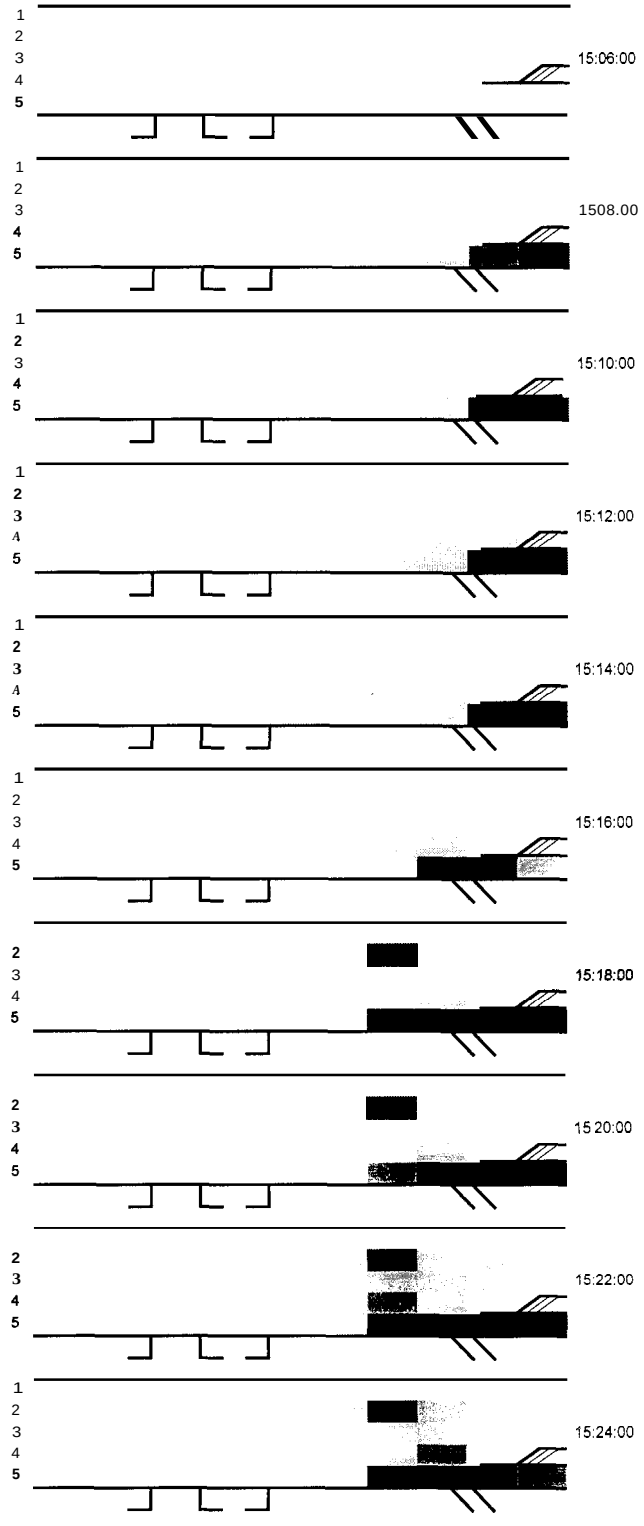


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

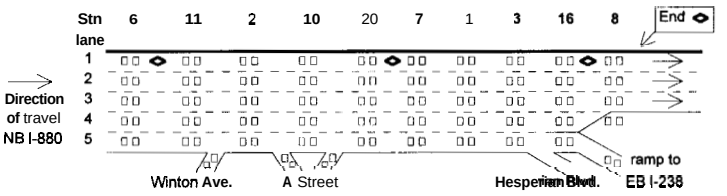
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	3	3	3	3	3	5
	2	0	0	0	0	12	11	14	11	10	10
15:06:00	3	0	0	0	0	12	10	10	13	10	13
	4	0	0	0	0	13	11	11	10	6	0
	5	0	0	0	0	12	10	12	18	14	23
			0		0	0					
	1										
	2	0	0	0	0	13	12	15	17	12	10
15:08:00	3	0	0	0	0	14	14	14	13	13	14
	4	0	0	0	0	14	11	10	9	3	0
	5	0	0	0	0	16	13	13	16	25	33
			0		0	0					
	1	0	0	0	0	3	3	3	4	4	6
	2	0	0	0	0	12	11	13	14	12	11
15:10:00	3	0	0	0	0	11	11	10	14	16	16
	4	0	0	0	0	11	10	9	11	4	0
	5	0	0	0	0	13	9	9	19	35	33
			0		0	0					
	1	0	0	0	0	4	3	3	4	4	7
	2	0	0	0	0	14	13	16	14	15	12
15:12:00	3	0	0	0	0	14	12	10	13	15	16
	4	0	0	0	0	14	11	10	12	14	0
	5	0	0	0	0	10	11	12	18	37	39
			0		0	0					
	1					3	4	3	4	6	7
	2	0	0	0	0	12	10	12	13	13	12
15:14:00	3	0	0	0	0	12	11	10	13	13	12
	4	0	0	0	0	11	10	8	12	10	0
	5	0	0	0	0	11	10	10	17	56	43
			0		0	0					
	1	0	0	0	0	4	4	4	5	5	8
	2	0	0	0	0	12	11	15	13	11	11
15:16:00	3	0	0	0	0	12	13	11	15	14	16
	4	0	0	0	0	15	12	11	15	60	
	5	0	0	0	0	14	13	14	46	37	22
			0		0	0					
	1	0	0	0	0	2	2	3	4	4	7
	2	0	0	0	0	13	14	33	18	15	11
15:18:00	3	0	0	0	0	12	12	17	15	17	15
	4	0	0	0	0	14	12	14	16	8	0
	5	0	0	0	0	13	11	32	56	49	47
			0		0	0					
	1	0	0	0	0	4	4	7	7	6	7
	2	0	0	0	0	13	13	30	15	14	12
15:20:00	3	0	0	0	0	11	12	21	17	15	15
	4	0	0	0	0	12	12	18	21	8	0
	5	0	0	0	0	10	9	28	48	46	43
			0		0	0					
	1	0	0	0	0	4	5	8	8	8	9
	2	0	0	0	0	15	17	36	20	16	11
15:22:00	3	0	0	0	0	15	18	24	22	16	13
	4	0	0	0	0	16	16	25	17	6	0
	5	0	0	0	0	12	15	41	44	42	39
			0		0	0					
	1	0	0	0	0	4	4	6	6	8	10
	2	0	0	0	0	9	10	38	22	15	12
15:24:00	3	0	0	0	0	8	10	15	22	18	20
	4	0	0	0	0	11	12	17	26	7	0
	5	0	0	0	0	11	12	43	53	43	30
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 03/02/93, 15:06 - 16:24

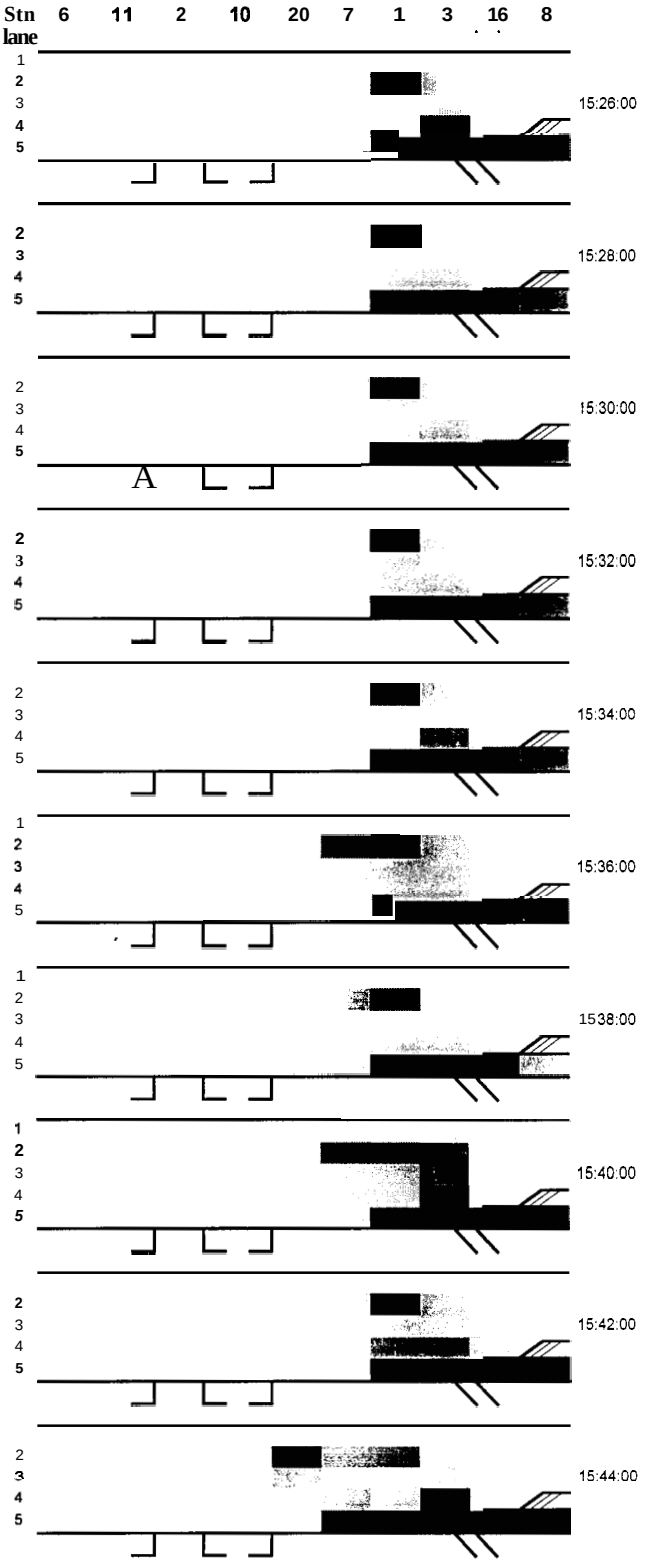


Occupancy			Code	Shade
0	io	10	0	
10	io	15	1	
15	to	20	2	
20	to	25	3	
25	io	30	4	
30	io	40	5	
40	andup		6	

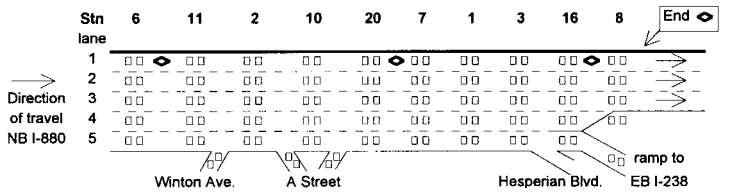
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
						3	3	4	5	5	8
	2	0	0	0	0	12	17	39	20	15	12
15:26:00	3	0	0	0	0	11	14	16	19	13	12
	4	0	0	0	0	11	11	17	34	7	0
	5	0	0	0	0	10	11	49	45	41	35
			0		0	0					
	1	0	0	0	0	4	4	7	5	4	7
	2	0	0	0	0	14	16	46	17	13	11
15:28:00	3	0	0	0	0	12	13	17	19	13	13
	4	0	0	0	0	12	14	24	24	10	0
	5	0	0	0	0	12	11	54	57	36	25
			0		0	A					
	1	0	0	0	0	4	5	8	7	6	8
	2	0	0	0	0	11	16	37	19	13	11
15:30:00	3	0	0	0	0	12	14	13	20	13	14
	4	0	0	0	0	14	17	19	23	11	0
	5	0	0	0	0	12	14	49	49	33	29
			0		0	0					
	1	0	0	0	0	5	7	9	9	8	1	0
	2	0	0	0	0	13	22	41	19	13	12
15:32:00	3	0	0	0	0	11	17	22	14	14	15
	4	0	0	0	0	1	4	1	6	2	3	2	4	8	0
	5	0	0	0	0	10	13	50	49	38	27
			0		0	A					
	1	0	0	0	0	6	5	7	1	0	9	9
	2	0	0	0	0	13	14	35	22	13	11
15:34:00	3	0	0	0	0	10	11	19	17	12	12
	4	0	0	0	0	11	11	18	28	14	0
	5	0	0	0	0	9	9	3	9	4	5	3	6	2	6
			0		0	0					
	1	0	0	0	0	4	6	6	7	7	8
	2	0	0	0	0	17	34	42	23	16	12
15:36:00	3	0	0	0	0	16	22	23	21	13	11
	4	0	0	0	0	14	17	21	22	9	0
	5	0	0	0	0	10	11	40	50	39	39
			0		0	0					
	1	0	0	0	0	5	6	6	6	7	9
	2	0	0	0	0	18	26	40	23	17	12
15:38:00	3	0	0	0	0	18	22	23	21	18	14
	4	0	0	0	0	13	19	23	23	11	0
	5	0	0	0	0	14	16	44	48	45	22
			0		0	0					
	1	0	0	0	0	7	1	0	9	1	0	8	1	0
	2	0	0	0	0	20	31	37	26	16	11
15:40:00	3	0	0	0	0	15	22	20	27	14	13
	4	0	0	0	0	1	4	2	1	2	0	3	4	6	0
	5	0	0	0	0	12	18	50	60	34	39
			0		0	0					
	1	0	0	0	0	8	9	9	11	11	11
	2	0	0	0	0	22	24	42	20	14	11
15:42:00	3	0	0	0	0	17	25	20	23	15	15
	4	0	0	0	0	19	23	27	28	18	0
	5	0	0	0	0	12	17	47	49	54	37
			0		0	0					
	1	0	0	0	0	5	6	7	8	6	9
	2	0	0	0	0	31	27	28	22	14	11
15:44:00	3	0	0	0	0	27	22	19	22	16	14
	4	0	0	0	0	16	27	22	53	6	0
	5	0	0	0	0	13	31	63	67	39	36
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880, 03/02/93,** 15:06 - 16:24

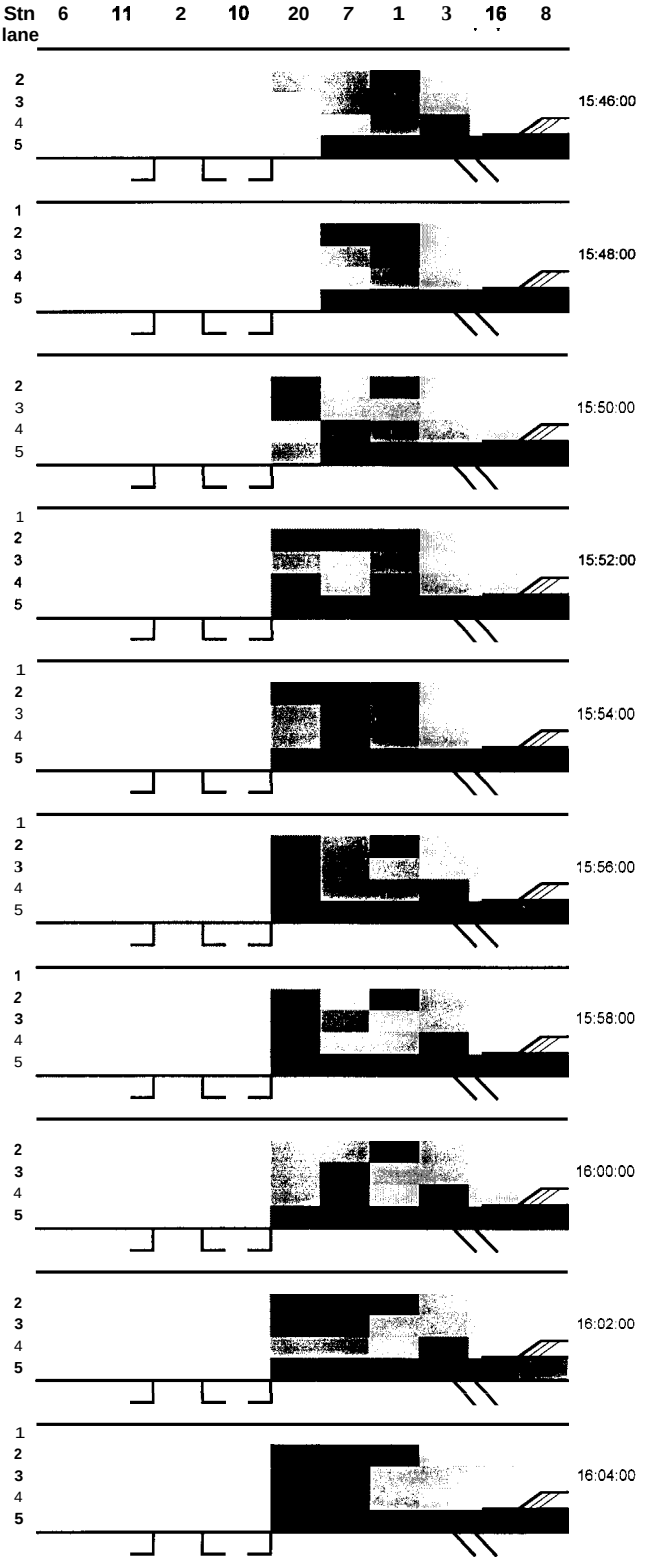


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

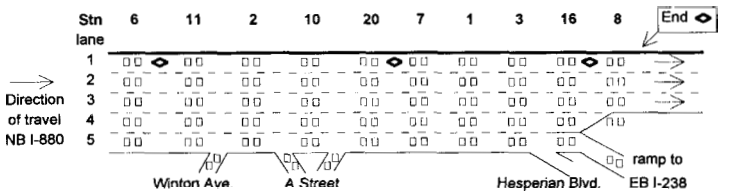
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	7	9	9	9	6	8
	2	0	0	0	0	29	30	54	17	13	9
15:46:00	3	0	0	0	0	22	26	26	22	11	11
	4	0	0	0	0	14	22	30	36	4	0
	5	0	0	0	0	11	39	62	66	38	43
			0		0	0					
	1	0	0	0	0	8	9	1	0	1	1	8	7
	2	0	0	0	0	24	40	50	16	11	10
15:48:00	3	0	0	0	0	20	29	30	17	12	11
	4	0	0	0	0	1	6	2	4	2	8	2	3	3	0
	5	0	0	0	0	18	53	58	52	35	51
			0		0	0					
	1	0	0	0	0	7	7	6	9	9	1	1
	2	0	0	0	0	42	25	45	17	13	11
15:50:00	3	0	0	0	0	34	23	23	18	11	12
	4	0	0	0	0	24	33	25	23	10	0
	5	0	0	0	0	28	53	45	43	54	33
			0		0	0					
	1	0	0	0	0	6	6	7	1	0	6	8
	2	0	0	0	0	37	31	53	17	17	9
15:52:00	3	0	0	0	0	29	25	27	18	17	11
	4	0	0	0	0	36	24	34	23	18	0
	5	0	0	0	0	39	35	57	55	51	46
			0		0	A					
	1	0	0	0	0	5	6	5	5	4	8
	2	0	0	0	0	34	31	40	17	14	10
15:54:00	3	0	0	0	0	27	34	26	18	11	12
	4	0	0	0	0	2	8	3	7	2	9	2	4	4	0
	5	0	0	0	0	36	52	41	59	41	45
			0		0	0					
	1	0	0	0	0	8	8	8	7	8	8
	2	0	0	0	0	39	30	48	18	14	10
15:56:00	3	0	0	0	0	40	25	23	19	13	9
	4	0	0	0	0	4	3	3	0	2	8	3	3	7	0
	5	0	0	0	0	30	50	58	61	41	50
			0		0	0					
	1	0	0	0	0	1	4	1	3	1	1	1	0	8	9
	2	0	0	0	0	37	25	50	22	14	10
15:58:00	3	0	0	0	0	41	28	20	21	12	14
	4	0	0	0	0	3	2	2	3	2	1	3	6	4	0
	5	0	0	0	0	38	44	45	59	37	39
			0		0	0					
	1	0	0	0	0	7	8	8	1	0	8	1	1
	2	0	0	0	0	29	26	43	25	15	12
16:00:00	3	0	0	0	0	29	33	22	22	14	12
	4	0	0	0	0	29	30	19	41	18	0
	5	0	0	0	0	39	44	57	63	48	35
			0		0	A					
	1	0	0	0	0	1	0	1	0	9	9	8	8
	2	0	0	0	0	35	35	40	23	13	11
1602'00	3	0	0	0	0	36	32	22	23	15	14
	4	0	0	0	0	29	25	19	34	6	0
	5	0	0	0	0	39	42	63	54	31	29
			0		0	0					
	1	0	0	0	0	8	8	8	9	8	1	0
	2	0	0	0	0	41	34	46	18	15	12
16:04:00	3	0	0	0	0	35	31	22	22	12	13
	4	0	0	0	0	3	1	3	3	2	1	1	7	5	0
	5	0	0	0	0	40	59	41	44	44	43
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **I-880, 03/02/93,** 15:06 - 16:24



Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

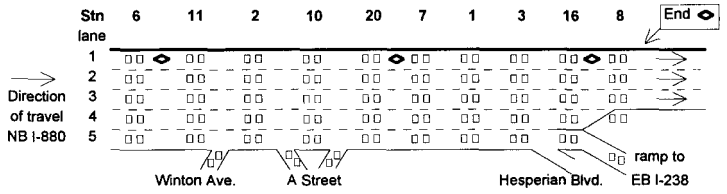
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	8	8	7	9	7	8
	2	0	0	0	0	33	27	39	23	19	12
16:06:00	3	0	0	0	0	38	27	21	23	16	14
	4	0	0	0	0	35	31	22	28	5	0
	5	0	0	0	0	39	47	47	45	36	50
			0		0	0					
	1	0	0	0	0	9	9	8	8	7	1	0
	2	0	0	0	0	30	32	37	17	15	11
16:08:00	3	0	0	0	0	38	22	21	15	13	13
	4	0	0	0	0	3	3	2	4	2	5	2	2	2	0
	5	0	0	0	0	32	42	53	56	58	50
			0		0	0					
	1	0	0	0	0	11	12	10	8	7	7
	2	0	0	0	0	30	21	42	20	14	12
16:10:00	3	0	0	0	0	34	28	30	20	17	14
	4	0	0	0	0	35	26	28	23	4	0
	5	0	0	0	0	33	44	50	60	40	19
			0		0	0					
	1	0	0	0	0	7	9	7	9	9	9
	2	0	0	0	0	40	26	51	19	16	10
16:12:00	3	0	0	0	0	30	30	28	24	19	16
	4	0	0	0	0	31	31	44	17	7	0
	5	0	0	0	0	36	44	62	59	41	32
			0		0	0					
	1	0	0	0	0	9	11	9	9	7	9
	2	0	0	0	0	37	28	44	21	15	12
16:14:00	3	0	0	0	0	34	28	25	17	14	13
	4	0	0	0	0	32	29	26	24	3	0
	5	0	0	0	0	40	56	58	41	35	42
			0		0	0					
	1	0	0	0	0	7	1	0	6	6	6	8
	2	0	0	0	0	48	27	40	24	15	11
16:16:00	3	0	0	0	0	41	26	22	23	15	14
	4	0	0	0	0	3	4	3	5	3	2	2	2	5	0
	5	0	0	0	0	35	49	49	45	47	39
			0		0	0					
	1	0	0	0	0	8	1	0	9	1	0	7	8
	2	0	0	0	0	32	39	44	20	15	10
16:18:00	3	0	0	0	0	28	30	25	18	12	13
	4	0	0	0	0	3	3	3	1	2	7	1	6	5	0
	5	0	0	0	0	37	40	57	54	36	46
			51		0	0					
	1	0	0	0	0	8	1	0	7	5	6	7
	2	0	0	0	0	42	35	46	24	12	10
16:20:00	3	0	0	0	0	47	30	21	21	10	12
	4	0	0	0	0	3	8	3	5	1	7	2	0	8	0
	5	0	0	0	0	29	45	53	56	40	52
			0		0	0					
	1	0	0	0	0	1	0	9	1	0	9	8	8
	2	0	0	0	0	39	30	45	21	17	12
16:22:00	3	0	0	0	0	27	29	22	20	13	11
	4	0	0	0	0	2	9	3	3	2	4	2	5	6	0
	5	0	0	0	0	30	37	53	47	41	44
			0		0	0					
	1	0	0	0	0	15	14	12	13	7	9
	2	0	0	0	0	33	23	48	26	15	10
16:24:00	3	0	0	0	0	41	29	32	21	16	16
	4	0	0	0	0	39	34	24	33	10	0
	5	0	0	0	0	33	36	49	61	39	38
			0		0	0					

Shading

	Stn	6	11	2	10	20	7	1	3	16	8	
	lane											
	1											
	2											
16:06:00	3											16:06:00
	4											
	5											
	1											
	2											
16:08:00	3											16:08:00
	4											
	5											
	1											
	2											
16:10:00	3											16:10:00
	4											
	5											
	1											
	2											
16:12:00	3											16:12:00
	4											
	5											
	1											
	2											
16:14:00	3											16:14:00
	4											
	5											
	1											
	2											
16:16:00	3											16:16:00
	4											
	5											
	1											
	2											
16:18:00	3											16:18:00
	4											
	5											
	1											
	2											
16:20:00	3											16:20:00
	4											
	5											
	1											
	2											
16:22:00	3											16:22:00
	4											
	5											
	1											
	2											
16:24:00	3											16:24:00
	4											
	5											

2-Minute Occupancy Data Northbound I-880, 03/03/93, 15:44 - 17:02

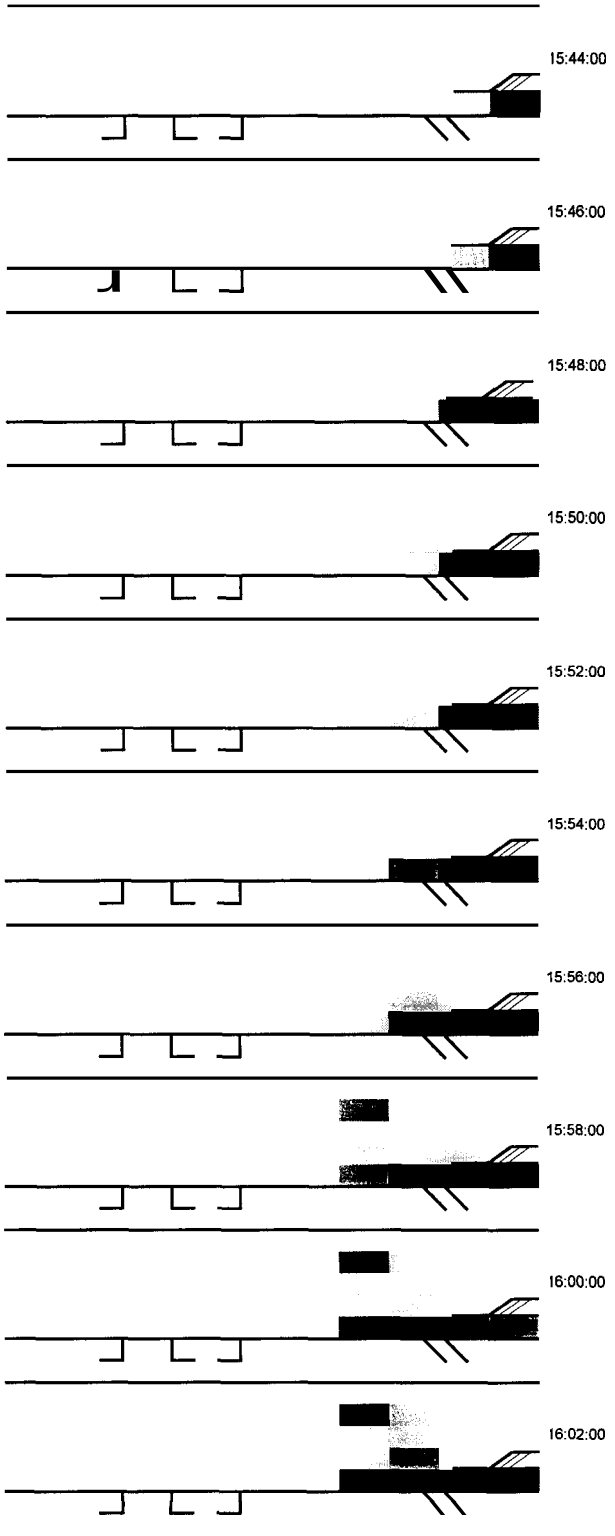


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

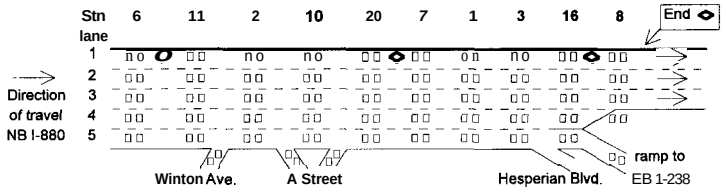
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	5	6	5	6	7	9
	2	0	0	0	0	11	10	13	19	15	12
15:44:00	3	0	0	0	0	9	10	10	15	13	13
	4	0	0	0	0	11	10	9	11	5	0
	5	0	0	0	0	12	10	11	17	11	39
				0	0	0					
	1	0	0	0	0	3	7	2	3	6	8
	2	0	0	0	0	14	13	14	15	12	12
15:46:00	3	0	0	0	0	11	11	10	12	13	15
	4	0	0	0	0	11	9	9	10	4	0
	5	0	0	0	0	12	10	10	15	21	32
				0	0	0					
	1	0	0	0	0	6	6	6	5	4	6
	2	0	0	0	0	15	13	14	14	13	12
15:48:00	3	0	0	0	0	11	12	10	9	12	12
	4	0	0	0	0	12	10	9	10	5	0
	5	0	0	0	0	1	0	1	8	12	37	42
				0	0	0					
	1	0	0	0	0	4	4	4	4	6	9
	2	0	0	0	0	12	11	13	14	13	11
15:50:00	3	0	0	0	0	10	10	8	10	15	14
	4	0	0	0	0	14	11	10	15	3	0
	5	0	0	0	0	10	10	10	14	6P	41
				0	0	0					
	1	0	0	0	0	6	6	6	7	9	11
	2	0	0	0	0	11	11	12	17	16	12
15:52:00	3	0	0	0	0	11	11	9	12	15	13
	4	0	0	0	0	1	1	1	0	8	10	13	0
	5	0	0	0	0	8	7	7	15	45	40
				0	0	0					
	1	0	0	0	0	6	5	5	7	6	8
	2	0	0	0	0	13	13	16	15	14	11
15:54:00	3	0	0	0	0	12	11	11	10	13	13
	4	0	0	0	0	12	10	10	12	9	0
	5	0	0	0	0	12	11	12	30	15	6P
				0	0	0					
	4	0	0	0	0	6	5	5	8	6	7
	2	0	0	0	0	13	11	17	19	13	10
15:56:00	3	0	0	0	0	11	10	12	02	13	12
	4	0	0	0	0	12	9	10	22	14	0
	5	0	0	0	0	9	9	11	47	48	44
				0	0	0					
						5	4	5	7	8	11
	2	0	0	0	0	12	11	28	19	17	11
15:58:00	3	0	0	0	0	10	11	17	18	19	19
	4	0	0	0	0	13	10	17	18	17	0
	5	0	0	0	0	11	12	9Z	LP	1E	42
				0	0	0					
	1					5	4	5	7	5	8
	2	0	0	0	0	11	12	35	18	17	11
16:00:00	3	0	0	0	0	12	12	19	19	17	13
	4	0	0	0	0	11	12	19	16	12	0
	5	0	0	0	0	14	19	46	38	43	29
				0	0	0					
	1	0	0	0	0	5	5	7	8	7	8
	2	0	0	0	0	13	19	47	20	19	10
16:02:00	3	0	0	0	0	11	11	19	20	13	10
	4	0	0	0	0	10	12	18	25	5	0
	5	0	0	0	0	10	10	53	YY	34	3E
				0	0	0					

Shading



2-Minute Occupancy Data Northbound I-880, 03/03/93, 15:44 - 17:02

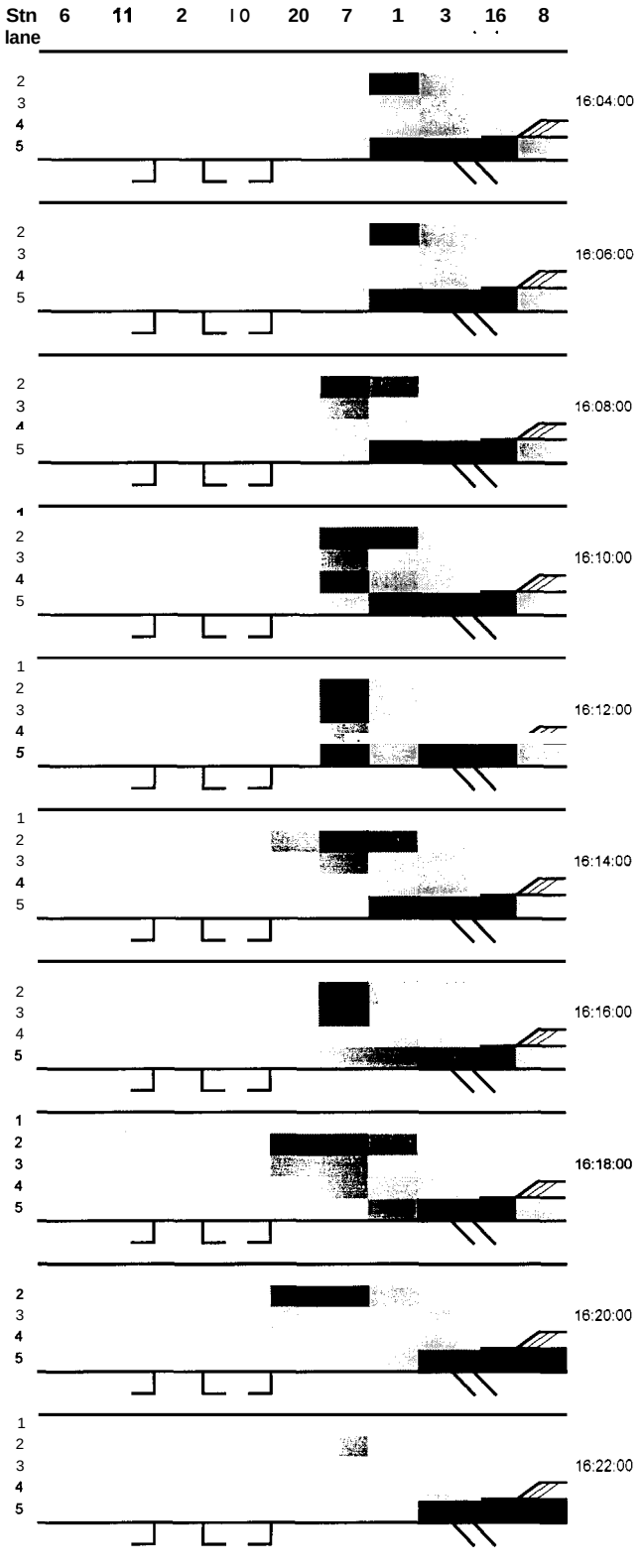


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

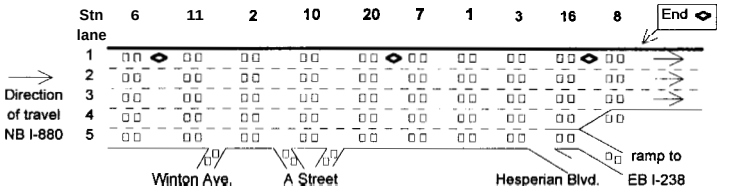
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	5	6	7	9	8	8
	2	0	0	0	0	12	15	43	22	14	11
16:04:00	3	0	0	0	0	10	12	18	21	14	12
	4	0	0	0	0	11	13	19	25	12	0
	5	0	0	0	0	10	12	50	57	47	22
			0		0		A				
	1	0	0	0	0	5	6	9	7	5	8
	2	0	0	0	0	13	20	45	25	15	12
16:06:00	3	0	0	0	0	12	16	20	20	18	13
	4	0	0	0	0	9	15	17	21	17	0
	5	0	0	0	0	12	23	57	54	34	24
			0		0	0					
	1	0	0	0	0	6	1	0	7	5	5	9
	2	0	0	0	0	14	31	28	16	13	10
16:08:00	3	0	0	0	0	11	29	11	13	11	13
	4	0	0	0	0	12	20	20	17	7	0
	5	0	0	0	0	9	21	45	51	40	22
			0		0		A				
	1	0	0	0	0	7	7	1	7	8	6	6
	2	0	0	0	0	23	38	34	11	10	8
16:10:00	3	0	0	0	0	12	26	19	14	10	10
	4	0	0	0	0	13	32	21	14	4	0
	5	0	0	0	0	10	22	36	46	37	17
			0		0	0					
	1	0	0	0	0	10	11	16	11	6	9
	2	0	0	0	0	19	34	25	16	14	10
16:12:00	3	0	0	0	0	16	31	19	15	12	13
	4	0	0	0	0	15	28	17	18	2	0
	5	0	0	0	0	14	34	24	47	32	24
			0		0	0					
	1	0	0	0	0	9	9	10	9	8	9
	2	0	0	0	0	28	35	25	16	15	11
16:14:00	3	0	0	0	0	24	30	19	18	14	13
	4	0	0	0	0	15	19	17	21	6	0
	5	0	0	0	0	15	18	36	45	39	15
			0		0	0					
	1	0	0	0	0	8	9	11	10	8	11
	2	0	0	0	0	24	34	24	16	15	11
16:16:00	3	0	0	0	0	19	33	20	16	13	13
	4	0	0	0	0	17	24	20	18	9	0
	5	0	0	0	0	15	28	28	39	37	16
			0		0	0					
	1	0	0	0	0	10	10	10	8	8	9
	2	0	0	0	0	31	31	26	18	15	11
16:18:00	3	0	0	0	0	26	28	17	17	15	14
	4	0	0	0	0	17	26	20	16	2	0
	5	0	0	0	0	14	17	29	43	37	18
			0		0	0					
	1	0	0	0	0	7	6	8	6	7	10
	2	0	0	0	0	33	38	21	15	16	13
16:20:00	3	0	0	0	0	20	18	16	16	19	14
	4	0	0	0	0	18	20	18	20	7	0
	5	0	0	0	0	14	13	18	38	38	35
			0		0	0					
	1	0	0	0	0	6	6	6	7	7	9
	2	0	0	0	0	21	27	20	18	14	11
16:22:00	3	0	0	0	0	17	21	17	16	14	17
	4	0	0	0	0	16	16	15	19	7	0
	5	0	0	0	0	14	16	17	41	40	43
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880, 03/03/93**, 15:44 - 17:02

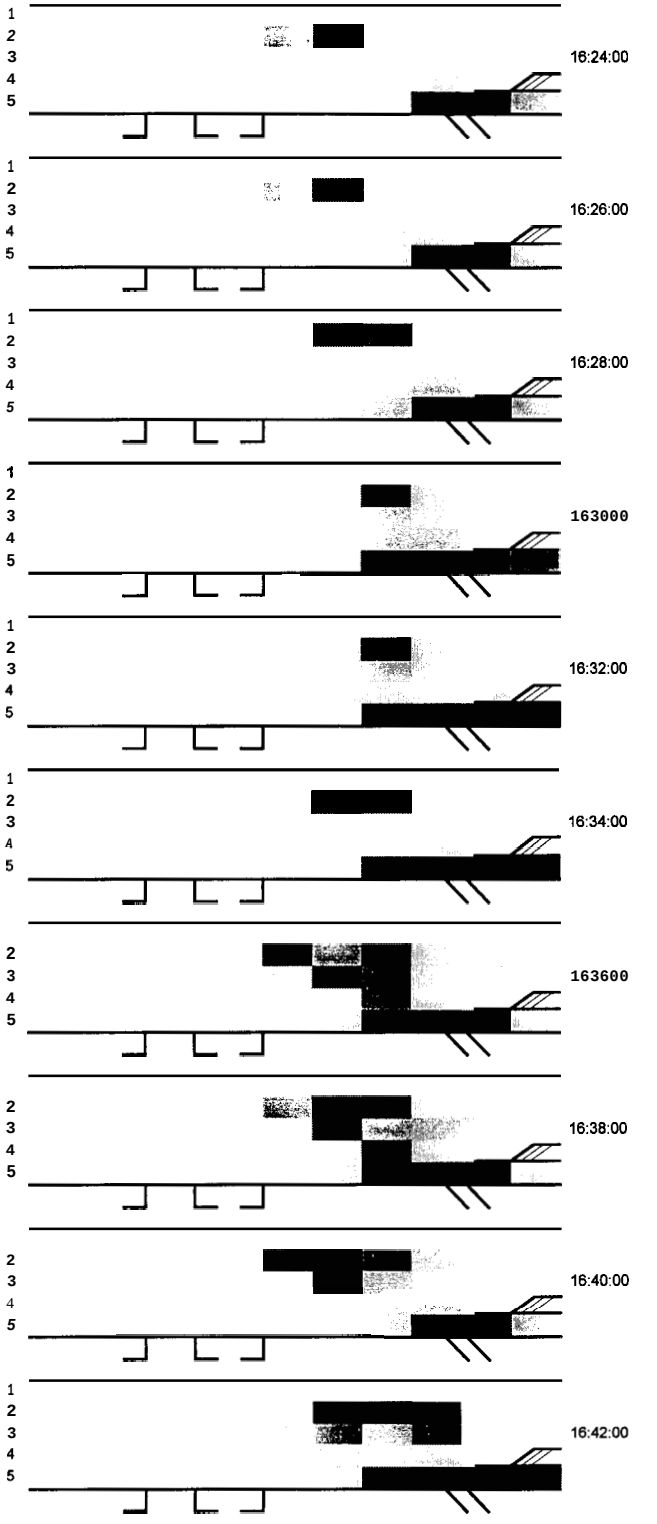


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 lo 25	3	
25 to 30	4	
30 lo 40	5	
40 andup	6	

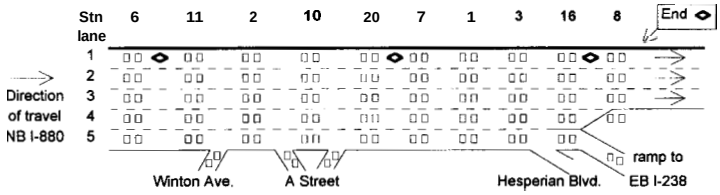
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	8	9	9	6	5	8
	2	0	0	0	0	30	34	19	23	16	10
16:24:00	3	0	0	0	0	24	24	18	21	16	15
	4	0	0	0	0	13	12	10	20	7	0
	5	0	0	0	0	15	14	13	43	38	22
			0		0	0					
	1	0	0	0	0	7	7	8	9	6	9
	2	0	0	0	0	25	33	24	22	16	11
16:26:00	3	0	0	0	0	18	18	22	21	16	12
	4	0	0	0	0	1 9	1 7	1 5	1 9	3	0
	5	0	0	0	0	12	11	16	39	41	17
			0		0	0					
	1	0	0	0	0	7	8	9	7	8	1 0
	2	0	0	0	0	17	32	26	18	18	11
16:28:00	3	0	0	0	0	14	18	16	20	18	16
	4	0	0	0	0	16	15	17	21	6	0
	5	0	0	0	0	IS	15	20	46	41	20
			0		0	0					
	1	0	0	0	0	4	5	6	9	7	1 0
	2	0	0	0	0	11	19	37	17	14	12
16:30:00	3	0	0	0	0	11	17	23	19	15	16
	4	0	0	0	0	10	12	22	22	8	0
	5	0	0	0	0	11	12	37	38	41	28
			0		0	0					
						4	5	5	5	5	6
	2	0	0	0	0	13	22	43	15	14	10
16:32:00	3	0	0	0	0	12	16	24	19	14	13
	4	0	0	0	0	13	15	16	17	20	0
	5	0	0	0	0	12	14	40	41	36	45
			0		0	0					
	1	0	0	0	0	6	6	6	7	5	8
	2	0	0	0	0	16	38	32	18	16	9
16:34:00	3	0	0	0	0	14	22	19	16	16	14
	4	0	0	0	0	12	1 4	2 0	1 8	6	0
	5	0	0	0	0	11	14	35	55	46	39
			0		0	0					
	1	0	0	0	0	8	7	8	5	6	1 0
	2	0	0	0	0	34	26	33	19	16	10
16:36:00	3	0	0	0	0	24	33	29	20	15	16
	4	0	0	0	0	18	18	26	17	9	0
	5	0	0	0	0	16	16	34	48	37	18
			0		0	A					
	1	0	0	0	0	9	10	16	11	8	10
	2	0	0	0	0	27	35	40	20	IS	11
16:38:00	3	0	0	0	0	16	32	25	22	18	17
	4	0	0	0	0	1 5	2 3	3 0	1 8	6	0
	5	0	0	0	0	12	18	42	37	35	20
			0		0	0					
	1	0	0	0	0	7	7	7	8	8	9
	2	0	0	0	0	38	30	26	20	14	11
1640.00	3	0	0	0	0	20	34	22	17	IS	14
	4	0	0	0	0	20	21	20	22	10	0
	5	0	0	0	0	14	12	21	42	37	20
			0		0	0					
	1	0	0	0	0	6	5	5	6	7	9
	2	0	0	0	0	24	30	31	26	17	11
16:42:00	3	0	0	0	0	18	29	21	30	18	13
	4	0	0	0	0	16	21	18	18	6	0
	5	0	0	0	0	17	20	31	40	40	38
			0		L	A					

Shading



2-Minute Occupancy Data Northbound **1-880, 03/03/93,** 15:44 - 17:02



Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	7	9	8	6	5	8
	2	0	0	0	0	19	36	30	24	14	11
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	5	0	0	0	0	I2	16	32	47	38	25
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	1	0	0	0	0	8	9	9	10	9	9
	2	0	0	0	0	21	33	38	17	15	12
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	2	0	0	0	0	31	33	31	21	21	11
16:48:00	3	0	0	0	0	22	31	27	21	22	17
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	5	0	0	0	0	19	21	29	40	45	41
			0		0	0					
	1	0	0	0	0	12	13	13	13	10	10
	2	0	0	0	0	33	25	37	20	15	12
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	5	0	0	0	0	IS	19	32	46	41	49
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	1	0	0	0	0	8	11	10	11	13	14
	2	0	0	0	0	20	33	40	18	22	15
16:52:00	3	0	0	0	0	16	23	22	17	18	17
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			0		0	0					
	1	0	0	0	0	6	7	7	8	7	1 0
	2	0	0	0	0	25	30	49	19	16	I2
16:54:00	3	0	0	0	0	21	27	31	18	11	12
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	1	0	0	0	0	8	9	8	9	7	8
	2	0	0	0	0	30	33	39	29	14	11
16:56:00	3	0	0	0	0	21	35	23	23	14	14
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	5	0	0	0	0	14	33	33	41	44	34
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	2	0	0	0	0	29	28	39	23	14	10
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	5	0	0	0	0	11	20	42	47	28	43
			0		0	A					
	1	0	0	0	0	8	9	7	6	6	10
	2	0	0	0	0	31	35	36	19	16	I2
17:00:00	3	0	0	0	0	22	32	31	20	15	14
	4	0	0	0	0	1 7	3 5	2 3	2 0	5	0
	5	0	0	0	0	14	29	39	37	27	28
			0		0	0					
	1	0	0	0	0	7	8	7	8	7	9
	2	0	0	0	0	20	37	40	18	13	10
17:02:00	3	0	0	0	0	19	26	24	21	18	IS
	4	0	0	0	0	1 7	2 2	2 4	2 1	7	0
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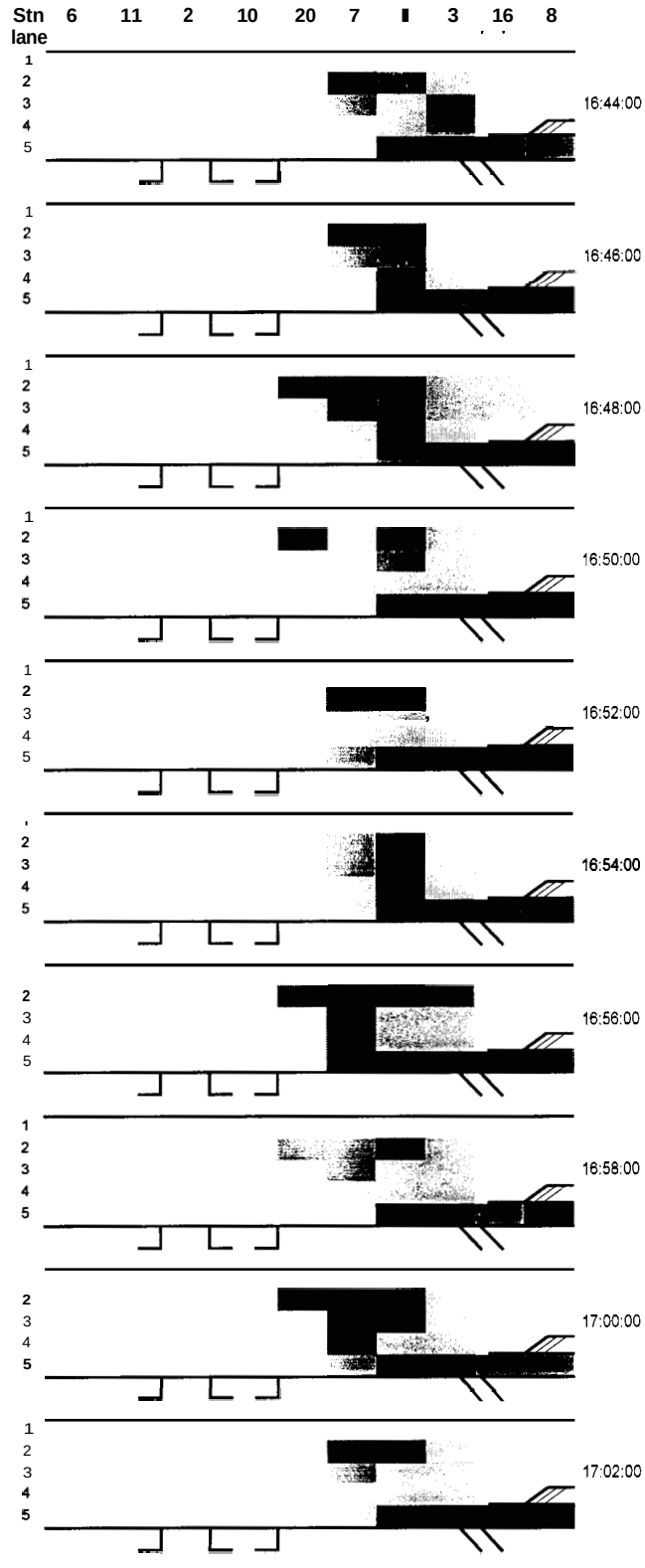
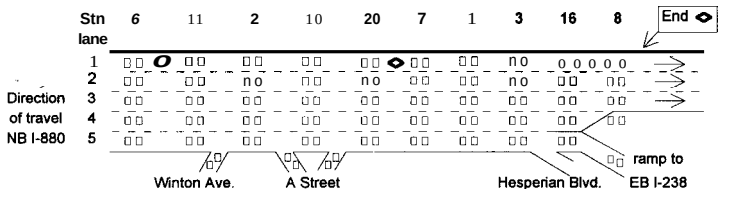
Shading



2-Minute Occupancy Data Northbound 1-880, 03/04/93, 14:50 - 16:08

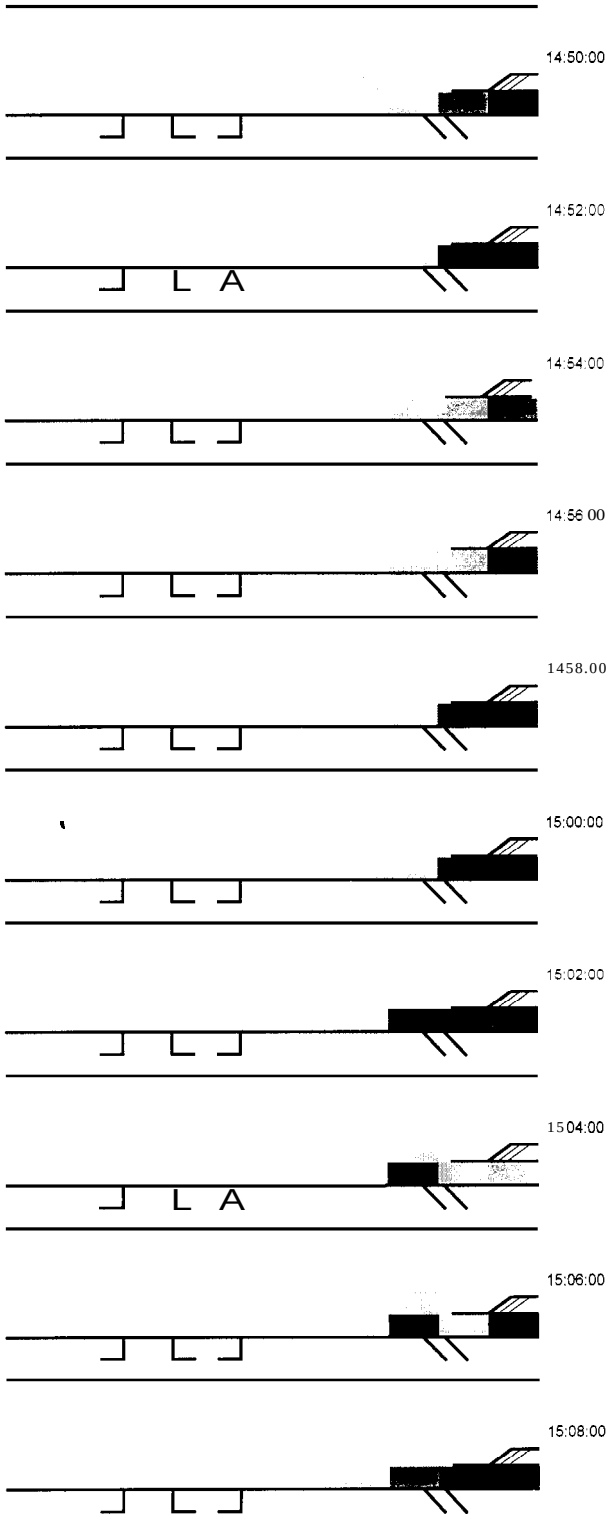


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

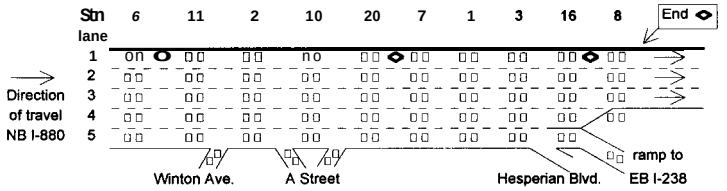
Occupancy

Stn lane	6	11	2	10	20	7	1	3	16	8
14:50:00										
1	0	0	0	0	8	9	8	11	11	12
2	0	0	0	0	12	9	11	10	11	13
3	0	0	0	0	11	12	11	16	12	11
4	0	0	0	0	13	11	11	15	9	0
5	0	0	0	0	11	9	11	17	27	42
14:52:00										
1	0	0	0	0	8	7	7	6	8	9
2	0	0	0	0	9	8	12	9	11	13
3	0	0	0	0	11	9	10	16	16	17
4	0	0	0	0	14	11	10	11	7	0
5	0	0	0	0	10	10	11	14	33	32
14:54:00										
1	0	0	0	0	8	7	7	8	5	7
2	0	0	0	0	9	9	1	1	9	9	1	0
3	0	0	0	0	9	9	8	13	11	12
4	0	0	0	0	10	1	0	8	9	7	0
5	0	0	0	0	9	9	9	1	7	2	5	2	6
14:56:00										
1	0	0	0	0	6	6	6	7	8	8
2	0	0	0	0	10	10	11	10	10	11
3	0	0	0	0	10	8	7	14	13	13
4	0	0	0	0	11	11	12	13	4	0
5	0	0	0	0	10	8	8	1	6	2	5	3	5
14:58:00										
1	0	0	0	0	5	5	5	6	6	7
2	0	0	0	0	12	10	12	11	11	12
3	0	0	0	0	13	11	11	19	11	12
4	0	0	0	0	12	12	11	11	7	0
5	0	0	0	0	11	10	10	10	38	36
15:00:00										
1	0	0	0	0	5	5	5	4	5	6
2	0	0	0	0	13	12	14	13	13	13
3	0	0	0	0	13	12	12	18	18	17
4	0	0	0	0	1	3	1	1	1	0	1	3	6	0
5	0	0	0	0	10	9	11	13	33	43
15:02:00										
1	0	0	0	0	4	4	4	6	6	8
2	0	0	0	0	12	10	13	13	13	11
3	0	0	0	0	9	7	7	12	9	13
4	0	0	0	0	1	2	1	1	1	0	1	4	3	0
5	0	0	0	0	12	9	11	38	39	42
150400										
1	0	0	0	0	3	3	3	4	5	7
2	0	0	0	0	13	13	19	16	11	10
3	0	0	0	0	11	10	13	15	10	9
4	0	0	0	0	11	11	10	16	2	0
5	0	0	0	0	13	11	17	40	16	22
15:06:00										
1	0	0	0	0	4	3	3	5	6	7
2	0	0	0	0	12	12	13	15	13	10
3	0	0	0	0	13	11	12	12	11	9
4	0	0	0	0	10	10	10	16	3	0
5	0	0	0	0	7	7	8	4	5	1	7	4	1
15:08:00										
1	0	0	0	0	4	4	4	6	6	8
2	0	0	0	0	13	11	16	16	12	11
3	0	0	0	0	10	10	9	17	12	12
4	0	0	0	0	11	11	11	14	6	0
5	0	0	0	0	13	11	16	28	32	40

Shading



2-Minute Occupancy Data Northbound 1-880, 03/04/93, 14:50 - 16:08

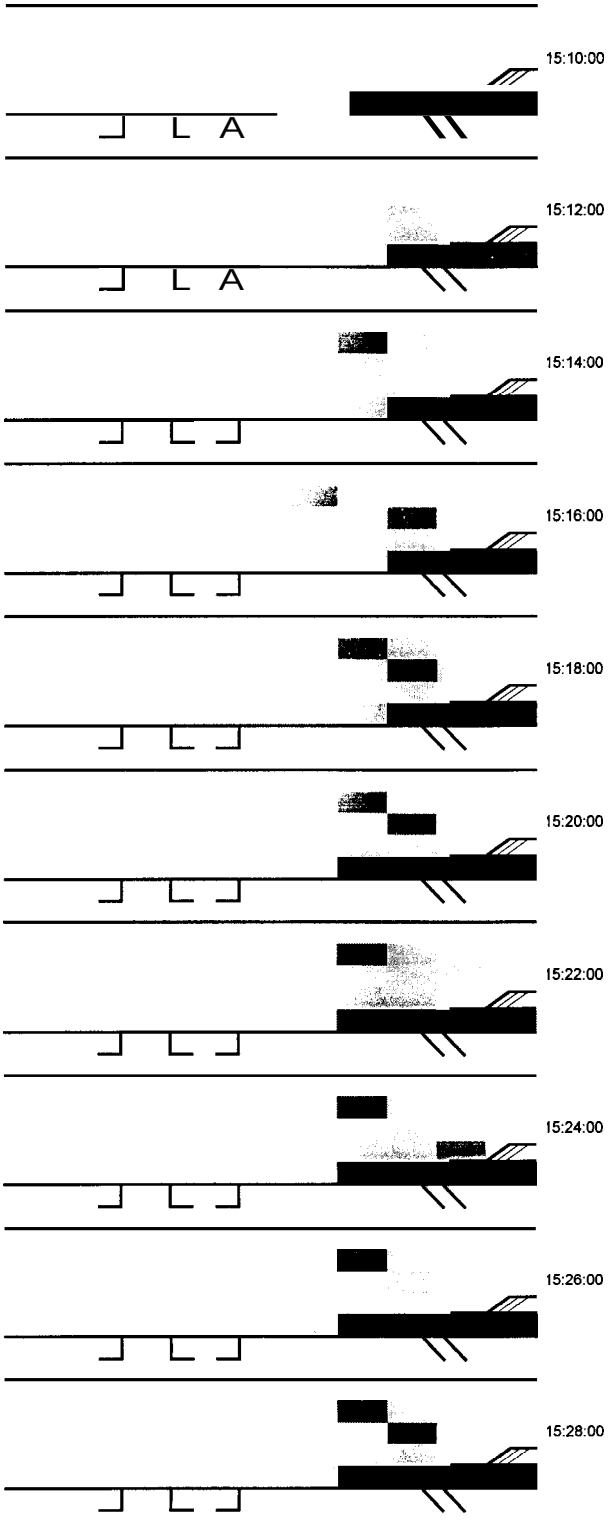


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

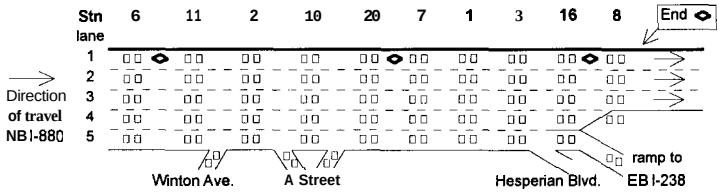
Occupancy

Stn lane	6	11	2	10	20	7	1	3	16	8
1	0	0	0	0	2	3	4	5	6	6
2	0	0	0	0	14	13	23	15	13	11
15:10:00 3	0	0	0	0	15	13	14	20	13	13
4	0	0	0	0	13	11	12	17	7	0
5	0	0	0	0	14	12	20	40	35	44
		$1		L 0 A						
1	0	0	0	0	2	2	4	4	5	8
2	0	0	0	0	11	12	23	21	13	12
15:12:00 3	0	0	0	0	11	10	17	24	14	12
4	0	0	0	0	12	12	1 4 2 3		5	0
5	0	0	0	0	12	10	17	45	35	32
		$1		L 0 0						
1	0	0	0	0	3	3	4	6	6	6
2	0	0	0	0	15	19	26	21	15	13
15:14:00 3	0	0	0	0	13	16	20	17	17	16
4	0	0	0	0	1 5 1 4 1 5 1 7 6 0					
5	0	0	0	0	13	12	21	40	32	31
		$1		L 0 0						
1	0	0	0	0	3	6	6	8	7	9
2	0	0	0	0	15	25	20	18	14	11
15:16:00 3	0	0	0	0	12	19	14	26	10	12
4	0	0	0	0	12	14	1 2 2 0		7	0
5	0	0	0	0	9	12	16	39	33	41
		L 0		L 0 0						
1	0	0	0	0	5	6	6	7	7	1 0
2	0	0	0	0	17	17	26	21	15	13
15:18:00 3	0	0	0	0	14	14	16	37	15	12
4	0	0	0	0	1 2 1 1 1 1 1 9 8 0					
5	0	0	0	0	13	13	21	41	35	45
		L 0		L 0 0						
1	0	0	0	0	4	5	7	7	6	8
2	0	0	0	0	12	17	30	19	15	12
15:20:00 3	0	0	0	0	13	15	15	29	17	15
4	0	0	0	0	10	11	14	16	7	0
5	0	0	0	0	9	9	3 7 5 0 4 1 4 9			
		A 0		L 0 A						
					4	4	6	7	7	7
2	0	0	0	0	13	17	31	23	15	12
15:22:00 3	0	0	0	0	11	14	19	21	20	13
4	0	0	0	0	1 3 1 4 2 0 2 4 7 0					
5	0	0	0	0	11	13	32	50	44	39
		$1		L 0 A						
1	0	0	0	0	2	3	5	7	6	8
2	0	0	0	0	11	16	36	19	17	11
15:24:00 3	0	0	0	0	9	14	17	21	15	13
4	0	0	0	0	14	15	20	24	26	0
5	0	0	0	0	12	13	48	53	54	45
		L 0		L 0 A						
1	0	0	0	0	4	5	7	7	7	7
2	0	0	0	0	11	19	35	20	15	11
15:26:00 3	0	0	0	0	10	14	15	20	19	14
4	0	0	0	0	1 1 1 4 1 5 1 7 8 0					
5	0	0	0	0	10	15	47	49	42	40
		L 0		L 0 0						
1	0	0	0	0	5	5	7	5	5	8
2	0	0	0	0	11	14	36	18	15	11
152800 3	0	0	0	0	10	11	16	29	18	14
4	0	0	0	0	1 1 1 4 1 7 2 0 7 0					
5	0	0	0	0	9	13	48	57	43	37
		L 0		L 0 0						

Shading



2-Minute Occupancy Data Northbound 1-880, 03/04/93, 14:50 - 16:08

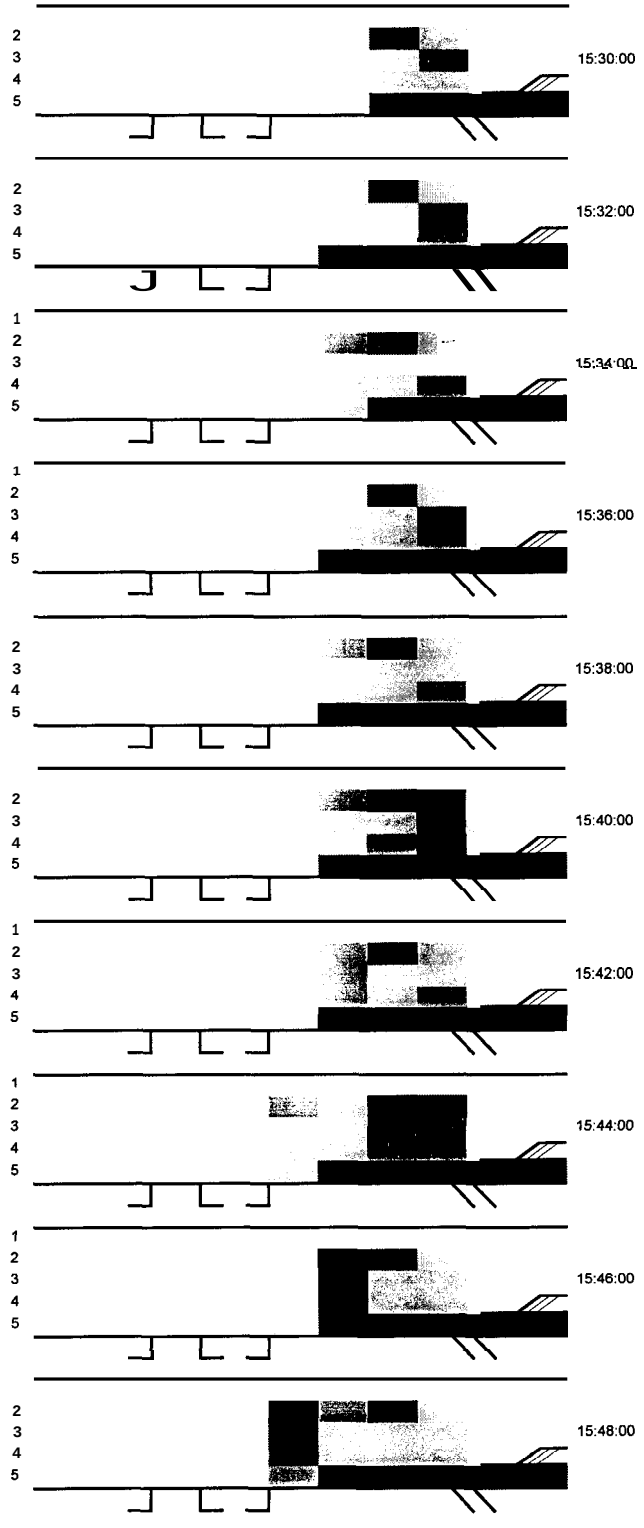


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

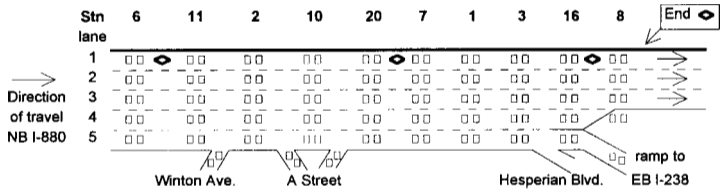
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	4	5	7	9	7	8
	2	0	0	0	0	14	16	34	22	14	11
15:30:00	3	0	0	0	0	12	14	19	25	15	11
	4	0	0	0	0	15	15	24	23	4	0
	5	0	0	0	0	11	17	46	51	37	41
			0		0	0					
	1	0	0	0	0	1	2	6	7	7	7	1	0
	2	0	0	0	0	12	23	36	19	15	14
15:32:00	3	0	0	0	0	12	18	13	27	16	11
	4	0	0	0	0	11	17	17	26	13	0
	5	0	0	0	0	11	34	44	56	44	41
			0		0	0					
	1	0	0	0	0	5	7	7	9	7	7
	2	0	0	0	0	16	30	38	20	15	10
15:34:00	3	0	0	0	0	15	24	16	18	14	15
	4	0	0	0	0	13	21	19	26	9	0
	5	0	0	0	0	12	21	51	44	44	42
			0		0	0					
	1	0	0	0	0	3	6	7	9	7	8
	2	0	0	0	0	11	17	38	19	13	11
15:36:00	3	0	0	0	0	12	17	22	28	11	10
	4	0	0	0	0	14	20	24	29	13	0
	5	0	0	0	0	11	41	54	58	31	39
			0		0	0					
	1	0	0	0	0	5	7	8	1	0	8	7
	2	0	0	0	0	13	26	42	22	12	11
15:38:00	3	0	0	0	0	12	22	20	24	10	9
	4	0	0	0	0	11	21	24	29	14	0
	5	0	0	0	0	11	45	51	67	33	47
			0		0	0					
	1	0	0	0	0	4	6	6	7	7	1	0
	2	0	0	0	0	13	28	37	26	15	12
15:40:00	3	0	0	0	0	13	23	23	26	14	11
	4	0	0	0	0	15	22	26	31	8	0
	5	0	0	0	0	11	36	50	48	42	34
			0		0	0					
	1	0	0	0	0	7	8	9	9	8	9
	2	0	0	0	0	18	28	41	23	12	9
15:42:00	3	0	0	0	0	15	26	17	23	13	12
	4	0	0	0	0	15	29	22	26	5	0
	5	0	0	0	0	13	48	44	51	39	50
			0		0	0					
	1	0	0	0	0	7	7	7	6	6	9
	2	0	0	0	0	29	24	47	34	14	11
15:44:00	3	0	0	0	0	23	24	25	27	7	9
	4	0	0	0	0	21	24	26	27	5	0
	5	0	0	0	0	18	39	54	51	58	33
			0		0	0					
	1	0	0	0	0	5	6	6	9	7	8
	2	0	0	0	0	20	44	33	19	14	12
15:46:00	3	0	0	0	0	20	32	20	21	13	10
	4	0	0	0	0	19	30	20	21	5	0
	5	0	0	0	0	15	39	61	60	40	38
			0		0	0					
	1	0	0	0	0	8	9	8	8	7	9
	2	0	0	0	0	40	30	44	19	15	11
15:48:00	3	0	0	0	0	35	24	24	23	12	12
	4	0	0	0	0	35	22	23	34	4	0
	5	0	0	0	0	30	49	54	66	44	39
			0		0	0					

Shading



2-Minute Occupancy Data Northbound I-880, 03/04/93, 14:50 - 16:08

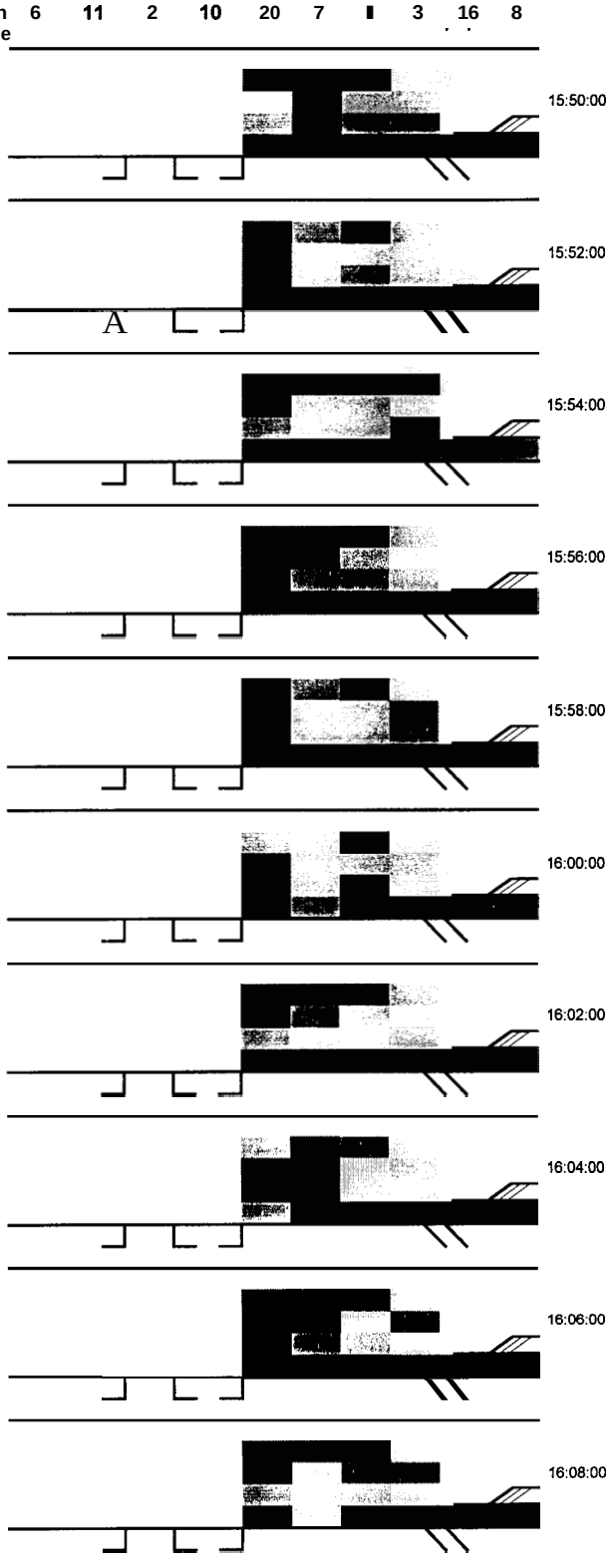


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

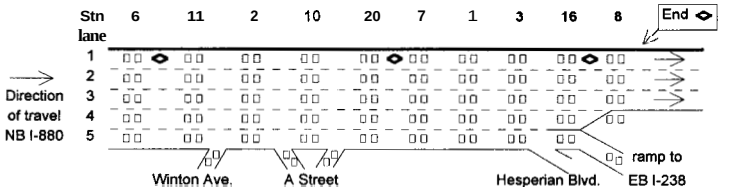
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	7	7	7	7	7	7
	2	0	0	0	0	32	35	41	20	15	12
155000	3	0	0	0	0	22	34	21	22	14	10
	4	0	0	0	0	2 5	3 3	2 5	3 0	7	0
	5	0	0	0	0	31	47	55	57	33	32
			0		0	A					
						7	7	7	7	8	9
	2	0	0	0	0	42	29	42	20	14	11
15:52:00	3	0	0	0	0	36	24	21	22	11	13
	4	0	0	0	0	33	23	29	24	20	0
	5	0	0	0	0	42	32	51	56	46	42
			0		0	A					
	1	0	0	0	0	1 0	9	9	1 1	8	8
	2	0	0	0	0	31	31	39	31	14	10
15:54:00	3	0	0	0	0	36	23	22	19	11	11
	4	0	0	0	0	2 9	2 2	2 3	3 7	8	0
	5	0	0	0	0	33	40	49	57	29	29
			0		0	0					
	1	0	0	0	0	1 0	9	1 0	9	7 1	1
	2	0	0	0	0	33	35	42	21	15	12
15:56:00	3	0	0	0	0	40	31	22	19	11	Y
	4	0	0	0	0	3 4	2 9	2 5	2 3	6	0
	5	0	0	0	0	32	39	51	48	36	39
			0		0	A					
	1	0	0	0	0	11	11	10	9	7	9
	2	0	0	0	0	42	29	34	18	13	11
15:58:00	3	0	0	0	0	40	24	22	27	13	13
	4	0	0	0	0	3 9	2 1	2 2	2 6	9	0
	5	0	0	0	0	39	48	37	44	34	39
			0		0	0					
	1	0	0	0	0	7	7	6	7	7	9
	2	0	0	0	0	29	22	45	20	13	11
16:00:00	3	0	0	0	0	33	22	22	22	15	12
	4	0	0	0	0	3 6	2 1	36	19	3	0
	5	0	0	0	0	37	28	45	49	49	45
			0		0	0					
	1	0	0	0	0	6	6	6	7	6	7
	2	0	0	0	0	30	33	39	21	13	10
16:02:00	3	0	0	0	0	41	28	22	19	13	11
	4	0	0	0	0	30	24	17	22	10	0
	5	0	0	0	0	33	35	60	58	38	37
			0		0	0					
	1	0	0	0	0	8	8	8	8	7	8
	2	0	0	0	0	29	40	27	18	14	10
16:04:00	3	0	0	0	0	30	42	19	23	13	13
	4	0	0	0	0	4 1	3 3	2 0	1 7	7	0
	5	0	0	0	0	26	38	30	40	35	41
			0		0	0					
	1	0	0	0	0	7	8	8	7	6	8
	2	0	0	0	0	37	34	35	15	13	11
16:06:00	3	0	0	0	0	41	34	19	25	14	14
	4	0	0	0	0	4 4	2 8	2 2	1 3	5	0
	5	0	0	0	0	39	35	37	33	36	46
			0		0	A					
	1	0	0	0	0	8	7	7	8	6	7
	2	0	0	0	0	35	32	41	15	11	10
16:08:00	3	0	0	0	0	44	23	27	29	13	11
	4	0	0	0	0	2 8	2 2	2 2	2 0	7	0
	5	0	0	0	0	37	23	39	52	63	41
			0		0	A					

Shading



2-Minute Occupancy Data Northbound I-880, 03/05/93, 14:16 - 15:34



Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

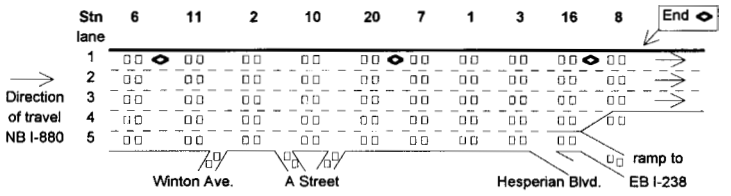
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	7	6	6	7	7	7
	2	0	0	0	0	11	10	11	10	9	10
14:16:00	3	0	0	0	0	11	10	9	11	13	14
	4	0	0	0	0	1	1	1	0	1	1	1	0	4	0
	5	0	0	0	0	8	9	9	1	1	1	5	2	6	
			0		0	0					
	1	0	0	0	0	7	6	6	6	5	8
	2	0	0	0	0	8	7	9	8	7	1	2
14:18:00	3	0	0	0	0	11	11	11	10	11	14
	4	0	0	0	0	10	11	9	11	4	0
	5	0	0	0	0	11	8	8	11	12	24
		$1		0		A					
	1	0	0	0	0	9	8	7	8	7	7
	2	0	0	0	0	12	11	17	10	10	11
14:20:00	3	0	0	0	0	13	12	13	14	14	14
	4	0	0	0	0	15	14	11	11	4	0
	5	0	0	0	0	16	15	17	18	14	20
		$1		0	0						
	1	0	0	0	0	9	8	8	11	10	10
	2	0	0	0	0	10	10	13	14	10	9
14:22:00	3	0	0	0	0	15	12	11	14	11	14
	4	0	0	0	0	1	3	1	2	1	1	1	8	4	0
	5	0	0	0	0	14	11	13	31	29	25
		$1		0		A					
	1	0	0	0	0	5	5	4	7	7	8
	2	0	0	0	0	8	8	12	11	10	10
14:24:00	3	0	0	0	0	11	11	13	16	14	13
	4	0	0	0	0	1	2	1	0	8	1	5	8	0
	5	0	0	0	0	10	9	12	35	29	32
			0		0	0					
	1	0	0	0	0	9	8	9	1	0	9	8
	2	0	0	0	0	10	9	14	11	11	10
14:26:00	3	0	0	0	0	14	13	11	12	15	16
	4	0	0	0	0	1	3	1	1	1	2	1	0	5	0
	5	0	0	0	0	13	11	15	25	33	26
		$1		0		A					
	1	0	0	0	0	6	6	5	10	10	11
	2	0	0	0	0	10	8	11	11	10	12
14:28:00	3	0	0	0	0	10	9	10	12	11	15
	4	0	0	0	0	1	2	9	1	0	1	5	5	0
	5	0	0	0	0	10	8	10	34	23	29
		$1		0	0						
	1	0	0	0	0	1	0	1	1	1	5	1	0	8	7
	2	0	0	0	0	11	14	18	11	10	9
14:30:00	3	0	0	0	0	14	14	13	12	14	11
	4	0	0	0	0	12	12	12	10	2	0
	5	0	0	0	0	13	14	15	18	22	25
			0		0	0					
	1	0	0	0	0	8	7	6	8	9	1	3
	2	0	0	0	0	10	7	13	10	10	13
14:32:00	3	0	0	0	0	10	9	8	11	12	16
	4	0	0	0	0	1	2	1	0	1	0	1	1	5	0
	5	0	0	0	0	24	10	12	14	25	27
			0		0	0					
	1	0	0	0	0	8	7	7	8	9	7
	2	0	0	0	0	10	9	12	11	9	11
14:34:00	3	0	0	0	0	13	12	12	13	12	11
	4	0	0	0	0	1	2	1	1	1	0	1	3	7	0
	5	0	0	0	0	10	10	10	30	28	23
			0		0	0					

Shading

Stn	6	11	2	10	20	7	1	3	16	8	
lane											
1											
2											
3											14:16:00
4											
5											
1											
2											
3											14:18:00
4											
5											
1											
2											
3											14:20:00
4											
5		A									
1											
2											
3											14:22:00
4											
5											
1											
2											
3											14:24:00
4											
5											
1											
2											
3											14:26:00
4											
5		A									
1											
2											
3											14:28:00
4											
5											
1											
2											
3											14:30:00
4											
5											
1											
2											
3											14:32:00
4											
5		A	L	A							
1											
2											
3											14:34:00
4											
5											

2-Minute Occupancy Data Northbound I-880, 03/05/93, 14:16 - 15:34

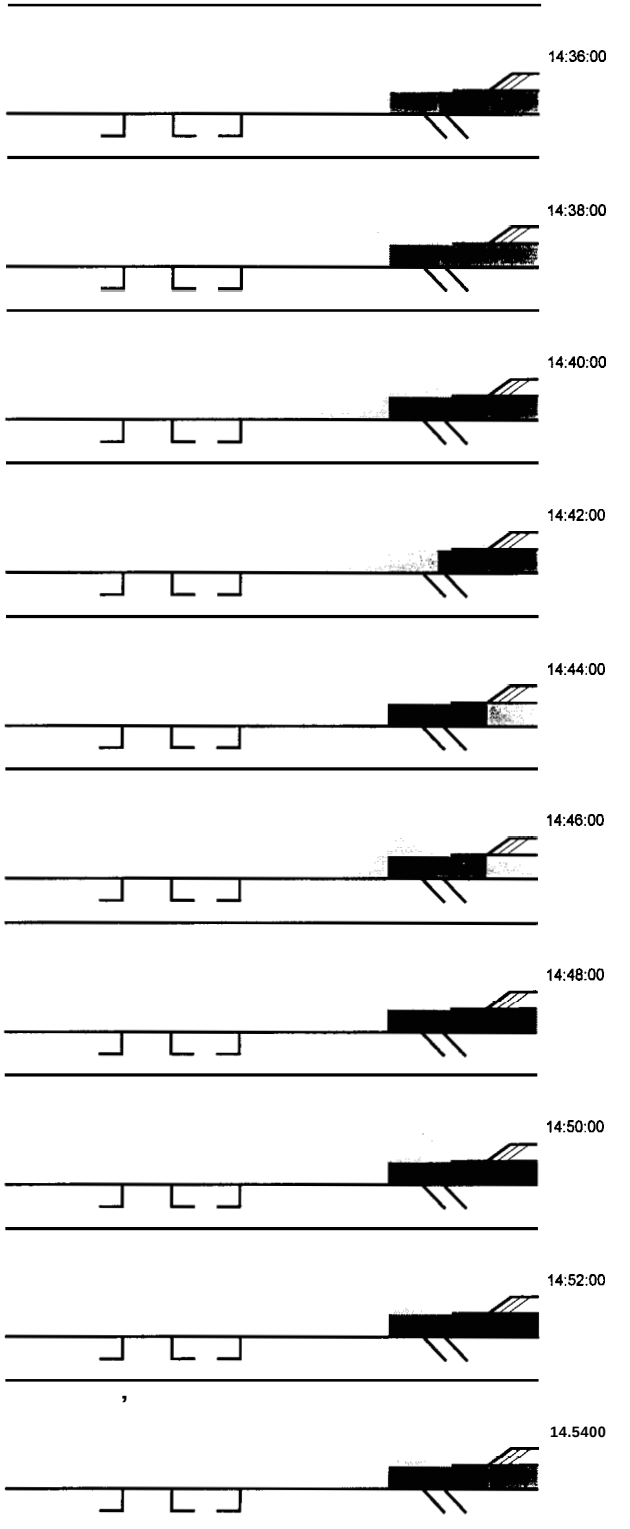


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

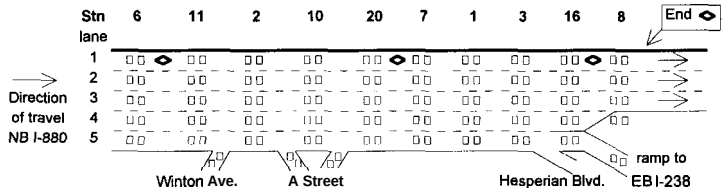
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	7	7	8	7	7	8
	2	0	0	0	0	11	10	13	11	10	9
14:36:00	3	0	0	0	0	10	9	10	12	13	14
	4	0	0	0	0	13	11	9	11	3	0
	5	0	0	0	0	10	10	11	27	35	25
			0		0	0					
	1	0	0	0	0	9	9	8	1	2	1	2	1	1
	2	0	0	0	0	12	11	14	14	12	14
14:38:00	3	0	0	0	0	11	10	9	14	11	11
	4	0	0	0	0	13	13	11	18	6	0
	5	0	0	0	0	12	11	12	30	29	27
			$1		0	A					
	1	0	0	0	0	8	8	8	9	1	0	1	0
	2	0	0	0	0	10	10	15	11	12	12
14:40:00	3	0	0	0	0	11	11	10	13	13	14
	4	0	0	0	0	1	3	1	0	9	1	6	9	0
	5	0	0	0	0	13	12	14	30	33	28
			$1		0	0					
	1	0	0	0	0	8	8	7	1	0	8	1	0
	2	0	0	0	0	11	10	16	15	10	12
14:42:00	3	0	0	0	0	11	10	10	15	13	12
	4	0	0	0	0	12	10	10	12	10	0
	5	0	0	0	0	11	10	14	25	31	27
			0		0	A					
	1	0	0	0	0	8	6	7	1	0	1	0	1	0
	2	0	0	0	0	10	10	12	12	14	12
14:44:00	3	0	0	0	0	10	10	10	13	13	15
	4	0	0	0	0	11	11	9	15	3	0
	5	0	0	0	0	10	9	11	35	32	24
			$1		0	0					
	1	0	0	0	0	10	10	13	13	11	10
	2	0	0	0	0	12	12	18	15	13	11
14:46:00	3	0	0	0	0	14	14	15	16	12	13
	4	0	0	0	0	14	9	12	16	4	0
	5	0	0	0	0	11	10	16	34	29	24
			0		0	0					
	1	0	0	0	0	7	7	7	8	1	0	1	3
	2	0	0	0	0	9	9	1	2	1	2	1	1	1	2
14:48:00	3	0	0	0	0	10	9	9	13	12	14
	4	0	0	0	0	12	11	11	13	3	0
	5	0	0	0	0	10	9	10	41	31	37
			$1		0	A					
	1	0	0	0	0	9	8	8	1	3	9	7
	2	0	0	0	0	10	9	13	17	11	10
14:50:00	3	0	0	0	0	13	10	12	16	12	11
	4	0	0	0	0	1	2	1	0	9	1	4	6	0
	5	0	0	0	0	6	6	7	4	2	3	7	4	2
			0		0	0					
	1	0	0	0	0	9	8	9	12	12	11
	2	0	0	0	0	10	10	11	11	12	12
14:52:00	3	0	0	0	0	10	10	8	16	16	17
	4	0	0	0	0	1	2	1	0	1	1	1	2	5	0
	5	0	0	0	0	9	8	8	3	2	4	9	3	2
			$1		0	A					
	1	0	0	0	0	7	7	7	11	11	12
	2	0	0	0	0	10	9	13	14	11	10
14:54:00	3	0	0	0	0	11	11	10	13	11	12
	4	0	0	0	0	1	1	9	9	1	7	5	0
	5	0	0	0	0	12	8	12	41	33	26
			0		0	A					

Shading



2-Minute Occupancy Data Northbound **1-880, 03/05/93,** 14:16 - 15:34

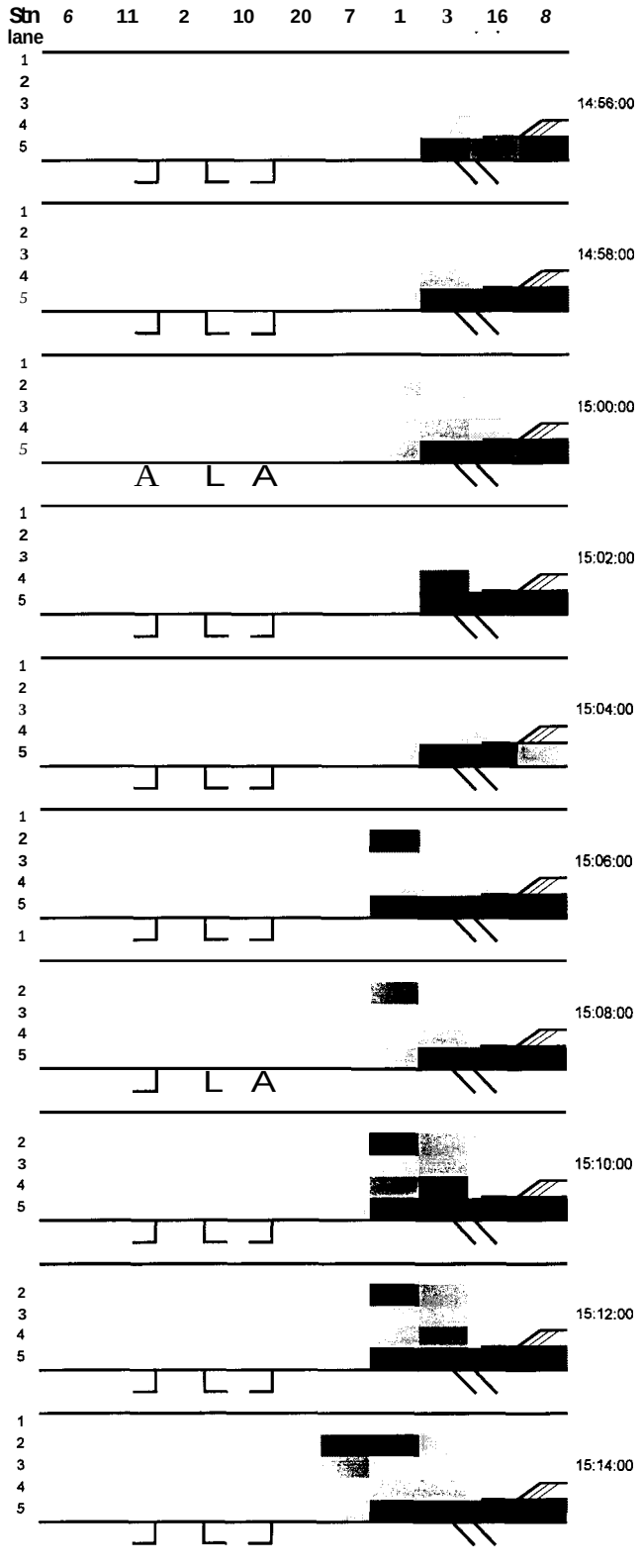


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

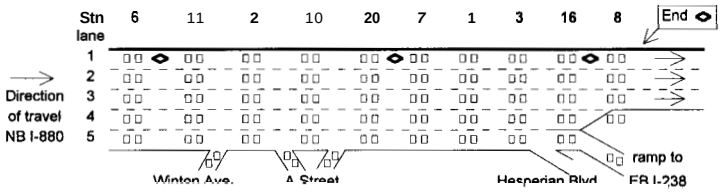
Occupancy

Stn	6	11	2	10	20	7	1	3	16	8
lane										
1	0	0	0	0	6	4	5	1	0	1	0	1	1
2	0	0	0	0	10	10	16	13	11	12
14:56:00 3	0	0	0	0	13	12	13	14	13	13
4	0	0	0	0	1	2	1	1	1	4	1	9	9	0
5	0	0	0	0	14	12	16	45	29	35
		0		0	0					
1	0	0	0	0	8	9	1	4	1	1	8	7
2	0	0	0	0	13	13	25	14	12	9
14:58:00 3	0	0	0	0	13	13	21	19	11	12
4	0	0	0	0	15	13	1	7	2	0	4	0
5	0	0	0	0	9	9	2	0	5	4	3	6	3	6
		0		L	A					
1	0	0	0	0	6	5	6	1	1	1	2	1	3
2	0	0	0	0	9	10	25	15	14	12
15:00:00 3	0	0	0	0	10	10	10	18	18	17
4	0	0	0	0	12	12	19	24	15	0
5	0	0	0	0	8	7	2	3	4	4	3	9	4	3
		0		L	A					
1	0	0	0	0	3	2	3	6	6	8
2	0	0	0	0	8	8	1	3	1	6	1	2	1	1
15:02:00 3	0	0	0	0	8	8	9	12	9	13
4	0	0	0	0	9	9	8	3	2	7	0
5	0	0	0	0	10	8	9	6	1	3	8	4	2
		0		L	A					
1	0	0	0	0	3	3	4	5	8	9
2	0	0	0	0	11	10	16	17	12	9
15:04:00 3	0	0	0	0	9	8	10	15	10	9
4	0	0	0	0	11	10	10	19	12	0
5	0	0	0	0	8	8	1	3	6	5	4	7	2	2
		0		0	0					
1	0	0	0	0	4	4	4	5	5	6
2	0	0	0	0	10	11	30	13	12	12
15:06:00 3	0	0	0	0	9	9	11	12	11	9
4	0	0	0	0	12	12	13	13	11	0
5	0	0	0	0	12	11	39	47	41	41
		0		0	0					
1	0	0	0	0	5	4	5	5	7	8
2	0	0	0	0	13	14	27	20	14	9
15:08:00 3	0	0	0	0	12	12	15	17	12	12
4	0	0	0	0	1	3	1	2	1	8	2	0	5	0
5	0	0	0	0	9	8	2	5	6	1	3	5	4	0
		0		0	0					
1	0	0	0	0	4	5	6	8	6	7
2	0	0	0	0	11	14	43	25	14	11
15:10:00 3	0	0	0	0	12	14	19	20	13	13
4	0	0	0	0	1	2	1	2	2	8	5	2	8	0
5	0	0	0	0	12	12	47	64	49	44
		0		0	0					
1	0	0	0	0	6	7	1	0	1	1	7	9
2	0	0	0	0	13	18	41	23	15	11
15:12:00 3	0	0	0	0	13	16	20	24	14	12
4	0	0	0	0	13	13	21	28	6	0
5	0	0	0	0	11	14	49	51	38	32
		41		L	A					
1	0	0	0	0	7	9	9	1	0	1	0	9
2	0	0	0	0	12	32	42	18	16	11
15:14:00 3	0	0	0	0	13	27	15	17	17	16
4	0	0	0	0	11	16	23	25	13	0
5	0	0	0	0	11	16	49	72	39	31
		0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880, 03/05/93,** 14:16 - 15:34

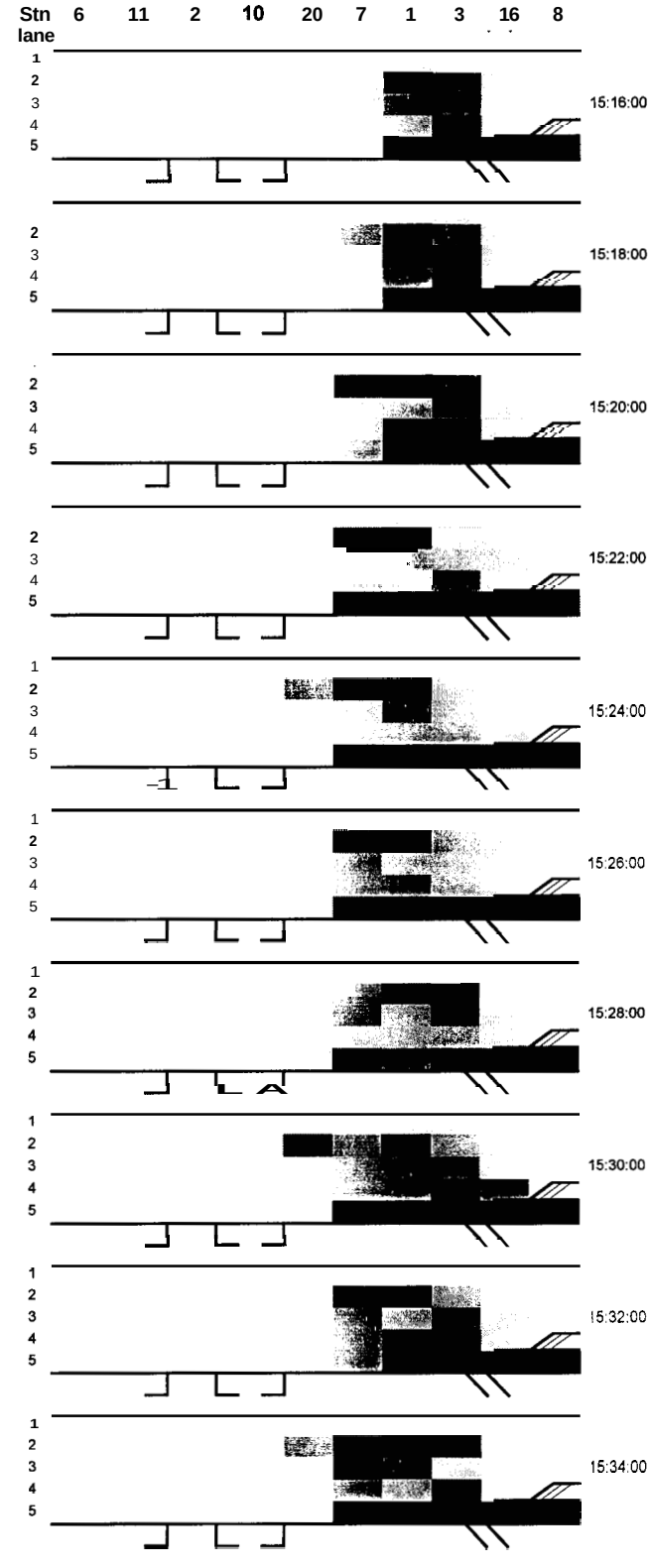


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	io	30	4	
30	io	40	5	
40	andup		6	

Occupancy

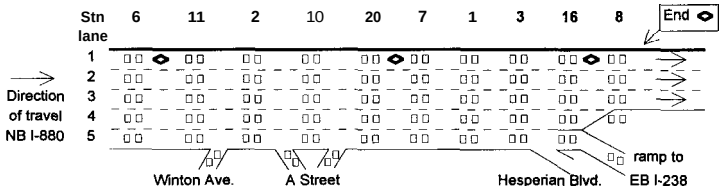
	Stn lane	6	11	2	10	20	7	1	3	16	8
	1		0	0	0	8	10	10	13	9	10
	2	0	0	0	0	16	23	40	28	13	11
15:16:00	3	0	0	0	0	15	21	26	26	10	12
	4	0	0	0	0	12	18	22	37	9	0
	5	0	0	0	0	9	15	49	53	48	41
			$1		0	0					
	1		0	0	0	6	8	10	13	7	8
	2	0	0	0	0	12	29	43	27	12	11
15:18:00	3	0	0	0	0	9	20	31	37	15	12
	4	0	0	0	0	12	16	30	37	8	0
	5	0	0	0	0	10	14	48	47	39	45
			0		0	0					
	1	0	0	0	0	2	5	5	7	6	8
	2	0	0	0	0	13	34	47	30	14	9
15:20:00	3	0	0	0	0	11	19	24	29	17	15
	4	0	0	0	0	12	18	30	33	12	0
	5	0	0	0	0	11	27	49	49	34	49
			01		0	0					
	1	0	0	0	0	8	10	11	11	7	8
	2	0	0	0	0	21	33	46	19	16	10
15:22:00	3	0	0	0	0	22	24	24	21	20	13
	4	0	0	0	0	13	22	19	26	11	0
	5	0	0	0	0	10	42	50	35	48	39
			0		0	0					
	1		0	00	0	6	8	8	10	10	9
	2	0	0	0	0	29	34	48	19	15	13
15:24:00	3	0	0	0	0	19	22	26	21	15	13
	4	0	0	0	0	16	22	24	20	12	0
	5	0	0	0	0	16	36	53	53	46	45
			01		0	0					
	1	0	0	0	0	7	8	8	9	9	9
	2	0	0	0	0	22	35	42	20	17	12
15:26:00	3	0	0	0	0	12	27	22	20	19	14
	4	0	0	0	0	13	26	28	25	14	0
	5	0	0	0	0	14	36	42	52	46	40
			0		0	0					
	1	0	0	0	0	6	8	7	7	7	1	0
	2	0	0	0	0	20	30	38	26	15	12
15:28:00	3	0	0	0	0	18	27	23	29	18	14
	4	0	0	0	0	13	23	21	24	17	0
	5	0	0	0	0	11	36	29	47	46	37
			0		0	0					
	1	0	0	0	0	12	14	14	13	8	8
	2	0	0	0	0	32	28	41	23	13	9
15:30:00	3	0	0	0	0	22	25	27	25	15	11
	4	0	0	0	0	15	27	27	32	30	0
	5	0	0	0	0	14	41	44	55	34	41
			0		0	0					
	1	0	0	0	0	6	7	9	14	12	11
	2	0	0	0	0	22	30	47	24	16	11
15:32:00	3	0	0	0	0	16	26	20	27	16	11
	4	0	0	0	0	16	29	30	35	14	0
	5	0	0	0	0	14	30	53	57	49	41
			$1		0	0					
	1		0	00	0	9	10	10	9	7	9
	2	0	0	0	0	29	33	42	31	14	12
15:34:00	3	0	0	0	0	19	30	27	18	14	15
	4	0	0	0	0	2 1 2 6 2 4 3 0 5					0
	5	0	0	0	0	14	42	45	65	36	42
			0		0	0					

Shading



2-Minute Occupancy Data

Northbound **1-880,** 03/10/93, 15:02 - 16:20



Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	2	2	2	2	2	5
	2	0	0	0	0	12	11	15	13	12	11
15:02:00	3	0	0	0	0	12	9	9	11	13	16
	4	0	0	0	0	12	12	12	12	5	0
	5	0	0	0	0	12	12	14	20	15	26
			$1		0	0					
	1	0	0	0	0	3	3	2	2	2	5
	2	0	0	0	0	9	9	12	10	10	9
15:04:00	3	0	0	0	0	7	7	7	8	10	13
	4	0	0	0	0	11	9	8	9	3	0
	5	0	0	0	0	11	9	10	15	30	46
			0		0	0					
	1	0	0	0	0	2	2	2	3	4	5
	2	0	0	0	0	15	14	16	17	99	
15:06:00	3	0	0	0	0	11	11	10	13	11	11
	4	0	0	0	0	13	11	11	15	4	0
	5	0	0	0	0	10	10	12	23	46	43
			0		0	0					
	1	0	0	0	0	2	2	2	4	4	5
	2	0	0	0	0	11	11	13	15	15	13
15:08:00	3	0	0	0	0	11	10	11	18	19	16
	4	0	0	0	0	12	11	10	16	13	0
	5	0	0	0	0	11	8	8	3	6	4
			A		0	0					
	1	0	0	0	0	3	3	3	5	6	6
	2	0	0	0	0	12	11	13	21	13	11
15:10:00	3	0	0	0	0	7	7	7	1	7	1
	4	0	0	0	0	1	1	1	0	9	1
	5	0	0	0	0	8	8	10	30	39	25
			A		0	0					
	1	0	0	0	0	4	4	4	6	7	7
	2	0	0	0	0	13	12	19	18	12	12
15:12:00	3	0	0	0	0	11	10	12	13	13	12
	4	0	0	0	0	11	10	10	19	7	0
	5	0	0	0	0	12	11	14	41	35	24
			0		0	A					
	1	0	0	0	0	4	4	5	6	6	8
	2	0	0	0	0	15	16	26	17	13	11
15:14:00	3	0	0	0	0	13	14	19	15	12	14
	4	0	0	0	0	14	15	17	19	8	0
	5	0	0	0	0	11	12	15	27	32	25
			$1		0	0					
	1	0	0	0	0	5	4	7	9	7	9
	2	0	0	0	0	14	14	26	22	14	12
15:16:00	3	0	0	0	0	13	14	21	23	15	15
	4	0	0	0	0	15	14	17	20	5	0
	5	0	0	0	0	10	10	17	36	32	26
			0		0	0					
	1	0	0	0	0	3	3	5	7	7	8
	2	0	0	0	0	11	9	24	19	13	11
15:18:00	3	0	0	0	0	11	11	14	18	17	16
	4	0	0	0	0	11	13	8	13	21	6
	5	0	0	0	0	10	10	18	39	35	28
			$1		0	0					
	1	0	0	0	0	4	2	3	4	5	7
	2	0	0	0	0	11	11	20	19	15	12
15:20:00	3	0	0	0	0	10	9	12	14	13	15
	4	0	0	0	0	13	55	10	14	10	0
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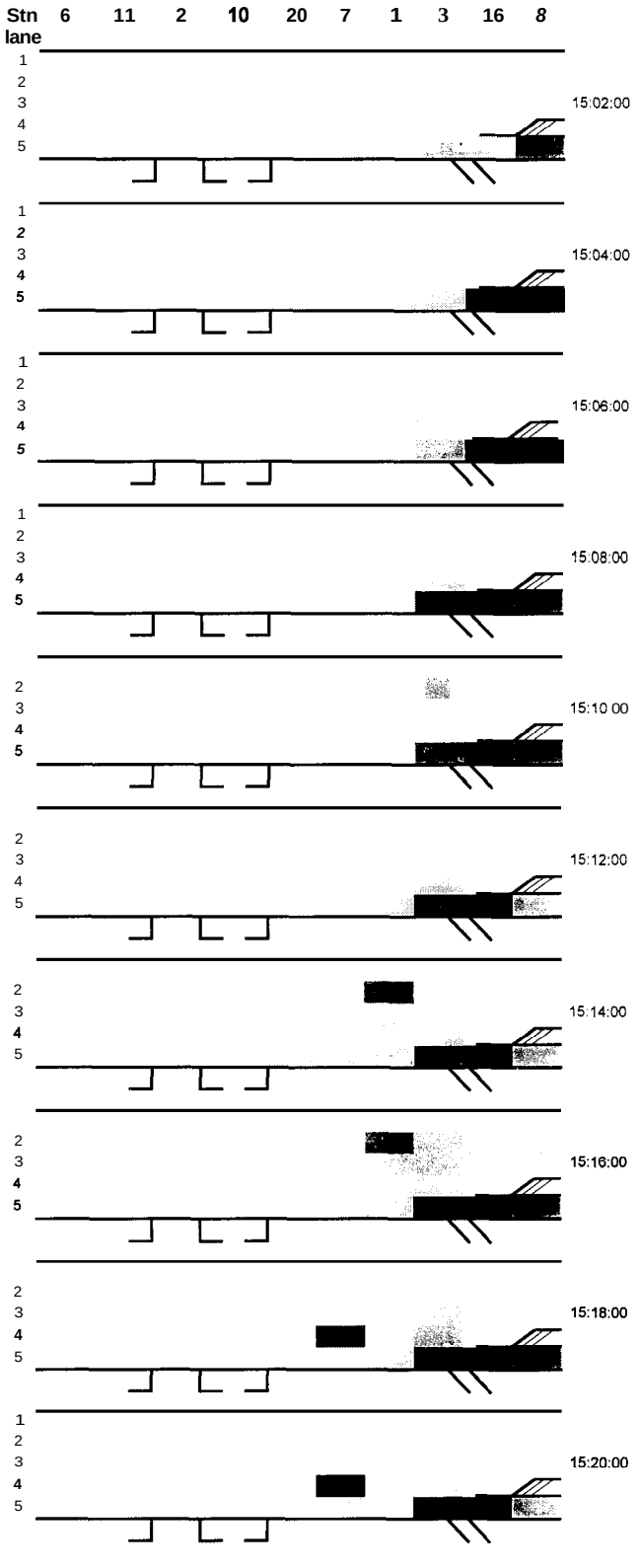
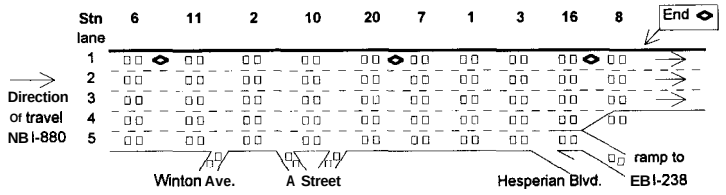
Shading



2-Minute Occupancy Data Northbound I-880, 03/10/93, 15:02 - 16:20

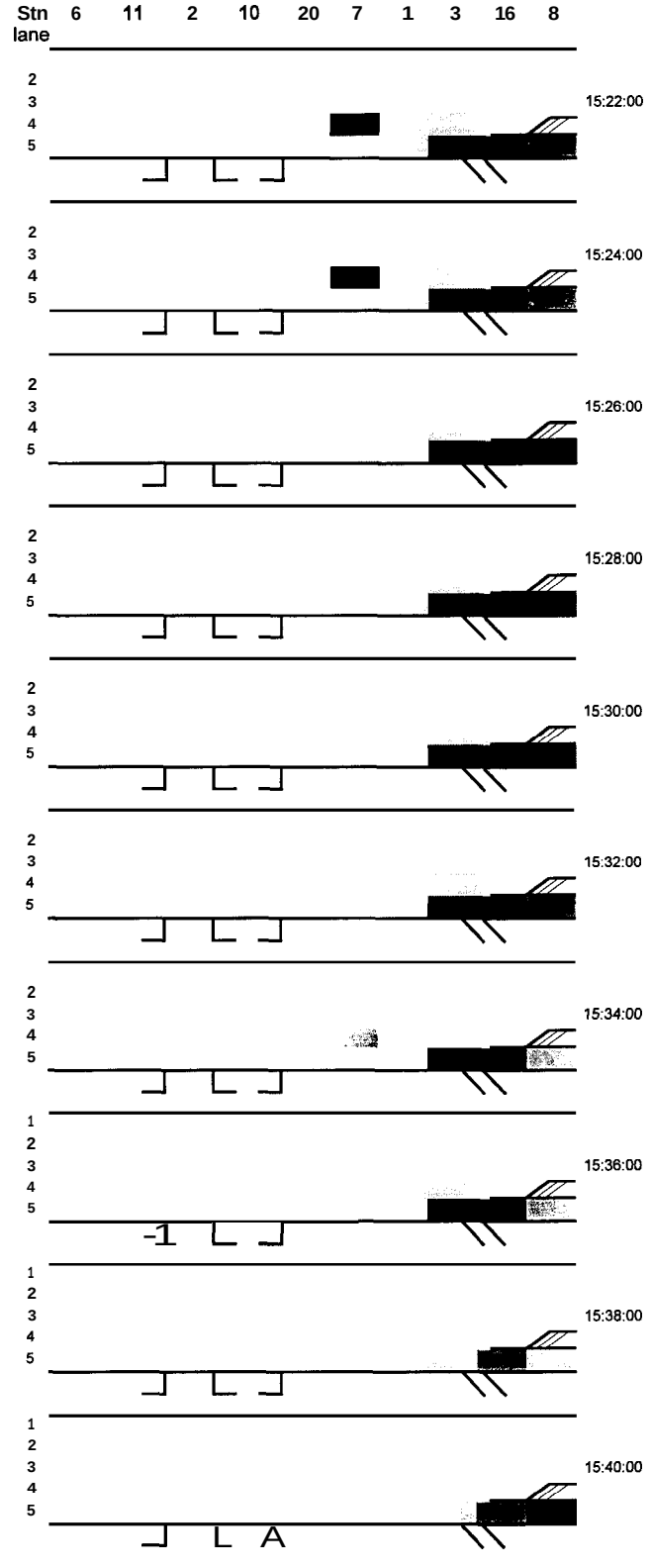


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

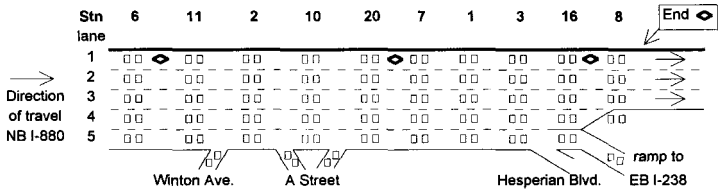
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	3	3	4	6	5	6
	2	0	0	0	0	15	13	17	18	14	12
15:22:00	3	0	0	0	0	12	11	11	14	10	12
	4	0	0	0	0	1	3	5	5	1	1	1	8	8	0
	5	0	0	0	0	10	9	14	49	35	26
			$1		0		A				
	1	0	0	0	0	3	3	3	4	6	7
	2	0	0	0	0	12	10	15	18	12	10
15:24:00	3	0	0	0	0	10	9	11	17	13	14
	4	0	0	0	0	10	66	10	19	7	0
	5	0	0	0	0	8	7	10	39	32	25
			$1		0		A				
	1	0	0	0	0	5	4	4	5	4	6
	2	0	0	0	0	9	10	12	21	13	10
15:26:00	3	0	0	0	0	9	9	8	16	13	13
	4	0	0	0	0	1	2	5	1	2	1	7	6	0
	5	0	0	0	0	12	11	9	44	36	38
			0		0		A				
	1	0	0	0	0	3	3	3	6	7	8
	2	0	0	0	0	14	12	15	20	12	10
15:28:00	3	0	0	0	0	10	9	9	1	5	1	3	1	4
	4	0	0	0	0	1	1	5	1	0	1	9	4	0
	5	0	0	0	0	8	8	10	39	47	38
			0		0		A				
	1	0	0	0	0	4	4	4	6	5	7
	2	0	0	0	0	13	11	13	18	14	12
15:30:00	3	0	0	0	0	10	10	9	14	12	13
	4	0	0	0	0	8	4	8	1	4	1	0	0
	5	0	0	0	0	10	7	9	4	2	3	0	3	6
			0		0	0					
	1	0	0	0	0	5	5	5	6	7	8
	2	0	0	0	0	12	11	14	16	14	12
15:32:00	3	0	0	0	0	12	11	12	14	18	15
	4	0	0	0	0	10	4	8	16	14	0
	5	0	0	0	0	11	9	11	36	42	26
			0		0	0					
	1	0	0	0	0	5	5	3	4	4	7
	2	0	0	0	0	12	12	12	15	16	13
15:34:00	3	0	0	0	0	10	10	11	14	13	12
	4	0	0	0	0	1	1	2	8	8	1	2	7	0
	5	0	0	0	0	10	9	8	48	40	25
			0		0	0					
	1	0	0	0	0	5	4	4	5	6	8
	2	0	0	0	0	13	12	12	16	15	12
15:36:00	3	0	0	0	0	9	8	7	11	11	13
	4	0	0	0	0	12	10	10	16	10	0
	5	0	0	0	0	8	7	8	3	0	3	5	2	5
			$1		0		A				
	1	0	0	0	0	5	5	4	5	5	8
	2	0	0	0	0	13	13	13	14	14	11
15:38:00	3	0	0	0	0	12	13	10	13	11	15
	4	0	0	0	0	1	4	1	2	1	0	1	1	8	0
	5	0	0	0	0	11	10	8	19	26	13
			0		0	0					
	1	0	0	0	0	4	4	5	6	5	7
	2	0	0	0	0	14	14	16	19	14	12
15:40:00	3	0	0	0	0	11	10	11	16	15	15
	4	0	0	0	0	1	3	1	3	1	2	1	6	3	0
	5	0	0	0	0	11	10	13	23	28	31
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 03/10/93, 15:02 - 16:20

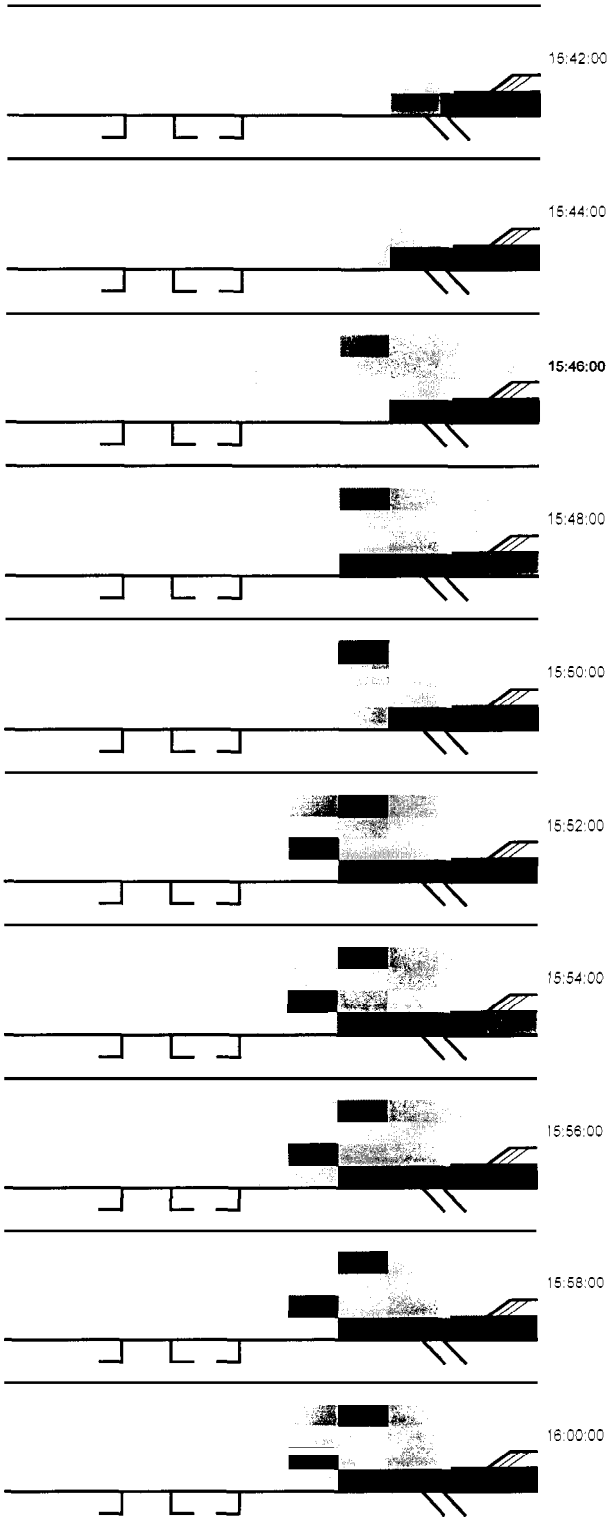


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

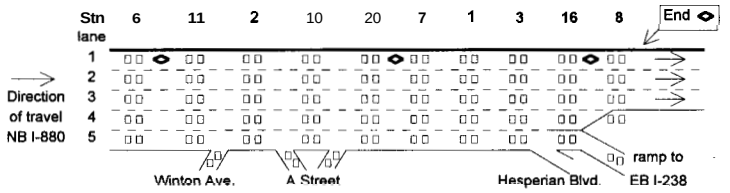
Occupancy

Stn lane	6	11	2	10	20	7	1	3	16	8
1	0	0	0	0	4	4	4	5	6	9
2	0	0	0	0	13	12	17	22	17	11
15:42:00 3	0	0	0	0	13	13	14	20	17	13
4	0	0	0	0	1 3 1	0 1	0 1	7 9	0	
5	0	0	0	0	11	9	13	29	41	42
		0		0	0					
1	0	0	0	0	6	5	5	6	5	7
2	0	0	0	0	13	13	19	19	19	12
15:44:00 3	0	0	0	0	13	13	13	19	22	17
4	0	0	0	0	13	12	11	19	12	0
5	0	0	0	0	14	12	15	44	40	47
		0		0	0					
1	0	0	0	0	6	5	6	6	8	9
2	0	0	0	0	15	15	27	24	15	11
15:46:00 3	0	0	0	0	12	12	22	21	18	17
4	0	0	0	0	11	11	13	20	12	0
5	0	0	0	0	10	9	17	54	52	43
		0		0	0					
1	0	0	0	0	5	4	6	7	8	1 0
2	0	0	0	0	11	14	34	24	15	11
15:48:00 3	0	0	0	0	11	11	17	19	16	19
4	0	0	0	0	11	11	1 6 2 3		6	0
5	0	0	0	0	10	10	33	49	46	28
		0		0	0					
1	0	0	0	0	5	6	8	5	6	8
2	0	0	0	0	13	19	34	18	15	11
15:50:00 3	0	0	0	0	11	15	23	19	12	11
4	0	0	0	0	1 4 2	2 1	8 1	8 3	0	
5	0	0	0	0	7	8 2	4 4	8 3	4 4	1
		0		0						
1	0	0	0	0	5	7	8	9	7	8
2	0	0	0	0	16	27	38	20	13	10
15:52:00 3	0	0	0	0	19	20	25	19	14	14
4	0	0	0	0	12	56	18	17	9	0
5	0	0	0	0	9	11	38	46	43	35
		0		0	0					
1	0	0	0	0	5	6	8	7	7	9
2	0	0	0	0	16	16	37	22	16	11
15:54:00 3	0	0	0	0	12	14	16	23	19	17
4	0	0	0	0	17	59	21	18	5	0
5	0	0	0	0	18	16	40	41	36	30
		0		0	0					
1	0	0	0	0	5	8	7	8	8	9
2	0	0	0	0	12	18	38	23	17	12
15:56:00 3	0	0	0	0	11	18	20	16	16	14
4	0	0	0	0	1 0 5	7 2	4 2	0 4		0
5	0	0	0	0	10	16	41	47	40	48
		0		0						
1	0	0	0	0	5	5	7	9	7	9
2	0	0	0	0	12	15	41	20	15	10
15:58:00 3	0	0	0	0	12	14	19	18	13	13
4	0	0	0	0	11	55	16	21	10	0
5	0	0	0	0	9	10	42	50	42	40
		0		0	0					
1	0	0	0	0	5	7	7	9	6	8
2	0	0	0	0	14	28	43	23	14	10
16:00:00 3	0	0	0	0	10	22	17	20	13	11
4	0	0	0	0	11	58	1 6 2	2	5	0
5	0	0	0	0	11	16	49	59	49	46
		0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880**,03/10/93, 15:02 - 16:20

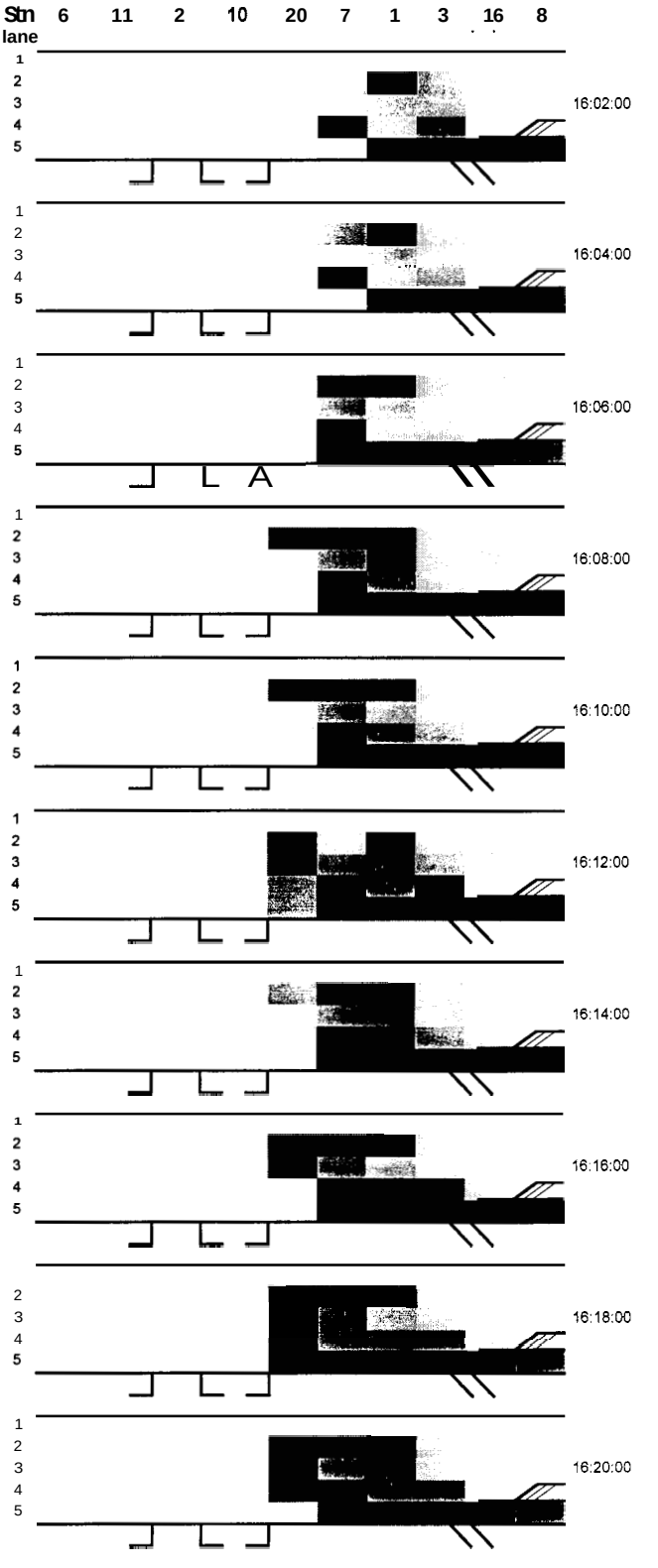


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

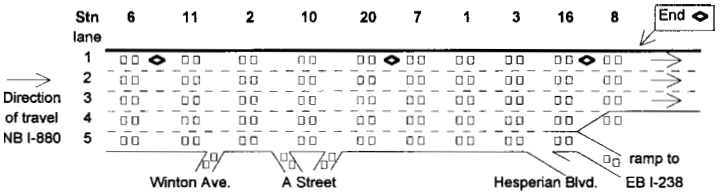
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	5	7	7	9	8	9
	2	0	0	0	0	12	23	49	23	14	11
16:02:00	3	0	0	0	0	10	17	23	23	11	12
	4	0	0	0	0	10	57	18	27	7	0
	5	0	0	0	0	11	14	55	61	39	44
			0		0	0					
	1	0	0	0	0	3	5	7	8	8	7
	2	0	0	0	0	13	26	51	17	13	11
16:04:00	3	0	0	0	0	10	18	21	18	14	14
	4	0	0	0	0	15	58	18	21	6	0
	5	0	0	0	0	10	20	46	66	40	40
			0		0	0					
	1		0	0	0	8	10	10	6	5	7
	2	0	0	0	0	18	31	44	15	13	10
16:06:00	3	0	0	0	0	22	28	23	15	15	14
	4	0	0	0	0	15	62	20	16	8	0
	5	0	0	0	0	13	41	54	55	36	26
			0		0	0					
	1	0	0	0	0	9	12	11	9	7	8
	2	0	0	0	0	31	40	36	14	13	9
16:08:00	3	0	0	0	0	17	27	33	14	11	12
	4	0	0	0	0	19	35	30	17	7	0
	5	0	0	0	0	14	31	43	54	37	30
			0		0						
	1	0	0	0	0	7	10	11	9	8	8
	2	0	0	0	0	31	38	42	17	12	11
16:10:00	3	0	0	0	0	25	27	23	17	11	11
	4	0	0	0	0	21	33	30	21	4	0
	5	0	0	0	0	25	43	45	49	35	39
			0		0	0					
	1					8	9	9	7	9	9
	2	0	0	0	0	46	25	43	20	13	10
16:12:00	3	0	0	0	0	31	30	26	24	10	12
	4	0	0	0	0	29	34	28	40	3	0
	5	0	0	0	0	27	38	47	58	46	33
			A		0	A					
	1	0	0	0	0	7	8	11	10	6	6
	2	0	0	0	0	29	37	34	18	14	11
16:14:00	3	0	0	0	0	19	29	28	18	15	14
	4	0	0	0	0	21	35	34	25	11	0
	5	0	0	0	0	15	43	50	54	36	44
			0		0	A					
	1	0	0	0	0	9	9	10	8	7	9
	2	0	0	0	0	35	30	38	19	12	9
16:16:00	3	0	0	0	0	35	25	23	19	12	12
	4	0	0	0	0	21	32	34	37	12	0
	5	0	0	0	0	21	51	38	59	64	45
			0		0	0					
	1		0	0	0	8	8	8	7	8	9
	2	0	0	0	0	33	33	35	18	14	11
16:18:00	3	0	0	0	0	37	30	22	16	14	12
	4	0	0	0	0	32	26	28	28	18	0
	5	0	0	0	0	32	32	39	63	51	29
			0		0	0					
	1		0	0	0	7	8	8	7	5	7
	2	0	0	0	0	45	33	48	18	12	9
16:20:00	3	0	0	0	0	35	29	29	17	10	10
	4	0	0	0	0	33	32	29	27	4	0
	5	0	0	0	0	23	39	45	62	41	29
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 03/18/93, 15:14 - 16:32

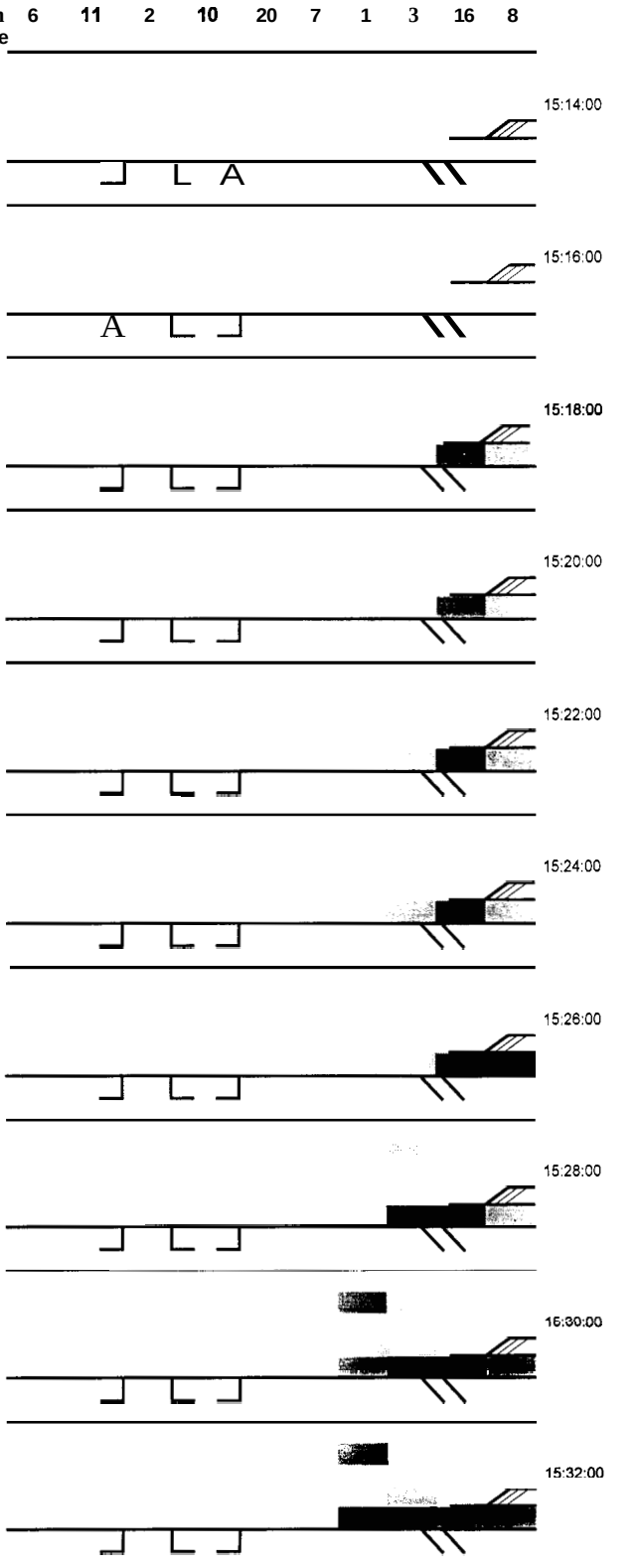


occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

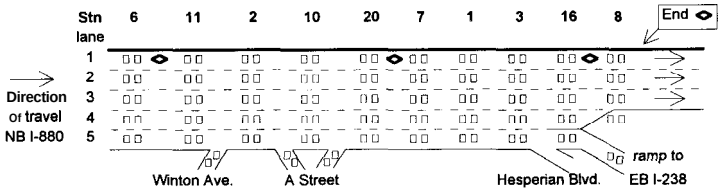
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	5	5	5	5	3	6
	2	0	0	0	0	12	12	13	12	10	9
15:14:00	3	0	0	0	0	11	9	7	8	10	15
	4	0	0	0	0	1	2	9	9	1	0	3	0
	5	0	0	0	0	12	10	10	14	10	21
			0		0	0					
	1	0	0	0	0	3	2	2	3	3	8
	2	0	0	0	0	12	11	14	13	10	12
15:16:00	3	0	0	0	0	12	10	10	12	11	12
	4	0	0	0	0	1	2	1	1	1	0	1	0	4	0
	5	0	0	0	0	10	9	9	1	3	1	1	2	1
			0		0	0					
	1	0	0	0	0	3	3	3	4	4	6
	2	0	0	0	0	10	10	11	11	12	9
15:18:00	3	0	0	0	0	10	9	9	10	12	14
	4	0	0	0	0	11	10	7	8	6	0
	5	0	0	0	0	8	6	8	1	1	2	8	2	3
			0		0	0					
	1	0	0	0	0	4	3	2	3	3	5
	2	0	0	0	0	12	10	12	12	13	10
15:20:00	3	0	0	0	0	12	12	10	11	12	11
	4	0	0	0	0	13	10	11	12	8	0
	5	0	0	0	0	11	9	10	14	28	19
			0		0	0					
	1	0	0	0	0	4	4	4	5	4	6
	2	0	0	0	0	16	14	14	14	14	10
15:22:00	3	0	0	0	0	14	12	11	10	16	15
	4	0	0	0	0	16	17	12	13	12	0
	5	0	0	0	0	17	11	11	15	38	25
			0		0	0					
	1	0	0	0	0	3	3	3	3	7	7
	2	0	0	0	0	12	9	14	12	14	14
15:24:00	3	0	0	0	0	12	12	11	13	13	14
	4	0	0	0	0	1	3	1	0	1	0	1	1	7	0
	5	0	0	0	0	10	9	11	20	35	24
			0		0	0					
	1	0	0	0	0	4	3	4	4	5	5
	2	0	0	0	0	14	12	14	12	15	12
15:26:00	3	0	0	0	0	13	11	10	13	12	13
	4	0	0	0	0	14	12	11	12	8	0
	5	0	0	0	0	15	12	12	19	32	32
			0		0	0					
	1	0	0	0	0	4	4	4	7	6	8
	2	0	0	0	0	16	14	18	17	15	11
15:28:00	3	0	0	0	0	13	11	10	15	12	12
	4	0	0	0	0	12	11	8	12	4	0
	5	0	0	0	0	12	10	14	33	33	22
			0		0	0					
	1	0	0	0	0	4	3	5	6	6	7
	2	0	0	0	0	14	17	27	20	14	12
15:30:00	3	0	0	0	0	14	15	16	19	13	11
	4	0	0	0	0	10	10	16	15	3	0
	5	0	0	0	0	13	14	25	37	35	25
			0		0	0					
	1	0	0	0	0	4	4	6	8	5	8
	2	0	0	0	0	14	14	29	22	14	12
15:32:00	3	0	0	0	0	11	10	14	16	12	15
	4	0	0	0	0	12	14	1	3	2	0	7	0
	5	0	0	0	0	16	13	33	47	29	26
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880, 03/18/93**, 15:14 - 16:32

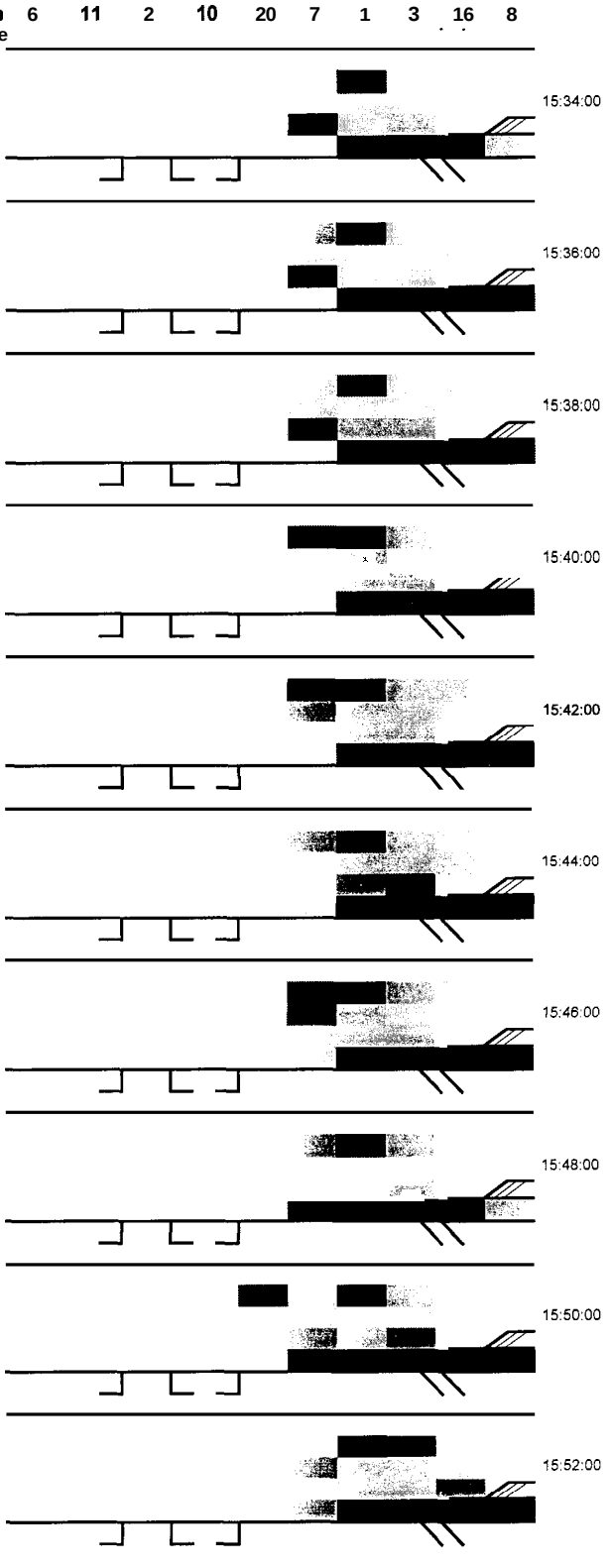


Occupancy			Code	Shade
0	io	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	io	30	4	
30	to	40	5	
40	and	up	6	

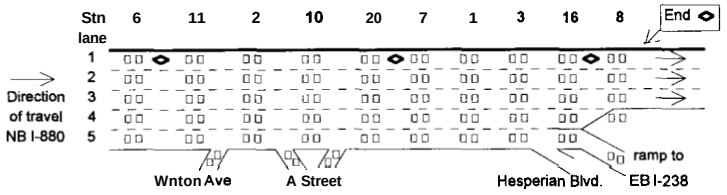
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	4	4	7	7	5	8
	2	0	0	0	0	12	14	40	19	14	12
15:34:00	3	0	0	0	0	12	14	17	17	13	10
	4	0	0	0	0	1	3	4	7	1	8	2	0	9	0
	5	0	0	0	0	10	10	38	53	38	21
			0		0	0					
	1	0	0	0	0	4	5	5	5	8	7
	2	0	0	0	0	14	28	42	17	15	11
15:36:00	3	0	0	0	0	13	18	18	14	17	14
	4	0	0	0	0	1	3	5	8	1	5	1	7	5	0
	5	0	0	0	0	11	12	49	51	45	38
			0		0	0					
	1	0	0	0	0	5	6	4	6	8	8
	2	0	0	0	0	23	21	36	19	14	12
15:38:00	3	0	0	0	0	17	22	17	17	14	12
	4	0	0	0	0	1	7	3	4	2	0	2	2	9	0
	5	0	0	0	0	14	15	44	48	41	35
			0		0	0					
	1	0	0	0	0	6	6	7	8	9	8
	2	0	0	0	0	22	32	43	21	18	12
15:40:00	3	0	0	0	0	20	23	23	18	16	15
	4	0	0	0	0	1	5	1	6	2	1	2	2	6	0
	5	0	0	0	0	12	15	44	38	38	37
			0		0	0					
	1	0	0	0	0	6	8	8	9	1	0	9
	2	0	0	0	0	13	30	38	20	20	10
15:42:00	3	0	0	0	0	13	26	24	21	17	13
	4	0	0	0	0	1	4	1	8	2	1	2	3	9	0
	5	0	0	0	0	14	18	32	56	34	45
			0		0	0					
	1	0	0	0	0	9	11	9	9	7	9
	2	0	0	0	0	25	26	40	24	20	12
15:44:00	3	0	0	0	0	14	19	24	22	20	14
	4	0	0	0	0	1	3	2	4	2	5	3	6	8	0
	5	0	0	0	0	13	25	42	44	33	46
			0		0	0					
	1	0	0	0	0	6	9	9	10	11	10
	2	0	0	0	0	22	31	46	21	18	11
15:46:00	3	0	0	0	0	17	35	23	19	15	13
	4	0	0	0	0	1	3	2	4	2	1	2	5	3	0
	5	0	0	0	0	11	19	52	54	44	31
			0		0	0					
	1	0	0	0	0	5	7	6	8	7	1	0
	2	0	0	0	0	15	28	40	24	14	12
15:48:00	3	0	0	0	0	15	21	20	18	13	16
	4	0	0	0	0	1	0	1	7	1	9	2	1	6	0
	5	0	0	0	0	11	38	54	51	47	25
			0		0	0					
	1	0	0	0	0	9	1	1	9	1	0	9	1	1
	2	0	0	0	0	33	20	33	21	14	12
15:50:00	3	0	0	0	0	21	20	17	19	16	14
	4	0	0	0	0	1	7	2	7	2	0	2	8	8	0
	5	0	0	0	0	14	34	42	56	45	50
			0		0	0					
	1	0	0	0	0	7	7	6	8	1	1	0
	2	0	0	0	0	24	23	40	25	19	12
15:52:00	3	0	0	0	0	19	25	22	22	18	14
	4	0	0	0	0	16	25	25	23	29	0
	5	0	0	0	0	12	26	49	58	41	37
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880,03/18/93,** 15:14 - 16:32



Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	andup		6	

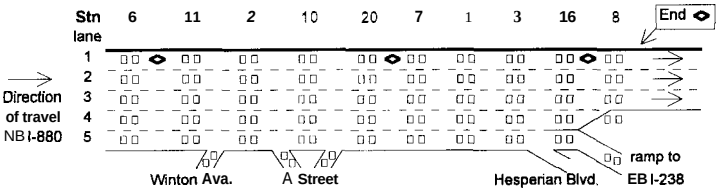
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	7	9	10	9	5	9
	2	0	0	0	0	24	29	51	21	14	11
15:54:00	3	0	0	0	0	14	22	21	21	13	13
	4	0	0	0	0	13	24	18	26	24	0
	5	0	0	0	0	13	30	69	63	46	43
			0		0	0					
	1	0	0	0	0	5	7	6	7	6	10
	2	0	0	0	0	24	28	34	27	15	11
15:56:00	3	0	0	0	0	18	23	17	22	12	12
	4	0	0	0	0	15	26	20	26	16	0
	5	0	0	0	0	11	35	50	54	43	37
			0		0	0					
	1	0	0	0	0	6	6	6	8	1	0	8
	2	0	0	0	0	23	29	40	28	14	12
15:58:00	3	0	0	0	0	23	33	21	25	16	14
	4	0	0	0	0	13	31	28	33	16	0
	5	0	0	0	0	12	31	51	61	31	43
			0								
	1	0	0	0	0	7	7	7	7	7	7
	2	0	0	0	0	25	38	46	23	15	10
16:00:00	3	0	0	0	0	21	44	30	26	12	14
	4	0	0	0	0	16	34	28	26	7	1
	5	0	0	0	0	15	28	40	65	53	39
			0		0	0					
	1	0	0	0	0	9	10	11	13	5	10
	2	0	0	0	0	38	34	50	23	13	11
16:02:00	3	0	0	0	0	28	25	26	25	14	11
	4	0	0	0	0	20	36	22	32	16	0
	5	0	0	0	0	15	51	58	72	45	47
			0		0	0					
	1	0	0	0	0	5	5	5	7	10	9
	2	0	0	0	0	39	25	39	27	13	10
16:04:00	3	0	0	0	0	32	27	20	23	15	13
	4	0	0	0	0	2 1 2 7		18	42	5	0
	5	0	0	0	0	20	53	42	63	38	49
			0		0	0					
	1	0	0	0	0	7	8	6	7	9	8
	2	0	0	0	0	27	31	46	18	14	11
16:06:00	3	0	0	0	0	29	28	24	20	14	13
	4	0	0	0	0	2 1 3 7 3 1			25	3	0
	5	0	0	0	0	21	46	62	51	40	36
			0		0	0					
	1	0	0	0	0	11	11	10	13	6	9
	2	0	0	0	0	42	37	43	26	13	11
16:08:00	3	0	0	0	0	33	32	27	25	10	12
	4	0	0	0	0	38	34	38	27	2	0
	5	0	0	0	0	49	43	55	59	37	38
			0		0	0					
	1	0	0	0	0	8	9	9	9	7	9
	2	0	0	0	0	38	31	44	28	14	12
16:10:00	3	0	0	0	0	32	28	24	21	12	14
	4	0	0	0	0	31	32	32	27	3	0
	5	0	0	0	0	33	62	59	50	33	27
			0		0	0					
	1					10	11	8	7	7	8
	2	0	0	0	0	34	35	48	25	14	10
16:12:00	3	0	0	0	0	32	33	25	23	13	11
	4	0	0	0	0	4 3 2 8 2 6 2 8 7					0
	5	0	0	0	0	40	47	55	62	47	37
			0		0	0					

Shading

Stn lane	6	11	2	10	20	7	1	3	16	8	
1											
2											
3											15:54:00
4											
5											
1											
2											
3											15:56:00
4											
5											
1											
2											
3											15:58:00
4											
5											
1											
2											
3											16:00:00
4											
5											
1											
2											
3											16:02:00
4											
5											
1											
2											
3											16:04:00
4											
5											
1											
2											
3											16:06:00
4											
5											
1											
2											
3											16:08:00
4											
5											
1											
2											
3											16:10:00
4											
5											
1											
2											
3											16:12:00
4											
5											

2-Minute Occupancy Data Northbound **1-880, 03/18/93** 15:14 - 16:32

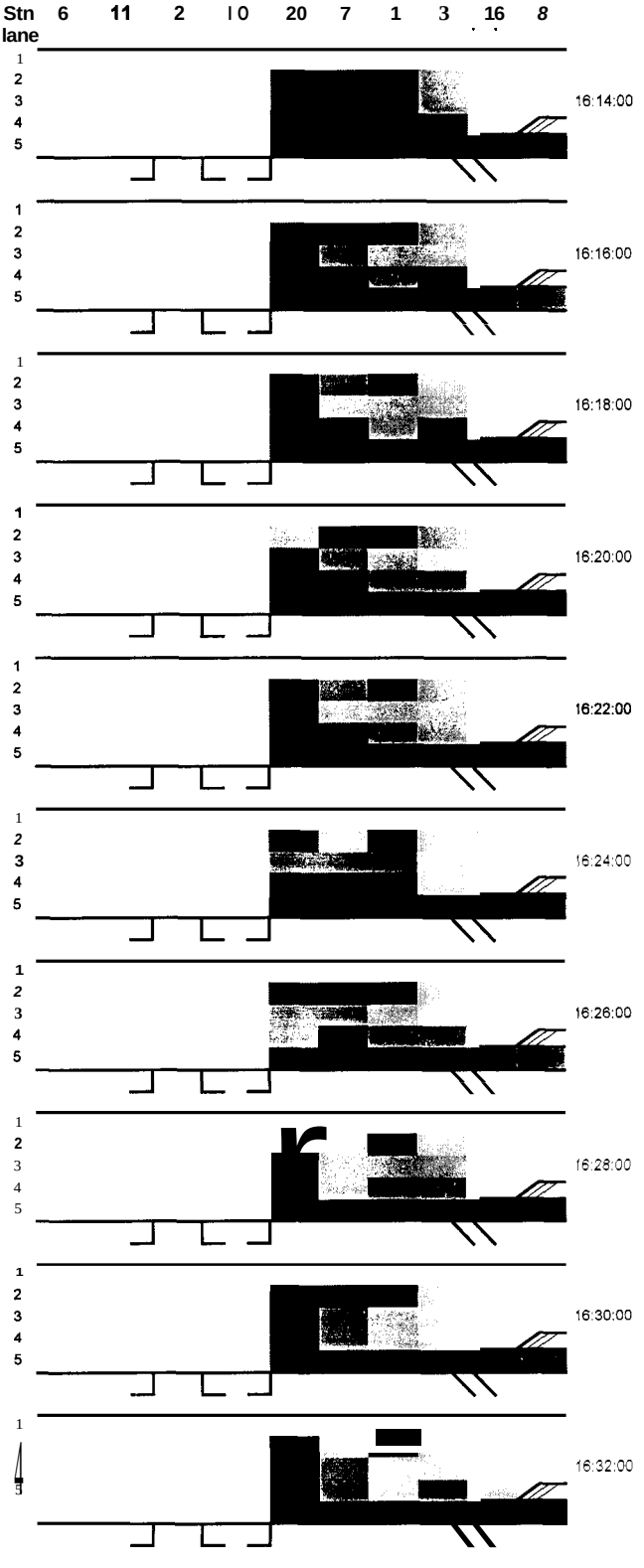


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

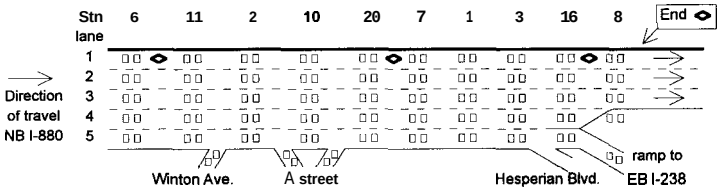
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
16:14:00	1	0	0	0	0	6	6	8	9	7	9
	2	0	0	0	0	35	36	60	22	12	12
	3	0	0	0	0	34	31	31	21	9	11
	4	0	0	0	0	3 6	3 5	3 5	3 4	4	0
	5	0	0	0	0	42	55	64	58	36	49
				A	L	A					
16:16:00	1	0	0	0	0	8	9	7	7	8	7
	2	0	0	0	0	35	32	44	22	14	9
	3	0	0	0	0	36	30	22	21	12	12
	4	0	0	0	0	3 3	3 4	3 0	3 0	5	0
	5	0	0	0	0	52	41	47	61	42	25
			A		0	0					
16:18:00	1	0	0	0	0	7	8	8	9	7	9
	2	0	0	0	0	33	27	40	20	15	11
	3	0	0	0	0	30	24	23	23	14	9
	4	0	0	0	0	4 0	5 2	2 1	6 2	7	0
	5	0	0	0	0	31	34	46	56	41	32
			0		0	0					
16:20:00	1	0	0	0	0	9	1 0	1	1	9 8	8
	2	0	0	0	0	29	43	49	20	14	10
	3	0	0	0	0	34	29	23	18	13	12
	4	0	0	0	0	33	36	25	29	8	0
	5	0	0	0	0	32	59	57	49	40	42
			0		L	A					
16:22:00	1	0	0	0	0	1 0	1 0	8	9	7	9
	2	0	0	0	0	41	27	40	22	14	10
	3	0	0	0	0	39	22	24	21	14	10
	4	0	0	0	0	3 6	3 0	2 6	2 3	7	0
	5	0	0	0	0	54	48	47	62	43	32
			0		0	0					
16:24:00	1	O	0	0	0	9	8	9	1	1	5	8
	2	0	0	0	0	33	23	50	19	14	12
	3	0	0	0	0	30	26	27	18	13	15
	4	0	0	0	0	3 1	3 2	3 9	1 9	9	0
	5	0	0	0	0	41	48	47	44	40	35
			0		0	A					
16:26:00	1	0	0	0	0	7	8	7	8	9	1	0
	2	0	0	0	0	38	45	44	19	15	9
	3	0	0	0	0	29	26	24	18	14	13
	4	0	0	0	0	28	40	26	26	8	0
	5	0	0	0	0	45	44	54	51	50	29
			0		0	0					
16:28:00						7	8	6	7	8	8
	2	0	0	0	0	39	23	42	20	16	10
	3	0	0	0	0	41	23	22	21	15	10
	4	0	0	0	0	4 5	2 1	2 6	2 8	8	0
	5	0	0	0	0	37	47	56	57	40	32
			0		0	A					
16:30:00	1	0	0	0	0	1 0	1 0	9	1 0	8	9
	2	0	0	0	0	30	35	34	17	13	12
	3	0	0	0	0	34	29	20	19	16	15
	4	0	0	0	0	32	26	23	19	7	0
	5	0	0	0	0	33	50	51	38	43	35
			0		0	0					
16:32:00	1	0	0	0	0	10	10	9	9	7	9
	2	0	0	0	0	42	23	36	18	14	10
	3	0	0	0	0	35	26	19	19	15	16
	4	0	0	0	0	42	26	19	26	15	0
	5	0	0	0	0	41	31	46	48	39	44
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880,**03/19/93, 14:14 - 15:32



Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and	up	6	

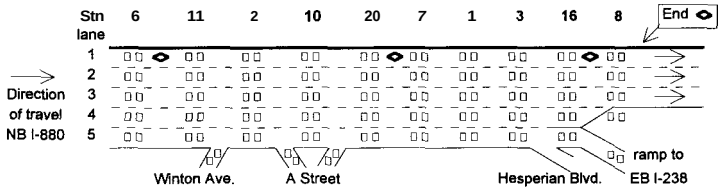
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	6	5	4	5	4	7
	2	0	0	0	0	9	8	1	3	8	9	8
14:14:00	3	0	0	0	0	9	8	X	10	12	13
	4	0	0	0	0	1	3	1	2	1	0	1	0	8	0
	5	0	0	0	0	11	9	12	15	17	26
			0		0	0					
	1	0	0	0	0	7	7	5	6	7	8
	2	0	0	0	0	11	10	12	9	9	9
14:16:00	3	0	0	0	0	11	9	X	8	11	13
	4	0	0	0	0	13	12	10	11	5	0
	5	0	0	0	0	13	10	10	12	24	25
			0		0	0					
	1	0	0	0	0	7	8	1	8	8	7
	2	0	0	0	0	9	8	12	11	10	9
14:18:00	3	0	0	0	0	13	14	10	14	16	11
	4	0	0	0	0	18	16	14	14	6	0
	5	0	0	0	0	16	13	14	23	33	27
			0		0	0					
	1	0	0	0	0	9	7	6	8	9	1	1
	2	0	0	0	0	9	10	12	11	11	12
14:20:00	3	0	0	0	0	12	11	12	15	13	17
	4	0	0	0	0	12	10	10	16	5	0
	5	0	0	0	0	9	9	11	37	31	26
			0		0	0					
	1	0	0	0	0	7	6	8	9	9	1	1
	2	0	0	0	0	10	9	14	11	10	11
14:22:00	3	0	0	0	0	11	9	X	11	10	12
	4	0	0	0	0	1	2	1	2	1	0	1	4	8	0
	5	0	0	0	0	11	10	14	32	34	20
			0		0	0					
	1	0	0	0	0	9	8	8	9	1	0	1	0
	2	0	0	0	0	11	10	13	12	9	10
14:24:00	3	0	0	0	0	12	11	12	14	11	12
	4	0	0	0	0	1	4	1	2	1	3	1	8	9	0
	5	0	0	0	0	12	9	12	29	42	26
			0		0	0					
	1	0	0	0	0	9	7	8	12	12	11
	2	0	0	0	0	11	10	13	13	13	12
14:26:00	3	0	0	0	0	13	11	12	17	12	13
	4	0	0	0	0	1	3	1	3	1	2	1	6	7	0
	5	0	0	0	0	13	11	13	37	38	19
			0		0	0					
	1	0	0	0	0	8	7	7	11	11	11
	2	0	0	0	0	9	9	1	4	1	3	1	2	1	2
14:28:00	3	0	0	0	0	11	10	10	18	10	9
	4	0	0	0	0	13	13	12	19	5	0
	5	0	0	0	0	13	10	13	42	39	24
			0		L	A					
	1	0	0	0	0	8	8	1	0	1	6	1	3	1	2
	2	0	0	0	0	10	10	25	15	11	11
14:30:00	3	0	0	0	0	12	11	14	17	12	12
	4	0	0	0	0	13	1	2	1	8	2	8	9	0
	5	0	0	0	0	14	14	31	43	37	23
			0		0	0					
	1	0	0	0	0	7	7	9	13	11	11
	2	0	0	0	0	9	9	2	7	1	5	1	1	1	0
14:32:00	3	0	0	0	0	9	9	11	17	10	11
	4	0	0	0	0	10	10	15	32	7	0
	5	0	0	0	0	11	9	36	50	38	22
			0		0	0					

Shading

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1										
	2										
14:14:00	3											14:14:00
	4										
	5										
	1										
	2										
14:16:00	3											14:16:00
	4										
	5										
	1										
	2										
14:18:00	3											14:18:00
	4										
	5										
	1										
	2										
14:20:00	3											14:20:00
	4										
	5										
	1										
	2										
14:22:00	3											14:22:00
	4										
	5										
	1										
	2										
14:24:00	3											14:24:00
	4										
	5										
	1										
	2										
14:26:00	3											14:26:00
	4										
	5										
	1										
	2										
14:28:00	3											14:28:00
	4										
	5										
	1										
	2										
14:30:00	3											14:30:00
	4										
	5										
	1										
	2										
14:32:00	3											14:32:00
	4										
	5										

2-Minute Occupancy Data Northbound **1-880, 03/19/93,** 14:14 - 15:32

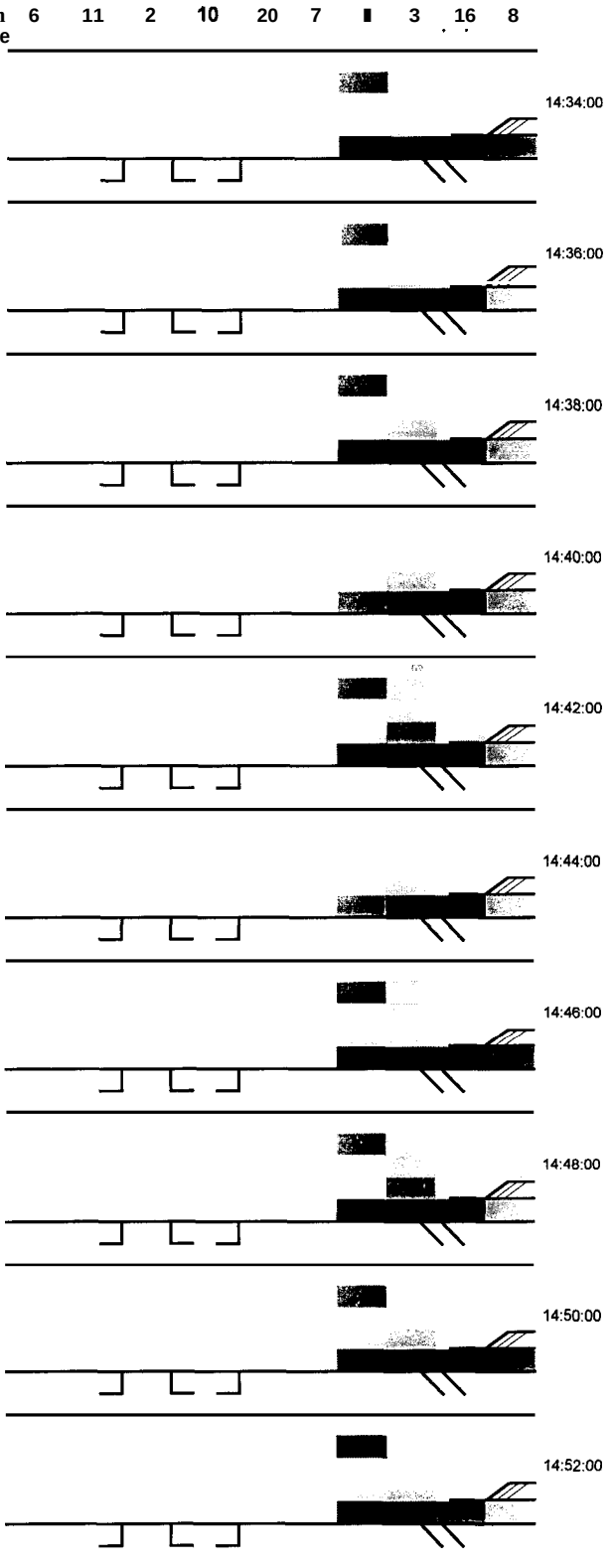


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and	up	6	

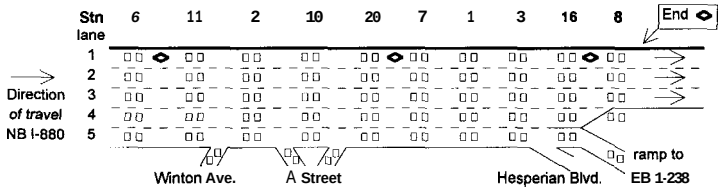
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	11	8	11	17	15	13
	2	0	0	0	0	12	11	28	16	13	13
14:34:00	3	0	0	0	0	14	13	12	14	12	14
	4	0	0	0	0	12	10	11	12	9	0
	5	0	0	0	0	13	12	38	39	32	25
			0		0	0					
	1	0	0	0	0	8	8	9	16	12	12
	2	0	0	0	0	10	10	29	16	14	12
14:36:00	3	0	0	0	0	11	10	14	17	17	14
	4	0	0	0	0	13	13	15	19	10	0
	5	0	0	0	0	11	10	34	36	35	23
			0		0	0					
	1	0	0	0	0	9	8	9	1	3	1	3	1	2
	2	0	0	0	0	12	11	28	16	15	13
14:38:00	3	0	0	0	0	13	14	14	14	14	11
	4	0	0	0	0	16	15	16	25	8	0
	5	0	0	0	0	13	10	35	54	37	22
			$1		0	0					
	1	0	0	0	0	9	X	14	19	15	14
	2	0	0	0	0	12	9	24	19	13	12
14:40:00	3	0	0	0	0	12	11	16	19	14	11
	4	0	0	0	0	10	10	18	24	10	0
	5	0	0	0	0	10	10	26	57	43	25
			0		0	0					
	1	0	0	0	0	6	5	9	2	2	1	4	1	2
	2	0	0	0	0	11	10	27	20	14	12
14:42:00	3	0	0	0	0	10	10	16	18	14	13
	4	0	0	0	0	12	12	14	29	11	0
	5	0	0	0	0	10	9	33	59	35	22
			0		0	0					
	1	0	0	0	0	7	7	7	1	3	1	3	1	3
	2	0	0	0	0	10	9	21	20	13	12
14:44:00	3	0	0	0	0	11	11	14	19	13	16
	4	0	0	0	0	14	12	15	18	6	0
	5	0	0	0	0	11	11	29	44	34	24
			0		ELI						
	1	0	0	0	0	9	9	11	14	11	11
	2	0	0	0	0	12	12	29	15	10	12
14:46:00	3	0	0	0	0	12	13	14	15	12	13
	4	0	0	0	0	12	14	15	20	5	0
	5	0	0	0	0	13	12	37	37	32	26
			0		0	0					
	1	0	0	0	0	7	8	1	1	1	6	1	4	1	2
	2	0	0	0	0	11	10	26	17	13	11
14:48:00	3	0	0	0	0	11	12	14	20	15	12
	4	0	0	0	0	1	2	1	2	1	7	2	7	6	0
	5	0	0	0	0	10	10	32	49	33	23
			0		0	0					
	1	0	0	0	0	11	10	15	17	14	14
	2	0	0	0	0	10	11	25	14	12	10
14:50:00	3	0	0	0	0	11	11	12	14	13	13
	4	0	0	0	0	10	11	18	22	10	0
	5	0	0	0	0	12	11	34	48	38	27
			$1		0	0					
	1	0	0	0	0	9	11	16	17	12	12
	2	0	0	0	0	13	12	31	16	12	11
14:52:00	3	0	0	0	0	13	13	17	16	12	15
	4	0	0	0	0	12	13	16	21	4	0
	5	0	0	0	0	15	19	33	40	27	23
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, **03/19/93** 14:14 - 15:32



Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and	up	6	

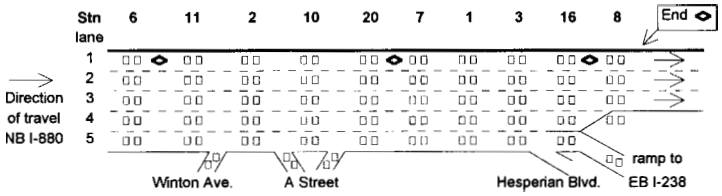
Occupancy

Stn	6	11	2	10	20	7	1	3	16	8
lane										
1	0	0	0	0	7	7	10	14	12	13
2	0	0	0	0	9	8	33	15	13	13
14:54:00 3	0	0	0	0	11	8	10	13	11	13
4	0	0	0	0	9	10	11	18	8	0
5	0	0	0	0	11	10	47	40	35	26
		A		0	0					
1	0	0	0	0	7	7	7	9	9	9
2	0	0	0	0	9	9	16	12	10	9
14:56:00 3	0	0	0	0	11	12	11	13	12	12
4	0	0	0	0	12	10	13	15	6	0
5	0	0	0	0	11	9	17	43	38	16
		$1		0	0					
1					8	7	8	10	8	10
2	0	0	0	0	11	11	26	13	11	11
14:58:00 3	0	0	0	0	11	10	16	11	10	11
4	0	0	0	0	12	12	13	16	8	0
5	0	0	0	0	11	11	27	32	34	24
		0		0	0					
1	0	0	0	0	5	6	8	10	8	10
2	0	0	0	0	14	15	31	17	13	11
15:00:00 3	0	0	0	0	15	17	19	14	13	9
4	0	0	0	0	17	13	14	17	5	0
5	0	0	0	0	10	11	37	51	37	25
		0		0	A					
1	0	0	0	0	6	10	11	10	7	8
2	0	0	0	0	12	22	38	14	11	10
15:02:00 3	0	0	0	0	12	17	18	12	11	14
4	0	0	0	0	12	18	16	14	3	0
5	0	0	0	0	8	13	43	35	28	22
		0		0	A					
1	0	0	0	0	7	8	13	13	10	11
2	0	0	0	0	11	21	31	17	11	9
15:04:00 3	0	0	0	0	13	20	20	16	11	12
4	0	0	0	0	15	19	18	18	5	0
5	0	0	0	0	11	23	35	40	22	33
		A		0	A					
1	0	0	0	0	4	7	6	7	6	8
2	0	0	0	0	15	30	36	18	13	10
15:06:00 3	0	0	0	0	14	21	20	17	15	15
4	0	0	0	0	15	22	24	26	20	0
5	0	0	0	0	18	27	38	41	48	42
		$1		0	0					
1										
2	0	0	0	0	20	20	29	21	14	10
15:08:00 3	0	0	0	0	18	29	20	21	15	13
4	0	0	0	0	18	20	20	29	10	0
5	0	0	0	0	10	25	32	48	41	23
		01		0	0					
1	0	0	0	0	11	13	11	12	10	9
2	0	0	0	0	18	25	46	24	18	12
15:10:00 3	0	0	0	0	15	17	26	25	23	15
4	0	0	0	0	17	18	25	35	13	0
5	0	0	0	0	11	15	42	50	32	27
		0		0	0					
1	0	0	0	0	7	8	12	11	11	12
2	0	0	0	0	18	29	36	24	14	15
15:12:00 3	0	0	0	0	18	24	21	19	13	18
4	0	0	0	0	21	35	31	26	17	0
5	0	0	0	0	14	41	35	37	39	28
		0		0	0					

Shading

Stn	6	11	2	10	20	7	1	3	16	8
lane										
2										
14:54:00 3										14:54:00
4										
5										
1										
2										
14:56:00 3										14:56:00
4										
5										
1										
2										
14:58:00 3										14:58:00
4										
5										
2										
15:00:00 3										15:00:00
4										
5										
2										
15:02:00 3										150200
4										
5										
2										
15:04:00 3										15:04:00
4										
5										
1										
2										
15:06:00 3										15:06:00
4										
5										
1										
2										
15:08:00 3										15:08:00
4										
5										
1										
2										
15:10:00 3										15:10:00
4										
5										
1										
2										
15:12:00 3										15:12:00
4										
5										

2-Minute Occupancy Data Northbound **1-880, 03/19/93,** 4:14 - 15:32

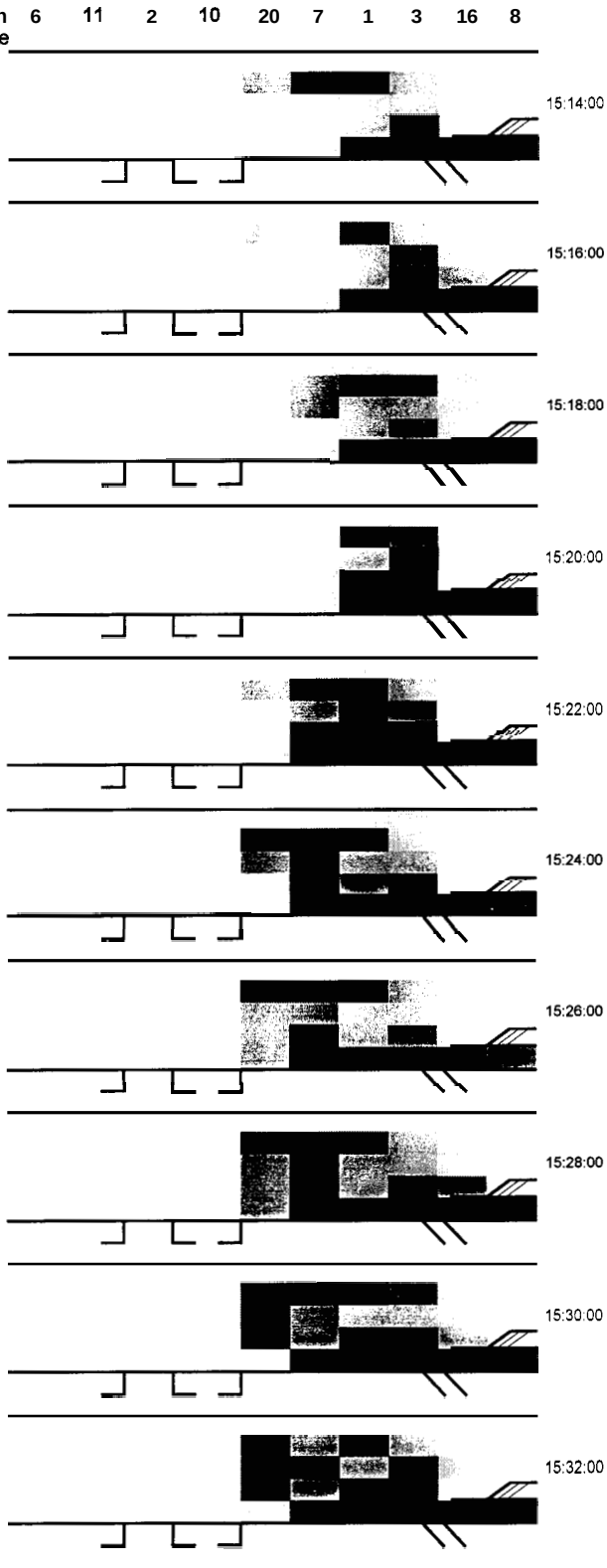


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

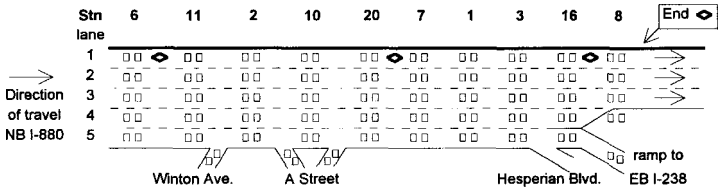
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
15:14:00	1	0	0	0	0	9	10	12	12	10	10
	2	0	0	0	0	27	31	33	23	15	12
	3	0	0	0	0	22	20	20	23	15	12
	4	0	0	0	0	16	20	24	33	10	0
	5	0	0	0	0	19	21	36	39	35	33
			0		0	0					
15:16:00	1	0	0	0	0	10	11	10	12	X	10
	2	0	0	0	0	26	20	37	24	15	12
	3	0	0	0	0	19	19	21	26	17	14
	4	0	0	0	0	16	17	24	32	25	0
	5	0	0	0	0	14	23	37	42	59	39
			$1		0	0					
15:18:00	1	0	0	0	0	X	11	12	15	12	12
	2	0	0	0	0	16	28	31	26	17	12
	3	0	0	0	0	18	28	22	24	17	15
	4	0	0	0	0	12	18	22	26	17	0
	5	0	0	0	0	11	22	42	56	47	42
			$1		0	0					
15:20:00	1	0	0	0	0	9	9	9	1	1	9	1	2
	2	0	0	0	0	23	22	41	26	15	11
	3	0	0	0	0	19	22	23	36	15	14
	4	0	0	0	0	2	0	1	9	3	5	4	4	9	0
	5	0	0	0	0	16	15	48	55	52	34
			$1		0	0					
15:22:00	1	0	0	0	0	11	11	10	12	11	9
	2	0	0	0	0	29	33	43	21	11	10
	3	0	0	0	0	17	29	31	29	15	13
	4	0	0	0	0	1	9	3	4	4	2	5	2	7	0
	5	0	0	0	0	16	39	52	61	43	31
			0		0	0					
15:24:00	1	0	0	0	0	X	9	1	3	1	3	1	0	1	1
	2	0	0	0	0	35	34	46	19	14	12
	3	0	0	0	0	28	37	25	21	12	13
	4	0	0	0	0	1	9	4	5	2	9	3	4	9	0
	5	0	0	0	0	19	40	55	43	44	39
			0		0	0					
15:26:00	1	0	0	0	0	11	14	12	12	11	11
	2	0	0	0	0	36	31	43	22	14	11
	3	0	0	0	0	27	30	23	21	13	X
	4	0	0	0	0	29	31	21	25	14	0
	5	0	0	0	0	25	46	45	55	41	30
			$1		0	0					
15:28:00	1	0	0	0	0	7	8	9	11	10	11
	2	0	0	0	0	35	37	34	21	14	10
	3	0	0	0	0	28	32	20	24	16	11
	4	0	0	0	0	27	34	24	39	25	0
	5	0	0	0	0	29	43	40	50	45	43
			$1		0	0					
15:30:00	1	0	0	0	0	1	2	1	3	1	0	1	0	8	8
	2	0	0	0	0	36	37	45	25	15	11
	3	0	0	0	0	33	26	23	24	17	12
	4	0	0	0	0	35	25	32	32	23	0
	5	0	0	0	0	23	42	49	56	42	35
			$1		0	0					
15:32:00	1	0	0	0	0	8	8	9	10	7	10
	2	0	0	0	0	39	26	41	23	14	11
	3	0	0	0	0	33	31	24	30	17	15
	4	0	0	0	0	3	4	2	7	3	3	3	9	7	0
	5	0	0	0	0	22	57	50	65	40	38
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/18/93, 15:20 - 16:38

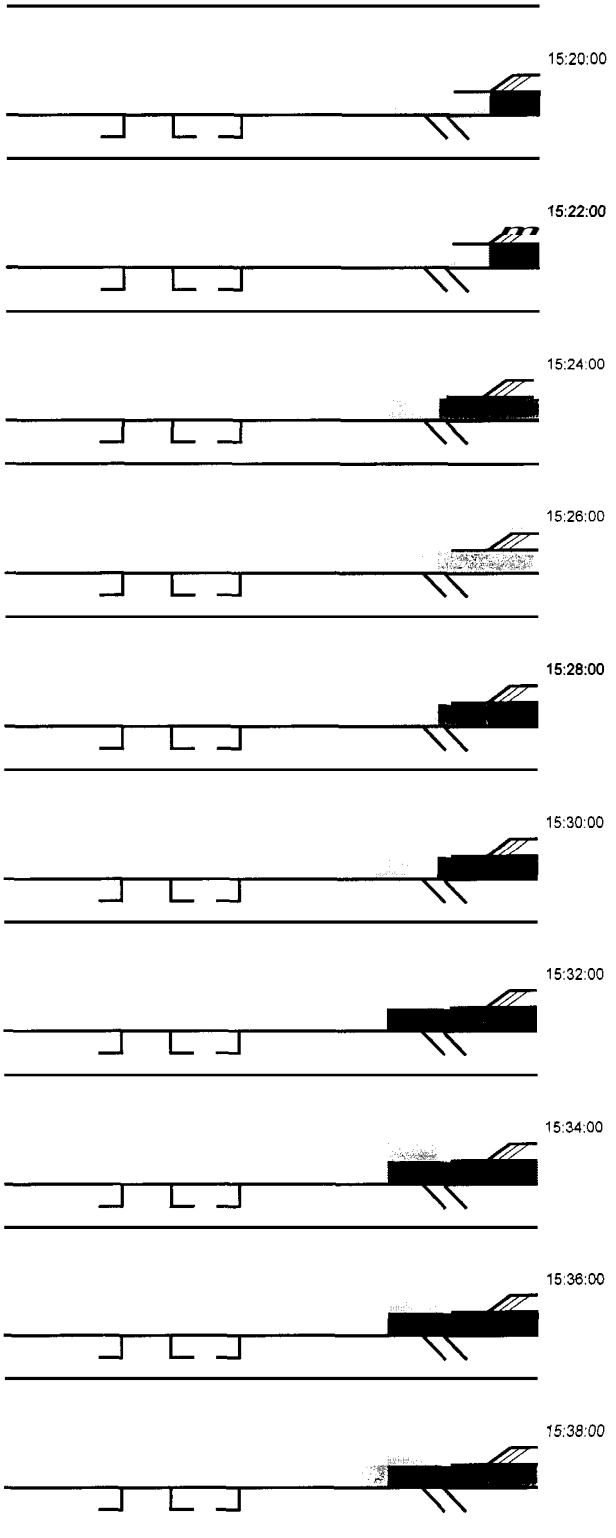


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

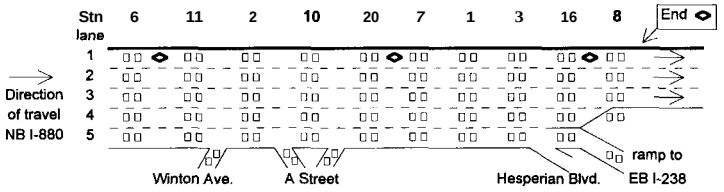
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	3	5	4	4	4	6
	2	0	0	0	0	12	12	10	13	12	12
15:20:00	3	0	0	0	0	12	13	11	12	11	15
	4	0	0	0	0	1	3	1	0	9	1	1	4	0
	5	0	0	0	0	7	8	1	0	1	4	1	4	3	1
			$1		0		A				
	1	0	0	0	0	6	5	3	3	4	6
	2	0	0	0	0	14	13	11	13	11	11
15:22:00	3	0	0	0	0	13	13	11	12	12	16
	4	0	0	0	0	11	10	11	11	3	0
	5	0	0	0	0	9	9	9	1	2	1	7	3	3
			91		0		0				
	1	0	0	0	0	5	5	5	6	6	8
	2	0	0	0	0	14	12	11	13	12	11
15:24:00	3	0	0	0	0	12	12	10	12	14	14
	4	0	0	0	0	10	9	8	9	2	0
	5	0	0	0	0	9	9	9	1	5	2	7	2	5
			0		0		0				
	1	0	0	0	0	3	4	3	4	4	8
	2	0	0	0	0	12	11	11	13	13	12
15:26:00	3	0	0	0	0	12	12	11	11	12	15
	4	0	0	0	0	1	3	1	2	1	0	1	1	4	0
	5	0	0	0	0	10	9	11	13	22	25
			0		0		0				
				0	0	3	2	2	3	3	7
	2	0	0	0	0	12	11	10	14	13	11
15:28:00	3	0	0	0	0	12	9	10	10	14	15
	4	0	0	0	0	10	10	10	12	4	0
	5	0	0	0	0	9	8	9	1	6	2	8	3	5
			0		0		0				
						4	3	2	3	5	7
	2	0	0	0	0	11	10	10	9	11	10
15:30:00	3	0	0	0	0	11	11	8	10	13	12
	4	0	0	0	0	13	11	8	11	4	0
	5	0	0	0	0	9	9	11	18	37	37
			0		0		0				
	1	0	0	0	0	5	4	3	4	3	5
	2	0	0	0	0	13	11	9	12	11	10
15:32:00	3	0	0	0	0	12	11	9	13	10	12
	4	0	0	0	0	1	0	1	0	1	0	1	5	5	0
	5	0	0	0	0	1	0	7	9	3	1	3	2	3	6
			0		0		0				
	1	0	0	0	0	3	3	4	7	6	8
	2	0	0	0	0	11	10	11	17	13	12
15:34:00	3	0	0	0	0	11	10	12	17	15	15
	4	0	0	0	0	1	5	1	3	9	2	1	4	0
	5	0	0	0	0	10	9	10	39	44	38
			0		0		0				
	1	0	0	0	0	4	3	3	4	5	8
	2	0	0	0	0	13	14	13	12	13	11
15:36:00	3	0	0	0	0	12	12	11	13	13	13
	4	0	0	0	0	1	3	1	3	1	1	1	7	5	0
	5	0	0	0	0	11	9	12	44	37	49
			0		0		0				
	1	0	0	0	0	3	1	3	6	7	6	6
	2	0	0	0	0	13	13	22	21	14	10
15:38:00	3	0	0	0	0	13	13	18	19	13	13
	4	0	0	0	0	1	5	1	3	1	4	1	7	8	0
	5	0	0	0	0	11	9	21	61	46	28
			0		0		0				

Shading



2-Minute Occupancy Data Northbound **1-880,**10/18/93, 15:20 - 16:38



Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 lo 40	5	
40 andup	6	

Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	4	4	6	8	7	9
	2	0	0	0	0	13	17	23	19	15	11
15:40:00	3	0	0	0	0	11	13	23	21	14	13
	4	0	0	0	0	11	12	23	21	2	0
	5	0	0	0	0	10	10	31	49	33	23
			0		0	0					
	1	0	0	0	0	5	5	6	8	6	8
	2	0	0	0	0	14	18	38	17	13	10
15:42:00	3	0	0	0	0	11	16	22	18	13	14
	4	0	0	0	0	1 3	1 3	2 2	2 5	3	0
	5	0	0	0	0	9	10	48	45	30	43
			0		0	0					
	1	0	0	0	0	7	8	7	7	7	9
	2	0	0	0	0	18	24	26	20	15	10
1544.00	3	0	0	0	0	14	21	20	19	IS	14
	4	0	0	0	0	14	12	17	21	9	0
	5	0	0	0	0	11	12	28	49	45	29
			0		0	0					
	1	0	0	0	0	5	8	9	10	8	10
	2	0	0	0	0	17	20	30	27	16	11
15:46:00	3	0	0	0	0	15	14	22	22	15	15
	4	0	0	0	0	1 4	1 7	2 0	2 4	6	0
	5	0	0	0	0	11	12	35	54	33	31
			0		0	0					
	1	0	0	0	0	5	8	9	11	9	11
	2	0	0	0	0	11	22	31	25	14	11
15:48:00	3	0	0	0	0	11	15	16	22	14	11
	4	0	0	0	0	1 0	1 3	2 1	2 9	3	0
	5	0	0	0	0	11	13	45	45	50	50
			$1		0	0					
	1	0	0	0	0	6	7	8	1	1	1	0	1	0
	2	0	0	0	0	13	25	34	19	14	10
15:50:00	3	0	0	0	0	13	23	17	17	14	13
	4	0	0	0	0	12	20	15	22	6	0
	5	0	0	0	0	11	14	48	69	35	28
			$1		0	A					
	1	0	0	0	0	3	6	6	8	7	8
	2	0	0	0	0	12	29	34	21	14	11
15:52:00	3	0	0	0	0	11	20	19	24	16	14
	4	0	0	0	0	1 3	1 7	2 4	3 6	2	0
	5	0	0	0	0	11	19	52	62	29	35
			$1		0	0					
	1	0	0	0	0	5	5	5	7	6	8
	2	0	0	0	0	12	25	30	23	13	11
15:54:00	3	0	0	0	0	10	23	15	21	14	14
	4	0	0	0	0	11	19	19	32	14	0
	5	0	0	0	0	11	36	44	42	49	38
			0		0	0					
	1	0	0	0	0	4	7	7	7	6	8
	2	0	0	0	0	12	22	41	20	14	11
15:56:00	3	0	0	0	0	11	17	21	18	13	12
	4	0	0	0	0	1 2	1 7	2 5	2 4	3	0
	5	0	0	0	0	9	22	48	61	38	34
			$1		0	0					
						4	6	6	7	7	7
	2	0	0	0	0	10	28	35	23	13	11
15:58:00	3	0	0	0	0	12	18	16	22	12	12
	4	0	0	0	0	11	18	1 7	3 5	2	0
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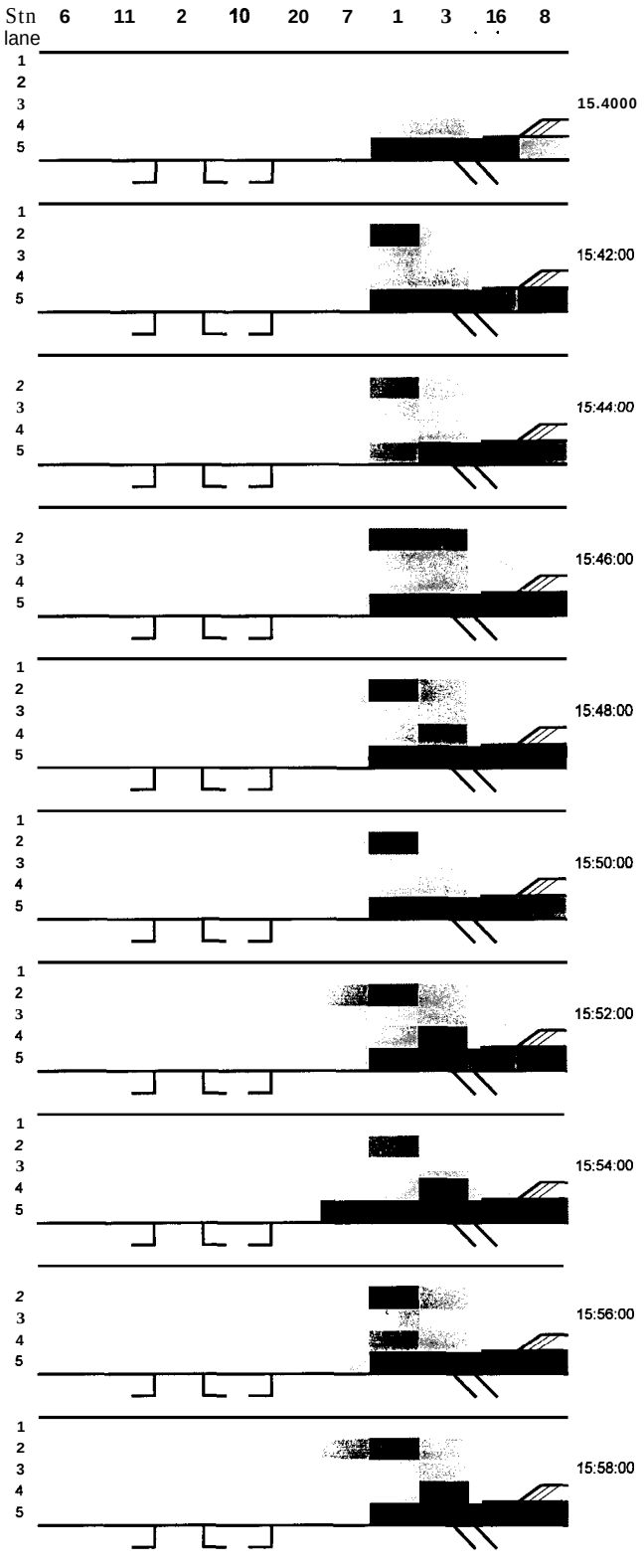
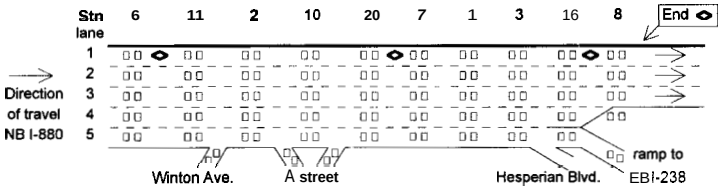
Shading



2-Minute Occupancy Data Northbound 1-880, 10/18/93, 15:20 - 16:38



Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

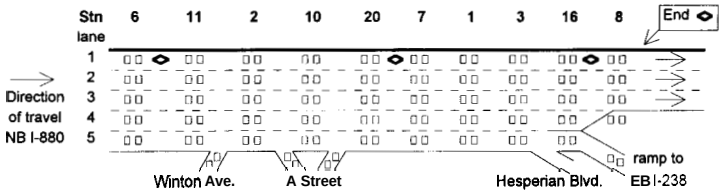
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1		0	0	0	7	7	7	9	8	8
	2	0	0	0	0	13	23	32	22	15	10
16:00:00	3	0	0	0	0	17	21	22	22	17	14
	4	0	0	0	0	1 1 1 4 1 8 2 4 7					0
	5	0	0	0	0	11	21	40	60	39	41
			0		0	A					
	1	0	0	0	0	4	7	11	12	9	9
	2	0	0	0	0	13	17	37	26	19	13
16:02:00	3	0	0	0	0	11	16	26	27	20	15
	4	0	0	0	0	1 1 1 2 1 5 1 8				6	0
	5	0	0	0	0	9	11	42	59	37	32
			0		0	0					
	1	0	0	0	0	5	4	6	9	7	1 0
	2	0	0	0	0	10	14	39	30	16	13
16:04:00	3	0	0	0	0	13	16	26	31	19	16
	4	0	0	0	0	13	14	28	35	4	0
	5	0	0	0	0	10	13	46	44	30	32
			0		0	0					
	1	0	0	0	0	3	5	6	5	6	9
	2	0	0	0	0	13	24	33	19	13	11
16:06:00	3	0	0	0	0	14	22	19	19	14	18
	4	0	0	0	0	1 4 2 0 3 2 2 8 6					0
	5	0	0	0	0	11	15	44	39	40	36
			0		0	0					
	1	0	0	0	0	4	5	5	5	4	6
	2	0	0	0	0	15	23	33	17	15	11
16:08:00	3	0	0	0	0	14	22	16	16	15	13
	4	0	0	0	0	13	20	18	23	7	0
	5	0	0	0	0	9	17	39	51	53	33
			0		0	0					
	1	0	0	0	0	4	6	5	6	6	8
	2	0	0	0	0	14	24	33	20	14	10
16:10:00	3	0	0	0	0	12	21	21	22	15	14
	4	0	0	0	0	1 3 1 5 1 7 3 8 2					0
	5	0	0	0	0	10	11	38	68	37	24
			0		0	0					
	1	0	0	0	0	3	6	8	9	7	8
	2	0	0	0	0	13	21	33	18	12	12
16:12:00	3	0	0	0	0	11	18	32	19	14	15
	4	0	0	0	0	12	14	28	20	4	0
	5	0	0	0	0	8	13	63	42	32	39
			0		0	0					
	1	0	0	0	0	5	4	4	5	4	7
	2	0	0	0	0	19	28	26	16	16	13
16:14:00	3	0	0	0	0	17	24	19	19	13	14
	4	0	0	0	0	1 2 1 9 2 0 2 0 7					0
	5	0	0	0	0	11	12	34	41	39	28
			0		0	0					
	1	0	0	0	0	7	9	7	8	6	9
	2	0	0	0	0	23	22	35	17	16	14
16:16:00	3	0	0	0	0	21	19	21	19	17	15
	4	0	0	0	0	13	1 4 2 0 1 9			6	0
	5	0	0	0	0	13	12	31	47	38	44
			0		0	A					
	1	0	0	0	0	4	5	6	7	8	9
	2	0	0	0	0	13	19	28	20	14	11
16:18:00	3	0	0	0	0	13	18	20	25	19	16
	4	0	0	0	0	1 1 1 4 1 6 1 9 6					0
	5	0	0	0	0	11	14	33	51	49	27
			0		0	0					

Shading

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1										
	2										
16:00:00	3										16:00:00
	4										
	5										
	1										
	2										
16:02:00	3										16:02:00
	4										
	5										
	1										
	2										
16:04:00	3										16:04:00
	4										
	5										
	1										
	2										
16:06:00	3										16:06:00
	4										
	5										
	1										
	2										
16:08:00	3										16:08:00
	4										
	5										
	1										
	2										
16:10:00	3										16:10:00
	4										
	5										
	1										
	2										
16:12:00	3										16:12:00
	4										
	5										
	1										
	2										
16:14:00	3										16:14:00
	4										
	5										
	1										
	2										
16:16:00	3										16:16:00
	4										
	5										
	1										
	2										
16:18:00	3										16:18:00
	4										
	5										

2-Minute Occupancy Data Northbound 1-880, 10/18/93, 15:20 - 16:38

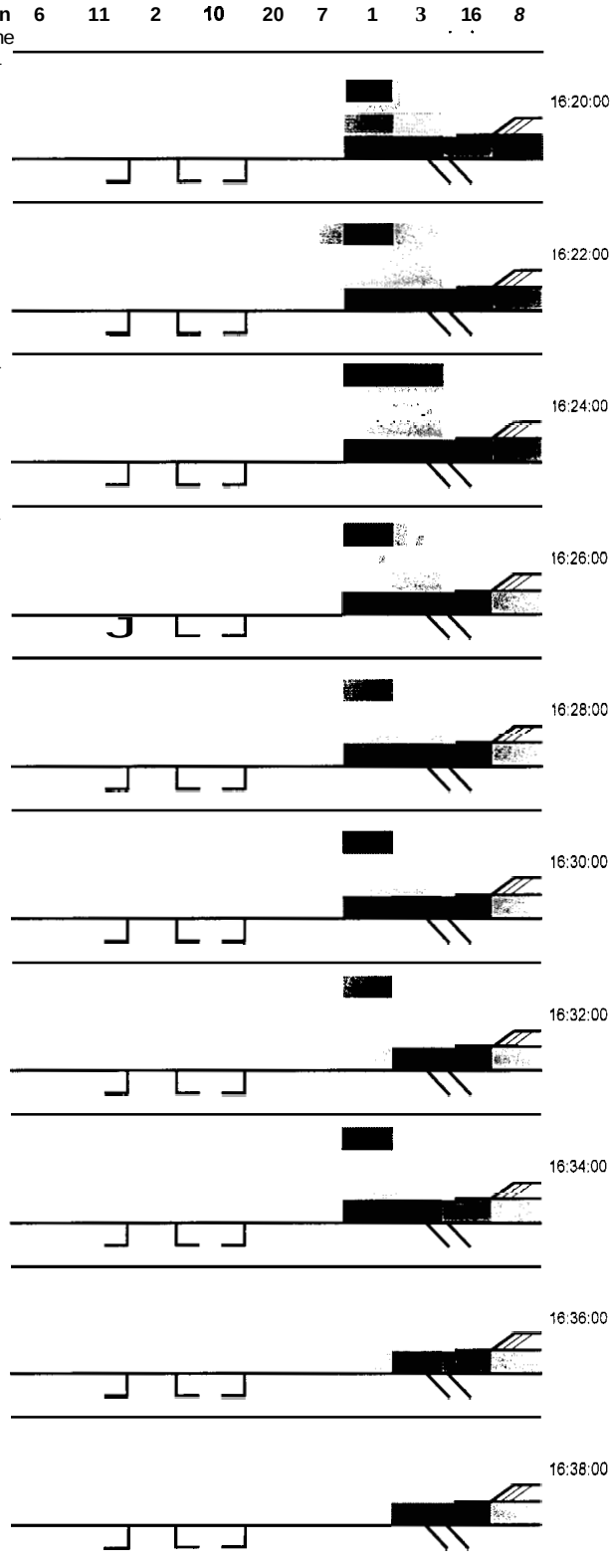


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

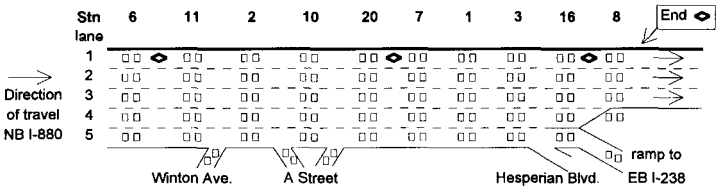
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	5	7	8	9	6	9
	2	0	0	0	0	12	15	42	19	16	11
16:20:00	3	0	0	0	0	13	19	23	20	16	18
	4	0	0	0	0	10	15	25	18	5	0
	5	0	0	0	0	9	9	46	53	29	37
			0		0	0					
	1	0	0	0	0	4	8	10	11	7	9
	2	0	0	0	0	10	27	30	22	14	12
16:22:00	3	0	0	0	0	12	19	17	21	13	14
	4	0	0	0	0	1	0	1	6	1	8	2	3	3	0
	5	0	0	0	0	9	13	37	45	30	26
			$1		0	0					
	1	0	0	0	0	5	5	7	9	7	7
	2	0	0	0	0	13	14	34	28	12	11
16:24:00	3	0	0	0	0	13	13	15	22	15	14
	4	0	0	0	0	11	10	21	23	4	0
	5	0	0	0	0	9	12	49	56	37	27
			0		0	0					
	1	0	0	0	0	4	4	5	8	8	8
	2	0	0	0	0	10	14	38	25	13	10
16:26:00	3	0	0	0	0	12	12	21	20	11	11
	4	0	0	0	0	1	2	1	4	1	9	2	1	5	0
	5	0	0	0	0	10	14	55	44	37	23
			$1		0	0					
	1	0	0	0	0	5	5	6	6	4	7
	2	0	0	0	0	14	21	29	17	14	11
16:28:00	3	0	0	0	0	11	22	17	19	15	14
	4	0	0	0	0	1	1	1	6	1	6	1	9	3	0
	5	0	0	0	0	8	13	39	37	30	23
			$1		0	0					
	1	0	0	0	0	5	7	8	8	7	8
	2	0	0	0	0	12	21	31	18	14	13
16:30:00	3	0	0	0	0	12	21	15	17	14	14
	4	0	0	0	0	11	16	18	18	4	0
	5	0	0	0	0	9	13	39	43	32	23
			0		0	0					
	1	0	0	0	0	4	5	7	7	9	9
	2	0	0	0	0	12	13	26	18	15	12
16:32:00	3	0	0	0	0	12	12	21	20	16	15
	4	0	0	0	0	11	12	14	17	3	0
	5	0	0	0	0	10	9	25	41	32	23
			0		0	0					
	1	0	0	0	0	2	3	5	6	5	9
	2	0	0	0	0	12	18	32	19	16	13
16:34:00	3	0	0	0	0	9	13	16	18	15	14
	4	0	0	0	0	9	9	1	4	1	6	3	0
	5	0	0	0	0	8	7	4	5	4	2	2	7	2	3
			01		0	0					
	1	0	0	0	0	4	3	4	6	4	8
	2	0	0	0	0	11	11	13	18	15	12
16:36:00	3	0	0	0	0	10	9	10	16	14	16
	4	0	0	0	0	1	1	8	1	0	1	6	5	0
	5	0	0	0	0	10	10	11	42	29	24
			0		0	0					
	1	0	0	0	0	2	2	1	3	5	5
	2	0	0	0	0	14	11	12	15	13	12
16:38:00	3	0	0	0	0	11	10	9	10	11	14
	4	0	0	0	0	1	2	1	1	1	0	1	3	3	0
	5	0	0	0	0	12	10	11	31	32	23
			$1		0	0					

Shading



2-Minute Occupancy Data Northbound I-880, 10/22/93, 14:00 - 15:18

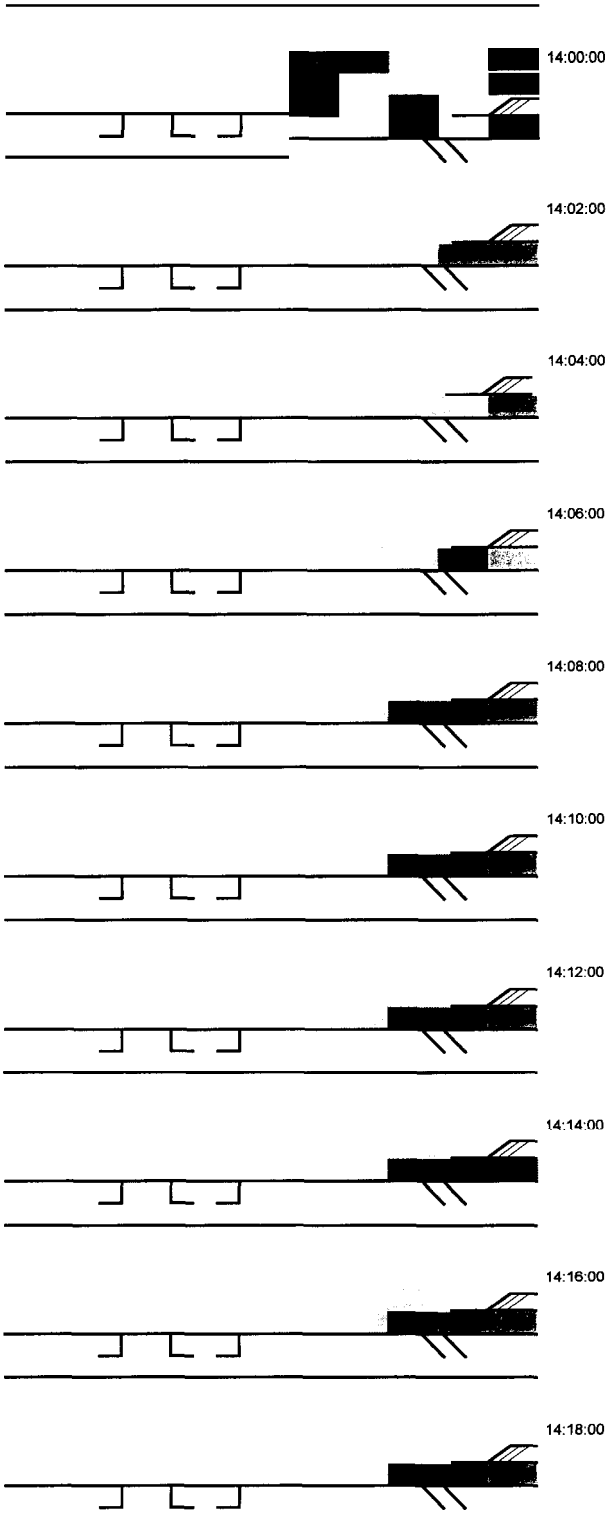


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

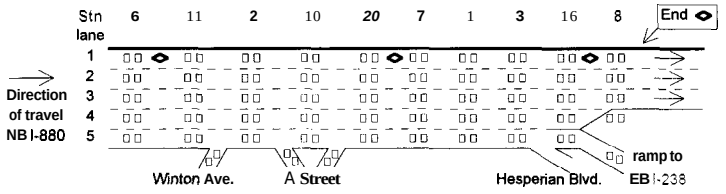
Occupancy

Stn	6	11	2	10	20	7	1	3	16	8
lane										
1	0	0	0	0	6	0	0	0	0	0
2	0	0	0	0	9	5	0	5	0	0	0	0
14:00:00 3	0	0	0	0	83	90	0	50	0	90
4										
5	0	0	0	0	12	0	0	50	0	99
		0		0	0					
1	0	0	0	0	6	6	4	5	5	7
2	0	0	0	0	8	8	9	9	8	10
14:02:00 3	0	0	0	0	11	10	11	8	10	11
4	0	0	0	0	14	11	10	11	0	0
5	0	0	0	0	11	10	8	12	28	92
		0		0	0					
1	0	0	0	0	6	5	5	6	5	5
2	0	0	0	0	10	6	9	7	8	10
14:04:00 3	0	0	0	0	11	10	12	11	12	11
4	0	0	0	0	11	11	11	13	0	0
5	0	0	0	0	11	10	11	17	81	26
		0		0	0					
1	0	0	0	0	8	6	5	6	7	6
2	0	0	0	0	9	9	10	8	8	9
14:06:00 3	0	0	0	0	11	10	9	10	11	12
4	0	0	0	0	11	11	11	14	0	0
5	0	0	0	0	13	12	13	17	34	22
		0		0	0					
1	0	0	0	0	6	5	5	6	7	8
2	0	0	0	0	10	9	10	11	10	10
14:08:00 3	0	0	0	0	12	11	10	12	11	11
4	0	0	0	0	1	0	1	1	6	1	0	1	0
5	0	0	0	0	11	10	11	22	22	92
		0		0	0					
1	0	0	0	0	8	5	5	6	6	7
2	0	0	0	0	1	0	8	8	8	8	9
14:10:00 3	0	0	0	0	1	5	9	8	12	13	12
4	0	0	0	0	12	11	9	15	0	0
5	0	0	0	0	51	11	11	39	32	82
		0		0	0					
1	0	0	0	0	6	8	7	10	8	7
2	0	0	0	0	9	10	12	10	10	9
14:12:00 3	0	0	0	0	10	15	13	18	13	12
4	0	0	0	0	12	11	11	14	0	0
5	0	0	0	0	13	11	11	31	30	82
		0		0	0					
1	0	0	0	0	9	6	7	10	9	10
2	0	0	0	0	11	9	11	12	10	11
14:14:00 3	0	0	0	0	11	10	9	14	16	17
4	0	0	0	0	11	12	11	15	0	0
5	0	0	0	0	11	10	12	40	31	30
				0	0					
1	0	0	0	0	6	9	7	8	9	10
2	0	0	0	0	10	10	13	12	10	10
14:16:00 3	0	0	0	0	11	10	9	11	10	11
4	0	0	0	0	12	9	7	15	0	0
5	0	0	0	0	13	11	16	15	28	92
				0	0					
1	0	0	0	0	8	6	6	9	9	10
2	0	0	0	0	9	9	10	12	11	10
14:18:00 3	0	0	0	0	12	8	8	12	12	12
4	0	0	0	0	12	11	10	14	0	0
5	0	0	0	0	11	12	11	31	30	82
		0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/22/93, 14:00 - 15:18

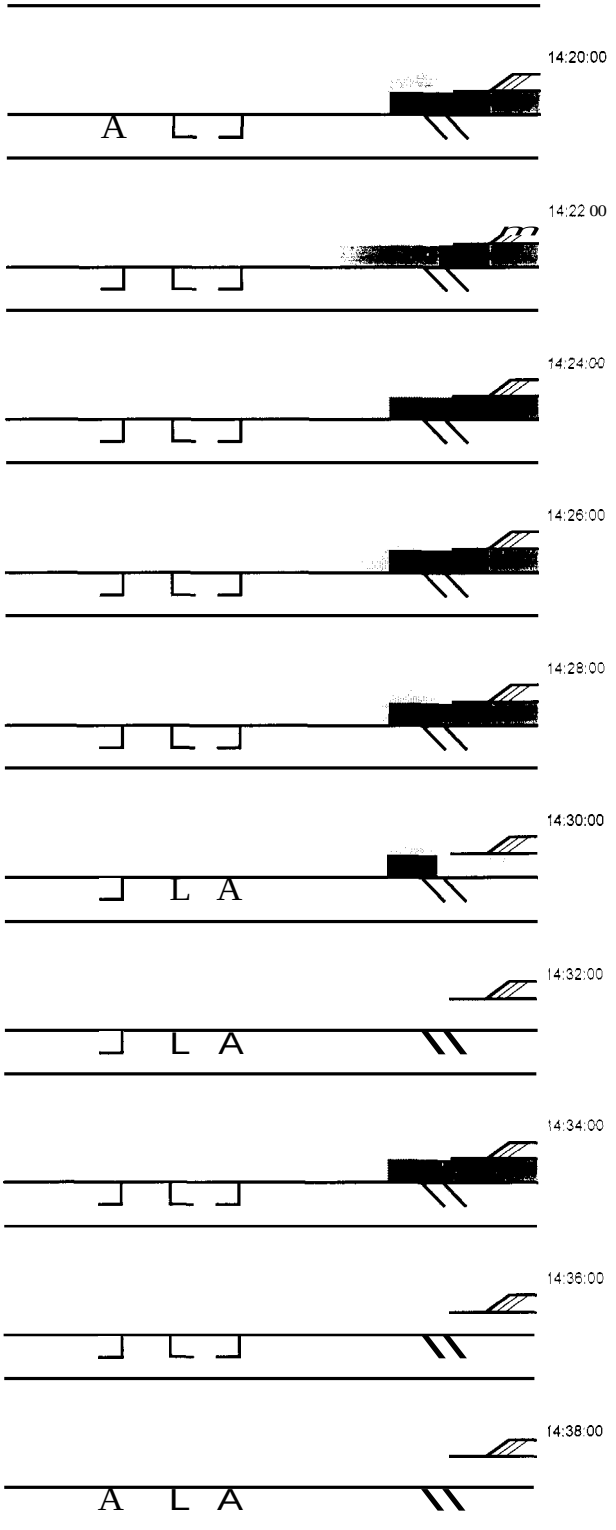


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

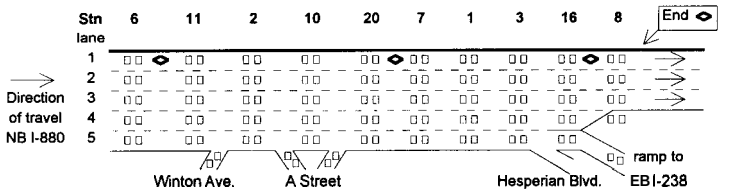
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	5	7	8	10	8	9
	2	0	0	0	0	9	9	1	2	1	0	9	1	0
14:20:00	3	0	0	0	0	13	11	10	18	13	13
	4	0	0	0	0	13	12	11	23	0	0
	5	0	0	0	0	10	11	15	41	33	27
				0	0	0					
	1	0	0	0	0	8	6	6	9	9	1	1
	2	0	0	0	0	7	9	1	9	1	3	1	0	1	1
14:22:00	3	0	0	0	0	12	11	13	14	15	12
	4	0	0	0	0	1	1	9	1	2	1	9	0	0
	5	0	0	0	0	10	10	28	28	30	26
				0	0	0					
				0	0	7	6	7	9	9	7
	2	0	0	0	0	9	7	10	11	11	11
14:24:00	3	0	0	0	0	12	11	11	17	15	14
	4	0	0	0	0	14	10	10	14	0	0
	5	0	0	0	0	14	10	11	31	37	26
				0	0	A					
	1	0	0	0	0	0	6	7	1	0	8	9
	2	0	0	0	0	0	9	1	2	9	9	1	0
14:26:00	3	0	0	0	0	0	11	10	10	11	14
	4	0	0	0	0	0	12	12	15	0	0
	5	0	0	0	0	0	10	15	39	34	29
				0	0	0					
	1	0	0	0	0	0	7	8	11	11	11
	2	0	0	0	0	0	11	11	12	10	11
14:28:00	3	0	0	0	0	0	13	12	17	15	15
	4	0	0	0	0	0	11	9	15	0	0
	5	0	0	0	0	0	12	13	30	29	28
				0	0	0					
	1	0	0	0	0	0	7	6	7	7	8
	2	0	0	0	0	0	9	1	0	1	0	9	1	0
14:30:00	3	0	0	0	0	0	10	10	13	12	18
	4	0	0	0	0	0	8	9	1	2	0	0
	5	0	0	0	0	0	Y	1	0	3	6	1	3	2	3
				0	0	0					
	1	0	0	0	0	0	8	9	10	9	10
	2	0	0	0	0	0	9	1	0	1	0	1	0	1	1
14:32:00	3	0	0	0	0	0	10	11	12	10	12
	4	0	0	0	0	0	12	12	13	0	0
	5	0	0	0	0	0	10	12	22	23	22
				0	0	A					
	1	0	0	0	0	0	7	8	1	3	1	2	1	1
	2	0	0	0	0	0	10	11	12	9	10
14:34:00	3	0	0	0	0	0	10	10	14	10	9
	4	0	0	0	0	0	9	8	11	0	0
	5	0	0	0	0	0	9	12	31	26	25
				0	0	A					
						0	5	5	6	6	9
	2	0	0	0	0	0	8	8	7	10	12
14:36:00	3	0	0	0	0	0	11	10	13	11	14
	4	0	0	0	0	0	14	11	11	0	0
	5	0	0	0	0	0	10	9	1	4	2	4	2	5
				0	0	A					
	1	0	0	0	0	0	8	8	1	0	7	8
	2	0	0	0	0	0	9	11	10	9	10
14:38:00	3	0	0	0	0	0	11	9	11	9	12
	4	0	0	0	0	0	1	3	1	1	1	4	0	0
	5	0	0	0	0	0	10	13	22	19	25
				0	0	0					

Shading



2-Minute Occupancy Data Northbound I-880, 10/22/93, 14:00 - 15:18

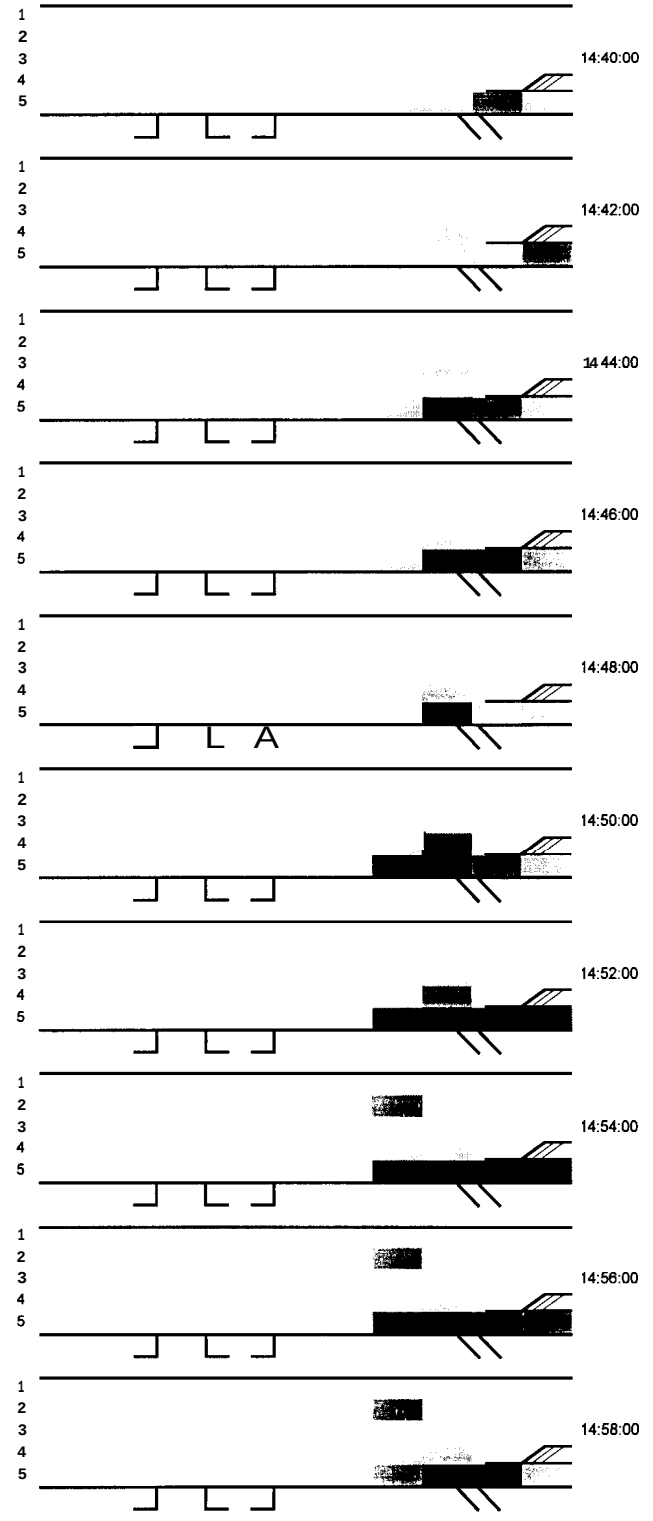


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 andup	6	

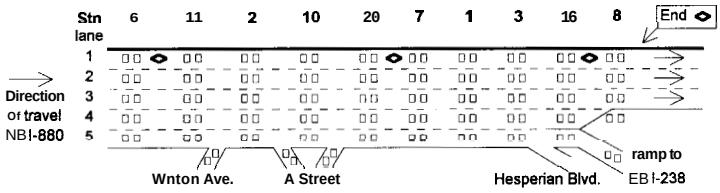
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	0	9	8	8	7	9
	2	0	0	0	0	0	11	10	8	10	11
14:40:00	3	0	0	0	0	0	13	11	12	13	15
	4	0	0	0	0	0	1 2	1 3	1 4	0	0
	5	0	0	0	0	0	12	11	13	26	25
			0		0	0					
	1			0	0	0	8	7	11	11	10
	2	0	0	0	0	0	11	15	13	13	14
14:42:00	3	0	0	0	0	0	14	15	14	13	15
	4	0	0	0	0	0	1 3	1 5	1 7	0	0
	5	0	0	0	0	0	14	19	19	20	25
			0		0	0					
	1	0	0	0	0	0	9	10	13	10	10
	2	0	0	0	0	0	10	14	15	12	12
14:44:00	3	0	0	0	0	0	11	12	21	13	14
	4	0	0	0	0	0	13	14	17	0	0
	5	0	0	0	0	0	12	18	34	26	23
			0		0	A					
	1	0	0	0	0	0	7	10	13	11	13
	2	0	0	0	0	0	10	11	16	13	11
14:46:00	3	0	0	0	0	0	11	13	18	15	15
	4	0	0	0	0	0	1	1	1 0	1 8	0 0
	5	0	0	0	0	0	7	1 0	4 1	3 6	2 4
			0		0	A					
	1	0	0	0	0	0	7	9	16	12	12
	2	0	0	0	0	0	9	14	15	10	10
14:48:00	3	0	0	0	0	0	10	11	18	13	14
	4	0	0	0	0	0	1 3	1 3	2 3	0	0
	5	0	0	0	0	0	10	18	70	13	23
			0		0	0					
	1	0	0	0	0	0	10	12	15	11	11
	2	0	0	0	0	0	11	25	15	11	10
14:50:00	3	0	0	0	0	0	14	13	19	11	10
	4	0	0	0	0	0	1 3	2 0	3 5	0	0
	5	0	0	0	0	0	12	39	46	25	20
			0		0	0					
	1	0	0	0	0	0	9 1	2 1	9 1	3 1	2
	2	0	0	0	0	0	11	24	19	11	12
14:52:00	3	0	0	0	0	0	14	15	17	9	11
	4	0	0	0	0	0	8 1	6	2 9	0	0
	5	0	0	0	0	0	11	33	45	32	34
			0		0	0					
	1	0	0	0	0	0	9 1	6 1	9 1	3 1	2
	2	0	0	0	0	0	11	30	17	11	10
14:54:00	3	0	0	0	0	0	10	13	18	16	14
	4	0	0	0	0	0	7 1	1 1	1 8	0	0
	5	0	0	0	0	0	9	3 5	4 8	4 3	5 1
			0		0	0					
	1	0	0	0	0	0	6 1	1 1	1 8	1 3	1 4
	2	0	0	0	0	0	8 2	6 1	7 1	5 1	4
14:56:00	3	0	0	0	0	0	13	17	14	13	13
	4	0	0	0	0	0	9 1	5 1	9 0		0
	5	0	0	0	0	0	10	40	46	44	30
			0		0	0					
	1	0	0	0	0	0	6 9	1 4	1 1	1 2	
	2	0	0	0	0	0	12	26	16	12	12
14:58:00	3	0	0	0	0	0	14	15	24	16	14
	4	0	0	0	0	0	1 0	1 8	2 3	0	0
	5	0	0	0	0	0	9 2	9 6	3 3	7	2 4
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880,**10/22/93, 14:00 - 15:18

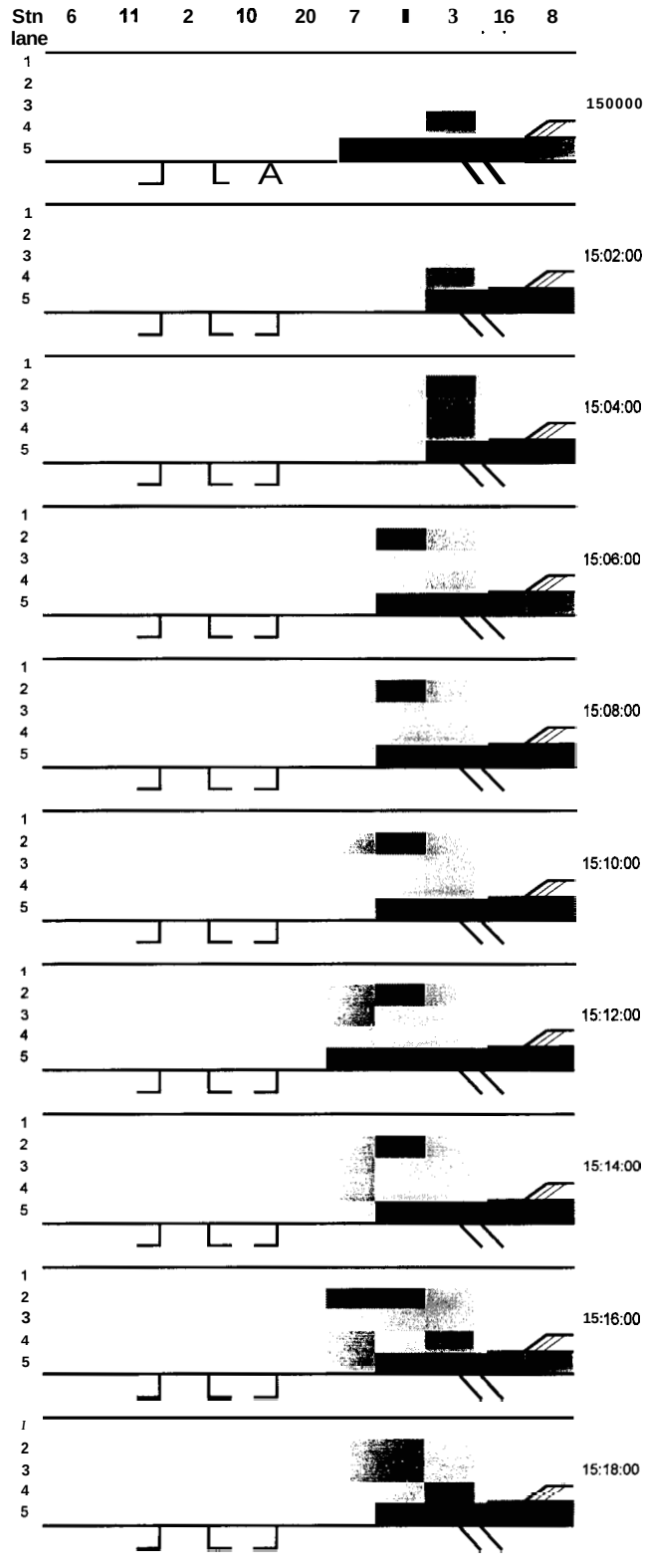


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and	up	6	

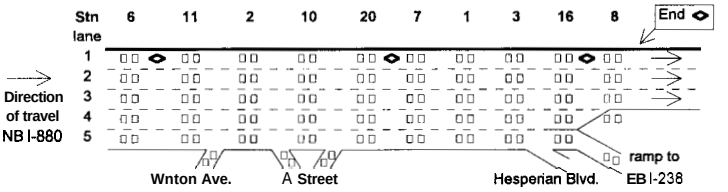
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
15:00:00	1	0	0	0	0	0	5	6	9	1	0	1	0
	2	0	0	0	0	0	10	20	16	12	12
	3	0	0	0	0	0	10	13	18	11	14
	4	0	0	0	0	0	1	0	1	3	2	5	0	0
	5	0	0	0	0	0	8	31	48	37	26
			0		0	0					
15:02:00	1	0	0	0	0	0	6	7	8	7	7
	2	0	0	0	0	0	12	16	18	10	9
	3	0	0	0	0	0	11	11	18	12	11
	4	0	0	0	0	0	11	15	29	0	0
	5	0	0	0	0	0	9	16	54	42	35
			0		0	0					
15:04:00	1	0	0	0	0	0	5	8	13	11	11
	2	0	0	0	0	0	1	2	1	9	3	3	1	2	9
	3	0	0	0	0	0	11	16	28	11	10
	4	0	0	0	0	0	1	1	1	7	2	6	0	0
	5	0	0	0	0	0	7	17	64	43	32
			0		0	0					
15:06:00	1	0	0	0	0	0	5	7	8	6	8
	2	0	0	0	0	0	16	39	20	13	10
	3	0	0	0	0	0	13	19	18	14	17
	4	0	0	0	0	0	1	2	1	8	2	5	0	0
	5	0	0	0	0	0	13	49	69	42	30
			$1		L	0	A				
15:08:00	1	0	0	0	0	0	6	8	9	8	9
	2	0	0	0	0	0	24	33	23	12	11
	3	0	0	0	0	0	19	17	19	12	14
	4	0	0	0	0	0	1	9	2	3	2	2	0	0
	5	0	0	0	0	0	16	56	48	50	36
			$1		0	0					
15:10:00	1	0	0	0	0	0	7	8	9	9	1	0
	2	0	0	0	0	0	25	33	22	14	10
	3	0	0	0	0	0	19	16	20	12	13
	4	0	0	0	0	0	1	8	1	7	2	3	0	0
	5	0	0	0	0	0	19	49	51	44	39
			0		0	0					
15:12:00	1	0	0	0	0	0	8	7	9	8	9
	2	0	0	0	0	0	27	34	22	14	11
	3	0	0	0	0	0	29	19	17	15	14
	4	0	0	0	0	0	2	1	1	5	1	6	0	0
	5	0	0	0	0	0	35	45	47	37	37
			0		0	0					
15:14:00	1	0	0	0	0	0	10	9	10	8	11
	2	0	0	0	0	0	27	37	21	15	11
	3	0	0	0	0	0	26	20	23	19	15
	4	0	0	0	0	0	26	18	19	0	0
	5	0	0	0	0	0	21	50	44	39	41
			0		0	0					
15:16:00	1	0	0	0	0	0	7	7	9	9	1	0
	2	0	0	0	0	0	34	34	25	15	13
	3	0	0	0	0	0	25	24	21	15	15
	4	0	0	0	0	0	2	8	1	9	3	0	0	0
	5	0	0	0	0	0	27	36	52	41	28
			0		0	0					
15:18:00	1	0	0	0	0	0	8	7	1	0	7	8
	2	0	0	0	0	0	27	29	21	13	11
	3	0	0	0	0	0	27	27	24	14	13
	4	0	0	0	0	0	2	0	2	1	35	0	0
	5	0	0	0	0	0	22	39	41	42	33
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/27/93, 15:00 - 16:18

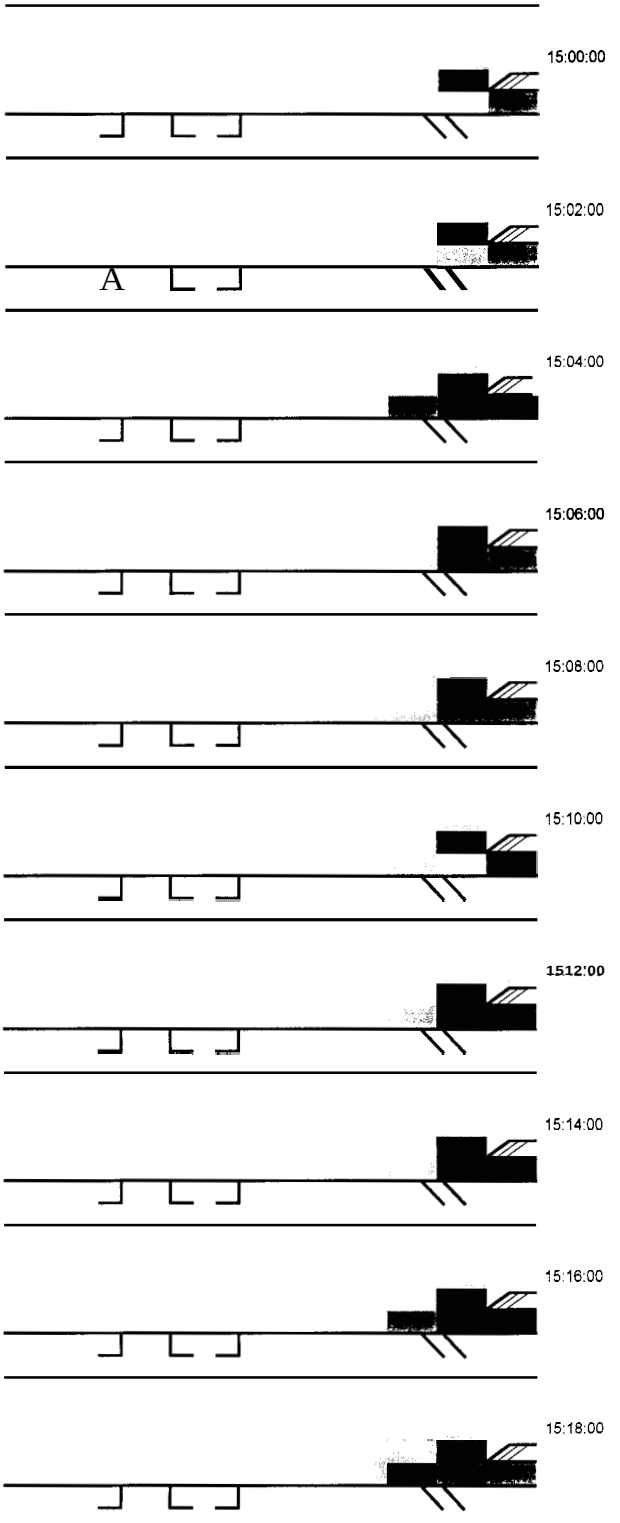


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

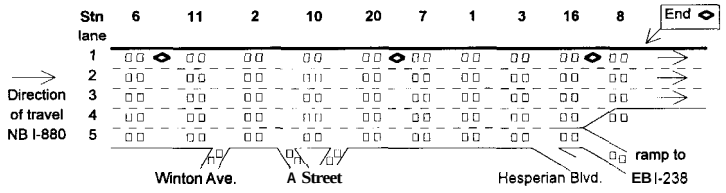
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	5	4	4	4	4	5
	2	0	0	0	0	1	0	8	9	9	8	9
15:00:00	3	0	0	0	0	11	10	8	10	10	14
	4	0	0	0	0	11	7	10	12	100	0
	5	0	0	0	0	11	10	10	14	13	16
			0		0	0					
	1	0	0	0	0	5	4	3	3	3	5
	2	0	0	0	0	13	11	11	11	10	9
15:02:00	3	0	0	0	0	13	12	11	12	12	14
	4	0	0	0	0	13	12	12	12	100	0
	5	0	0	0	0	13	12	11	13	20	26
			0		0	0					
	1	0	0	0	0	5	5	4	5	4	7
	2	0	0	0	0	11	10	12	15	14	11
15:04:00	3	0	0	0	0	9	9	10	13	15	15
	4	0	0	0	0	11	10	9	11	100	0
	5	0	0	0	0	11	10	13	27	33	39
			0		0	A					
	1	0	0	0	0	3	3	3	4	5	7
	2	0	0	0	0	12	10	9	10	10	10
15:06:00	3	0	0	0	0	13	9	10	12	12	14
	4	0	0	0	0	15	12	9	10	100	0
	5	0	0	0	0	10	9	9	1	3	3	6	2	6
			0		0	A					
	1	0	0	0	0	4	4	4	5	4	6
	2	0	0	0	0	14	14	13	17	15	9
15:08:00	3	0	0	0	0	14	15	12	15	18	15
	4	0	0	0	0	13	12	10	11	100	0
	5	0	0	0	0	12	11	13	16	25	28
			0		0	A					
	1	0	0	0	0	5	4	4	7	6	1	0
	2	0	0	0	0	14	13	13	23	17	13
15:10:00	3	0	0	0	0	12	9	11	14	14	15
	4	0	0	0	0	13	10	8	11	100	0
	5	0	0	0	0	11	11	12	19	15	34
			0		0	0					
	1	0	0	0	0	2	2	2	4	6	9
	2	0	0	0	0	8	8	1	1	1	4	1	4	1	1
15:12:00	3	0	0	0	0	9	10	9	14	15	16
	4	0	0	0	0	12	11	10	14	100	0
	5	0	0	0	0	1	0	9	1	2	2	2	3	5	3	4
			0		0	0					
				0	0	5	5	4	4	4	5
	2	0	0	0	0	16	15	11	12	11	12
15:14:00	3	0	0	0	0	14	11	9	10	11	12
	4	0	0	0	0	13	11	8	9	1	0	0	0
	5	0	0	0	0	11	9	9	1	8	3	6	3	2
			0		0	A					
	1	0	0	0	0	6	5	5	6	5	7
	2	0	0	0	0	14	15	15	24	14	12
15:16:00	3	0	0	0	0	16	16	17	18	15	13
	4	0	0	0	0	13	11	14	16	100	0
	5	0	0	0	0	12	11	11	29	34	37
			0		0	0					
	1	0	0	0	0	5	5	7	8	7	1	0
	2	0	0	0	0	11	14	20	20	13	12
15:18:00	3	0	0	0	0	13	15	22	25	19	16
	4	0	0	0	0	12	11	14	17	100	0
	5	0	0	0	0	9	10	16	33	29	29
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/27/93, 15:00 - 16:18

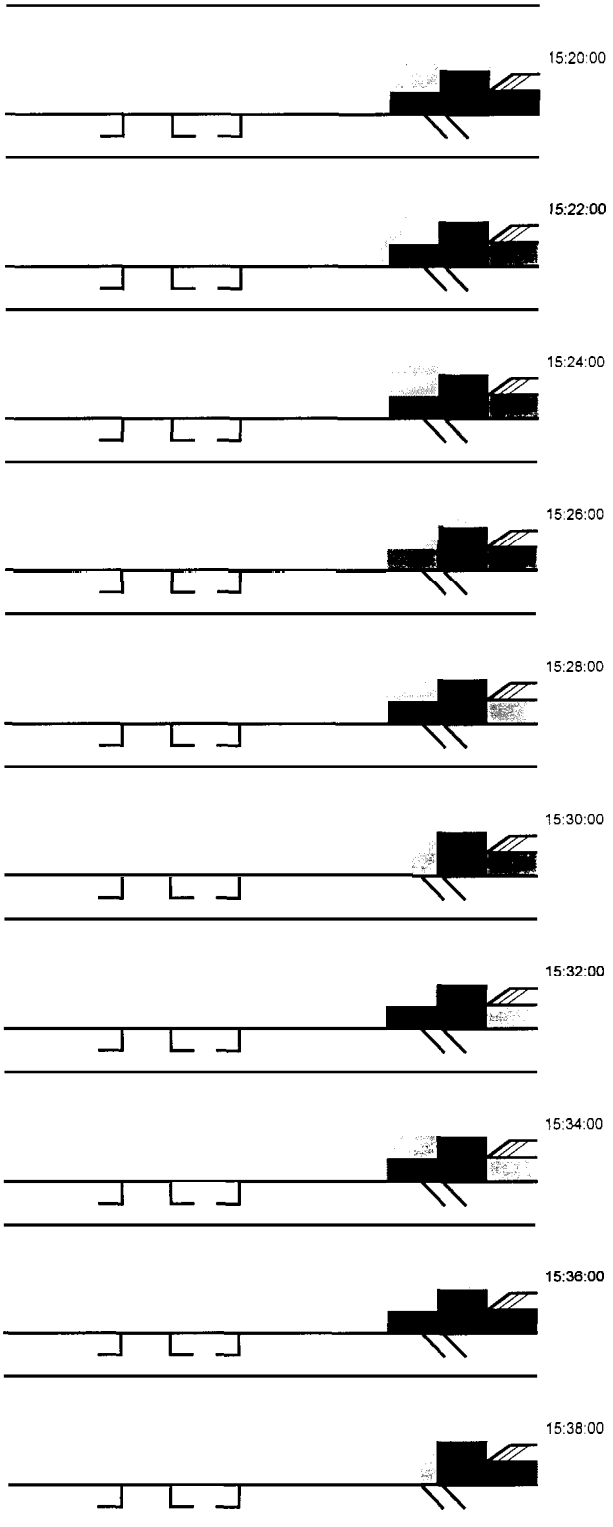


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

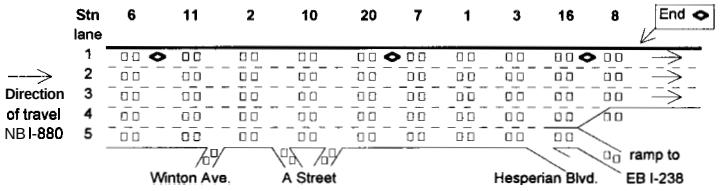
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	1	0	3	3	5	8	7	9
	2	0	0	0	0	13	12	16	21	15	12
15:20:00	3	0	0	0	0	8	7	1 3	2	1	1 4 1 7
	4	0	0	0	0	10	11	10	23	100	0
	5	0	0	0	0	10	8	9	5 0 3	2	4 0
			0		0	1					
	1	0	1	0	0	4	3	4	6	5	7
	2	0	0	0	0	13	13	16	22	14	12
15:22:00	3	0	0	0	0	12	10	13	19	13	11
	4	0	0	0	0	12	11	12	19	100	0
	5	0	0	0	0	10	10	15	46	37	26
			0		0	0					
	1	0	0	0	0	4	4	4	5	7	9
	2	0	0	0	0	10	11	11	21	15	12
15:24:00	3	0	0	0	0	11	11	14	21	15	14
	4	0	0	0	0	11	10	9	1 7	1 0	0 0
	5	0	0	0	0	9	8	9	3 9	4 0	2 6
			0		0	0					
	1	0	0	0	0	3	3	2	4	6	8
	2	0	0	0	0	13	13	13	17	19	12
15:26:00	3	0	0	0	0	13	13	11	14	16	16
	4	0	0	0	0	12	10	9	13	100	0
	5	0	0	0	0	13	11	12	28	36	26
			0		0	A					
	1	0	0	0	0	5	4	4	6	7	9
	2	0	0	0	0	13	12	13	17	13	12
15:28:00	3	0	0	0	0	14	13	13	16	14	16
	4	0	0	0	0	14	14	11	15	100	0
	5	0	0	0	0	12	8	11	40	30	22
			0		0	0					
	1	0	0	0	0	6	6	6	8	6	8
	2	0	0	0	0	12	13	14	20	15	12
15:30:00	3	0	0	0	0	10	11	14	19	18	15
	4	0	0	0	0	14	11	12	18	100	0
	5	0	0	0	0	10	11	11	21	32	25
			0		0	0					
	1	0	0	0	0	3	2	4	6	8	10
	2	0	0	0	0	11	9	13	19	14	11
15:32:00	3	0	0	0	0	10	10	10	16	14	16
	4	0	0	0	0	11	10	11	15	100	0
	5	0	0	0	0	10	9	14	48	36	22
			0		0	0					
	1	0	0	0	0	5	5	5	6	5	6
	2	0	0	0	0	12	12	14	18	14	10
15:34:00	3	0	0	0	0	10	10	14	15	13	13
	4	0	0	0	0	11	8	9	22	100	0
	5	0	0	0	0	9	8	9	3 6	3 1	2 2
			0		0	0					
	1	0	0	0	0	4	4	4	6	7	9
	2	0	0	0	0	12	11	11	16	14	12
153600	3	0	0	0	0	13	12	11	16	15	15
	4	0	0	0	0	12	12	10	13	100	0
	5	0	0	0	0	9	9	1 2	3 3	3 2	3 6
			0		0	0					
	1	0	0	0	0	4	4	4	5	4	7
	2	0	0	0	0	11	11	10	14	14	11
15:38:00	3	0	0	0	0	11	10	9	10	13	13
	4	0	0	0	0	10	9	9	1 3	1 0	0 0
	5	0	0	0	0	10	8	8	2 5	3 8	3 8
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/27/93, 15:00 - 16:18

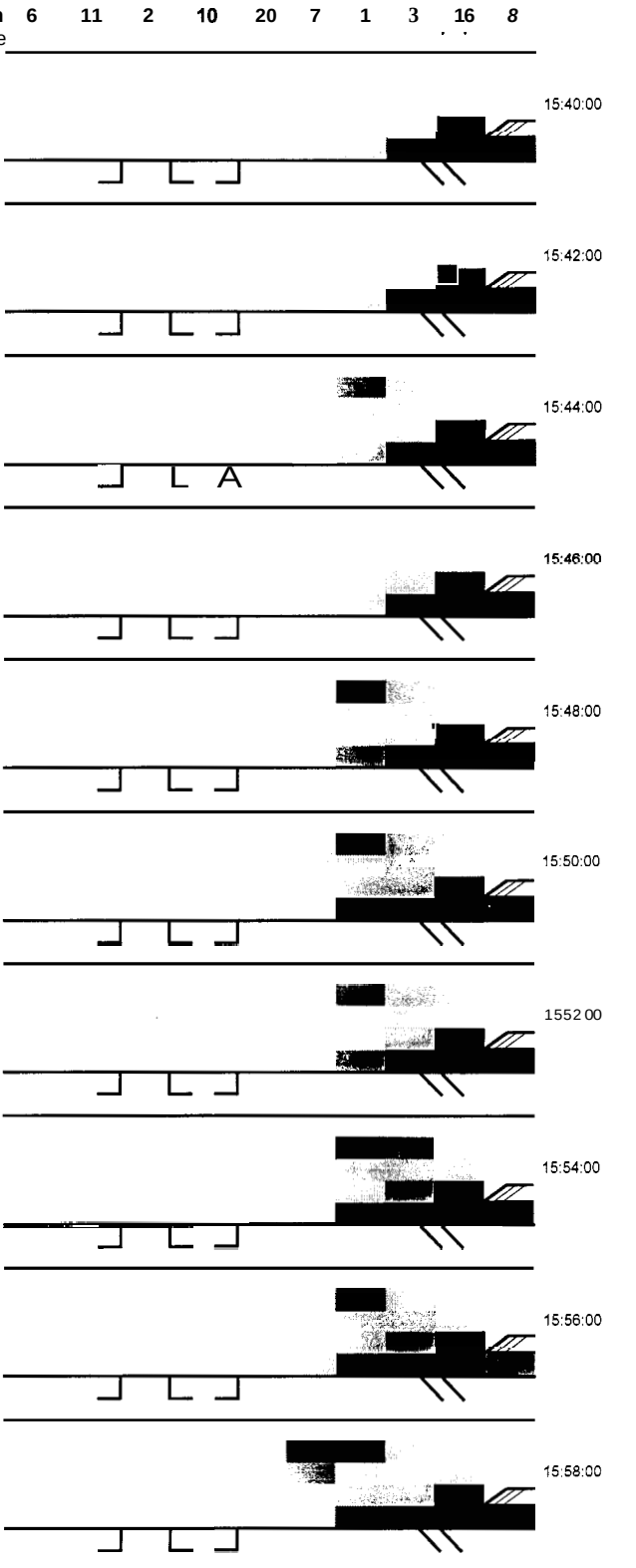


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

Occupancy

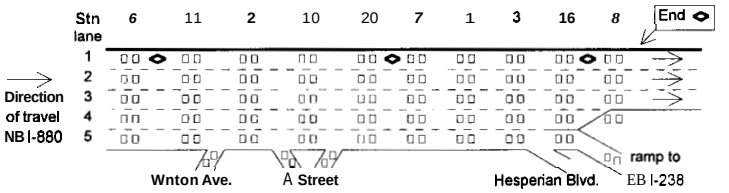
	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	3	3	3	4	5	7
	2	0	0	0	0	13	11	11	16	11	11
15:40:00	3	0	0	0	0	13	10	9	14	10	12
	4	0	0	0	0	13	11	10	18	100	0
	5	0	0	0	0	10	9	11	36	41	31
			0		0	A					
	1	0	0	0	0	5	4	5	7	6	7
	2	0	0	0	0	12	13	17	25	14	10
15:42:00	3	0	0	0	0	11	12	14	21	13	12
	4	0	0	0	0	10	10	8	14	100	0
	5	0	0	0	0	10	9	19	53	43	34
			0		0	A					
	1	0	0	0	0	5	5	6	7	7	9
	2	0	0	0	0	11	11	26	22	14	11
15:44:00	3	0	0	0	0	10	8	19	19	14	14
	4	0	0	0	0	13	10	15	15	100	0
	5	0	0	0	0	8	8	2	3	3	9	4	1	3	0
			0		0	0					
	1	0	0	0	0	6	5	5	6	6	8
	2	0	0	0	0	13	12	20	20	15	11
15:46:00	3	0	0	0	0	12	11	17	18	12	11
	4	0	0	0	0	11	10	15	17	100	0
	5	0	0	0	0	9	10	19	48	38	33
			0		0	0					
	1	0	0	0	0	5	4	9	1	2	8	9
	2	0	0	0	0	12	13	31	24	13	11
15:48:00	3	0	0	0	0	12	12	18	22	12	13
	4	0	0	0	0	11	10	14	19	100	0
	5	0	0	0	0	10	10	29	51	37	31
			0		0	0					
	1			0	0	5	7	5	7	8	9
	2	0	0	0	0	13	21	34	25	14	10
15:50:00	3	0	0	0	0	11	18	19	21	12	11
	4	0	0	0	0	10	11	20	22	100	0
	5	0	0	0	0	10	10	41	41	40	36
			0		0	0					
	1	0	0	0	0	4	7	8	9	6	9
	2	0	0	0	0	11	21	28	24	19	11
15:52:00	3	0	0	0	0	9	13	18	18	18	15
	4	0	0	0	0	9	13	14	21	100	0
	5	0	0	0	0	10	11	25	54	42	39
			0		0	A					
	1	0	0	0	0	5	5	8	9	7	8
	2	0	0	0	0	14	17	41	29	14	12
15:54:00	3	0	0	0	0	13	17	21	22	17	15
	4	0	0	0	0	13	13	19	27	100	0
	5	0	0	0	0	10	10	54	51	48	41
			0		0	0					
	1					4	7	8	9	9	9
	2	0	0	0	0	13	25	34	20	15	11
15:56:00	3	0	0	0	0	11	20	20	21	18	12
	4	0	0	0	0	15	15	25	26	100	0
	5	0	0	0	0	12	11	42	60	39	28
			0		0	0					
	1	0	0	0	0	5	6	8	8	6	8
	2	0	0	0	0	16	30	34	20	15	11
15:58:00	3	0	0	0	0	16	26	19	19	18	14
	4	0	0	0	0	14	24	23	24	100	0
	5	0	0	0	0	14	23	34	53	51	41
			0		0	0					

Shading



2-Minute Occupancy Data

Northbound 1-880, 10/27/93, 15:00 - 16:18

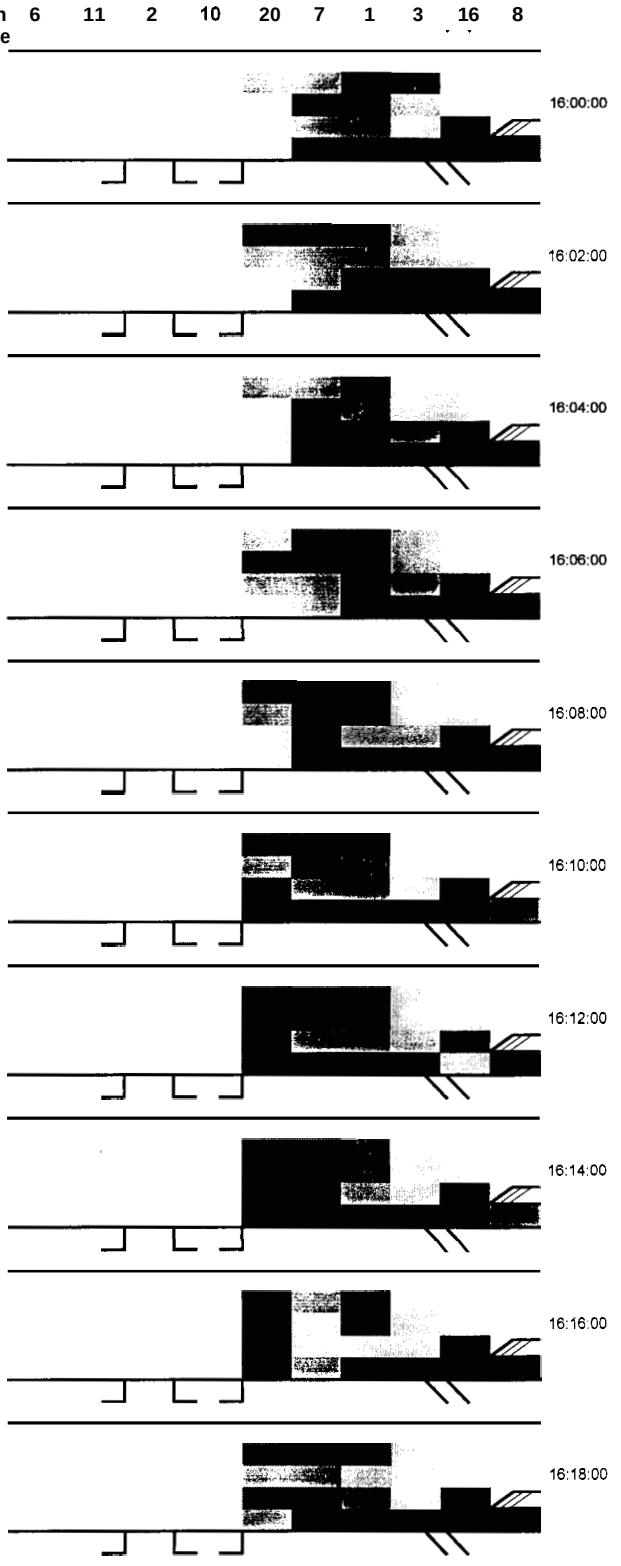


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

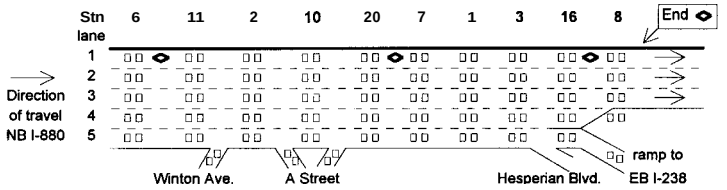
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	7	7	6	6	5	6
	2	0	0	0	0	28	29	32	26	12	10
16:00:00	3	0	0	0	0	24	33	27	23	10	11
	4	0	0	0	0	16	26	28	19	100	0
	5	0	0	0	0	13	34	39	64	43	30
			0		0	0					
	1	0	0	0	0	7	8	8	8	7	8
	2	0	0	0	0	35	36	48	20	13	9
16:02:00	3	0	0	0	0	25	26	25	22	15	13
	4	0	0	0	0	21	26	32	32	100	0
	5	0	0	0	0	18	34	40	62	42	38
			0		0	0					
	1	0	0	0	0	6	8	9	9	7	8
	2	0	0	0	0	29	27	32	20	15	11
16:04:00	3	0	0	0	0	23	32	28	19	15	12
	4	0	0	0	0	17	33	30	26	100	0
	5	0	0	0	0	18	45	37	51	40	36
			0		0	0					
	1	0	0	0	0	7	6	6	6	8	1	0
	2	0	0	0	0	30	31	40	25	13	12
16:06:00	3	0	0	0	0	34	30	33	20	14	14
	4	0	0	0	0	29	26	31	25	100	0
	5	0	0	0	0	21	29	56	54	41	37
			0		0	0					
	1	0	0	0	0	6	9	9	5	5	7
	2	0	0	0	0	38	34	40	17	13	9
16:08:00	3	0	0	0	0	28	31	33	17	13	10
	4	0	0	0	0	23	33	24	24	100	0
	5	0	0	0	0	17	52	54	54	37	39
			0		0	0					
	1	0	0	0	0	9	9	9	8	5	7
	2	0	0	0	0	33	37	36	15	12	X
16:10:00	3	0	0	0	0	29	35	30	13	11	12
	4	0	0	0	0	36	28	25	20	100	0
	5	0	0	0	0	33	43	43	45	36	27
			0		L	A					
	1	0	0	0	0	6	8	1	1	1	0	8	8
	2	0	0	0	0	44	32	33	17	10	10
16:12:00	3	0	0	0	0	40	31	33	17	12	11
	4	0	0	0	0	42	30	30	24	100	0
	5	0	0	0	0	36	51	41	49	18	33
			0		0	0					
	1	0	0	0	0	7	6	6	7	6	8
	2	0	0	0	0	35	36	27	16	12	11
16:14:00	3	0	0	0	0	37	33	28	18	13	12
	4	0	0	0	0	32	31	24	19	100	0
	5	0	0	0	0	40	48	51	40	34	29
			0		0	0					
	1			0	0	8	10	9	7	6	7
	2	0	0	0	0	36	28	31	16	14	11
16:16:00	3	0	0	0	0	39	24	33	17	14	13
	4	0	0	0	0	45	23	19	16	100	0
	5	0	0	0	0	37	28	48	39	34	33
			0		0	0					
	1	0	0	0	0	1	2	6	7	7	6	7
	2	0	0	0	0	34	32	35	15	12	11
16:18:00	3	0	0	0	0	26	28	25	18	12	13
	4	0	0	0	0	30	32	27	14	100	0
	5	0	0	0	0	28	44	39	51	41	37
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/29/93, 14:10 - 15:28

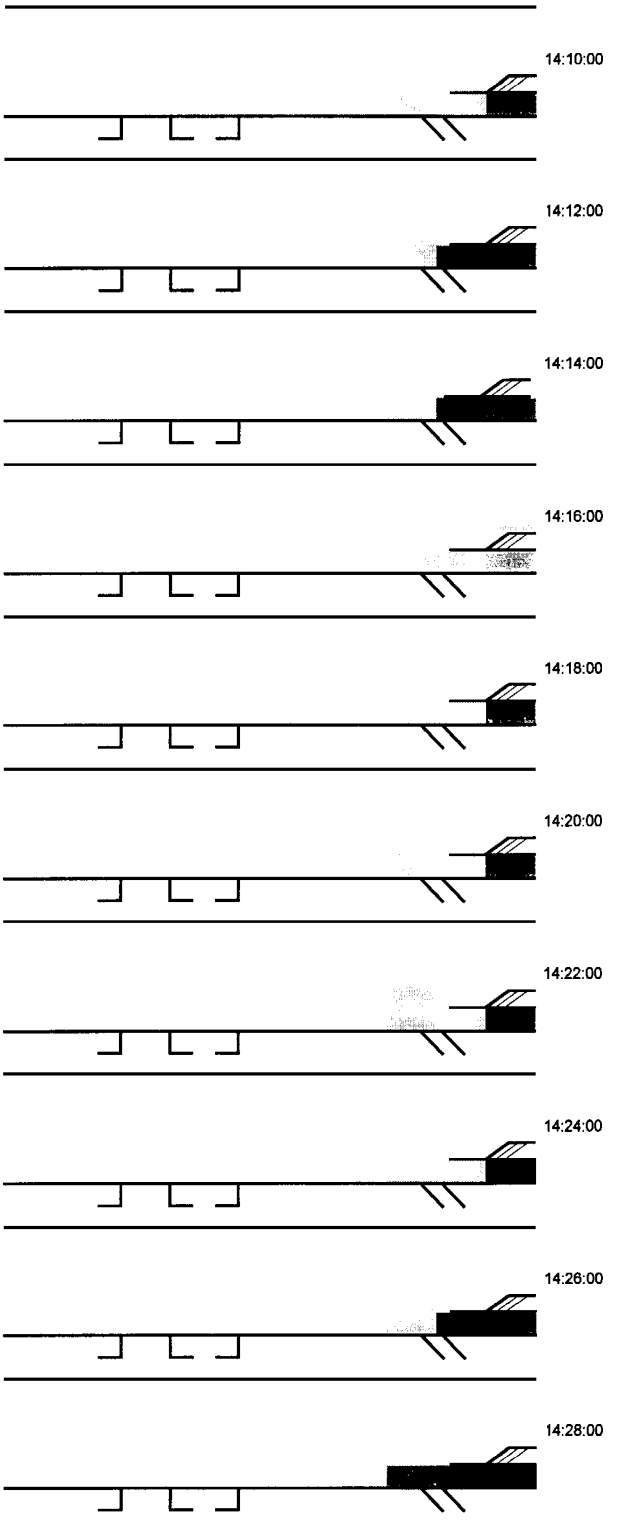


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		8	

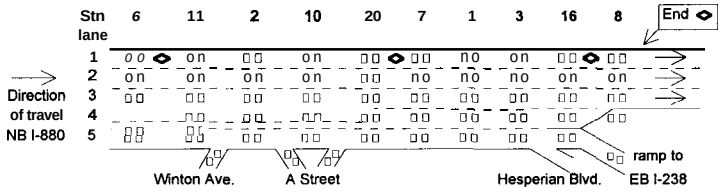
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	7	6	4	6	5	6
	2	0	0	0	0	11	10	7	10	9	10
14:10:00	3	0	0	0	0	11	11	7	12	12	14
	4	0	0	0	0	1	3	1	2	7	1	1	0	0
	5	0	0	0	0	10	11	7	17	11	25
			0		0	0					
			1	0	0	7	7	3	9	8	9
	2	0	0	0	0	1	0	8	7	9	8	8
14:12:00	3	0	0	0	0	10	11	5	11	13	15
	4	0	0	0	0	12	12	6	14	0	0
	5	0	0	0	0	11	11	7	15	27	27
			0		0	0					
						10	9	3	7	7	7
	2	0	0	0	0	1	3	1	2	8	9	9	9
14:14:00	3	0	0	0	0	13	9	6	11	12	13
	4	0	0	0	0	1	3	1	1	8	9	0	0
	5	0	0	0	0	11	8	10	11	31	29
			0		0	A					
	1	0	0	0	0	6	6	3	9	1	0	1	3
	2	0	0	0	0	7	8	7	11	11	15
14:16:00	3	0	0	0	0	7	8	5	10	11	18
	4	0	0	0	0	1	0	9	7	1	0	0	0
	5	0	0	0	0	9	9	9	15	14	25
			0		0	0					
	1	0	0	0	0	8	8	4	7	6	6
	2	0	0	0	0	11	9	7	8	6	7
14:18:00	3	0	0	0	0	13	11	6	10	9	10
	4	0	0	0	0	17	13	7	11	0	0
	5	0	0	0	0	12	12	8	14	13	16
			0		0	0					
	1	0	0	0	0	1	0	8	4	9	9	1	0
	2	0	0	0	0	9	10	7	11	10	10
14:20:00	3	0	0	0	0	12	12	8	13	11	14
	4	0	0	0	0	1	3	1	0	6	1	0	0	0
	5	0	0	0	0	14	10	9	18	15	27
			0		0	0					
	1	0	0	0	0	5	6	3	8	8	1	1
	2	0	0	0	0	12	10	7	11	9	12
14:22:00	3	0	0	0	0	11	11	6	12	12	15
	4	0	0	0	0	12	12	8	15	0	0
	5	0	0	0	0	10	10	9	18	11	16
			0		0	0					
	1	0	0	0	0	8	5	3	6	5	6
	2	0	0	0	0	1	2	1	0	7	9	8	9
14:24:00	3	0	0	0	0	12	10	6	13	14	13
	4	0	0	0	0	1	1	1	2	7	8	0	0
	5	0	0	0	0	13	10	8	15	15	38
			0		0	0					
	1	0	0	0	0	8	6	5	4	5	7
	2	0	0	0	0	9	1	0	7	8	1	0	1	0
14:26:00	3	0	0	0	0	12	11	8	11	11	14
	4	0	0	0	0	12	10	7	10	0	0
	5	0	0	0	0	12	12	8	18	32	25
			0		0	0					
	1	0	0	0	0	7	7	3	11	9	9
	2	0	0	0	0	10	8	7	12	13	12
14:28:00	3	0	0	0	0	15	13	7	18	16	15
	4	0	0	0	0	1	5	1	1	7	1	3	0	0
	5	0	0	0	0	12	10	9	26	37	40
			0		0	0					

Shading



2-Minute Occupancy Data Northbound 1-880, 10/29/93, 14:10 - 15:28

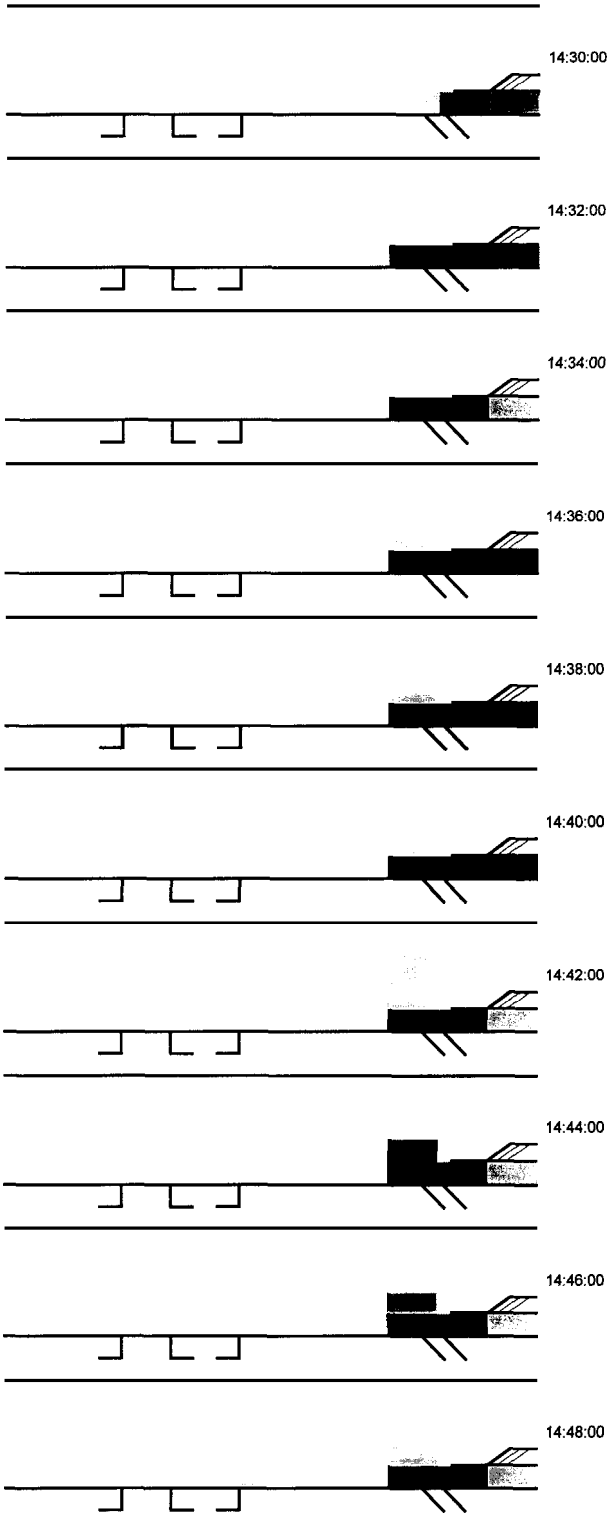


Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

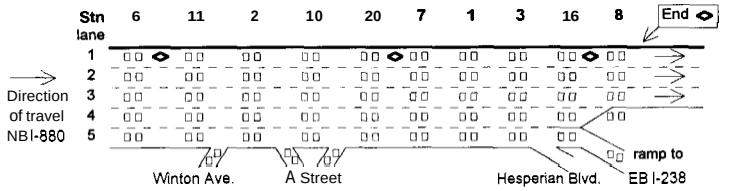
Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
	1	0	0	0	0	9	8	5	1	0	1	0	1	0
	2	0	0	0	0	11	11	X	11	12	12
14:30:00	3	0	0	0	0	13	12	5	18	18	17
	4	0	0	0	0	1	6	1	3	9	1	6	0	0
	5	0	0	0	0	11	11	X	20	38	28
			01		0	0					
	1	0	0	0	0	8	6	4	8	1	0	1	2
	2	0	0	0	0	10	10	6	12	14	13
14:32:00	3	0	0	0	0	12	9	6	IS	12	14
	4	0	0	0	0	14	12	8	13	0	0
	5	0	0	0	0	14	13	9	43	48	33
			0		0	0					
						8	7	3	10	10	10
	2	0	0	0	0	10	9	8	15	11	11
14:34:00	3	0	0	0	0	9	9	6	11	12	9
	4	0	0	0	0	14	11	9	14	0	0
	5	0	0	0	0	11	9	10	61	31	24
			0		0	0					
	1	0	0	0	0	9	8	3	10	11	11
	2	0	0	0	0	10	9	9	1 4 1 0 1 0		
14:36:00	3	0	0	0	0	10	10	7	15	12	13
	4	0	0	0	0	16	16	7	16	0	0
	5	0	0	0	0	11	9	10	41	36	45
			0		0	0					
	1	0	0	0	0	1	0	8	5	1	3	9	1	1
	2	0	0	0	0	13	10	7	12	11	10
14:38:00	3	0	0	0	0	16	13	7	14	14	15
	4	0	0	0	0	11	10	7	18	0	0
	5	0	0	0	0	10	9	8	5 3 3 9 3 2		
			0		0	0					
	1	0	0	0	0	1	7	2	1	3	1	2	1	3
	2	0	0	0	0	9	10	7	16	12	13
14:40:00	3	0	0	0	0	12	11	6	16	15	14
	4	0	0	0	0	1	4	1	3	7	1	8	0	0
	5	0	0	0	0	13	9	9	4 9 4 1 3 8		
			0		0	0					
	1	0	0	0	0	10	9	4	15	11	10
	2	0	0	0	0	10	11	8	16	11	10
14:42:00	3	0	0	0	0	13	11	7	17	15	14
	4	0	0	0	0	1	2	1	3	8	1	7	0	0
	5	0	0	0	0	10	11	8	46	31	24
			0		0	0					
	1	0	0	0	0	9	8	4	1	6	1	2	1	2
	2	0	0	0	0	11	9	X	19	13	14
14:44:00	3	0	0	0	0	11	10	8	17	14	17
	4	0	0	0	0	13	11	7	41	0	0
	5	0	0	0	0	14	11	9	60	32	24
			0		0	0					
	1	0	0	0	0	9	10	4	20	14	15
	2	0	0	0	0	11	11	7	19	13	13
14:46:00	3	0	0	0	0	10	12	7	22	13	16
	4	0	0	0	0	1	1	1	2	6	2	7	0	0
	5	0	0	0	0	10	9	X	4	8	3	4	2	0
			0		0	0					
	1	0	0	0	0	8	9	4	20	15	14
	2	0	0	0	0	12	12	8	19	12	15
14:48:00	3	0	0	0	0	12	11	6	21	10	13
	4	0	0	0	0	13	12	6	23	0	0
	5	0	0	0	0	13	12	10	48	41	25
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880,** 10129193, **14:10** - 15:28

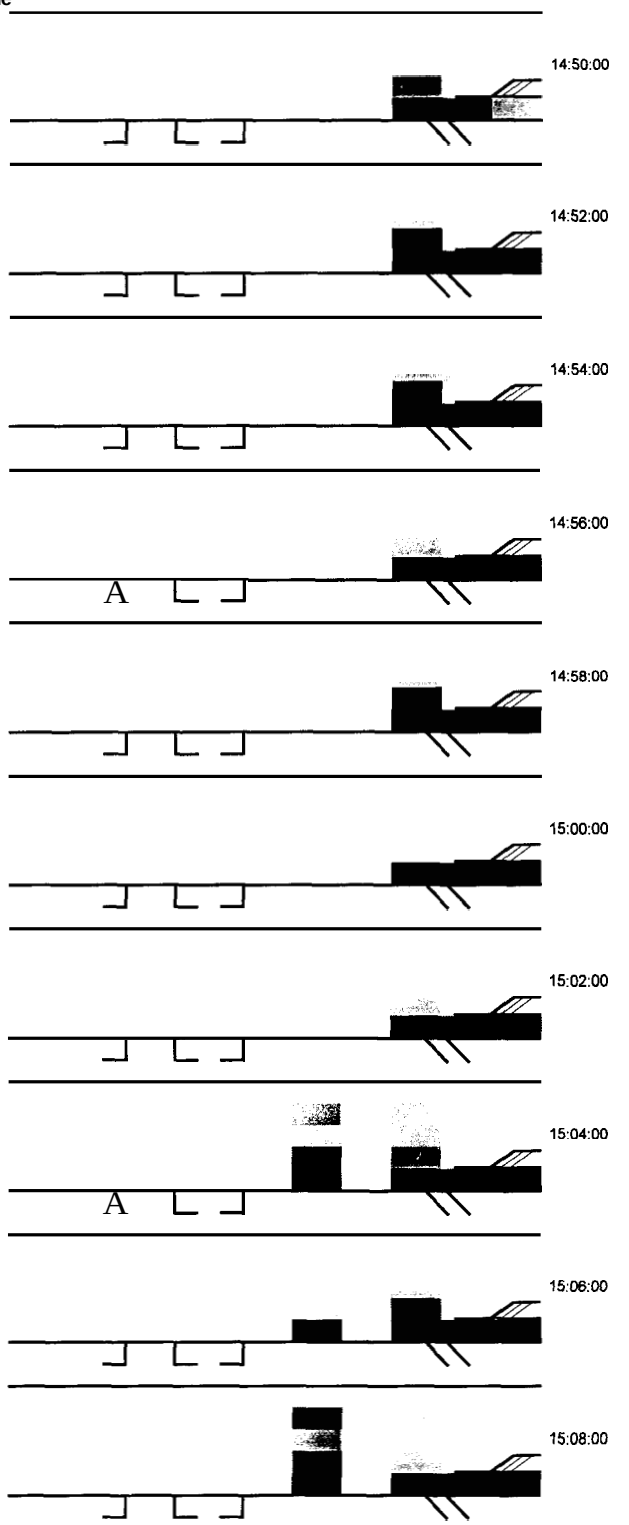


Occupancy			Code	Shade
0	to	10	0	
10	to	15	1	
15	to	20	2	
20	to	25	3	
25	to	30	4	
30	to	40	5	
40	and up		6	

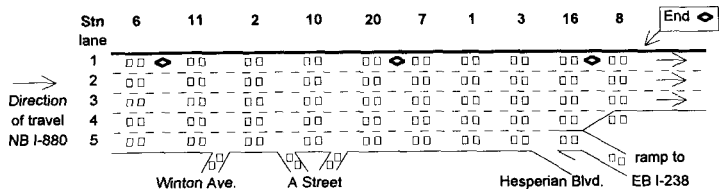
Occupancy

	Stn lane	6	11	2	10	20	7	1	3	16	8
	1	0	0	0	0	10	9	4	20	13	12
	2	0	0	0	0	11	9	7	20	14	11
14:50:00	3	0	0	0	0	10	11	1	22	15	14
	4	0	0	0	0	14	12	8	28	0	0
	5	0	0	0	0	10	13	9	53	47	23
			0		0	0					
	1	0	0	0	0	9	8	3	19	15	13
	2	0	0	0	0	11	12	8	21	12	12
14:52:00	3	0	0	0	0	11	11	7	24	13	15
	4	0	0	0	0	11	13	8	44	10	0
	5	0	0	0	0	11	14	8	58	35	30
			S1		0	0					
	1	0	0	0	0	9	10	4	18	14	12
	2	0	0	0	0	9	12	8	19	12	12
14:54:00	3	0	0	0	0	13	14	7	24	15	14
	4	0	0	0	0	10	12	7	34	0	0
	5	0	0	0	0	10	11	9	67	34	41
			0		0	0					
	1	0	0	0	0	7	7	4	20	11	11
	2	0	0	0	0	9	10	9	18	12	10
14:56:00	3	0	0	0	0	10	15	6	21	15	15
	4	0	0	0	0	13	17	8	24	0	0
	5	0	0	0	0	10	22	11	47	31	38
			0		0	0					
	1	0	0	0	0	5	6	4	14	13	12
	2	0	0	0	0	11	11	6	19	15	10
14:58:00	3	0	0	0	0	12	12	6	21	15	15
	4	0	0	0	0	11	12	5	41	0	0
	5	0	0	0	0	10	12	1	69	32	42
			0		0	A					
	1	0	0	0	0	6	9	4	13	10	11
	2	0	0	0	0	12	16	6	18	14	11
15:00:00	3	0	0	0	0	11	15	5	14	12	12
	4	0	0	0	0	11	10	6	18	0	0
	5	0	0	0	0	8	15	7	47	37	45
			0		0	0					
	1	0	0	0	0	5	8	2	1	2	9	8
	2	0	0	0	0	14	20	6	18	12	11
15:02:00	3	0	0	0	0	15	18	5	18	10	10
	4	0	0	0	0	1	6	1	9	6	2	3	0	0
	5	0	0	0	0	12	22	5	49	39	37
			0		0	0					
	1	0	0	0	0	5	8	3	1	2	1	0	1	0
	2	0	0	0	0	16	25	6	24	13	11
15:04:00	3	0	0	0	0	14	21	7	23	13	11
	4	0	0	0	0	1	4	3	3	1	2	7	0	0
	5	0	0	0	0	16	36	8	54	34	47
			0		0	0					
	1	0	0	0	0	6	9	4	8	8	9
	2	0	0	0	0	18	24	6	25	14	10
15:06:00	3	0	0	0	0	19	21	5	24	14	14
	4	0	0	0	0	1	7	2	3	6	3	3	0	0
	5	0	0	0	0	16	44	7	65	43	41
			0		0	A					
	1	0	0	0	0	5	9	3	8	8	1	1
	2	0	0	0	0	18	32	6	18	13	12
15:08:00	3	0	0	0	0	15	30	5	18	13	13
	4	0	0	0	0	1	6	3	7	7	2	2	0	0
	5	0	0	0	0	1	6	4	0	6	5	5	4	1	3	4
			0		0	0					

Shading



2-Minute Occupancy Data Northbound **1-880,** *10129193,* **14:10 - 15:28**



Occupancy	Code	Shade
0 to 10	0	
10 to 15	1	
15 to 20	2	
20 to 25	3	
25 to 30	4	
30 to 40	5	
40 and up	6	

Occupancy

	Stn	6	11	2	10	20	7	1	3	16	8
	lane										
15:10:00	1	0	0	0	0	1	0	1	1	3	1	0	8	1
	2	0	0	0	0	35	26	6	17	12	10
	3	0	0	0	0	42	25	6	14	13	11
	4	0	0	0	0	3	5	3	1	7	2	4	0	0
	5	0	0	0	0	26	61	8	61	37	41
			0		0	0					
15:12:00	1	0	0	0	0	9	9	3	1	0	8	9
	2	0	0	0	0	2	6	2	6	6	2	2	1	2	9
	3	0	0	0	0	26	31	I	22	12	13
	4	0	0	0	0	28	29	1	3	9	0	0
	5	0	0	0	0	21	55	I	58	36	24
			0		0	0					
15:14:00	1	0	0	0	0	9	1	0	3	8	7	8
	2	0	0	0	0	4	2	3	2	7	18	11	9
	3	0	0	0	0	35	31	6	17	14	14
	4	0	0	0	0	44	26	7	33	0	0
	5	0	0	0	0	49	37	7	51	39	39
			0		0	0					
15:16:00	1	0	0	0	0	8	9	4	9	7	7
	2	0	0	0	0	36	32	6	28	13	10
	3	0	0	0	0	26	24	6	23	16	11
	4	0	0	0	0	32	33	7	31	0	0
	5	0	0	0	0	3	8	5	2	6	6	4	4	3	4	2
			0		0	0					
15:18:00	1	0	0	0	0	1	4	1	3	5	1	1	9	1	0
	2	0	0	0	0	28	29	I	18	15	11
	3	0	0	0	0	33	34	8	20	15	14
	4	0	0	0	0	46	34	8	29	0	0
	5	0	0	0	0	36	42	9	62	39	45
			0		0	0					
15:20:00	1	0	0	0	0	7	8	3	12	8	8
	2	0	0	0	0	43	34	7	20	13	11
	3	0	0	0	0	38	32	6	28	14	13
	4	0	0	0	0	33	30	I	37	0	0
	5	0	0	0	0	38	49	8	59	33	40
			0		0	0					
15:22:00	1	0	0	0	0	9	14	2	9	7	8
	2	0	0	0	0	30	24	7	22	16	12
	3	0	0	0	0	29	24	6	24	IS	16
	4	0	0	0	0	28	36	7	30	0	0
	5	0	0	0	0	43	51	9	54	37	35
			0		0	0					
15:24:00	1	0	0	0	0	7	9	4	1	1	1	0	9
	2	0	0	0	0	22	33	8	25	13	11
	3	0	0	0	0	21	31	7	20	13	12
	4	0	0	0	0	3	0	3	8	1	2	7	0	0
	5	0	0	0	0	44	44	9	52	40	40
			0		0	0					
15:26:00	1	0	0	0	0	8	8	3	9	8	9
	2	0	0	0	0	36	20	6	21	16	10
	3	0	0	0	0	36	22	5	22	14	14
	4	0	0	0	0	3	4	3	1	6	3	7	0	0
	5	0	0	0	0	44	58	I	51	48	30
			0		0	0					
15:28:00	1	0	0	0	12	11	2	8	7	10
	2	0	0	0	0	24	32	7	22	14	11
	3	0	0	0	0	21	24	I	19	13	11
	4	0	0	0	0	24	25	7	46	0	0
	5	0	0	0	0	38	41	8	62	36	30
			0		0	0					

Shading