



# People Movement for Downtown Improvement

RECEIVED

SEP 21 1977

GENERAL MANAGER  
S.C.R.T.D.

S.C.R.T.D. LIBRARY

HT  
151  
.P46

U.S. DEPARTMENT OF TRANSPORTATION  
Urban Mass Transportation Administration



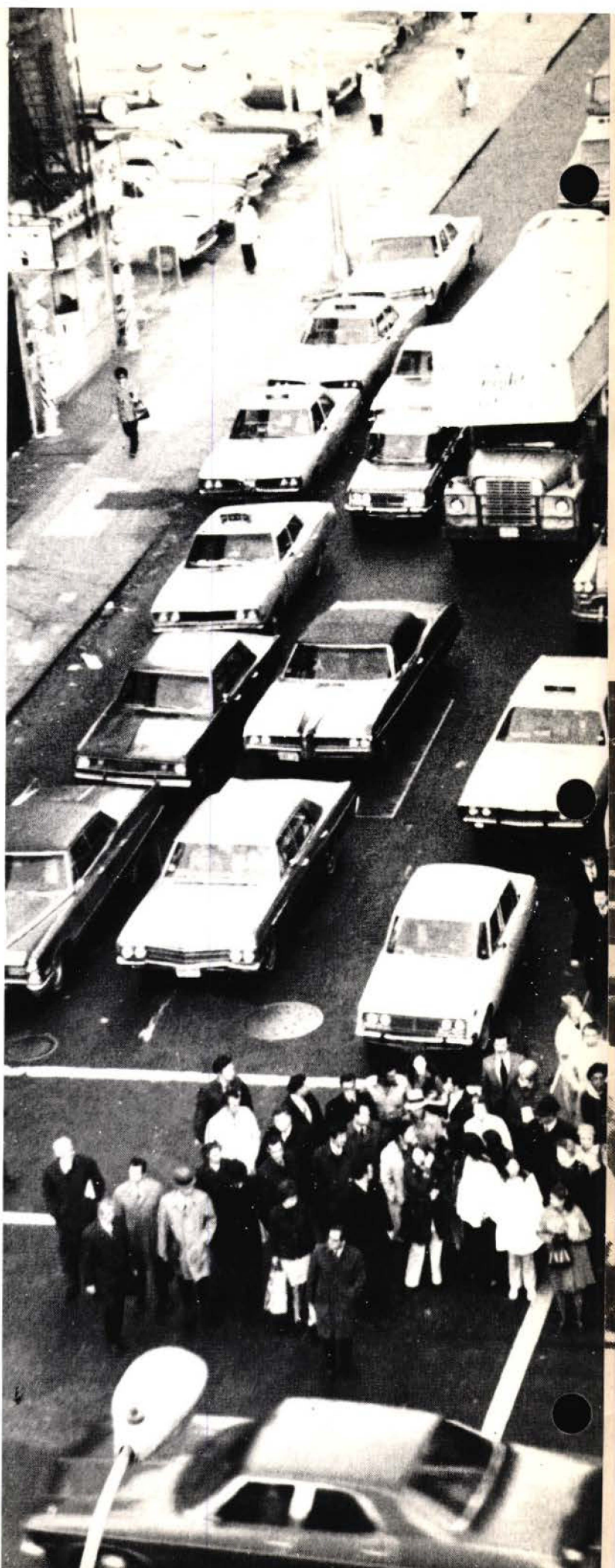
Downtown is the unique place where a city can function as a total community. Transportation changes in recent decades have favored the suburbs and contributed to the shift that left the downtown streets empty of people but still choked with auto traffic. Automobiles will continue to play an important part in providing access to downtown, but improvements in collective transportation and the pedestrian environment provide the best opportunity for bringing new vitality to the center city.

Improving the movement system of downtown is a complex task. This brochure is offered to you and your community to expand your information on the range of pedestrian and transportation improvements available. It is intended to provoke further thought about downtown needs and resources and to assist in deciding what is the most appropriate program for your city.

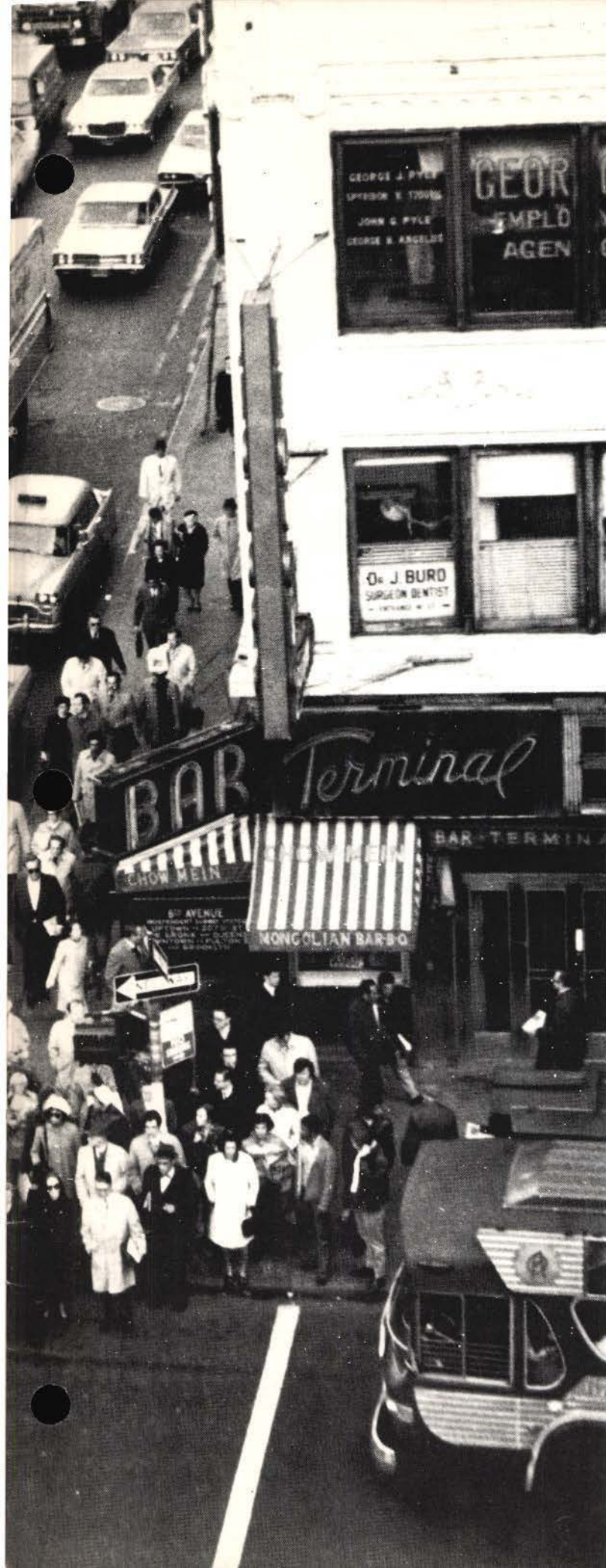
00523

HT  
151  
.P46

This brochure was prepared in January, 1977,  
for the U.S. Department of Transportation,  
Urban Mass Transportation Administration,  
Office of Service and Methods Demonstration  
Washington, D.C. 20590







## Contents

● The Decline and Potential of Downtowns	3
● Typical Downtown Resources and Opportunities	5
● Some Successful Improvements	7
● Components for Improved People Movement	11
● Summary of Components	23
● Further Information	25



# The Decline and Potential of Downtown



Deserted Downtown Street



Suburban Shopping Mall

When downtown was the only accessible activity center, special attention to its movement system or environment was not considered necessary. People and vehicles competed for the limited right of way, causing inconvenience, but there were no competing commercial attractions. As road networks expanded, auto ownership increased, and people chose to live further out of center city, the accessibility and convenience of outlying centers increased. In addition to easy access by auto, these centers offered attractions not available downtown: safe and attractive pedestrian malls free of vehicles, good environmental management, collective programming and advertising, generally predictable satisfaction for middle and upper income clients.

The impacts on most downtowns have been devastating. Their major growth occurred with centralized rail transit and they were ill suited for the new auto oriented patterns. The streets filled up with too many autos and the sidewalks became alternately overcrowded (at peak hours) and desolate (during evenings and weekends). While employment is still strong in most downtowns, shopping, recreational and social activities have become limited. As shopping centers most downtowns have been reduced to limited specialty trade and to serving the carless: the young, the elderly and the poor.

However there are still many unique and irreplaceable resources downtown that the suburbs cannot duplicate. These consist of people who still go there to work every day, of natural features such as rivers and harbors, of historic functions, buildings and traditions. Restoring convenient movement through high quality collective transportation, improving the public environment for pedestrians, and making use of downtown's unique resources are the necessary elements of downtown revitalization.

The following pages will call attention to some of the resources, suggest how transportation improvements can help a city take better advantage of these and show some successful examples of such improvements.



**Activities that have unique potential in downtown are:**

Extended use by downtown workers at lunch time and after work.

Cultural and entertainment facilities: theaters and museums — hotels, restaurants, bars.

Shopping oriented to service and specialty stores and to combining shopping with entertainment.

Special housing utilizing the convenience at locations and the qualities of historic buildings at converted open lots.

Other special events and activities that depend on the close proximity of varied urban functions and the richness of urban life: celebrations, festivals, conventions, street fairs, etc.

**Improvement in movement systems and the pedestrian environment can:**

Assure people of convenient and comfortable access both to downtown and within the area

Reduce noise, confusion and danger now caused by traffic

Remove physical barriers created by obsolete transportation facilities

Make the public environment conducive to new and more varied activities

**Other public and private programs need to:**

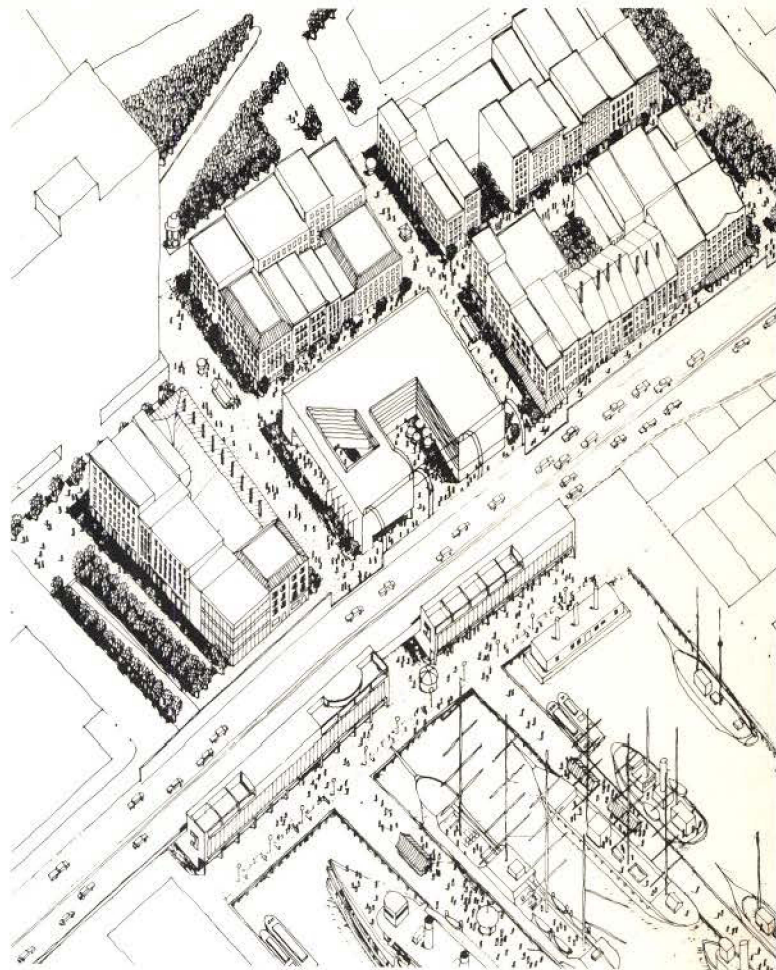
Provide incentives to the development of multi-use facilities including work, shopping, residences, hotels and entertainment

Encourage the mixed-use rehabilitation of older buildings through favorable zoning, building code, tax and financing policies

Locate people-intensive governmental and institutional facilities in the downtown area

Rejuvenate special attractions such as waterfronts, parks, museums, theaters, etc.

Create a coordinated planning-implementation-management organization that can combine public and private resources, can treat downtown problems comprehensively and can coordinate what now are typically many overlapping jurisdictions.



New Life for Old Waterfront — South Street Seaport proposal, Lower Manhattan



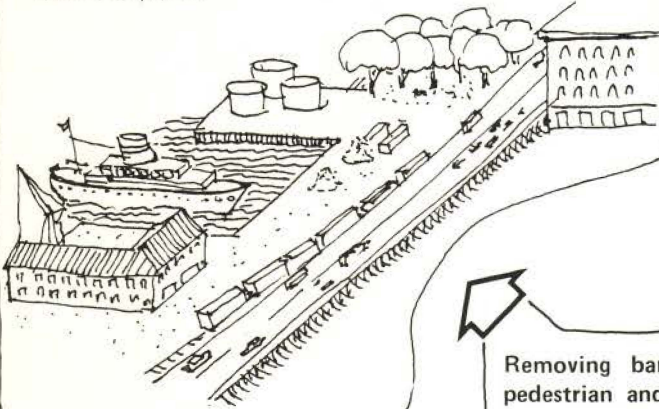
Renewed Activity in Pedestrian Environment—Quincy Market, Boston



# Typical Downtown Resources and Opportunities

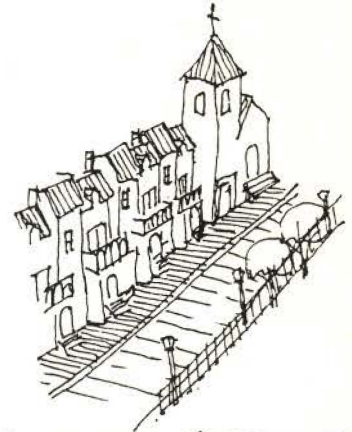
## Waterfront and Open Space

Many cities have river-, lake-, or sea-shores near downtown. These areas have great potential for living and recreation. They are often separated from other downtown activities by barriers such as railroad tracks, highways, or inactive industrial plants.



## Historic District

Almost every city center has a district of historic streets and buildings nearby. These districts when restored have great potential as tourist, shopping and living places. Poor access, excessive through traffic and a neglected street environment are obstacles to renewal.

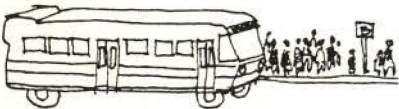


Removing barriers and providing pedestrian and transit connections have encouraged successful waterfront renewal in Boston, San Francisco, New York City, Baltimore, Seattle, Portland, Ore., and St. Louis.

Pedestrianization and public street improvement along with private rehabilitation have already catalyzed revitalization of historic areas in San Francisco, Boston, Atlanta, Philadelphia, San Antonio, and New Orleans.

## Bus Routes and Stops

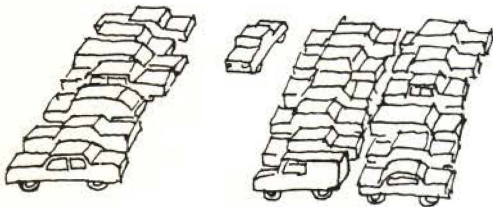
Buses are the only available public transit facility for most downtowns but conflicts with other traffic, poor pedestrian conditions and lack of information at major stops reduce convenience and give a poor image to this service.



Transit Malls, exclusive bus lanes, and pedestrian facilities at downtown bus stops introduced as a complete system can turn buses into first class transportation for downtown.

## Parking Areas

Many downtowns have a great deal of parking nearby but it is often scattered with confusing access patterns. The larger, less expensive parking areas are often out of comfortable walking range of most destinations.



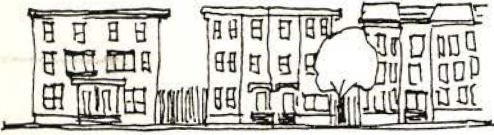
Better information, an organized fare rebate system from merchants, and shuttle service to more remote parking areas can increase use and convenience of existing parking.





## Residential Neighborhoods

Many cities have potentially attractive 19th century housing areas near downtown, but these have deteriorated due to poor public environment, heavy through traffic, and declining public transportation.

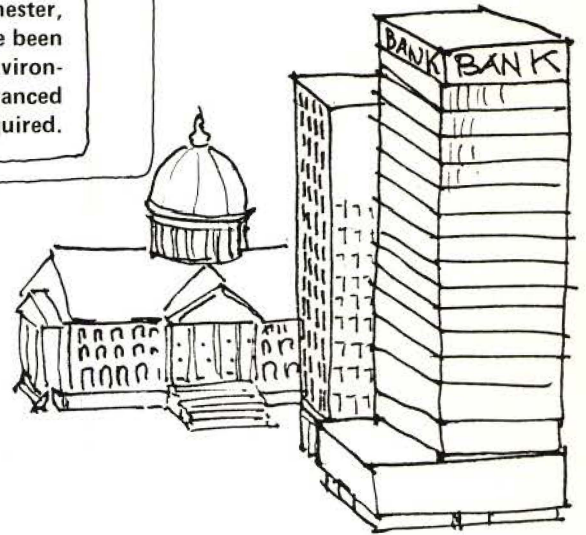


Convenience to city center can make these areas attractive again. Restoration combined with public space improvements has already occurred in Boston's South End, Philadelphia's Society Hill, Washington and San Francisco.

## Business and Government Offices

These true "central place" functions remain strong in almost every downtown. They bring a steady daytime population of workers and business visitors. The shopping and activity potential created by this population is often unrealized due to poor local access, unattractive street environment, and lack of information about downtown attractions.

Shuttle loops and pedestrian ways will improve access—pedestrian amenities will improve attraction. Shuttles in Los Angeles and free fare zones on transit in Rochester, N.Y., and Seattle, Wash., have been successful. In high density environments skyways and more advanced "people movers" may be required.



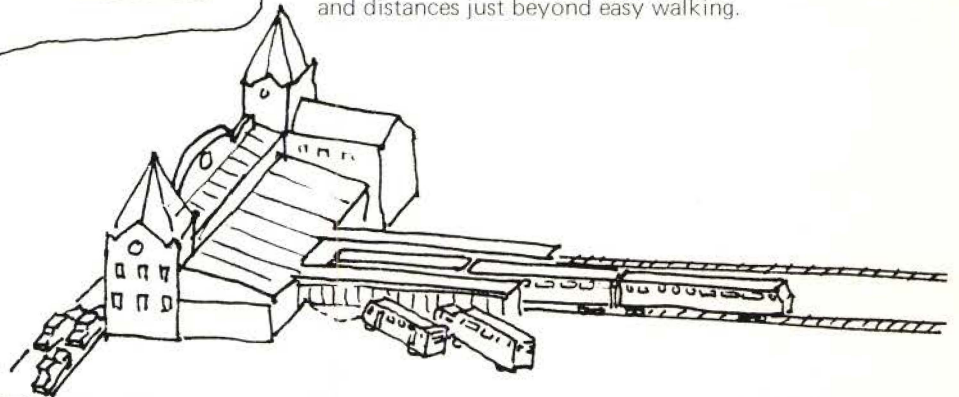
## Downtown Shopping

General shopping has decreased in most downtowns but service and specialty markets are still strong. These depend on nearby activity generators which are often cut off by inadequate access. Excessive traffic on main streets can destroy shopping environment.

Shuttle service, grade separated pedestrian ways or mechanical "people movers" can make this important connection.

## Railroad and Multimode Terminals

These 19th century focal points are now being revived into modern multi-mode centers in many cities. Access to downtown activities is often cut off by intervening traffic arteries and distances just beyond easy walking.



Pedestrian Malls have helped main street shopping in Louisville, Ky., Kalamazoo, Mich., Memphis, Tenn., and many other cities. If street is wide enough Transit Malls can mesh with the shopping activities as in Nicollet Mall, Minneapolis.



# Some Successful Improvements



Pedestrian Shelter, Hamilton Mall, Allentown



Baltimore Street Bridge, Baltimore



Guideway Transit (Cable Car) in Pedestrian Zone, Powell Street, San Francisco

Vehicle Free, Open Mall, Fresno







Nicollet Mall, Minneapolis, Before and After. Transit Mall in the heart of a large city







Pedestrian Shelter and Widened Sidewalk, Washington Street, Boston



Chestnut Street, Transit Mall, Philadelphia

State Street Mall, Madison, Wisc., tying University to State Capital







I.D.S. Center, Minneapolis, enclosed lobby provides focus for skyway system.



Skyway Bridge crossing Nicollet Mall, Minneapolis



Skyway Bridge Interior, Minneapolis

Vehicle Free Streets, Quincy Market, Boston





# Components for Improved People Movement

Components are arranged in order from relatively simple and low cost improvements to more complex and costly installations

## Temporary Street Closing



Nassau Street, New York: with Traffic



with People

Streets can be closed to cars at lunch time and on holidays when traffic is light, on a trial basis without any reconstruction necessary.

Crowding of pedestrians on narrow walks and many pedestrian/vehicle conflicts can be eliminated. Shopping comfort and enjoyment will be improved.

Most appropriate for densely used districts or streets with special events. Should be areas already having strong pedestrian activity.

Routings for displaced traffic and provision for building service must be planned. Merchants need to be consulted.

Examples: Nassau Street, Madison Avenue, and Fifth Avenue, New York; Raleigh, North Carolina; Yonge Street, Toronto.

Very low implementation investment, but extensive planning and management may be required.

## Sidewalk Widening



Market Street, San Francisco

Sidewalks can be widened at intersections or along block fronts to provide more space for pedestrians, and for outdoor eating or vending.

The congestion of people waiting at street crossings or bus stops can be relieved; heavy rush hour pedestrian flow near large office buildings, alleviated. New street furniture, plantings, vendors, can be accommodated without obstructing flow.

Appropriate in areas with moderate to very high pedestrian volumes.

Impact on parking spaces and traffic flow must be considered.

Examples: Washington, St., Boston; Main St., Santa Cruz, Calif.; Market St., San Francisco

Comparatively small investment and low cost of operation.



## Pedestrian Shelter



Pioneer Square, Seattle

Weather protection for pedestrians in public spaces can be provided by canopies, awnings or lattice work.

Shelters protect from wind, rain and snow and provide shade or heat as the climate demands.

Shelters are appropriate at points of waiting or heavy pedestrian activities, and can form continuous networks over sidewalks or along pedestrian ways.

Access for fire equipment and clearance for delivery and trash trucks must be considered. If attached to a private building, owner's consent is required.

Examples: Washington Street, Boston; Eugene, Ore.; Santa Barbara, Cal.; Hamilton Mall, Allentown, Pa.; Fresno, Cal.; Seattle, Wash.; Sherbrook, Canada.

Comparatively modest investment and moderate maintenance costs.

## Existing Building as Bus Shelter

Many existing buildings do or could have canopies, arcades or roof overhangs that can provide shelter at bus stops.

Using existing shelters eliminates the need for new construction; resources can then be used for seating, information panels, showcases.

Most appropriate where shelter possibilities coincide with need for bus stop.

Sidewalk must be sufficiently wide so that waiting passengers will not block building or shop entrances or flow.

Examples: Boston, Mass.; Rochester, N.Y.; Providence, R.I.

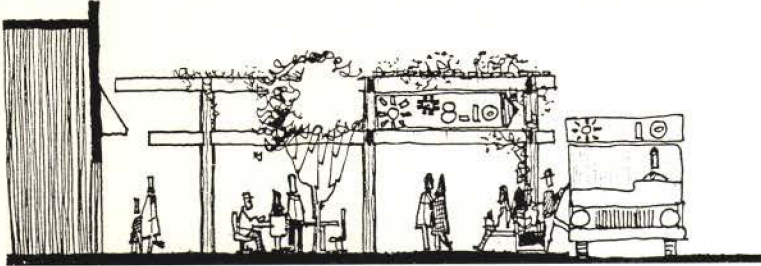
Low cost—may require change in bus stop location. Suitable for real property tax abatement incentives.



Existing Canopy with Proposed Benches, Boston



## Expanded Bus Stop



Moore-Heder Design for Bus Stop Tucson

Major bus stops should provide shelter and information for waiting passengers. Structures can be expanded to accommodate other pedestrian activities: shopping, restaurants, etc.

Expanded stops can improve environment and safety of bus riders, provide facilities for other activities, and create street life on transit malls.

Highly desirable at major downtown stops where large numbers of people wait to board.

Design should avoid conflict among bus riders, shoppers, and other activities, and should provide buffer against fumes and noise of buses.

Proposed for: Tucson, Memphis, Providence (Auto Restricted Zone Demonstrations).

Moderate capital costs which are eligible for funding as transit facility. Maintenance cost moderate and may be shared by abutting business.

## Escalators



13 Munich, Germany

Escalators provide vertical trips between levels of buildings or multigrade street and pedestrian networks, both indoors and out.

Escalators provide continuous capacity with minimal waiting or confusion of passengers. Direction may be reversed to accommodate traffic flow.

Escalators are appropriate for large volume pedestrian flows, as linkages among public activities on different levels and are essential for access to skyway networks. Where activity is periodic, escalators can be user activated.

Outdoor installations may have de-icing in cold climates. Elevators or ramps must be provided as alternatives for the disabled.

Examples: Widespread use in department stores, airports, modern transit systems, and shopping centers. Good outdoor system in Munich, West Germany.

Moderate to fairly high costs of installation and maintenance.



## Skyway or Tunnel Systems

Elevated skyways or public walkways below street level can provide direct access between buildings, creating a pedestrian network free of interference from street traffic. Direct access to building service elevators and escalators can be accommodated.

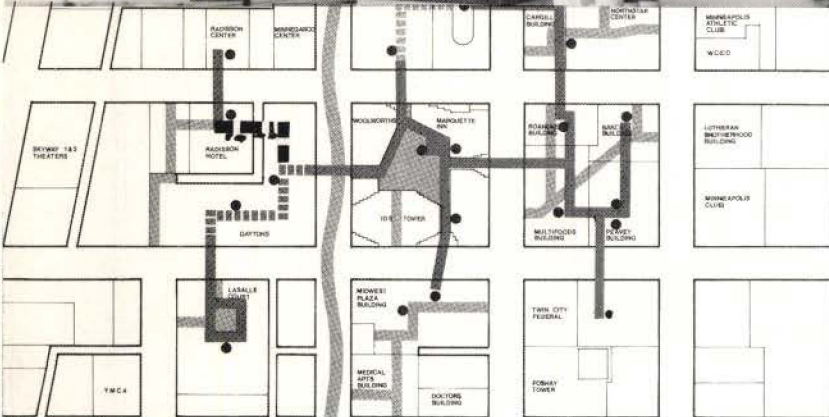
Skyways or tunnels can accommodate high volumes of pedestrian traffic and shorter trip times, in climate controlled comfort. They can generate new high rent activities on additional floors of buildings.

Appropriate in high density commercial centers where vehicular, pedestrian and traffic volumes are high, and where climates are extreme.

Participating building owners must modify their property to accommodate the network, and must contribute to maintenance.

Examples: Minneapolis Skyway, Cincinnati Skywalk, Montreal and Houston underground networks.

Skyways are moderate to highly expensive. They can be built incrementally but must evolve into a network. Skyways have been built by private owners to achieve commercial benefits.



Skyway System, Minneapolis

Street View and Partial Plan

## Moving Walkways

A moving walkway is a continuous belt for conveying standing or walking passengers in a straight line, either level or up a moderate grade.

They can carry large flows of pedestrian traffic and extend the length of walking trips beyond the typically comfortable range as well as permit easy movement of baggage, shopping carts and baby carriages.

Appropriate where pedestrian traffic is of highest density and walking distances are extensive. Suitable for point to point connection (i.e., parking lot to arena) rather than for active shopping environment.

Examples: Limited installation in airports, subway stations, and expositions.

Capital and operating costs are relatively high, depending directly on length and capacity.



Hanover Fair, Germany



## Free and Reduced Fare Buses



Free Shoppers Bus, Memphis, now replaced by Free Fare Zone

Free or reduced fare bus service is provided in clearly defined downtown zones for easy circulation over short routes.

Service expands areas of comfortable, easy access for downtown shoppers, business clientele, and visitors, with convenience of frequent service and simple loop or shuttle routes.

Appropriate in relatively large business and recreation areas with high levels of auto congestion and limited on-street parking.

Traffic congestion in central business districts may reduce reliability of these services.

Examples: Minneapolis; Sacramento; Washington, D.C.; Seattle; Portland, Ore.; Rochester, N.Y.

Low to moderate cost—if existing bus routes are used, as in Seattle, cost includes fare revenue given up.

## Exclusive Bus Lanes



Contraflow Bus Lane, Los Angeles

Traffic lanes along curb or within center median may be used exclusively by buses or shared with taxis and carpools. Some bus lanes move in opposite direction to other traffic—contra flow.

Travel time in center city can be reduced 5 to 40 percent, average time savings around 25 percent.

Appropriate on routes of heavy transit traffic, or where future service increases are planned.

Increased traffic congestion in other lanes can cause complaints or violators. Curbside bus lanes may be infringed by deliveries and illegal parking.

Extensive bus lanes in New York; Baltimore; Washington, D.C.; San Francisco, and many smaller cities.

Very low installation cost but may require changes in non-transit traffic movements and additional enforcement.



## Park and Ride

Low cost parking lots and garages provided at the edge of center city with good access to transit can make the trip to downtown easier.

Perimeter park-and-ride reduces the need for costly, limited downtown parking, but preserves flexibility of automobiles for returning to low density residential areas.

Parking facilities in conveniently located stadiums, convention centers, or theatres are appropriate for park-and-ride, because parking demand for these sites is on evenings and weekends.

Park-and-ride will work only if perimeter parking is much cheaper than downtown and transit service is frequent.

Examples: Atlanta; Pittsburgh; Hartford; Washington, D.C.; Los Angeles.

Cost ranges from low (for use of existing publicly owned lots) to high (for new multi-story parking garages).



Park and Ride, Quincy Center, Boston

## Paratransit - Jitney - Minibus

Small passenger vehicles can provide frequent service along popular fixed routes or more flexible corridors. Jitneys stop to load or unload passengers anywhere en route, and may deviate from route on request of passengers.

Jitneys provide quick access travel in downtown for shopping and other short trips.

Appropriate on major commercial and office streets. Vehicle frequency can be adjusted to demand.

May conflict with conventional transit and taxi operators who see loss of patrons to service. Taxi operators should be encouraged to provide this service.

Examples: Atlantic City, New Jersey; San Francisco, Los Angeles, Madison, Wisconsin; Washington, D.C.

Jitney service by private operators has no public cost except loss of transit fares. Subsidies may be required to maintain necessary but unprofitable service hours and routes.



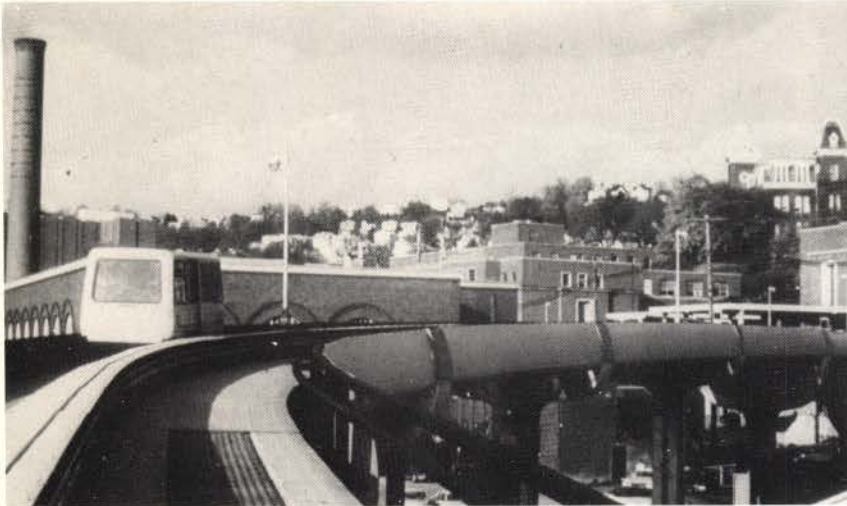
Mission Street Jitney, San Francisco



Minibus, Madison



## People Mover



Vehicle and Guideway in Morgantown, West Virginia



Fairlane Vehicle, Dearborn, Michigan

“People Movers”—separated or entrained electric cars of six to sixty passenger capacity—are driverless vehicles which operate on exclusive guideways. They may shuttle back and forth on a single guideway, or travel on a loop or a closed circuit route. People Mover systems may include several station stops, but few or no switches.

Cleveland, Houston, St. Paul and Los Angeles were awarded a total of \$220 million U.S. Department of Transportation grants for Downtown People Movers. The demonstration will test the feasibility and public acceptance in the harsher and more demanding environment of a real city central business district.

People Movers provide continuous or very frequent service which people can ride sitting or standing. Bags and bundles also can be accommodated.

Appropriate only in relatively compact areas with high intensity of use—for example, central business districts and major activity centers. People Movers can connect parking lots or bus terminals at the business district’s perimeter.

Adequate passenger capacity must be provided for convenience, and sufficient equipment must be provided for scheduled operating down-time.

Examples: Morgantown, W. Va.; Fairlane Center, Dearborn, Mich.; Disney World, Orlando, Fla.; several airports and amusement parks.

Initial capital costs range from high to very high, depending on technology and guideway location. Labor costs of operation are minimized by the absence of drivers.



## Other Fixed Guideway Systems

There are numerous variations of new and conventional fixed guideway equipment for movement of people in downtowns. Not every mode is suitable for all locations, but each may be useful in the future or for special applications.

Advanced people movers differ from shuttle and loop systems in complexity of network and operation. Groups of travelers with similar origins and destinations may be served by branch routes with switching capability, and off-line stations to prevent delays on the main line. Small groups may be served by direct origin to destination travel, with few or no intermediate stops.

Aerial tramways, electric trolley buses, and inclined guideways, among other equipment, may provide suitable service in unique situations—such as where a river or other barrier must be crossed, a steep grade must be climbed, or where existing networks of guideway and power supply are already in place.

Light Rail Transit, operating on exclusive right of way, may be incorporated with downtown people movement as part of general light rail urban transit service. This equipment works well at grade among people in transit malls as a result of low noise and exhaust, and certain, secure path of movement. Light rail may provide service within center city at the same time as collecting and distributing long haul passengers.

Installation costs are high. Complex planning and implementation programs are required.



Aerial Tramway, Roosevelt Island, New York



Light Rail in Auto Free Street, Munich, Germany



## Pedestrian Mall



Mid American Mall, Memphis



Pedestrian Mall Vehicle, Sacramento

Downtown shopping streets can be permanently closed to vehicles and rebuilt as pedestrian malls with trees, seats, shelters and other amenities.

Pedestrian Malls can re-establish image of previously deteriorated Main Street shopping, provide a traffic-, noise-, and pollution-free environment, and attract new shops and more shopping activity. They are likely to attract large numbers of regular downtown users as well as some new shoppers and visitors. They must be fun.

Appropriate where traffic is clearly a disruptive element and enough pedestrian activity can be expected to animate the street.

Planning must involve merchants and property owners, accessibility must be reinforced by bypass routes, peripheral parking and transit. Access for deliveries and emergency vehicles must be maintained. Special maintenance and programmed activities are usually necessary. Slow moving shuttle vehicles combining transport and recreation may enhance activities on the mall.

Examples; Memphis, Tenn.; Fresno, Cal.; Eugene, Ore.; Kalamazoo, Mich.; Munich; Copenhagen, etc.

Moderate to fairly high cost—usually involves complex planning and implementation process due to major changes in circulation system. Some have been financed through special tax assessment districts.



## Transit Mall



Nicollet Mall, Minneapolis



Granville Mall with Electric Trolley, Vancouver

Transit Malls are downtown streets closed to auto traffic and rebuilt for the exclusive use of surface transit vehicles and pedestrians. Sidewalks are usually widened and provided with ample bus shelters, planting, and other pedestrian amenities. Buses, electric trolley buses, or light rail vehicles can be operated on transit malls. Transit malls have been built from 5 to 10 blocks in length and they usually provide the main loading points for most of the downtown bound routes.

Transit Malls can improve transit operations by removing conflicting auto traffic. They can improve the image of bus transit and provide shelters and a pleasant environment for waiting passengers. They can also improve the image and convenience of the downtown shopping district.

Appropriate on streets where large numbers of transit vehicles and pedestrians converge. Street must be on the main bus routes and must be wide enough to accommodate both pedestrian and bus facilities without crowding.

Similar problems to pedestrian malls related to access for other vehicles and maintenance exist. Also must insure that walkways are adequately buffered from noise and fumes of buses by use of extra space or planting. Very high pedestrian or bus volumes on the same street can cause conflicts for both.

Examples: Completed—Minneapolis, Minn.; Philadelphia, Pa. Under construction—Portland, Ore.; Madison, Wisc.

Moderate to fairly high cost depending on level of pedestrian amenities. Usually involves complex planning and implementation processes due to major changes in circulation system. Some have been financed as transit related capital improvements by UMTA.

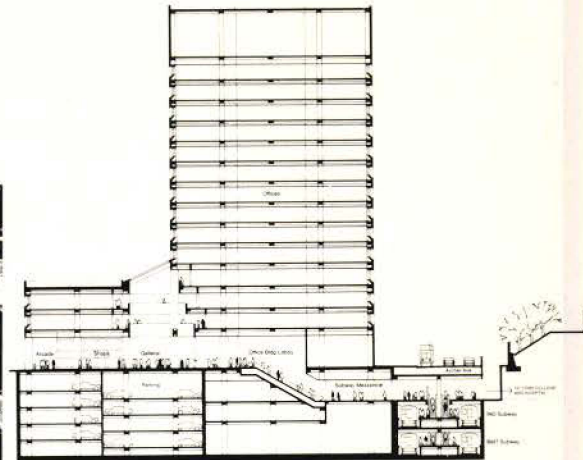


# Review of Components

Multiple components of people movement can be integrated in a total downtown program, rather than provide isolated improvements.

## Moving Sidewalks

can connect points of heavy activity, especially in new developments.

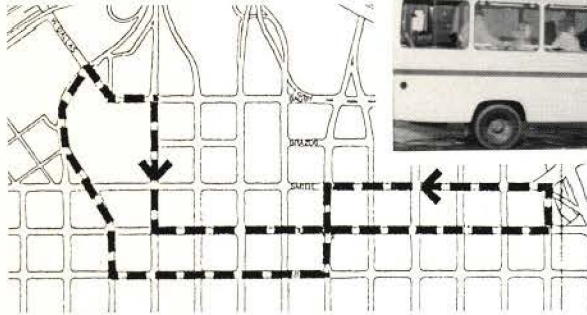


## Multi-Mode Transportation Center

can be integrated with major new development of offices, shopping, convention center, etc. Special distributor service can take people to other downtown destinations.

## Mini Buses

will be more compatible with heavy pedestrian use in downtown than large buses—they are most appropriate for loop and shuttle services.



## Shuttle Service

can circulate people along shopping streets and from fringe parking to destinations.



## Transit Malls

can form the downtown end of bus or light rail service. When volumes are high, these should be near but not on main shopping streets. Improved pedestrian facilities and shelters for waiting passengers must be included.

## Exclusive Bus Lanes

can improve the speed and image of bus service to the city center.

## Park and Ride

at the fringe of center city can reduce entering auto traffic.





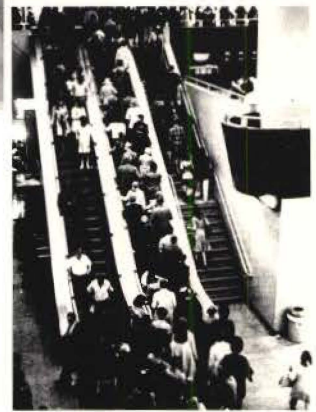
## People Movers

are appropriate where heavy volumes of pedestrians have similar destinations, and where new rights of way can become available. If elevated, only piers need to impinge on right of way.



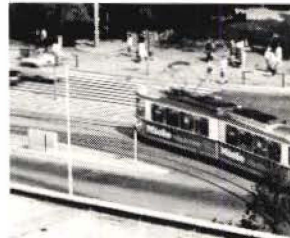
## Skyways

are most effective where they connect already-existing second level activities — shops, offices, transit facilities, or parking.



## Escalators

should be used to connect public pedestrian ways at different levels, at steep gradients, and with under or overpasses.



## Light Rail

can be used for special shuttle service as well as more extensive systems on ground level.

## Special Vehicles

that move slowly and are free of noise and pollution can complement extensive pedestrian shopping areas.















## Auto Free Streets

are usually most appropriate on main shopping streets, where many more pedestrians than drivers use the street.





# Summary of Components

COMPONENTS	COST	CAPACITY	TYPICAL APPLICATION OR OPERATION
Temporary Street Closing	\$		One to ten block length
Conventional Sidewalk	\$		Ten to Twenty foot width
Pedestrian and Transit Shelter	\$		Main downtown shops need specially designed shelters with increased pedestrian space
Pedestrian Mall	\$\$		One to ten block length, or multi-block area
Escalator	\$\$		15 to 20 foot typical elevation at 30° incline
Skyway or Tunnel System	\$\$\$		Ten to Twenty foot width; one street crossing to multi-block network
Moving Walkway	\$\$		Up to 425-foot length or greater, up to 12° incline
Transit Mall	\$\$		Minimum 25 to 35 ft width; Multi-lane operation
Exclusive Bus Lane	\$		Minimum 10-ft lanes, delineated by paint; signs and/or pedestrian islands
Minibus 15-passenger 25-passenger	\$		Mixed traffic or exclusive transit route, 10-15 mph
Conventional Bus 45-passenger	\$		Mixed traffic or exclusive transit route, 10-15 mph
Light Rail 50-passenger 120-passenger	\$\$\$		Exclusive rights-of-way, 15-40 mph
People Mover	\$\$\$\$		Elevated loop, shuttle or network. 1 to 5 min. between vehicles
Park-and-Ride	\$\$		Low cost parking at major peripheral lots with transit service



RANGE OF CAPACITY	RANGE OF CAPITAL COSTS	OPERATION AND MAINTENANCE COSTS
120 (unimpeded flow) to 1200 (max. congested) people per ft width/hour	Minimal for signs, barriers, Budget for pre-implementation publicity	Maintenance and operating budgets for non-mechanized on grade pedestrian facilities must include: Better than routine cleaning, repair and surveillance for security Care and replacement of planting and other pedestrian amenities Promotion of special activities to animate pedestrian areas Organization of combined marketing of shops, parking rebates
(same as above)	\$25 per sq yd; plus \$15 per foot, granite curb	
20 to 80 people at typical stop, 5 sq ft per person	\$10 to \$30 per sq ft	
120 (unimpeded flow) to 1200 (max. congested) people per ft width/per hour	\$50,000 to \$500,000 per city block for paving, landscape & utilities	
5,000-8,000 people per hr	\$55,000 to \$60,000 per unit, purchase and installation	\$200 to \$225 plus 2,200 kw electricity per month
120 (unimpeded flow) to 1200 (max. congested) people per ft width/per hour	Up to \$200 per sq ft or ca \$250,000 per street crossing (Climate controlled)	
4,000-8,000 people per hr	\$1,000 per foot length, purchase and installation	\$200 to \$250 per month, up to 425 foot length, plus electricity
60-90 buses per hr 2,400-3,600 people per hr	\$150,000 to \$500,000 per mile where existing streets can be used	Similar to Pedestrian Malls
30-40 buses per hr 1,200-1,600 people per hr	\$3,000 to \$15,000 per mile	Enforcement costs, depends on local practice
25-50 people per vehicle hour 50-100 people per vehicle hour	\$10,000-\$15,000 per vehicle \$15,000-\$40,000 per vehicle	\$10 to \$15 per vehicle operating hour \$10 to \$20 per vehicle operating hour
100-150 people per vehicle hour	\$60,000-\$80,000 per vehicle	\$10 to \$20 per vehicle operating hour
150-200 people per vehicle hour 200-300 people per vehicle hour	\$350,000 to \$1 million/mile (guideway) \$80,000 to \$100,000 per vehicle \$350,000 to \$500,000 per vehicle	\$20 to \$30 per vehicle operating hour
4,000 to 10,000 people per line hour	\$500,000 to \$5 million/mile guideway; plus \$30,000 to \$300,000 per vehicle	\$10 to \$20 per vehicle operating hour
3 to 5 daily vehicles per space short term; 1 vehicle per space commuter	\$100 to \$150/space at grade \$2,000 to \$4,000/space elevated	Shuttle operation or transit subsidy cost & personnel cost for maintenance and security



# Further Information

## Financing and Funding

Opportunities exist to finance improved people movement from a variety of revenue sources including private and commercial funds, government programs, civic associations, and other public and private interests. Private business concerns have been instrumental in funding people movement projects, particularly pedestrian improvements in downtown commercial areas. Assessments and contributions have generally been related to proportional benefits obtained from individual projects.

Most improved people movement has been funded by a combination of private interests, federal and local governments. Frequently applied Federal funds have included demonstration grants, community development grants, and public works financing. Local governments have contributed capital construction investment, operating and maintenance funds.

Civic associations, downtown development corporations and other quasi-public authorities have been active in support and sponsorship of improved people movement. New institutional arrangements and innovative techniques to finance people movement for downtown improvement are constantly being devised. Some combination of public, private and civic funding will usually be most effective.

### U.S. Department of Transportation Assistance

Various programs of the U.S. Department of Transportation are available to assist local areas in implementing improved people movement in downtowns. The Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA) each have grant or financial aid programs that are directly applicable to downtown transportation problems.

#### UMTA

Various UMTA funding programs are available to support preferential treatment for transit vehicles and other transit improvement projects:

**UMTA Section 3** (Discretionary Capital Assistance Program) funds can support such improvements as bus-only streets, transit shelters and stations, etc. UMTA Section 3 funds are available on an 80% Federal-20% Local sharing basis.

**UMTA Section 5** funds (Formula Funding Program) are also available to support capital improvements on a 80-20 basis or transit operating costs on a 50-50 basis although most urban areas are fully utilizing their funds already for operating costs.

**UMTA Section 6** (Research, Development and Demonstration Program) funds have been used in the past to develop and test new kinds of transit improvements. UMTA continues to be open to demonstrate innovations on an experimental or exemplary basis.

**UMTA Section 9** (Technical Assistance Program) funds can be used for technical studies for planning and design of transit facilities.

Inquiries about the possible use of these funding programs should be directed to:

Urban Mass Transportation Administration  
400 7th St., S.W.  
Washington, D.C. 20590

#### FHWA

Federal-aid highway system funding is available to support downtown improvement projects such as pedestrian streets and off street parking facilities:

**Federal-Aid Urban Systems (FAUS)** funding is available on a 70% Federal-30% Local sharing basis. FAUS funds are an apportioned funding source and are normally totally committed to other highway projects.

Inquiries about the use of FAUS funds should first be addressed to the local Metropolitan Planning Organization (MPO) which has the responsibility to develop a Transportation Improvement Plan indicating how FAUS funds shall be used. Other more general questions concerning the applicability of other Federal-Aid Highway System funding should be addressed to:

Federal Highway Administration  
400 7th St., S.W.  
Washington, D.C. 20590

### Federal Programs Outside of D.O.T.

**U.S. Department of Housing and Urban Development (HUD)** open space and historic rehabilitation have been used for improvement of pedestrianized streets.

**U.S. Department of Commerce Economic Development Administration (EDA)** funds local public works projects in areas of high unemployment.

**National Endowment for the Arts (NEA)** has funded planning efforts that included pedestrianization. This agency may also have modest funds for performances and events in pedestrianized downtown streets.







DEPARTMENT OF TRANSPORTATION  
URBAN MASS TRANSPORTATION  
ADMINISTRATION  
Washington, D.C. 20590

Official Business

PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID  
URBAN MASS TRANSPORTATION  
ADMINISTRATION  
DOT 511



DT-52F 4-13-77C  
SOUTHERN CALIF RAPID TRANSIT DIST  
GEN MGR  
425 S MAIN ST  
LOS ANGELES CA 90013

