

place but an economic success as well. Furthermore, during the past 30 years, there has evolved an understanding of the role played by transit in preserving Main Street, in serving businesses and employees, in reducing the impact of the automobile, and in generally supporting the downtown area and development on Main Street.

Next Steps

The design and planning for future downtown streetscape and transit improvements is ongoing.

Next steps include the following:

- Connecting the Blake Transit Center to Main Street with streetscape improvements, including improvements on the streets around the center to slow traffic and to make it a more pedestrian- and transit-friendly destination; and
- Creating a central square around the library in the block adjacent to the Blake Transit Center as part of the library block development study.

The AATA is entering into discussions with the University of Michigan to create a bus, activity transit, and retail node on the campus and has plans to work more closely with the DDA, downtown merchants, and the university to coordinate transit service and reduce the need for construction of more parking facilities. For example, the DDA is encouraging other major employers in the area to develop dedicated shuttles between remote parking lots and their corporate offices downtown. AATA is purchasing 14 new 20-passenger vehicles, 5 of which will be used as downtown shuttles to carry passengers from AATA service lots located north, south, east, and west of downtown.

Lessons Learned

- The early pedestrian improvements and traffic constraints set the stage for what happened over a 30-year period. Although no one could predict what did happen, without these improvements, downtown Ann Arbor might have lost its cohesiveness and sense of place.
- Projects may have been done differently had there been a real partnership between the transit agency, the city, and the business community. The vision for a revitalized, pedestrian-oriented downtown was shared, but the implementation should have been better coordinated.

■ CASE STUDY 3-5: DAVIS SQUARE, SOMERVILLE, MASSACHUSETTS

It's hip to be in Davis Square.

—*Boston Globe*, January 26, 1997

Somerville, Massachusetts, the most densely populated streetcar suburb in New England, is home to 76,000 people. In 1973, Davis Square, one of the city's largest central squares and a traditional commercial center, was selected as the location for a new station on the Red Line T (subway), using a former freight rail line that bisected the community. While the station was being planned, the city and the community developed a visionary strategy to radically transform the streets and pedestrian access to the square, provide additional on-street parking, improve its visual appearance, and create opportunities for new development.

At the heart of Davis Square is a complex six-point intersection, consisting of four major collector roadways and two smaller roadways (Figure 3-19). Until their reconfiguration in the 1970s, two major, pedestrian-unfriendly streets bisected the square, and several freight trains ran right through the square each day on the Boston and Maine Railroad, forcing traffic to back up for long periods of time. While the Massachusetts Bay Transportation Authority (MBTA) was building the station and a new plaza, the city of Somerville set to work on construction of pedestrian-oriented streetscape and landscape improvements, facade renovations, and a redevelopment plan to attract new businesses.

Once a gritty, down-at-the-heels intersection, Davis Square is now a vibrant nightclub and popular shopping district. New restaurants and nightclubs attract a young crowd from all over the Boston area to what is billed as an alternative to Harvard Square in Cambridge. There are also many new professional offices and neighborhood-oriented services. Yet, the square retains its residential character and ably serves the needs of a diverse mix of residents. What has been achieved goes far beyond what the farsighted community envisioned when it began to plan the square's revival in the mid-1970s.

Project Goals

The 20-year revitalization of Davis Square has occurred, not as the result of one plan or initiative, but as a series of plans that have evolved over time as the needs of the area have changed. The square's success is attributable to the city's sustained commitments coupled with a very involved and energetic residential community. These parties wielded significant political influence in the city and were able to develop a long-term vision at a time when the area was suffering from the urban decay and disinvestment faced by many 19th century industrial, working-class neighborhoods.

The primary goal set forth in the Davis Square Action Plan adopted in 1982 was to use the new Red Line Station as a cornerstone for redevelopment, strengthening Davis Square as a viable shopping district while preserving the residential character of the neighborhood. After convincing the MBTA to route its Red Line extension through Davis Square, the city of Somerville then set out to improve access to Davis Square for pedestrians, cars, buses, and bicycles.

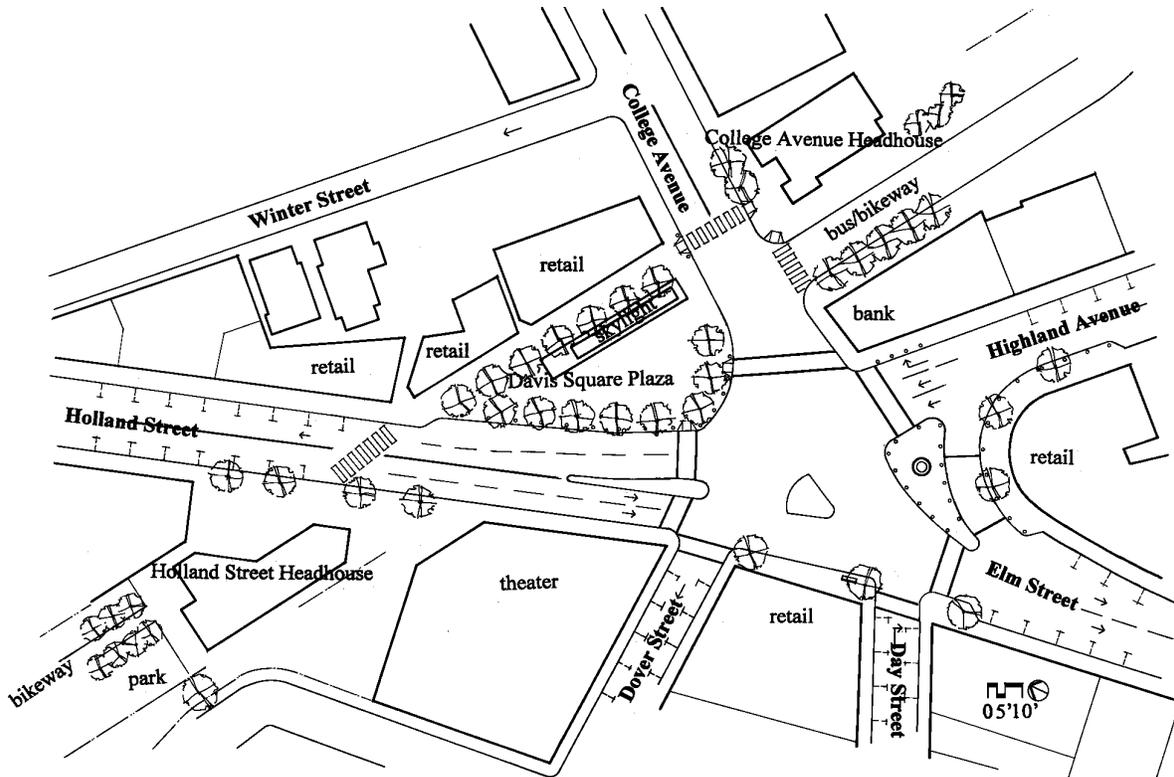


Figure 3-19. Davis Square, Somerville, Massachusetts.

In a planning study prepared by the city's Office of Planning and Community Development (OPCD) and its consultants in 1980 (Working Paper No. 5 of the Davis Square Planning Study), these goals were explicitly stated:

- Ensure pedestrian safety and convenience throughout Davis Square while minimizing traffic congestion;
- Design traffic patterns that promote the aims of the Davis Square business community;
- Provide safe and convenient pedestrian, car, and bus access to the (new MBTA Red Line) station; and
- Work with the MBTA and other agencies to appropriately reuse the railroad right-of-way.

Davis Square residents, in an effort to retain the residential character of their neighborhood, decided early on that the new Red Line Station should not provide any parking facilities, which they feared would destroy the character and human scale of their neighborhood. A 1989 Davis Square Parking Study further reinforced this basic commitment to reducing the number of vehicular trips to Davis Square as a way of reducing parking demand and relieving congestion.

Design and Planning Process

The OPCD and the Metropolitan Area Planning Council put together the first Davis Square urban design and

business study in 1977, while the Red Line extension was in the planning stage. That same year, the Davis Square Task Force was formed; it was composed of members of the Ward Six Civic Association, local business owners, and local officials and was to act as an advisory committee. The task force provided input about the revitalization plans, addressed issues related to construction of the Red Line extension, and helped determine the character of new development in the square. The OPCD hired consultants to study potential land uses, including office and retail, traffic, parking, and other issues. The studies were generated as a series of working papers, termed the "Davis Square Planning Study." The findings of these studies, along with input from the task force, were synthesized for the Davis Square Action Plan, which was adopted in 1982.

To help resolve the traffic issues within Davis Square, a 1976 federally subsidized TOPICS (Traffic Operations Program to Increase Capacity and Safety) study was conducted. This study recommended that two of the square's major two-way streets (Highland Avenue and Elm Street) be converted to one-way and that intersection signalization be simplified. This led to 5 years of fast-moving traffic careening through the square and to what many residents decried as a very dangerous situation for pedestrians. "I can't cross the street" and "you take your life into your hands" were among the complaints that the city

heard from Davis Square residents. While planning the square's revitalization, the city and the Davis Square Task Force decided that, along with the major MBTA improvements to the square, measures had to be taken to mitigate the pedestrian-hostile effects wrought by the TOPICS program.

Finally, the city of Somerville and the Task Force initiated many other projects to accompany the Red Line extension and Davis Square improvements. Property redevelopment activities included a storefront and facade improvement grant program, financing for building renovations, and designation of a portion of Davis Square as an urban renewal district. Property acquisition, clearance, infrastructure upgrades, and development took place within the boundaries of this district. The district was later developed as a 100,000-ft² office and retail complex, including public open space and a parking garage that serves patrons and employees of local businesses.

Design Strategies and Features

The Davis Square intersection was radically reconfigured, with a plaza added between the subway station entrances as well as other pedestrian enhancements. Sidewalks, which average about 10 ft in width, were widened at intersections and at other strategic spots, particularly crosswalks, to enhance pedestrian capacity, circulation, and safety. The sidewalks, many of the crosswalks, and the pedestrian islands are brick paved and the crosswalks are clearly marked (Figure 3-20). Safety islands are provided at some intersections. On Elm Street and Highland Avenue, crosswalks and neckdowns are provided at midblock locations (to reduce walking distance between intersections for pedestrians) and large signs advise vehicles to stop for pedestrians in the unsignaled crosswalks.

The four collector streets—Holland Street, Elm Street, Highland Avenue, and College Avenue—average about 40 ft in width, with two travel lanes and parallel parking with 1-hour meters on both sides. Holland Street and College Avenues are two-way, whereas Elm Street and Highland Avenues are one-way within the square. Several smaller one-way streets also connect to the square.

The MBTA developed a central plaza linking the two station entrance buildings built on an old railroad right-of-way. This plaza replaced a poorly defined open area containing at-grade parking spaces and debris. The plaza is designed to serve as the center of Davis Square, a gathering place and center for activities and outdoor entertainment. The plaza and the station were both eligible for state percent-for-art moneys. One percent of the cost of constructing the new station entrances was used to commission several figurative sculptures, some of which represent local citizens, which are set within the plaza. In addition, tiles designed by neigh-

borhood children were installed in the station and a large sculpture was commissioned to hang over the tracks. The public art projects fit in with the city's goal of creating a community place—a place where residents can feel a sense of ownership.

The old Boston and Maine Railroad right-of-way has become a bike path and greenway and, for part of its length, a designated bus way leading to the subway station. The bus way functions as a passenger stop for the College Avenue station entrance building, also called the head house, and there are other designated bus stops along Holland Street. MBTA buses and Tufts University's van services connect travelers to the subway line at these points.

Most of the remaining railroad right-of-way between Davis Square and the Alewife MBTA station in Cambridge (the Red Line's northern terminus) was redeveloped and landscaped as a linear park or bicycle/pedestrian pathway. A public park was constructed directly behind the Holland Street MBTA head house as part of a later project. The linear park connects at Alewife MBTA station with the Minuteman Trail, a 13-mile bicycle path traversing the towns of Arlington, Lexington, and Bedford. On the east side of Davis Square, an additional portion of the old right-of-way was redeveloped as a bike path. Known as the Grove-Cedar Streets segment, this facility was constructed in 1994 and is being upgraded with new lighting and grading with portions being used as a community garden.

Impacts and Assessment

The MBTA station and associated improvements have significantly transformed Davis Square, efficiently balancing a significant amount of vehicular traffic with an active



Figure 3-20. In Davis Square, ample paved pedestrian crosswalks and refuges are provided to make navigating between the Red Line T (subway) station, bus stops, and this seven-point intersection easier.

pedestrian environment. The streetscape improvements surrounding Davis Square station enhance pedestrian access to the station and local businesses while slowing traffic. These improvements also give the commercial area a more coherent appearance.

Transit Impacts

Undoubtedly the transit improvements have contributed significantly to the square's overall health, and the square's physical environment enhances public access and desire to use transit. Locating the subway station in Davis Square significantly decreased travel time into Boston for Somerville residents, making the area an attractive residential alternative for Boston-bound commuters. The presence of mass transit also makes the square's commercial district more attractive for office development, which contributes to the area's daytime activity.

The careful planning of Davis Square and its transit station has made it possible for people to reach the square without bringing more cars into this densely settled area. In fact, a before-and-after study completed in 1987 found that most subway riders boarding at Davis Square walk to the station (66 percent) and many others take a bus (21 percent). The station entrance buildings serve as bus shelters for passengers transferring between buses and between bus and subway. This multimodal function is particularly well planned at the College Avenue head house, where use of the former right-of-way as a bus way gives priority to buses, reducing the overall traffic moving through the intersection as well as bus travel times (Figure 3-21).

Traffic Impacts

The TOPICS changes made in the late 1970s were clearly designed to move automobile and truck traffic rapidly through the square. The result ignored the needs of pedestrians and would probably have led to further deterioration of the square had not the construction of the subway extension played a major role in reversing that trend. Now, the wider sidewalks, neckdowns, on-street parking, and irregular street configuration help to slow the traffic entering the square. At the same time, the pedestrian islands, medians, and center island serve to channel and calm the movement of cars within the intersection.

The street flow patterns do offer motorists numerous alternatives and turning options: two concurrent rotary (roundabout) patterns are formed by the one-way traffic on Highland Avenue and Elm Street in conjunction with two other adjoining streets. This gives motorists looking for on-street parking the option of recirculating through the square.

A traffic and circulation study conducted by the city in 1981 showed traffic volumes through the Davis Square area

to be over 79,000 cars in a 24-hour period. Although recent traffic counts are not available, traffic has undoubtedly increased since that time as the popularity of Davis Square as a destination has grown. Traffic generally moves smoothly but slowly, and during evening rush hour all cars make it through the intersection in two cycles, if not one. The slower movement of traffic has made the square safer and easier for pedestrians to cross, although it has encouraged their inclination to jaywalk.

Although local businesses pushed for an increase in parking, residents thought more parking would lead to disintegration of the neighborhood's urban fabric. "Park and ride" facilities were completely ruled out and even "kiss and ride" dropoffs were discouraged. As a result, no facilities for commuter parking are provided in the square.

Pedestrian Impacts

The new brick and granite paving, upgraded lighting, and facade improvements have given the plaza and surrounding streets a fresh, well-maintained appearance, in marked contrast to the square's previous unkempt and deteriorated state. The plaza is principally used as a central square by residents who sit, watch, rest from shopping or exercise, or wait for the next bus. The plaza also functions as a resting place for cyclists who use the adjacent bike paths and as a meeting place or "front yard" for adjacent businesses. Annual community events such as ArtBeat, sponsored by the city and the Somerville Arts Council, are staged there. Periodically, the plaza is used for public speaking events as well.

Because of the density of Somerville and the proximity of residential neighborhoods to the Davis Square Station (as well as the carefully controlled parking supply), the number of people who walk to the station is high. The transformation of Davis Square from a pedestrian hazard to a pedestrian



Figure 3-21. A dedicated bus way serves the College Avenue T station entrance.

attraction has offered an added incentive for walkers. By making crossings safer, by making the sidewalks more comfortable and better lighted, and by offering a diverse mix of retail activity along the streets, the square has become extremely friendly to pedestrians.

Efforts have recently been made to further improve pedestrian use of the square. Pedestrian crossing signal cycles, however, may need to be lengthened to reduce the amount and diversity of jaywalking that takes place. The pedestrian-only cycle, with a “chirping” walk signal, occurs about every 2½ min (slightly shorter when the pedestrian-activated light is pushed—then it cycles at 45 sec to 1 min). The pedestrian signal lasts a brief 8 sec followed by 12 sec of a flashing “don’t walk.” There are, however, pauses in traffic flow long enough for pedestrians to cross against the “don’t walk” signal, which they do quite often. For example, the light on College Avenue is red for 40 sec, which gives pedestrians coming out of the College Avenue entrance time to cross; however, cars turning during the 45-sec, right-turn, green arrow from Highland onto College often conflict with these pedestrians.

Economic Impacts

When the new transit station opened in 1984, business around Davis Square did not immediately thrive. The number of retail stores in the area declined from 68 in 1977 to 56 in 1987. However, many nonretail uses, such as beauty salons and real estate offices, had already begun to fill the empty retail spaces. With the Boston area’s emergence from its long recession, the area truly began to revive. The completion in 1993 of a new 100,000-ft² office and retail development on an urban renewal site adjacent to the Holland Avenue head house also may have helped spur investment. Many other smaller properties have subsequently been redeveloped. Clearly, the community’s vision of a rebirth of commercial and retail activity has, in the past few years, been fully realized. All benefit from their proximity to the MBTA station, which has enabled the square’s businesses to reach a wider patronage while serving local residents well. Retail vacancy rates around the square are close to zero.

Costs

The total cost of the Davis Square portion of the MBTA Red Line extension project was approximately \$29 million. Urban Systems Program funding totaling \$1.2 million was received from MASS DPW to fund streetscape improvements; \$100,000 in CDBG moneys was received in 1982 to provide special paving, landscaping, and street furniture. HUD money was also used for streetscape materials; Congestion Mitigation Air Quality (CMAQ) money is being

used to fund implementation of a new bus shuttle; and the Massachusetts Highway Department is paying for an expansion of the bike path. Somerset Bank funded a \$1 million storefront rehabilitation program. In 1981, Davis Square won Commercial Area Revitalization District (CARD) designation, making it eligible for low-interest industrial revenue bond financing for business expansions and new construction.

Conclusions

The city and community leaders agree that the residents’ intensive involvement throughout the planning process helped to set the direction and has led to the success of Davis Square. Many regional planners and even some city officials believed 20 years ago that the only way a new transit station could succeed was as a commuter “park and ride” facility. The city and residents have proven that they were right in fighting to preserve the residential character of their community and to create a setting for transit based on a comfortable balance between pedestrians and vehicles—instead of an automobile-dominated “park and ride” serving commuters from distant suburbs.

Next Steps

Today, 13 years after the opening of the Davis Square Red Line station in 1984, the city is continuing to implement the vision set out in the mid-1970s with continued pedestrian and transit-related enhancements: refurbishing of the central plaza and introduction of a new shuttle bus system that will provide even better access to the station.

In addition, the Massachusetts Highway Department will be conducting a bike path enhancement project, which will revisit the existing bike path spaces, replace fences along the bike path with friendlier gates, and add street lighting to facilitate nighttime riding.

The city is also working to redevelop some of the other squares in the city, most notably Union Square where, among other initiatives, they are exploring the feasibility of locating a commuter rail stop. With moneys from CMAQ and a matching grant from the city, Somerville also has plans to develop a cross-town shuttle to link each of the city’s numerous squares to each other, to key commercial areas, and to the Red Line, thereby enhancing north-south transit service and eliminating half the bus transfers in the city.

Lessons Learned

- There needs to be an overall shared vision and consensus about what ought to be done. In Somerville, this

vision was developed nearly 25 years ago and is being faithfully and incrementally implemented through careful planning.

- Incremental changes were considered positive measures because they allowed for evaluation and corrections of what had been accomplished.
 - Taking the steps necessary to create a walkable neighborhood will encourage people to walk to a transit station.
 - An intersection that is hostile to pedestrians and friendly to vehicles can be reconfigured so that it is friendly to both.
-