Critique and Analysis

Of the

Transportation Impact Analysis and Parking Study
(Gorove/Slade - 10/20/98)
for the proposed

1000-1010 16th Street PUD and Map Amendment
BZA Case 16389
Zoning Commission Case No. 98-14C

For

Presidential Owners, Inc.
(A Cooperative Apartment Building)

By

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ZONING COMMISSION
CASE No. 98-14C
EXHIBIT No. 45

ZONING COMMISSION
District of Columbia
CASE NO.98-14
EXHIBIT NO.45

SUMMARY

The redevelopment of general office building of the corner of 16th Street and K Street, in Northwest Washington, DC is proposed to higher density. The existing building is proposed to be expanded from 158,000 square feet to 190,900 square feet of general office plus 10,000 square feet of retail and "between 42 and 95" on-site parking spaces in an underground garage at 1010 16th Street. The intersection of 16th and K Street is in the midst of major commuter streets of 16th Street and 17th Street (North/South) and K Street and L Street (East/West). The applicant's, traffic impact analysis (Gorove/Slade Assoc., 10/20/98) is inadequate for the following reasons:

- **Capacity Analysis**

  + Ignores **Bus Stops** and **Pedestrians**
    e.g., 16th St. S. B. bus stop at K St. has **28** buses during the AM peak hour.

  + Considers **only two** intersections (16th & K, 16th & L Streets), yet admitted that one intersection away was operating at level of service LOS **F**, and the "K St. and 16th St. intersection typically fails on several signal cycles"

  + With **28** buses stopping in the AM peak SB on 16th St., the SW right lane is **not available** for movement about **1/2** of the time

  + The two **service roadways** on K St. provide only about **1/2** of the capacity of a normal lane.

  + **15 minute** parking on NB 16th St. approaching K St. **reduces** capacity for NB 16th St.

- **Vicinity Development**
  Two large **general office building** are planned (by right) for (1) 1625 I St. and (2) 2001 K St. (See Table 2). They were ignored. Also 1600 block of R. I. Avenue.

- **Trip Generation**

  + Significant **underestimation** of site trips (see Table 1)
  + **No** consideration of vicinity development
  + Used zero **retail** trips, **without** any **analysis** of existing vs. proposed retail.

- **Parking Demand & Truck Loading**

  In reality these two sections are merely a **brief** description of the topics and show:
  + **No** inventory of **parking supply**
  + **No** parking **demand** analysis
  + **No study** of parking by existing office employees
  + **Only** a proposal to provide an **undersized** loading area
  + Garage access on 16th Street is a problem.

INTRODUCTION/BACKGROUND

The redevelopment of a general office building of the corner of 16th Street and K Street, in Northwest Washington, DC is proposed to higher density. The existing building is proposed to be expanded from 158,000 square feet to 190,900 square feet of general office plus 10,000 square feet of retail and "between 42 and 95" on-site parking spaces in an underground garage at 1010 16th Street. The intersection of 16th and K Street is in the midst of major commuter streets of 16th Street and 17th Street (North/South) and K Street and L Street (East/West). In the applicant's, traffic impact analysis (Gorove/Slade Assoc., 10/20/98), two of the streets are described:

- "K" Street, N.W. is a two-way major arterial street in the vicinity of the site. "K" Street features two through lanes with a divided service lane used as a shared through-right lane for both the eastbound and westbound approaches to 16th Street. Curbside parking is allowed along the service lane from 9:30 am to 4:00 pm on the south side of the street for the eastbound approach.

- 16 Street, N.W. at "K" Street is a two-way major arterial street in the vicinity of the site. 16th Street has a shared through-left lane and shared through-right lane for the northbound approach to "K" Street. Taxis and buses are the only vehicles permitted to turn left at the northbound approach to "K" Street during the peak periods. The southbound approach to "K" Street has a shared through-left lane, one through lane, and a shared through-right lane during the AM commuter peak hour and a shared through left lane with a shared through right lane during the PM commuter peak hour. This lane configuration is illustrated in figure 2. The right lane is used for parking except during the AM peak period.

  Two-hour parking is permitted on the west side of 16th Street from 9:30 am to 4:00 pm and 15 minute hotel parking is permitted on the east side of 16th Street at the northbound approach to "K" Street. The southbound approach to 16th Street allows two-hour parking on the west side of the street from 9:30 am to 6:30 pm, Monday through Saturday and a taxi stand on the east side of the street for the hotel patrons.

Existing Conditions

Gorove/Slade did a capacity analysis of two intersections: 16th and K and 16th and L, showing operation at Level of Service (LOS) "B". They admit, "However, field observations at the intersection of "K" and 16th, and "L" and 16th Streets during the P.M. commuter peak hour show over-saturated conditions typical of level of service "F". "K" Street and 16th Street typically fails on several signal cycles during the P.M. commuter peak due to downstream congestion where Connecticut Avenue intersects "K" Street and where 15th Street meets "K" Street." "Due to heavy afternoon commuter traffic on "L" Street, vehicle congestion results eastbound along the "L" Street approach to 16th Street during the P.M. peak hour. This condition is attributed to the limited existing capacity of "L" Street at streets further to the east of 16th Street. Bottlenecks at the intersection of Massachusetts Avenue and "L" Street cause the intersections west of it to fail."

In addition, during peak hours there are heavily used bus stops on 16th Street and heavy pedestrian crossings of both 16th Street and K Street, both of which impact capacity and level of service.

Trip Generation

The 6th Edition of the ITE, Trip Generation Manual was used to estimate the future trips for the proposed site and two other developments in the vicinity. The other sites within the influence area of the proposed development of 16th and I Streets are at: (1) 1685 I Street (385,000 sq. ft. of new general office space) and (2) 2001 K St. (210,000 S.F. of new general office space). The ITE Manual equations for estimating trip generation for general office are: (see Appendix)

AM Peak Hour: $\ln(T) = 0.797 \ln(X) + 1.558$
PM Peak Hour: $T = 1.121 (X) + 79.295$

Using the Gorove/Slade estimate of 25% for transit proximity, the site trip generation is shown in Table 1.

Table 1
Trip Generation: Proposed Development
1000 16th Street

Use	Quantity	AM Peak Hour (8:30-9:30)			PM Peak Hour (4:45 - 5:45)		
		In	Out	Total	In	Out	Totals
General Office-New	32,900 SF	68	9	77	20	96	116
-25% Metro Rail Reduction		17	2	19	5	24	29
Total New Vehicle Trips		51	7	58	15	72	87
Total New Trips (Gorove/Slade report)		28	4	32	4	23	27

The applicant's trips are about 1/2 for AM and less than 1/4 for PM trips.

Using the same equations and transit reduction, table 2 shows the trips generated by the 2 vicinity developments.

Table 2
Trip Generation: Proposed Development - Vicinity of 16th & K Street

Use (by Right)	Quantity	AM Peak Hour (8:30-9:30)			PM Peak Hour (4:45 - 5:45)		
		In	Out	Total	In	Out	Totals
General Office							
1625 Eye St., NW	380,000 SF	476	64	540	86	419	505
-25% Transit Reduction		119	18	137	22	105	127
Total New Trips		357	46	403	64	314	378
2001 K St., NW	240,000 SF	330	45	375	59	289	348
-25% Transit Red.		82	11	93	15	72	87
Total New Trips		248	34	282	44	217	261

Several hundred trips for these two developments would be added to the existing 16th and K Street and 16th and L Street intersection.

CONCLUSION

1. Because of all the omissions the applicant's traffic study does not show large traffic impacts.

2. However, consider the actual background traffic - existing traffic plus vicinity development traffic; then add the proper site traffic (Table 1). Now place this **total** traffic through intersections that are currently operating at **"over-saturated conditions"**.* This is a significant and unacceptable impact!

2. This proposed increase in density at 1000 16th Street should not be approved because it will increase congestion in an already congested area.

*P6, Gorove/Slade report

APPENDIX

General Office Building
(710)

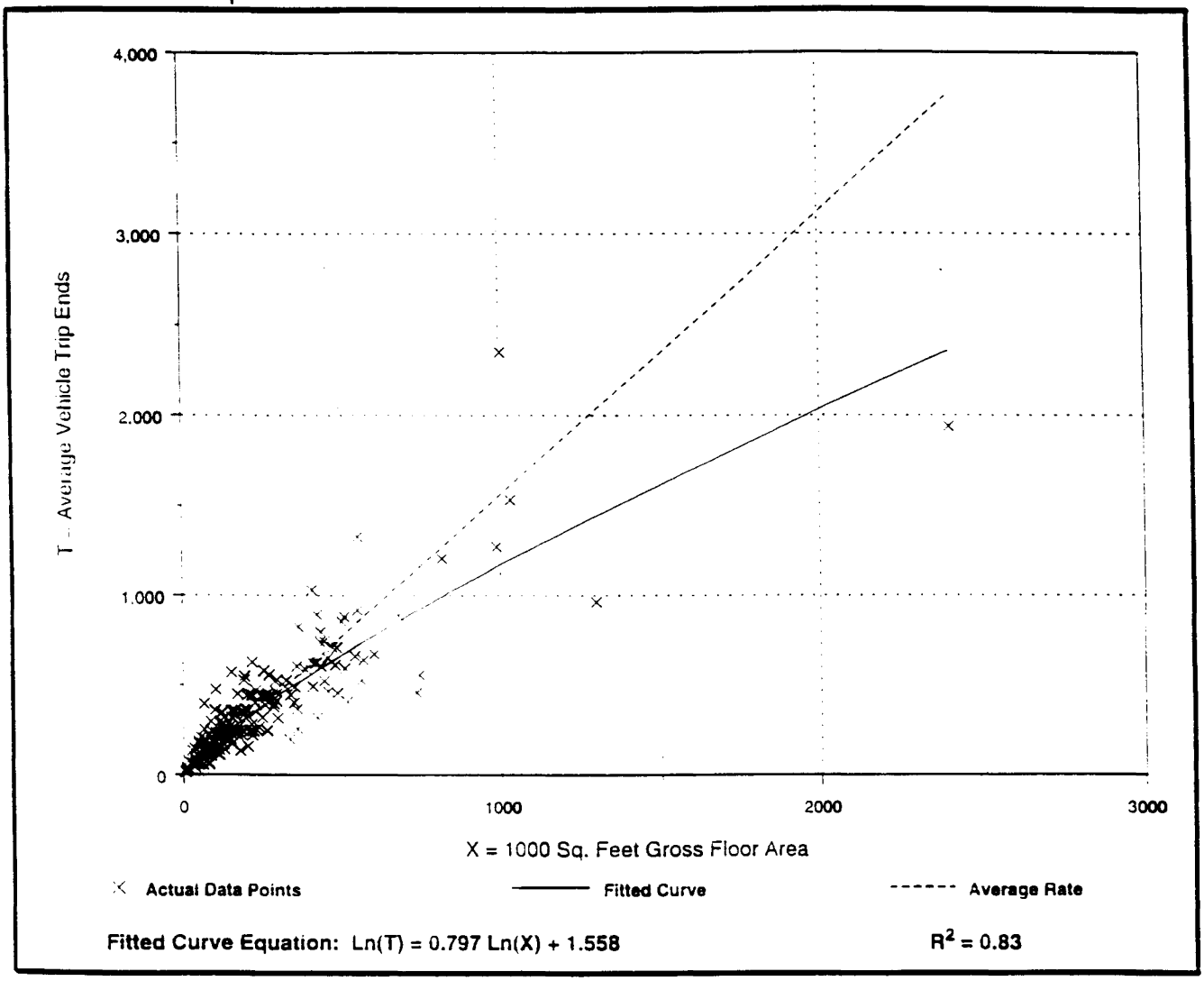
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday,**
A.M. Peak Hour

Number of Studies: 216
Average 1000 Sq. Feet GFA: 223
Directional Distribution: 88% entering, 12% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.56	0.60 - 5.98	1.40

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.797 Ln(X) + 1.558

R^2 = 0.83

General Office Building
(710)

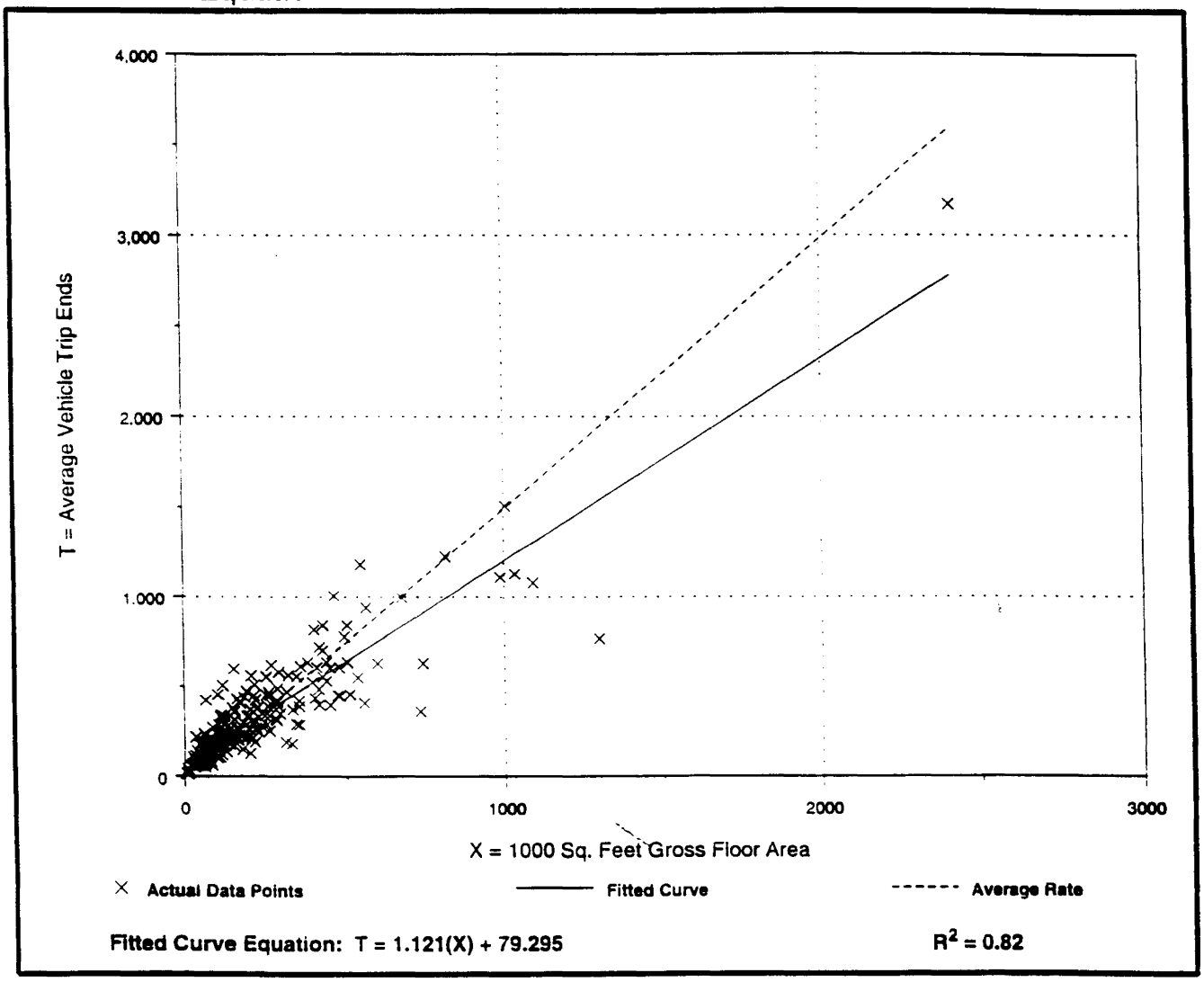
Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday,**
P.M. Peak Hour

Number of Studies: 234
Average 1000 Sq. Feet GFA: 216
Directional Distribution: 17% entering, 83% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.49	0.49 - 6.39	1.37

Data Plot and Equation



Fitted Curve Equation: $T = 1.121(X) + 79.295$

$R^2 = 0.82$