

# DANGEROUS BY DESIGN:

A Case Against Cars in Prospect Park



Transportation  
**ALTERNATIVES**

115 West 30th Street, Suite 1207

New York, NY 10001-4010

(212) 629-8080 • Campaign@transalt.org • www.transalt.org

**released fall 1998**

## **INTRODUCTION**

Prospect Park is the largest park in Brooklyn, serving nearly one million people per year. An estimated 1,150 cyclists and joggers use the 3.35 mile Prospect Park Drive loop daily. However, a daily average of 12,750 motor vehicles turn the park roadway into a motor traffic thoroughfare.<sup>1</sup>

A survey of Prospect Park Drive, conducted by Transportation Alternatives during September and October 1998, found that these motor vehicles frequently speed, intrude on the bike/ped lane, run red lights, and otherwise endanger park users.

Transportation Alternatives undertook this survey after receiving numerous complaints of motor vehicle menacing park users. Those complaints are verified by the findings of this report.

## **SUMMARY OF MAIN FINDINGS**

- 95 % of motorists exceeded the 30 mph speed limit; one motorist was clocked at 65 mph.
- 50% of motorists swerved in to the recreation lane.
- Every minute a car ran a red light
- The Prospect Park recreational lane violates federal, state and city guidelines for multi-use paths.
- Motor vehicles were involved in over one hundred crashes between \ January 1995 through June 1998— over a third involved pedestrians and cyclists.

## **RECOMMENDATIONS**

- Enact a three month trial car-free period starting April 1, 1999.
- Replace current barriers with gates similar to those found in Central Park.
- Increase enforcement of moving violations and install red light cameras along the Park Drive.

---

<sup>1</sup> Daily averages from NYDOT, *Prospect Park Drive Alternative Use Study*, vol. 1, 1996

# SPEEDING



## FINDINGS:

Surveys found speeding rampant on the park loop drive:

- Vehicles traveled through the park, on average, 10 mph over the legal 30 mph speed limit
- Fewer than 5 percent traveled at or below the 30 mph speed limit.
- 80% traveled more than 5mph over limit
- 45% traveled more than 10mph over limit

These findings are alarming because there is causal relationship between vehicle speeds and pedestrian injuries and fatalities (see figure 1).

The enforcement of speed limits in Prospect Park is paramount to the safety of park users. However, police from the 78<sup>th</sup> precinct report it is not possible to use radar to enforce speed laws in the park that due to the curvilinear nature of the Park Drive.

Speed limit signs are required beyond major intersections and at other locations where it is necessary to remind motorists of the limit that is applicable'.<sup>2</sup> There are a total of four speed limit signs posted along Park Drive. The recreational uses on this roadway warrants the necessity of frequent reminders to motorists of the 30 mph speed limit.

Studies have shown that at 30 mph 40 percent of pedestrians who are struck are killed. At 40 mph, 70 percent are killed<sup>3</sup> (see figure 1). Moreover, motorists are more likely to lose control of their vehicle if traveling at higher speeds.

The speed differential between bicycles and motor vehicles reduces the driver reaction time and ability to make appropriate evasive action and reduces the ability of bicycles to mix in traffic. A high incidence of speeding, as shown in these samples, poses a serious risk to all park users, especially children and senior citizens.

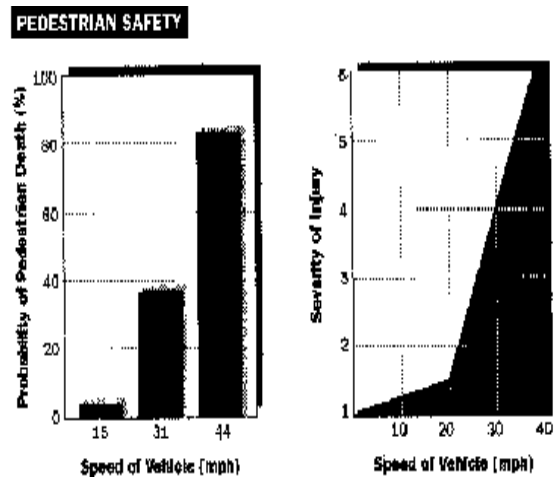


Figure 1: Vehicle Speed and Ped Fatalities

<sup>2</sup> US Department of Transportation, 1988, *Manual on Uniform Traffic Control Devices*, p. 2B-8

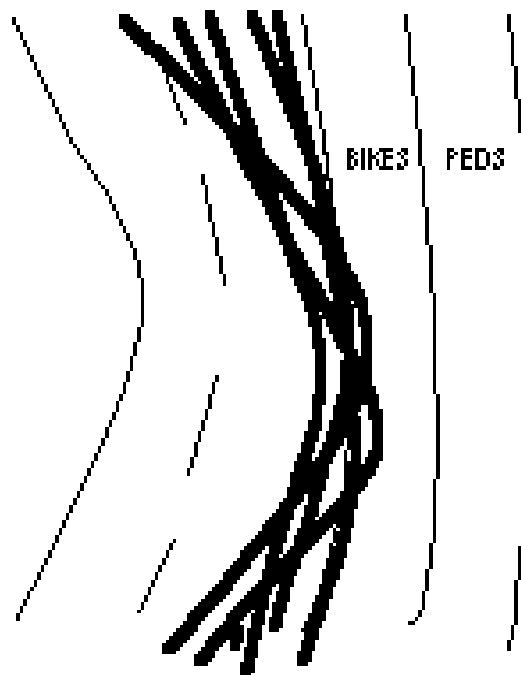
<sup>3</sup> Conservation Law Foundation, *Take Back Your Streets*, 1995 (see figure 1)

# MOTOR VEHICLE INTRUSION INTO BIKE/PED LANE

## FINDINGS:

Observations made on Park Drive, near Park Circle, found motorists driving in the bike/ped lane to be common.

- 50% of the 330 vehicles observed drove in the bike/ped lane
- The bicycle/pedestrian lane in Prospect Park is marked by thermoplastic paint. There are no other buffers, such as bollards or medians, separating motor vehicles from bicyclists and pedestrians.



*Figure 2: Composite diagram representing the path taken by intruding vehicles at Park Circle between 5-6pm October 13 1998.*

The lack of physical barriers, in combination with excessive vehicle speeds, creates conflicts between cyclists, pedestrians and motor vehicles. Evasive action taken by either cyclists or pedestrians (e.g. hesitating, stopping, or running to avoid an approaching motor vehicle), or by drivers (e.g. braking or swerving) can increase the possibility of accidents.



## RED LIGHT RUNNING



*This picture shows a non-emergency police vehicle running a red light*

There are eight traffic signals located where there is heavy pedestrian traffic crossing Park Drive. The observations made at several crosswalks on the Park Drive show motorists running red lights on average every two and half minutes. Moreover, the light cycles only have a 25 second pedestrian crossing phase. **The combination of a short pedestrian crossing phase and the high frequency of red light running makes Park Drive extremely hazardous for pedestrians.**

Running red lights is a danger to park users because:

- *Traffic signals are located where the pedestrian paths meet Park Drive;*
- *The majority of pedestrians are struck while in a crosswalk with the walk signal;<sup>4</sup>*
- *Vehicle to vehicle accidents (rear ending) increase.*

*Table 3: Traffic Light Violations along Park Drive Morning Peak Period*

<b>Total Red Lights Run</b>	30
<b>Total Yellow Lights Run</b>	64
<b>Total Number of Cars</b>	1146

*Every 2 minutes a car ran a red light.*

*Every 30 seconds a car ran either a red or yellow light.*

*Table 4: Traffic Light Violations along Prospect Park Drive PM Peak*

<b>Total Red Lights Run</b>	22
<b>Total Yellow Lights Run</b>	39
<b>Total Number of Cars</b>	511

*Every 3 minutes a car ran a red light.*

*Every minute a car ran either a red or yellow light.*

---

<sup>4</sup> NYSDOT CLASS Data

## PARK INTRUDERS

Prospect Park is closed to cars on weekends and holidays year round. During the months of April through October the park is closed to cars twice daily from 10am - 3pm and 7pm - 10pm.

According to the Prospect Park Alliance, only vehicles with business inside the park are authorized to be in the park during car-free hours. Parks Department vehicles are always permitted. Police vehicles are allowed only *if they are patrolling the park*. Ambulances and other emergency vehicles are allowed in the park during car-free hours only *if there is an emergency* in the park needing their attention.

Table 5: Barrier Violations in Prospect Park

Vehicle Type	Barrier Violation		Vehicles Already in Park	
	10-11am @ Park Circle	11-12pm @ GAP	10-11am @ Park Circle	11-12pm @ GAP
Private	5	3	8	4
Parks Dept.	4	0	9	3
Ambulance	1	0	1	3
NYPD	6	0	5	8
Sanitation Dept.	1	0	0	0
Contractors	0	1	1	0
DOT	0	0	1	1
NYC Transit	0	0	1	0
<b>Total Cars in Park</b>	<b>43</b>	<b>23</b>	<b>26</b>	<b>19</b>

**The above observations demonstrate lack of compliance by motorists, as well as, lack of enforcement of car free hours in the park by officials. The inconsistent and confusing car free hours may contribute to the lack of compliance.**

## RECREATIONAL LANE HAZARDS

Pavement inconsistencies can cause loss of control and contribute to accidents for bicyclists and skaters. Riding surfaces should be smooth, free of defect and debris, and have a uniform pavement edge. Grates and utility covers should be adjusted flush with the surface. Adequate signage and markings are essential.<sup>5</sup>

**The recreational lane through the park requires constant maintenance, including keeping it free of debris, the surface smooth, and keeping the lane designation from fading.**

Maintenance is especially important since the recreational lane abuts two lanes of moving traffic. Moreover, the presence of cars significantly increases life threatening outcomes of an accident occurring among users in the recreational lane.

## BARRIER CONDITIONS

<sup>5</sup> Pavement conditions and maintenance are discussed in AASHTO, NYDOT, and *Bicycle Safety Evaluation*

The barriers used to keep traffic from entering the park during car-free hours are inadequate. The barriers are flimsy and often haphazardly standing. Frequently the barriers are knocked down or blown over in a strong wind. **More substantial barriers are required to properly enforce car-free hours.**



## **BARRIER PLACEMENT**

It takes 20 minutes to drive around the park. There is only one patrol car in charge of closing all of the park entrances at the beginning of car-free hours.<sup>6</sup> It is impossible for one person to have all of the entrances closed promptly at the beginning of car-free hours and, as one might expect, it is very common for barriers to not be placed up to 20 minutes into car-free hours. **This is an enforcement issue that contributes to the compliance issue.** At the start of car-free hours cars will enter if no barrier is in place.

## **DANGEROUS DESIGN**

The park drive loop was designed solely as a scenic winding roadway for the enjoyment of people out for a relaxing drive in their carriages. Olmsted specifically designed the roadway with short sight distances. This is a design element used to create a more interesting and seemingly secluded atmosphere within the park. **This design element also makes the roadway extremely dangerous at speeds in excess of 30 mph.** In fact, some curves are dangerous even at the posted limit, considering the mixed use.

According to AASHTO, the ability to see ahead is critical in the safe operation of a vehicle in traffic. The greater the sight distance (the length of the roadway ahead visible to the driver), the more reaction time a driver has.<sup>7</sup> Sight distance is one of the important determinants of the maximum speed that can safely be driven on a roadway. Cars that drive at speeds greater than the speed limit will not be able to safely maneuver and stop their cars when necessary.

## **INCOMPATIBLE USE**

The left lane of the park drive was converted to recreational lane in the 1980's. This lane is a single substandard multi-use lane (for pedestrians and cyclists) adjacent to two moving traffic lanes with no physical median separating the recreational lane from moving traffic. Most regulations specify widths for either a mixed-use lane accommodating bicycles and cars, or a multi-use lane accommodating bicyclists and pedestrians. No specifications are made for roadways accommodating bicycles, pedestrians and cars.

---

<sup>6</sup> Brooklyn Heights Courier, June 2-15, 1997

<sup>7</sup> For a roadway with traffic going 30 mph the estimated sight distance required is approximately 200 feet.

The recommended minimum width for bicycle lanes alone is 5 feet. The New York Department of Transportation's minimum recommended width for multi-use lanes is 13 feet (lanes accommodating bicycles and pedestrians).<sup>8</sup> AASHTO states 12 to 14 feet as the critical target lane widths for safe bicycling in mixed-use conditions, but this only considers the space adequate for bicycles and *parked cars*.<sup>9</sup>

**A roadway accommodating bicyclists, pedestrians and motorists is essentially unheard of in terms of state and federal regulations.** Standards determined for the use of both bicycles and cars are based on factors that impacts the performance of bicycles and cars. Standards that exist for lanes shared by bicycles and pedestrians are based on the factors that impact their respective performances. There are no standards based on the complications that arise when the three uses are put together on one roadway.

## LANE WIDTH

Eight sections of the park drive loop were measured for this study. Six of the sections measured under the minimum 13 feet width recommended by NYDOT for multi-use lanes. One section was measured to be 21 feet. **The inconsistency of the width of the lane poses a significant safety hazard, especially considering:**

- *Most of the lane below the minimum recommended width of 13 feet*
- *Cyclists and pedestrians do not have enough room to maneuver and avoid conflict*
- *Cars often veer into the recreational lane*

According to both the American Association of State Highway and Transportation Officials (AASHTO)<sup>10</sup> and the New York City Department of Transportation<sup>11</sup>, multi-use lanes are undesirable because bicyclists and pedestrians do not mix well. Both agencies suggest providing separated bicycle and pedestrian lanes, additional width, signage, and striping to minimize motor vehicle conflicts.

---

<sup>8</sup> New York City Department of Transportation, *Design Manual, Facilities for Pedestrians and Bicyclists*, 1986

<sup>9</sup> Jeff Davis, *Bicycle Safety Evaluation*, 1987

<sup>10</sup> American Association of State Highway and Transportation Officials, *Guide for the Development of Bicycle Facilities*, 1991

<sup>11</sup> New York City Department of Transportation, *Design Manual, Facilities for Pedestrians and Bicyclists*, 1986

## VIOLENT COLLISIONS

It's no wonder considering the winding road, speeding and lax enforcement that there were more than 100 accidents on the Park Drive in a three and half year period. Eliminating cars from the park would increase the amount of space pedestrians and bicyclists have and thereby reduce the chance of accidents between park users. Accidents between park users and cars would be completely eliminated. **The prevention of death and injury is perhaps the single greatest reason to ban motor vehicles from Park Drive.**

Table 6: Crash Statistics in Prospect Park

Crash Type	1998 YTD	1997	1996	1995
Car to car	06	0	09	19
Car to cyclist	02	3	09	04
Car to pedestrians	00	3	03	02
Car striking fixed object	00	11	17	13
Car striking dog	00	00	00	01

## PREVENTABLE DEATH

In June of 1997 over 1,000 signature cards in support of an extension of car free hours were presented to the office of Borough President Howard Golden. A month later Rachel Fruchter was



killed by a speeding van while she cycled through the Park on a Saturday morning. Dr. Fruchter's death is a direct result of the dangerous conditions on the Park's roadway. Decisions on the closure of the park to cars have been continuously delayed despite the apparent dangers and public support.

The fact that Dr. Fruchter's death occurred during car free hours and was the result of a speeding vehicle points to the problems of incompatibility, compliance and

enforcement and the dangerous conditions that result. **Future deaths can be prevented by the closure of the park to cars.**

## CONCLUSIONS

This report clearly shows conditions in Prospect Park are unsuitable for safe recreation. This is especially outlandish considering Prospect Park was designed as a safe refuge from the chaos of the city and is one of New York's most cherished parks and landmarks. Forcing more than three incompatible uses on one road is unheard of in the design standards put forth by the city, state and federal transportation authorities..

The hazardous conditions created by reckless driving would be incredibly costly to correct. Therefore, the most cost effective means of creating a safe and enjoyable park for everyone is to close the park to cars.

In the late 1970's the two drives that cross the park east and west were closed to traffic. This closure occurred to "enhance recreational conditions in the park."<sup>12</sup> The recreational conditions in the park could be further enhanced, and even optimized, by closing the park loop drive to cars. The presence of cars in Prospect Park sacrifices the integrity of Olmsted's landmark design and the safety of park users.

---

<sup>12</sup> New York City Department of Transportation, 1993, *Prospect Park Drives Alternative Use Study*

## Appendix

### SPEED COUNTS

*Methodology:* 100 feet was marked off at 3 different points along the park drive. One spot was observed for an hour during AM peak hours, one during PM peak hours, and one during off-peak hours. A stopwatch was started when a car crossed the first marking and was stopped when the car crossed the second marking 100 feet away. Every fifth car was counted. The time was recorded to the 100th second. The speeds were then converted from 100 feet per second to miles per hour. The results are as follows.

Table 2: Vehicle Speeds Along Prospect Park Drive

Time	Sample Size	Average Speed	Range of Speed	over 30mph	over 35mph	over 40mph
AM Peak	144	40 mph	25 to 54	99%	86%	44%
PM Peak	172	39 mph	20 to 62	95%	77%	37%
Off Peak	137	42 mph	23 to 64	93%	78%	57%
Total	453	40 mph	20 to 64	96%	80%	45%

### RED LIGHT RUNNING

*Methodology:* Two crosswalks with traffic lights along Park Drive were observed for one hour each. During the observation period any vehicle running either a red or yellow light was recorded.

### RECKLESS DRIVING

*Methodology:* Vehicle counts were taken for 60 minutes during evening peak period on the Park Drive right before the Ocean Parkway - Coney Island Ave Exit. Motor vehicles were observed for driving in the recreational lane and conflicts with recreational users. The diagram provides a schematic of motorists' behavior, but is not to scale.

### PARK INTRUDERS

*Methodology:* Barrier Violations were recorded on two dates at two locations; September 16 between 11am and 12pm at Grand Army Plaza, and October 1 between 10:10am and 11:20am at Park Circle. The Park was closed to vehicles during these times. The number of cars seen driving in the park at these times was also documented.