Proposal for Incorporating Public Transit Provisions into a State Highway Access Management Code

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This paper describes how New Jersey Transit, a statewide public transit operator, participated in a project sponsored by the New Jersey Department of Transportation (DOT) to revise New Jersey's State Highway Access Management Code (access code). The transit operator advocated including public transit requirements in a revised access code as a means of mitigating traffic impacts created by new developments and of improving mobility for transit riders. The paper discusses the problems that led to the transit agency's involvement in the process, conditions under which transit access should be considered, the transit operator's role in the review process, criteria, and suggested transit provisions. The following premises were posited as a rationale for incorporating public transportation requirements into a revised access code: public transportation can effectively be used to improve the efficiency of the state highway system by providing an alternative to single-occupant vehicles and a way to mitigate traffic congestion created by development; developers can take specific actions and incorporate specific features in their projects to facilitate the efficient use of public transportation; the degree to which actions to facilitate the use of public transportation must be incorporated into projects seeking access permits should increase in proportion to the size of the development and the traffic generated. Revisions are still undergoing review by the New Jersey DOT and have not yet been finalized.

Access management has been defined as "the process or development of a program intended to ensure that the major arterials, intersections and freeway systems serving a community or region will operate safely and efficiently while adequately meeting the access needs of the abutting land uses along the roadway" (*1*). Although much has been written on access management, little is found relating to the inclusion of public transit access as a technique to meet the goals of safety and operational efficiency. A literature search revealed only one access manual reference that advocated incorporating public transit into an access management program (*2*).

The concept of access management for highways has been around for many years (*3*). New Jersey's State Highway Access Management Code (access code) was readopted in 1989 to allow the state to regulate access to its highways from abutting properties. In 2005, the New Jersey Department of Transportation (DOT) engaged a consultant to evaluate and develop possible revisions to the access code. The consultant would examine the code and suggest changes that would support smart growth and align better with New Jersey's municipal land use law. For example, the New Jersey DOT was interested in including "Main Street" provisions to allow special access treatments in locations where state highways pass through downtown areas. As part of the process, the New Jersey DOT formed a stakeholder group that included representatives of other state agencies, county and local governments, the development community, and traffic consultants. New Jersey Transit (NJ Transit), the state-owned public transit operator, was invited to participate in the stakeholder working group to review and comment on the proposed revisions to the access code.

BACKGROUND

NJ Transit had experienced several instances in which the owners of regional malls and large strip shopping malls abutting state highways had, at their sole discretion, prohibited NJ Transit buses from entering the properties or had required bus stops to be relocated to remote areas of the properties. The reasons for eliminating or relocating bus stops varied, but the underlying theme was that most shoppers came by auto and most bus patrons were workers or lower-income shoppers that the mall owners apparently wanted to be less visible. These actions by private developers made it more difficult for patrons to access bus stops and discouraged use of transit. The mall owners, however, had no obligation under the law to allow buses on their property and were acting within their rights to relocate bus stops or prohibit buses from circulating on the sites.

Although NJ Transit is state-owned and is the largest transit operator in the state, there are many other transit operators in New Jersey, including private bus companies with regular commuter routes, county and municipal bus operators, and nonprofit organizations that operate specialized services for elderly and disabled persons and provide access to jobs. All these services potentially could be affected by the decisions of private property owners to restrict or prohibit bus access.

An additional problem faced by transit operators frequently arose when construction of new driveways onto state highways required bus stops to be relocated without sufficient advance notice. In New Jersey, the transit operator has no authority to designate bus stops. That power is statutorily delegated to the jurisdiction responsible for each roadway, including the state, counties, or, in most cases, municipalities. There was no statutory requirement for the jurisdiction to involve the public

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transit operator in the design review process or to notify the transit operator in a timely manner to reduce inconvenience to passengers.

Because of the problems experienced with mall owners, NJ Transit staff began to consider whether a revised access code might provide a way to establish a right of public entry for transit operators onto properties that were accessed by the state highway system and to create a mechanism to allow transit operators to review the impact of new developments and driveways on existing bus stops.

RATIONALE FOR INCLUDING TRANSIT PROVISIONS IN ACCESS CODE

Governments that control roadways often have the authority to require abutting property owners to make improvements to mitigate traffic impacts or to pay various fees. These fees and improvements are called exactions and, in some cases, have been challenged by developers in court. To withstand any possible court challenges, the principle of rational nexus is applied. Rational nexus means that there must be a clear connection between the exaction and the impact caused by the development (*4*).

Thus, it was thought that a rational nexus must be shown between the purposes of the access code and the transit operator's requirements. In the access management and permitting process, it would be necessary to demonstrate a link between more efficient use of the state highway system and any accommodations sought for public transit. It might also be possible to base requirements for public transit on the need to ensure right of access by members of the public who are not able to drive. If there is insufficient connection between the legislative intent and what the transit operator requires, property owners and developers may be able to challenge requirements for public transportation as part of the access code.

The access code gives the commissioner of transportation the power to regulate access to New Jersey state highways from abutting properties (*5*). The state legislature declared a number of bases for regulating highway access. Arguments for accommodating public transportation in the access code should be based on these declarations. Following are excerpts from the statute:

> a. The purpose of the State highway system is to serve as a network of principal arterial routes for the safe and efficient movement of people and goods in the major travel corridors of the State. . . . c. The State has a public trust responsibility to manage and maintain effectively each highway within the State highway system to preserve its functional integrity and public purpose for the present and future generations. d. Land development activities and unrestricted access to State highways can impair the purpose of the State highway system and damage the public investment in that system. . . . g. The access rights of an owner of property abutting a State highway must be held subordinate to the public's right and interest in a safe and efficient highway. h. It is desirable for the Department of Transportation to establish through regulation a system of access management which will protect the functional integrity of the State highway system and the public investment in that system. (*6*)

In light of the legislative intent offered in New Jersey's statute on access management, the following premises were posited as a rationale for incorporating public transportation requirements into a revised access code:

- Public transportation can effectively be used to improve the efficiency of the state highway system by providing an alternative to single-occupant vehicles and a way to mitigate traffic congestion created by development.
- Developers can take specific actions and incorporate specific features in their projects to facilitate the efficient use of public transportation, such as shortening and improving pedestrian access routes between bus stops and main entrances, providing locations and shelters for bus stops, reducing driveway conflicts with buses and pedestrians, and allowing public transit vehicles to circulate efficiently through large development sites.
- The degree to which actions and features to facilitate the use of public transportation must be incorporated into projects seeking access permits should increase in proportion to the size of the development and the traffic generated.

Although NJ Transit looked only at New Jersey statutes, other jurisdictions considering including public transportation provisions in highway access management codes may also find a legal basis in federal regulations such as those dealing with air quality, access by disabled persons, congestion management, and policies dealing with "complete streets."

INCORPORATING TRANSIT IN ACCESS PERMIT REVIEW PROCESS

Several NJ Transit staff met with the consultant and provided input. Much of the input revolved around the need for the transit operator to review access permits for major developments. Also foreseen was a need to provide early guidance to developers and New Jersey DOT permit reviewers on what the transit operator would be looking for and what kind of provisions should be made by developers to accommodate public transportation.

Developers spend considerable sums on developing project designs and information for permit applications. If the transit operator reviews plans and suggests changes after the plans have been submitted without providing developers with advance knowledge of what is expected, considerable resistance is likely to be encountered. If, however, the requirements are known by the developer's architects and engineers before the start of the design and access permit application process, it may be possible to accommodate public transit at little or no cost.

The basis for the transit operator review should be established in the revised access code and justified with respect to the enabling legislation. The process should provide clear guidelines for staff responsible for managing the access permit review process as to which applications should be directed to the transit operator for review.

The documentation for the transit review process should

1. State the specific conditions under which applications will be forwarded to the transit operator,
2. Possibly include criteria for which a waiver of the transit operator review may be permitted,
3. Identify the units and positions within the transit operator responsible for reviewing access permits,
4. Include a schedule for the review process,
5. Develop a format for the transit operator's staff to follow in providing review comments and approvals, and
6. Provide a process for resolution of disputes about the disposition of the transit operator comments.

The coordination process would be kicked off by a determination that the site was "proximate" to transit. A site would be considered proximate if any part of it was within ½ mile (0.8 km) of a rail

transit station or within ¼ mile (0.4 km) of a bus line. These distances are commonly used to represent, respectively, an average 10-min and 5-min walk, which are considered to be the maximum distances most people are willing to walk to reach transit. As will be seen below, the maximum distances were not recommended for use in determining how far people should walk to reach transit from various locations within larger development sites. A standard of 600 ft (183 m) was recommended, which approximates a 3-min walk. This standard was proposed because many transit riders are senior citizens or mobility impaired and would not be expected to use transit if the walking distance to a bus stop was greater.

Once it was determined that a site was proximate to transit, the transit operator would be included in the access permit application review process. At that point, the involvement of the transit operator would depend on the size of the project in terms of trip generation potential.

ACCESS PERMIT APPLICATION CATEGORIES

It was thought to be appropriate to develop threshold criteria for levels of review activity based on project size. Applicants should be provided with clear guidance on specific actions that may be needed for efficient public transportation access, depending on the project's trip generation potential. The access code currently establishes three categories of permit application: minor application, major application, and major application with planning review. Table 1 shows the traffic generation thresholds set by the New Jersey DOT for each of the three categories as well as an approximation of the potential for transit, based on typical assumptions about available bus service and transit mode split.

TRANSIT REQUIREMENTS PROPOSED FOR INCORPORATION IN ACCESS PERMITS

NJ Transit staff had been invited to participate in the stakeholder group that met periodically throughout the access code revision project. After the initial meeting, NJ Transit's representative convened an internal meeting with representatives from market research, bus service planning, bus stop signs and shelters, and capital planning units to decide whether to formulate recommendations and submit them to the New Jersey DOT. The concept of including public transit access in the highway management code had never been explored by the agency before this opportunity, so there were no precedents to follow. Staff decided to prepare a set of recommendations based on conditions observed in the field and on bus stop location practices that the agency generally followed. The major considerations in formulating recommendations were pedestrian safety and ability to provide reasonable walking distances to and from bus stops. On-site bus circulation and the relationship of bus stop locations to local traffic conditions also were significant factors in formulating recommendations.

NJ Transit staff offered the following suggested actions to be addressed by developers in all access permit applications:

- All permit applications must identify any bus services or routes on all streets adjacent to the site.
- All permit applications must show the location of any existing bus stops adjacent to the site.
- Driveways shall not interfere with the operation and stopping patterns of public buses currently operating on state highways adjacent to the site.
- Sidewalks shall be provided along the entire frontage of the site bordering the state highway. Such sidewalks shall include curb cuts where appropriate and striping and appropriate signage where pedestrian paths cross driveways, and shall be accessible under the Americans with Disabilities Act (ADA).
- If there are sidewalks fronting the state highway on adjacent properties, the developer shall connect with those sidewalks, if feasible.
- Bus stops may be relocated with approval from the transit operator and the appropriate local jurisdictions, provided that the relocation does not unreasonably increase walking distances for transit riders by more than 600 ft (183 m).

For major access permit and major access permit with planning review, the following additional requirements were proposed:

- The developer shall designate a suitable location(s) for a public bus stop(s) on the highway so that no point on the parcel frontage is greater than 600 ft (183 m) from a stop location. The designation shall be subject to approval by the transit operator and appropriate jurisdictional officials. Such locations will provide sufficient space to erect a bus shelter and shall be accessible under requirements of the ADA. The New Jersey DOT may require bus turnouts, depending on traffic conditions and the absence of shoulders.
- If the developer is required to construct or improve a signalized intersection on the state highway adjacent to the site to provide access, the intersection design shall include provisions for pedestrian crossings and bus stops on each side of the state highway.
- The developer shall provide reasonably direct walkway access from bus stops to the main public and employee entrances of all buildings on the site.

TABLE 1 New Jersey Highway Access Code Permit Application Categories and Associated Traffic Generation Levels

Application Type	Vehicle Trips per Day	Peak Hour Vehicle Trips	Potential Peak Hour Transit Trips at 10% Mode Split	Potential Passengers per Peak Bus Trip at Half-Hourly Service Frequency
Minor application	<500	N/A	N/A	N/A
Major application	≥500	<200	N/A	N/A
Major application with planning review	≥500	≥200	≥20	≥10

NOTE: N/A = not applicable.

TABLE 2 Approximate Weekday Vehicle Trip Generation for Various Land Uses Based on ITE Trip Generation Rates (7)

Building Type	Approx. Space to Produce 500 Daily Trips (ins + outs)	Approx. Space to Produce 1,000 Daily Trips (ins + outs)	Approx. Space to Produce 2,000 Daily Trips (ins + outs)	Approx. Space to Produce 5,000 Daily Trips (ins + outs)	Daily Trip Generation Rate (weekday)	ITE *Trip Generation* Page (5th edition)
Single-family homes	50 dwelling units	100 dwelling units	200 dwelling units	500 dwelling units	9.55 trips per dwelling unit	258
Apartments (after 1973)	80 apartments	160 apartments	300 apartments	800 apartments	6.28 trips per apartment	320
Office buildings	25,000 gross square feet (2,325 m^2)	64,000 gross square feet (5,952 m^2)	160,000 gross square feet (14,880 m^2)	540,000 gross square feet (50,220 m^2)	Varies, per equation	952
Shopping centers	1,400 gross square feet (130.2 m^2)	4,400 gross square feet (409.2 m^2)	13,000 gross square feet (1,209 m^2)	57,000 gross square feet (5,301 m^2)	Varies, per equation	1,234
Industrial parks	70,000 gross square feet (6,510 m^2)	140,000 gross square feet (13,020 m^2)	280,000 gross square feet (26,040 m^2)	700,000 gross square feet (65,100 m^2)	6.97 trips per 1,000 gross square feet (93 m^2)	135

NOTE: Approx. = approximately.

Because of the problems NJ Transit had experienced with bus restrictions and prohibitions in some larger developments, another category was proposed—a "super major access permit with planning review"—which would apply to those developments that covered large areas of land and for which buses would need to circulate through the project to serve transit riders. The number of trips per day a project should generate to be included in this category was a major concern. Table 2 shows the approximate sizes of some typical land uses that generate 500, 1,000, 2,000, and 5,000 daily vehicular trips. It was decided to use a threshold that would create a market of sufficient size to warrant daily bus service, assuming that buses could attract about 10% of the trips. Two thousand daily vehicular trips could generate around 200 daily bus trips if a reasonable level of bus service were provided, and this number was proposed as the threshold for the super major access with planning review category. The study consultant, however, recommended that a higher threshold be used and suggested a range of 500 to 1,000 peak-hour trips.

Suggested requirements for developments that fall into the super major access permit with planning review category are more stringent than those for other categories. In addition to those required for all lesser categories, the following requirements would apply:

- The developer shall provide a suitable location, or locations, for a public transit stop no farther than 600 ft (183 m) from the main public and employee entrances of each building on the site. Each stop shall include a no-cost easement for locating appropriate bus stop signs and passenger information displays. If active bus stops exist on the state highway or other adjacent streets such that no main public or employee entrance is farther than 600 ft (183 m) from an existing bus stop, no additional bus stops will be required of the developer.
- If it is necessary for public transit vehicles to enter the site to provide suitable public transit stops no further than 600 ft (183 m) from the main public and employee entrances of each building on the site, the developer shall provide a permanent easement for public transit vehicles to access the site without fee.
- Locations designated for public transportation stops shall be designed to accommodate vans, shuttle buses, vehicles for the disabled, and public buses, and shall have designated walkways to all major buildings on the site.
- In consultation with the transit operator, the developer shall designate a reasonably direct route for public transportation vehicles to circulate through the site, connecting with all stops, in a manner to avoid circuitous routing and unnecessary delay.
- The developer shall identify and provide permanent easements to connect the internal roadway system for the site with adjacent properties, so that public transit trips between adjacent parcels shall not need to use the adjacent state highway.
- The developer shall provide lighting and shelters of an approved design at all designated public transportation stops. Canopies or overhangs attached to buildings may be used in lieu of shelters where appropriate.
- In consultation with the transit operator, if a public transit route is extended from an existing terminus to serve the new development, the developer shall provide appropriate locations for temporary parking (layover) for public transportation vehicles.

In some instances, state highways are used to access public transportation terminals and park-and-ride rail and bus stations. For developments in close proximity to such locations, it could be argued that it is in the public interest to reserve a portion of the available highway capacity for trips to and from these transit facilities, since they can eliminate auto trips on other sections of the state highway system. Consequently, specific requirements were developed for major access permit and major access permit with planning review to apply if the site abuts a fixed guideway public transportation right-of-way or has the potential for use as a major public transportation facility location. These requirements are as follows:

- The developer shall enter into good faith negotiations with NJ Transit or another public transportation provider to coordinate the access requirements of the developer's site with the needs of the public transportation provider.
- Such negotiations shall include consideration of reasonable access accommodations for both parties, consideration of how to share limited capacity of the state highway, accommodation of requirements for the construction of fixed guideway elements and station facilities, and consideration of the potential to create easements for at-grade or multilevel shared parking for use by both parties.

TRIP GENERATION CREDITS FOR TRANSIT ACCESS

Typically, the trip generation rates documented by the Institute of Transportation Engineers and used in many site traffic impact studies do not account for the provision of transit service. Research has shown, however, that development constructed in close proximity to frequent transit service can produce fewer trips than would be predicted by using standard ITE trip generation rates (*8*).

Consequently, in exchange for including access and provisions for public transit in new developments, NJ Transit and the consultant team also looked at the potential to allow developers to reduce peak-period traffic forecasts for their traffic impact studies to reflect the shift of auto trips to transit trips. NJ Transit would work with the developer to estimate a reasonable shift in auto trips to transit if a number of conditions were met. By reducing estimates of peak-period traffic generated by the development, the developer may benefit if the reduction brings traffic down to a level that requires less costly mitigation. In essence, this would provide a "carrot" for developers, in addition to the "stick" represented by the proposed regulations.

CONCLUSION

The proposals developed by NJ Transit staff were incorporated into suggested revisions to the access code and were presented to the stakeholder working group in November 2007. A proposal for adding a park-and-ride requirement for large retail shopping centers was also considered, but was later dropped. Reactions to the proposals were mixed, with local governments seeming to be in favor, while traffic consultants appeared to be more reserved in their judgments. At this time, the study is still undergoing review, and no formal recommendations have been adopted.

The proposals did not address legal issues or administrative feasibility. They were based solely on the perspective of the public transit operator and did not reflect the views of those charged with administration of the access code. Actual incorporation of transit provisions into a revised highway access code is likely to be controversial and will probably require legislative approval, which takes a considerable amount of time. Although it is likely that revisions to the code will be recommended by the New Jersey DOT, whether the proposed transit provisions will survive remains an open question at this time. Nevertheless, little research has been published on this topic, and the proposals developed in this study may be useful elsewhere.

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The proposals are based on the perspective of the public transit operator and do not reflect the views of those charged with administering the New Jersey State Highway Access Management Code.

The Access Management Committee peer-reviewed this paper.