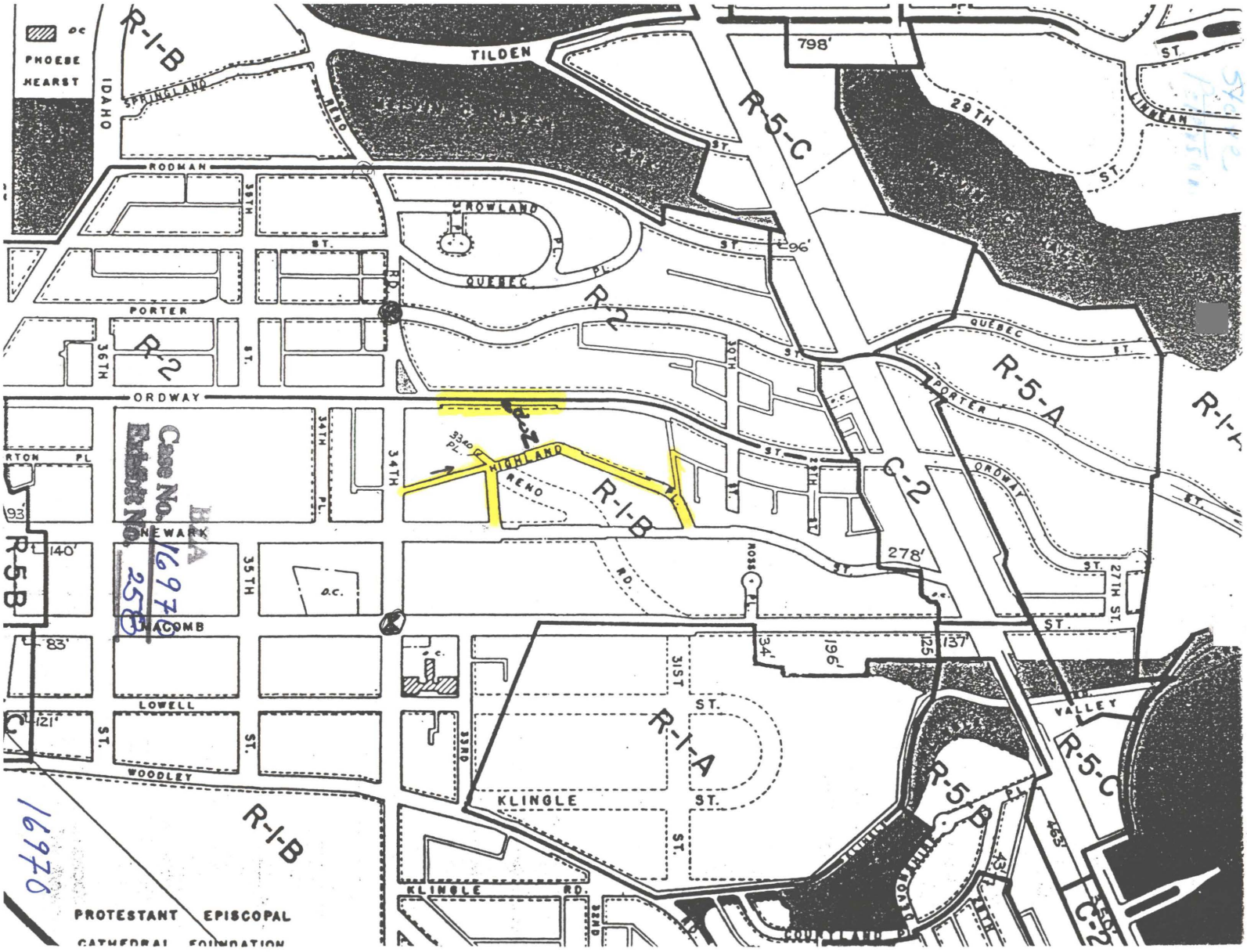


Board of Zoning Adjustment
District of Columbia
CASE NO.16970
EXHIBIT NO.258

NEIGHBORHOOD RESIDENTIAL STREET CHARACTERISTICS

Excerpts from *Transportation and Land Development, 2nd Edition*
Published by the Institute of Transportation Engineers, 2002

Chapter 13 of the subject reference is devoted to the planning and design of neighborhood streets. Even though dating back to the late 1800's, Highland Place, as a residential street has many of the characteristics that are considered today to be desirable elements of a "neighborhood residential street". A few of these characteristics are listed below.

- A livable residential neighborhood provides an environment that satisfies the desires of the residents while accounting for differences in lifestyle, housing preference, orientation of the home relative to the street, lot size and proximity to nonresidential uses.

- Low traffic speed and volume are essential to the creation and preservation of a high-quality neighborhood.

- Minimizing conflicts between pedestrians and vehicles improves the "walkability" of the neighborhood.

- The service provided by residential streets should be defined by slow speed and low volume (of vehicular traffic) that are compatible with a livable environment. The Level of Service (LOS) concept used to measure the operating characteristics of "traffic streets" is not appropriate for residential streets. The measures of effectiveness derived from LOS measures such as speed, volume to capacity ratios, average delay and density of traffic in a lane, do not (and should not) be applied to residential streets.

- Local residential streets serve a variety of functions in addition to providing vehicle access to individual residences. These include - pedestrian and bicycle movement, a location for utilities, deliveries and service, storm water facilities, solid waste collection and social space - even a place where children can play without being subjected to through traffic.

- Environmental quality of a neighborhood is enhanced when all, or at least the vast majority of, vehicle trips on a local street have an origin or destination on the street. *(A school such as NCRC that depends on parents to transport their children from locations outside of the immediate neighborhood is not a final destination. Rather it is a stop on the way to another place that is the ultimate destination. Thus, the access street to the school is not viewed by these drivers in the same perspective as is the street in front of their own home. Drivers passing through an area tend to drive faster than they do in local traffic.)*

- Residential streets are community space where people should be able to walk, children play and neighbors visit in safety and comfort. Auto movement and parking should be subservient to the pedestrian and social functions. Limiting the volume and speed of traffic is fundamental to the development and preservation of highly livable residential neighborhoods.

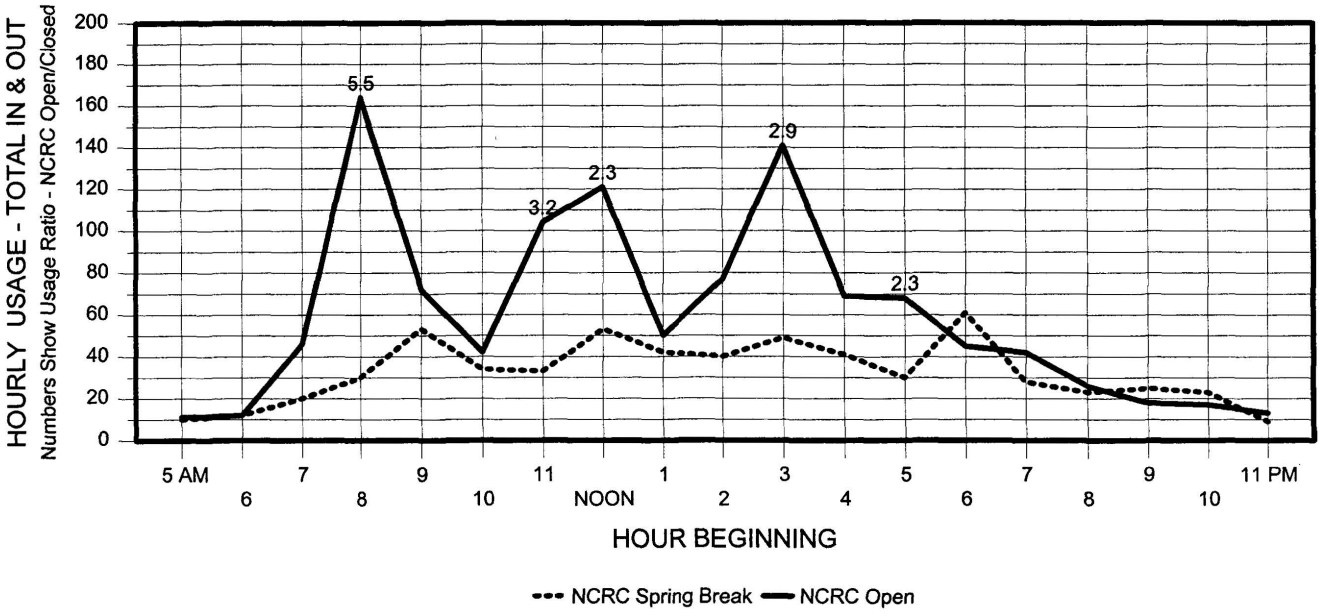
- Ideally, a peak-hour volume of less than 30 vehicles per hour is desirable on a local residential street at its intersection with another neighborhood street. The combined volume from the two streets of 60 vehicles per hour, after allowing for the potential of unequal distribution between the two streets, suggests that a maximum of 50 dwelling units should be served by a local street that intersects two other streets. *(As a point of reference, there are 37 houses served by the combination of 33rd Place, Highland Place and Ashley Terrace.)*

- The desirable speed and maximum average daily traffic volume on a local street are: 25 mph and 300 vehicles/day.

HIGHLAND/33rd LOOP - HOURLY USAGE - NCRC OPEN/CLOSED

Relative Combined Usage of Highland Place and 33rd Place, N.W.

Average of Counts on 2/3 Weekdays



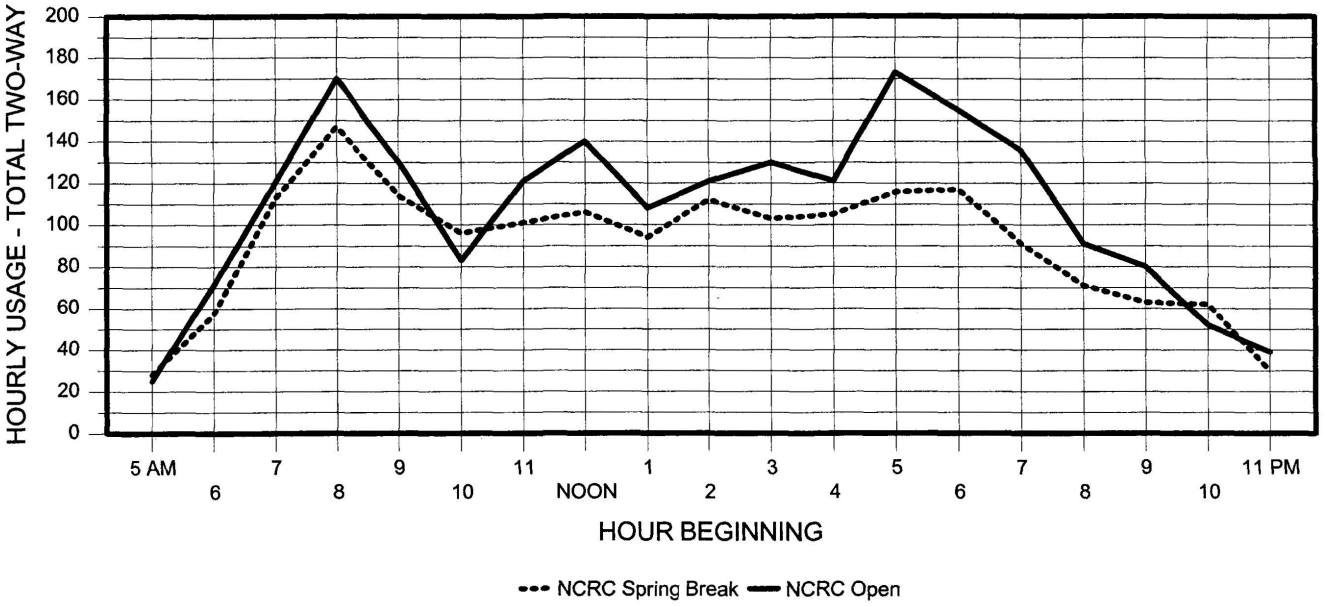
Study Dates: March 26 thru 28, 2002 (NCRC Spring Break) and April 30 thru May 2, 2002 (NCRC Open)
Relative Usage During 19 Hour Period Shown - NCRC Spring Break - 615, NCRC Open - 1140
Source: Vehicle Volume Recording Company, Gaithersburg, Maryland

CHART 1-A

ORDWAY STREET - HOURLY USAGE - NCRC OPEN/CLOSED

Relative Use Of Ordway Street, N.W. Between 34th Street and NCRC

Average of Counts on Two Weekdays



Study Dates: March 26 and 27, 2002 (NCRC Spring Break) and April 30 and May 1, 2002 (NCRC Open)
Relative Use During 19 Hour Period Shown - NCRC Spring Break - 1725, NCRC Open - 2065
Source: Vehicle Volume Recording Company, Gaithersburg, Maryland

CHART 1-B

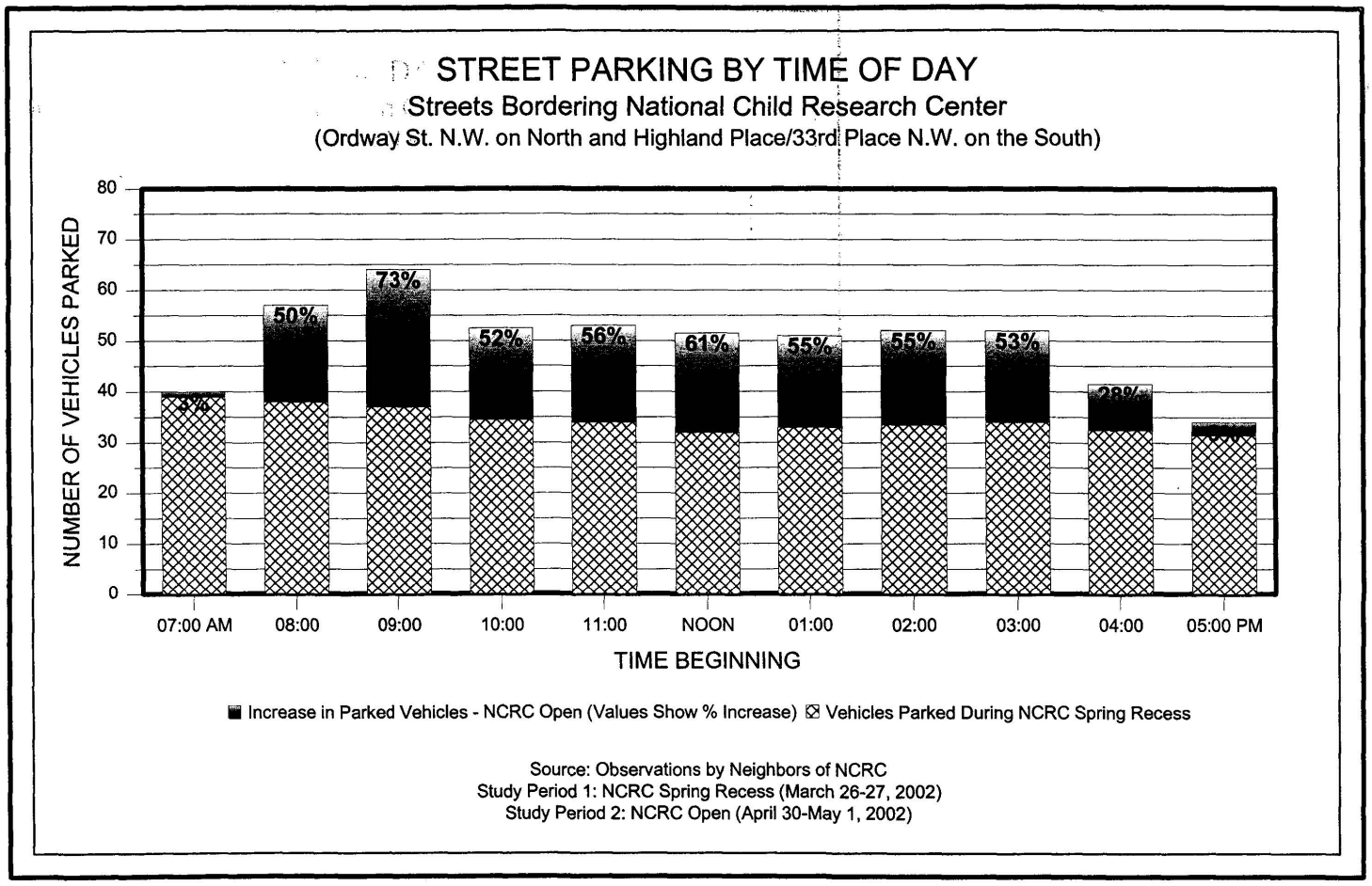
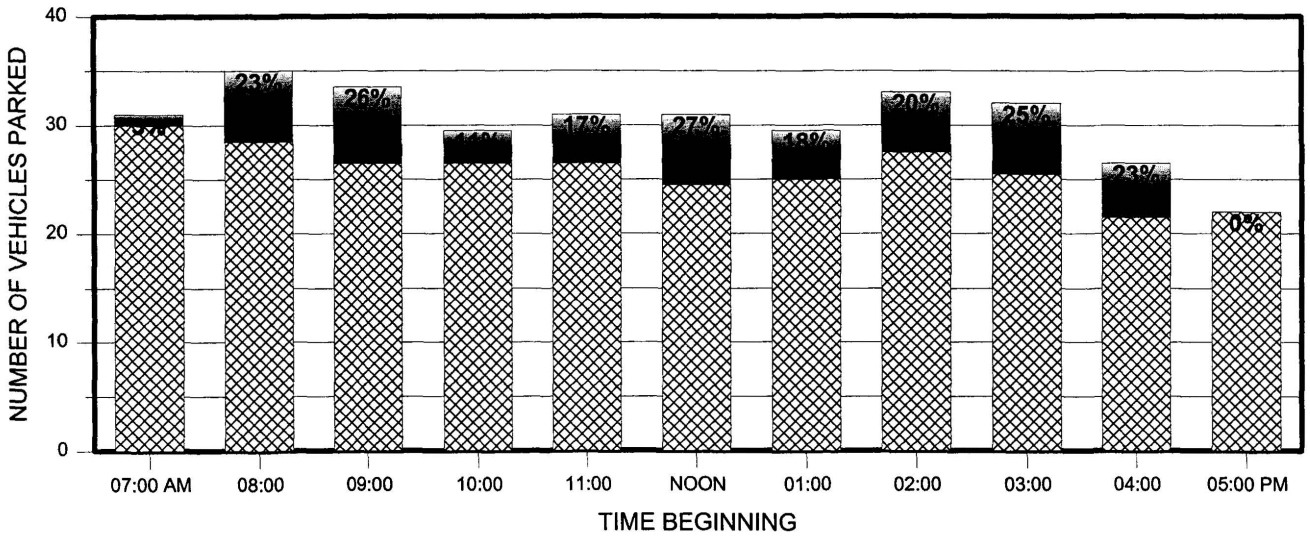

STREET PARKING BY TIME OF DAY
Streets Bordering National Child Research Center
(Ordway St. N.W. on North and Highland Place/33rd Place N.W. on the South)
NUMBER OF VEHICLES PARKED
80
70
60
50
40
30
20
10
0
3%
50%
73%
52%
56%
61%
55%
55%
53%
28%
07:00 AM
08:00
09:00
10:00
11:00
NOON
01:00
02:00
03:00
04:00
05:00 PM
TIME BEGINNING
Increase in Parked Vehicles - NCRC Open (Values Show % Increase)
Vehicles Parked During NCRC Spring Recess
Source: Observations by Neighbors of NCRC
Study Period 1: NCRC Spring Recess (March 26-27, 2002)
Study Period 2: NCRC Open (April 30-May 1, 2002)

CHART 2A

STREET PARKING BY TIME OF DAY

Streets Bordering National Child Research Center

(Highland Place/33rd Place, N.W.)



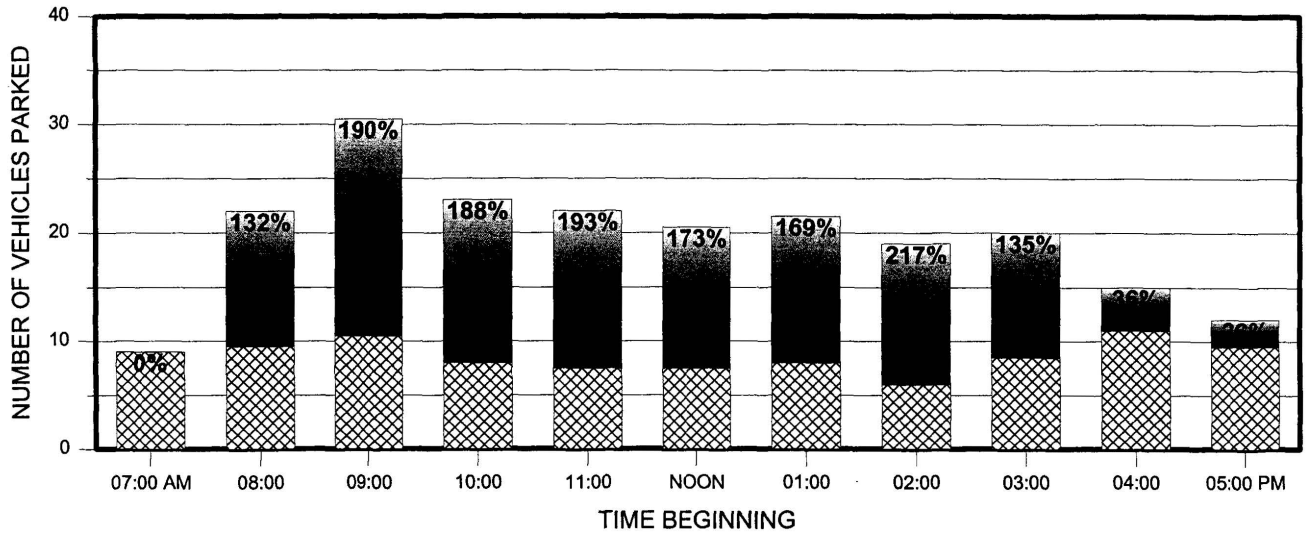
Source: Observations by Neighbors of NCRC
Study Period 1: NCRC Spring Recess (March 26-27, 2002)
Study Period 2: NCRC Open (April 30-May 1, 2002)

CHART 2B

STREET PARKING BY TIME OF DAY

Streets Bordering National Child Research Center

(Ordway Street, N.W.)



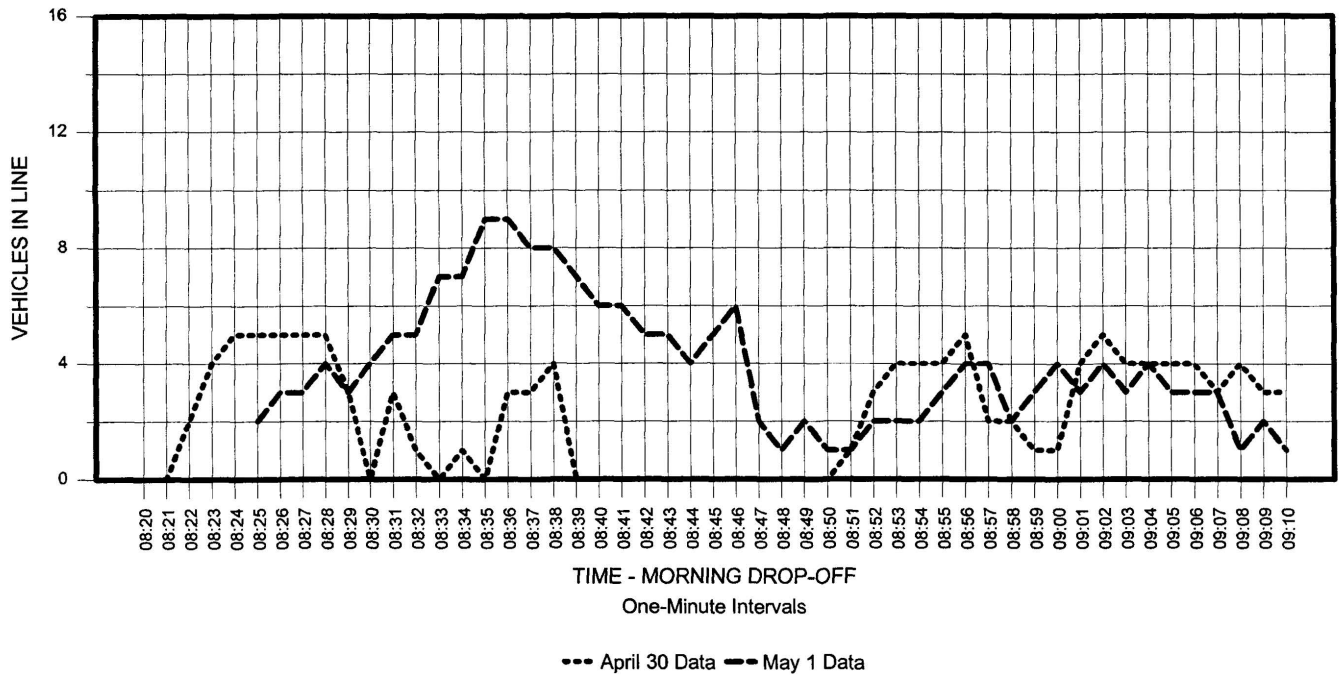
Source: Observations by Neighbors of NCRC
Study Period 1: NCRC Spring Recess (March 26-27, 2002)
Study Period 2: NCRC Open (April 30-May 1, 2002)

CHART 2C

VEHICLES IN LINE ON HIGHLAND PLACE, N.W.

In Front of National Child Research Center

Date of Study: April 30 and May 1, 2002 - School Open



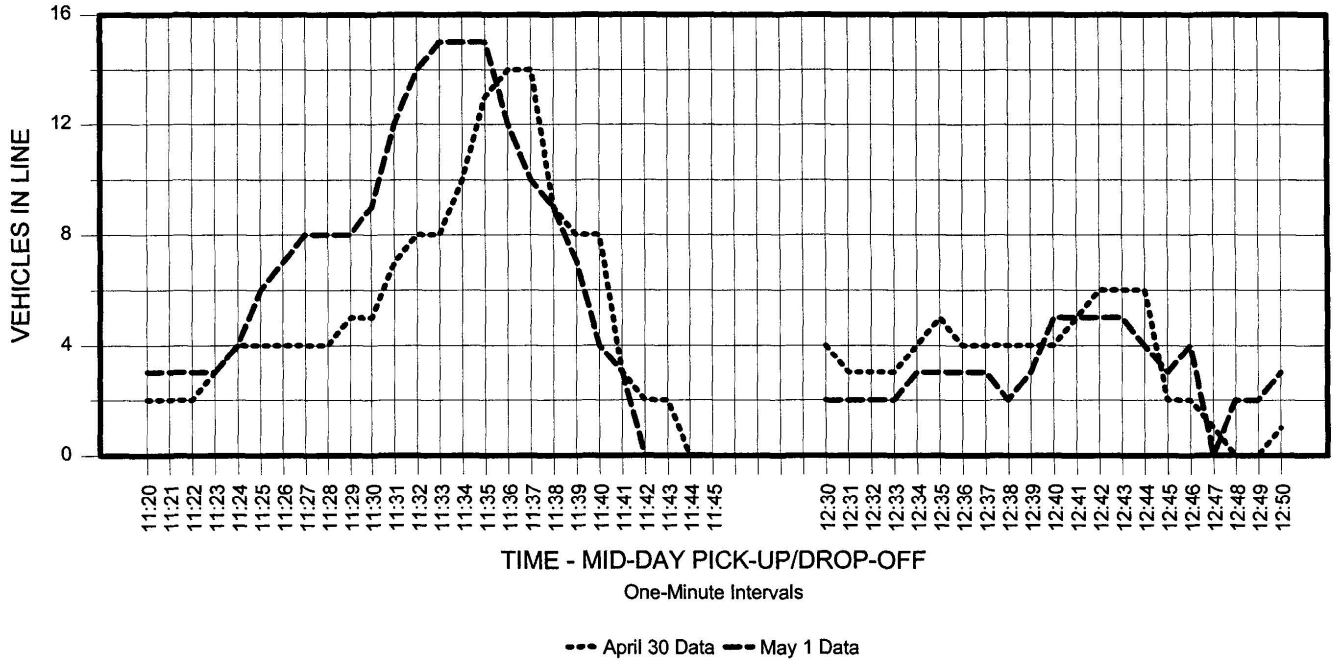
Note: Queue was measured from first vehicle in line. First 4 to 5 vehicles can park at curb in front of school.
Source: Observations by Neighbors of NCRC

CHART 3-A

VEHICLES IN LINE ON HIGHLAND PLACE, N.W.

In Front of National Child Research Center

Date of Study: April 30 and May 1, 2002 - School Open



Note: Queue was measured from first vehicle in line. First 4 to 5 vehicles can park at curb in front of school.

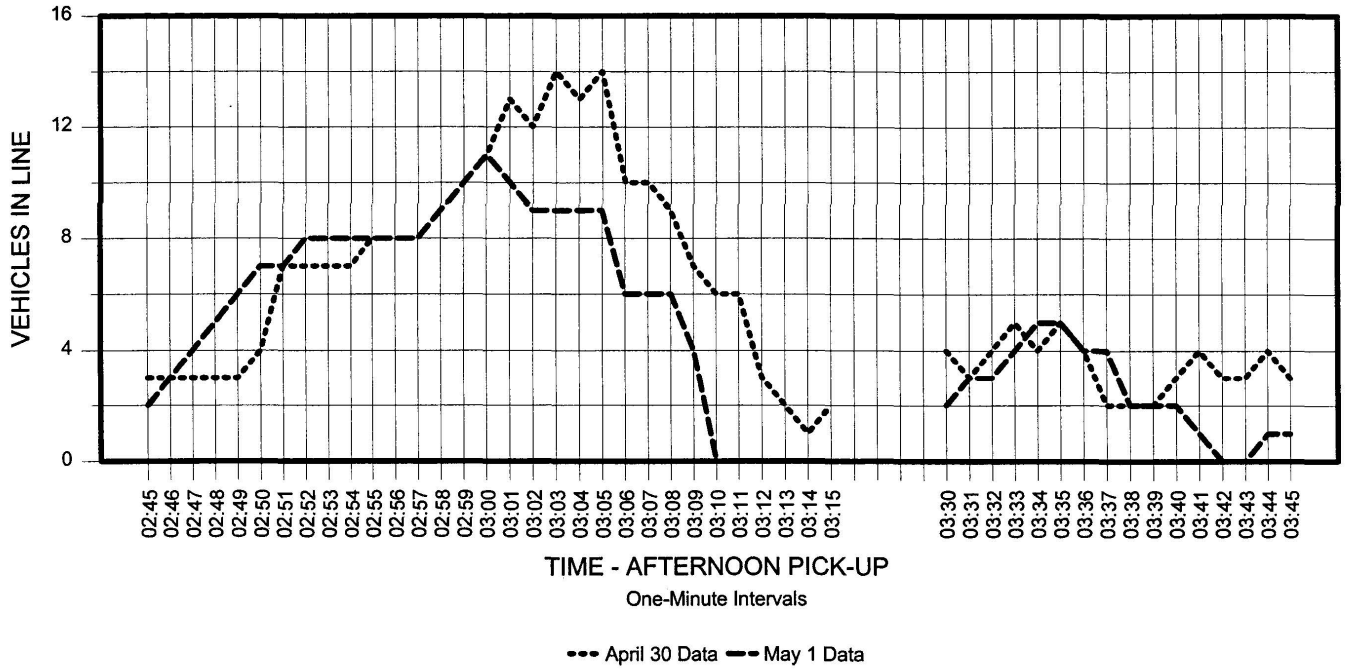
Source: Observations by Neighbors of NCRC

CHART 3-B

VEHICLES IN LINE ON HIGHLAND PLACE, N.W.

In Front of National Child Research Center

Date of Study: April 30 and May 1, 2002 - School Open



Note: Queue was measured from first vehicle in line. First 4 to 5 vehicles can park at curb in front of school.
Source: Observations by Neighbors of NCRC

CHART 3-C

OFF-CAMPUS STUDENT DROP-OFF/PICK-UP OBSERVATIONS

Streets Bordering National Child Research Center

Some of the parents with children enrolled at NCRC elect not to line up for drop-off and/or pick-up of their children at the designated point in front of the school. Instead these people park at a place that is convenient to them and then walk their children to or from school. The parking spaces selected may be legal curb spaces, areas where parking is prohibited for reasons of access or safety, and ocassionally even as double parking partially blocking the street.

The following table shows the results of observations by the neighbors of NCRC on two days (April 30 & May 1, 2002) when NCRC was open.

Period of Day	Observations on April 30, 2002				Observations on May 1, 2002				Average of Two Days
	Parameter	Street: Highland/33rd	Street: Ordway	Total	Parameter	Street: Highland/33rd	Street: Ordway	Total	
Morning	Child Walked To/From a Vehicle	38	29	67	Child Walked To/From a Vehicle	38	25	63	65
	Number of Vehicles	31	27	58	Number of Vehicles	27	20	47	53
	15-Min. Peak (8:40-8:55)	15	12	27	15-Min. Peak (8:40-8:55)	14	8	22	25
	Child Walked To/From School	0	1	1	Child Walked To/From School	2	1	3	2
	Total Children Observed	38	30	68	Total Children Observed	40	26	66	67
	Percent of Children Walking	0%	3%	1%	Percent of Children Walking	5%	4%	5%	3%
Mid-day (Before Noon)	Child Walked To/From a Vehicle	15	14	29	Child Walked To/From a Vehicle	22	7	29	29
	Number of Vehicles	14	12	26	Number of Vehicles	22	5	27	27
	15-Min. Peak (11:30-11:45)	14	7	21	15-Min. Peak (11:30-11:45)	21	2	23	22
	Child Walked To/From School	2	0	2	Child Walked To/From School	0	0	0	1
	Total Children Observed	17	14	31	Total Children Observed	22	7	29	30
	Percent of Children Walking	12%	0%	6%	Percent of Children Walking	0%	0%	0%	3%
Mid-day (After Noon)	Child Walked To/From a Vehicle	32	18	50	Child Walked To/From a Vehicle	33	19	52	51
	Number of Vehicles	15	13	28	Number of Vehicles	33	14	47	38
	15-Min. Peak (12:30-12:45)	7	8	15	15-Min. Peak (12:45-1:00)	17	6	23	19
	Child Walked To/From School	3	1	4	Child Walked To/From School	1	1	2	3
	Total Children Observed	35	19	54	Total Children Observed	34	20	54	54
	Percent of Children Walking	9%	5%	7%	Percent of Children Walking	3%	5%	4%	6%
Afternoon	Child Walked To/From a Vehicle	31	9	40	Child Walked To/From a Vehicle	26	18	44	42
	Number of Vehicles	24	6	30	Number of Vehicles	21	15	36	33
	15-Min. Peak (2:55-3:10/3:30-3:45)	11	3	14	15-Min. Peak (3:30-3:45)	9	6	15	15
	Child Walked To/From School	4	2	6	Child Walked To/From School	8	1	9	8
	Total Children Observed	35	11	46	Total Children Observed	34	19	53	50
	Percent of Children Walking	11%	18%	13%	Percent of Children Walking	24%	5%	17%	15%
Total for Day	Child Walked To/From a Vehicle	116	70	186	Child Walked To/From a Vehicle	119	69	188	**187**
	Number of Vehicles	84	58	142	Number of Vehicles	103	54	157	**150**
	Child Walked To/From School	9	4	13	Child Walked To/From School	11	3	14	**14**
	Total Children Observed	125	74	199	Total Children Observed	130	72	202	**201**
	Percent of Children Walking	7%	5%	7%	Percent of Children Walking	8%	4%	7%	**7%**
	Average No. Children/Vehicle	1.38	1.21	1.31	Average No. Children/Vehicle	1.16	1.28	1.20	**1.25**

CHART 4