

FRAMEWORKS

Leisure Activity

The expansion of Riverfront open space is meaningful primarily as it relates to the potential for providing leisure-time activity. Participation as much as conservation marks the objectives of MISSISSIPPI/MINNEAPOLIS. The greenway network should bring the waterfront on stage and flatter it with the City skyline as a backdrop, but it should also provide a variety of solutions to City resident boredom and focus visitor attention on the City's prime natural resource.

RECREATION

The river area would lend itself to substantial increases in numerous types of recreational uses. Direct water-related activities such as boating, fishing, rowing, and ice-skating should be encouraged. River edge spaces will provide opportunity for picnicking, bicycling, cross-country skiing, nature observation, and—primarily—for walking, hiking, running, and driving for pleasure.

Active sports requiring highly delineated spaces and hard surfaces, in which participants are not aware of the surrounding environment, do not suit a Riverfront location. These would include: tennis courts, baseball fields, golf courses, driving ranges, track sports, etc.

Even if the water quality of the Mississippi River were improved, most body contact water activities—including swimming and water skiing—should not be encouraged because of other conflicts and dangers which exist. The many lakes and swimming pools in the area are better suited to these uses. Wading in certain locations along the shore is bound to occur, however—particularly along the sand bars on the Lower River—and should be made as safe as possible.

The Riverfront is not best used for neighborhood playgrounds or parks. Special purpose play areas for children may be located near activity centers or housing developments, but should not be located on the lower bank unless extremely well protected from the water's edge. Recreational facilities which are part of residential development such as tennis courts, handball courts, or swimming pools do not inherently require Riverfront location and, therefore, should be kept within the residential complex.

Since separated pedestrian-bicycle pathways are the spine of the river leisure activity system, other support facilities should be primarily geared to them. Rest areas with shelters and benches, with rest rooms, first aid stations, telephones and refreshment should be integrated with the pathways.

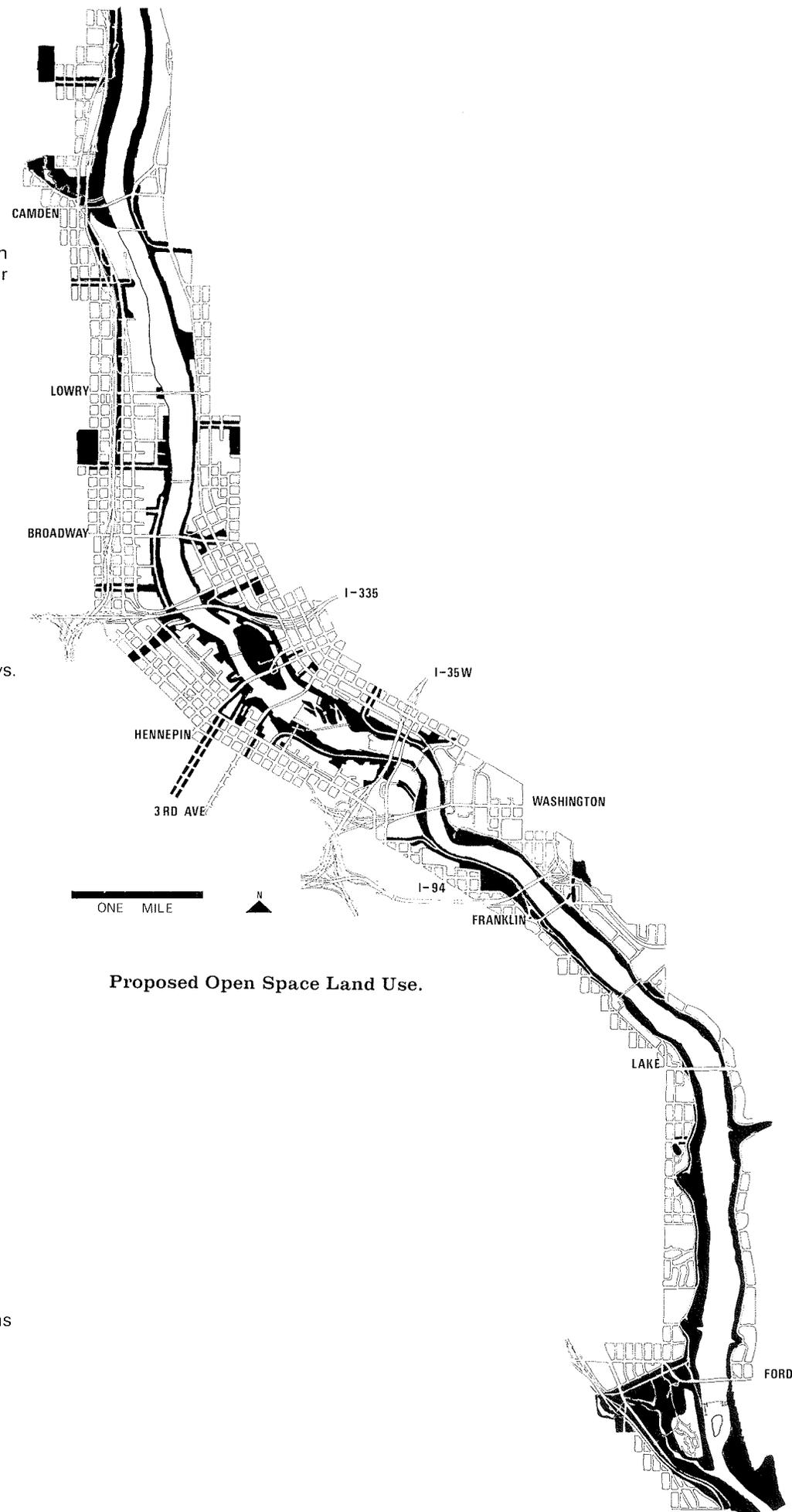
Rental facilities and racks for bicycles should be provided at key locations along the open space network. In certain instances special bicycle paths may be constructed for higher speed rides.

Picnic spaces can occupy parts of the greenway system at many locations. These facilities need not be large-scale picnic grounds, but can consist of many small picnic areas wherever the topography accommodates a few tables and accouterments.

The Riverfront plan proposes marinas of various types and scales at Boom Island, the mouth of Bassett's Creek, and the general area of the University Flats. At least one full service marina should be developed above and one below St. Anthony Lock and Dam. Not only dockage and storage, but boat rentals, bait and equipment sales, and perhaps seafood restaurants should be included in the marina facilities.

Smaller docking facilities may be situated near many of the activity areas along the river bank. Rowboats and canoes should have their own storage, rental, and dockage on the Lower River.

Fishing should be encouraged by the construction of separate docks, proposed in the plan for the area north of Camden, or with platforms





Ski-touring along the Lower River.

attached to other structures like existing bridges.

Recreational facilities must be geared to winter as well as summer use. Ice skating on Nicollet Island, cross-country skiing along the greenway, toboggan slides, indoor swimming pools and gymnasium equipment within residential complexes—a wide variety of passive and active recreation can be geared to the Minneapolis winter.

Consideration should also be given to planning for nighttime recreation. Appropriate lighting on parts of the greenways and around activity centers will greatly extend leisure-time activity.

Some forms of recreation are not top priority, but would offer exciting

potential for alternative development. Horseback riding from rental stables might take place along the Upper River bank from Shingle Creek to Fridley. And one-night tent camping for hikers, for instance, might be allowed City residents at a selected point or two along the banks. Caution must be used, however, to avoid impinging on the basic public pedestrian function of the open space system, or on other neighboring uses.

ENTERTAINMENT AND CULTURE

The contrast between the reality of the present and the potential of the future will be most noticeable as the Riverfront is galvanized to life by the culture and entertainment envisioned in the plan. Because of the existing

dearth of central Riverfront activity the fruition of even a fraction of district proposals would greatly expand enjoyment of the unique waterfront character.

The panorama of pleasures accessible to City residents and visitors on a typical summer evening could be as broad as the imagination. As suggested in district plans:

- Tour boats would stop at West Bank plazas, lock through the falls and proceed downstream.
- Moving or stationary "show" boats would serve meals, cocktails, and live entertainment.
- Old Town commerce on Main Street would invite strolling visitors to sidewalk cafes, restaurants serving ethnic foods, taverns, ice cream parlors, a beer garden, old-time movie theater, boutiques, and antique shops.
- Boom Island might offer colorful boat and people-watching from the windows of a seafood restaurant.
- Lourdes Square might have a folk dancing festival scheduled, with the many ethnic societies of Minneapolis congregating in their native costumes.
- Hennepin Square might schedule a children's puppet show next to a splashing fountain spraying colored light into the air.

On Nicollet Island an audience might gather on the curved steps of the amphitheater to watch a performance of Shakespeare in the Streets, staged before a double backdrop of theatrical set and City riverscape.

Other visitors to Nicollet Island might be strolling through the historic village, or stopping at the tourist information center where notice of river and city tours, entertainment schedules, special events, and maps would be available.

At the Gateway Cultural Center a Minnesota Symphony concert audience might spend intermission time wandering through an outdoor art exhibit, sheltered by a partial enclosure over the center's river edge plaza.

Teen night at the Riverfront East Community Center might be offering a combination of sports, games, and dancing for residents of the area.

Visitors to the Industrial Museum might stop at a river bank coffee house after their tour, before strolling up Hennepin Avenue to the heart of the Downtown entertainment district, checking a kiosk or posted directory map for the proper route.

On the roof of the Riverfront West Marina Towers, dining and dancing or just looking at the sparkling hues of City lights reflected in the river would fill several delightful leisure hours.

The range of leisure-time alternatives need not be limited to the summer season. In winter, one might dine within a greenhouse of lush flowers situated on Nicollet Island—to afterward ice skate on island canals, glance at the exhibit of ice sculpture, or relax in a Main Street pub. Alternative pleasures also might fit the brittle cold.

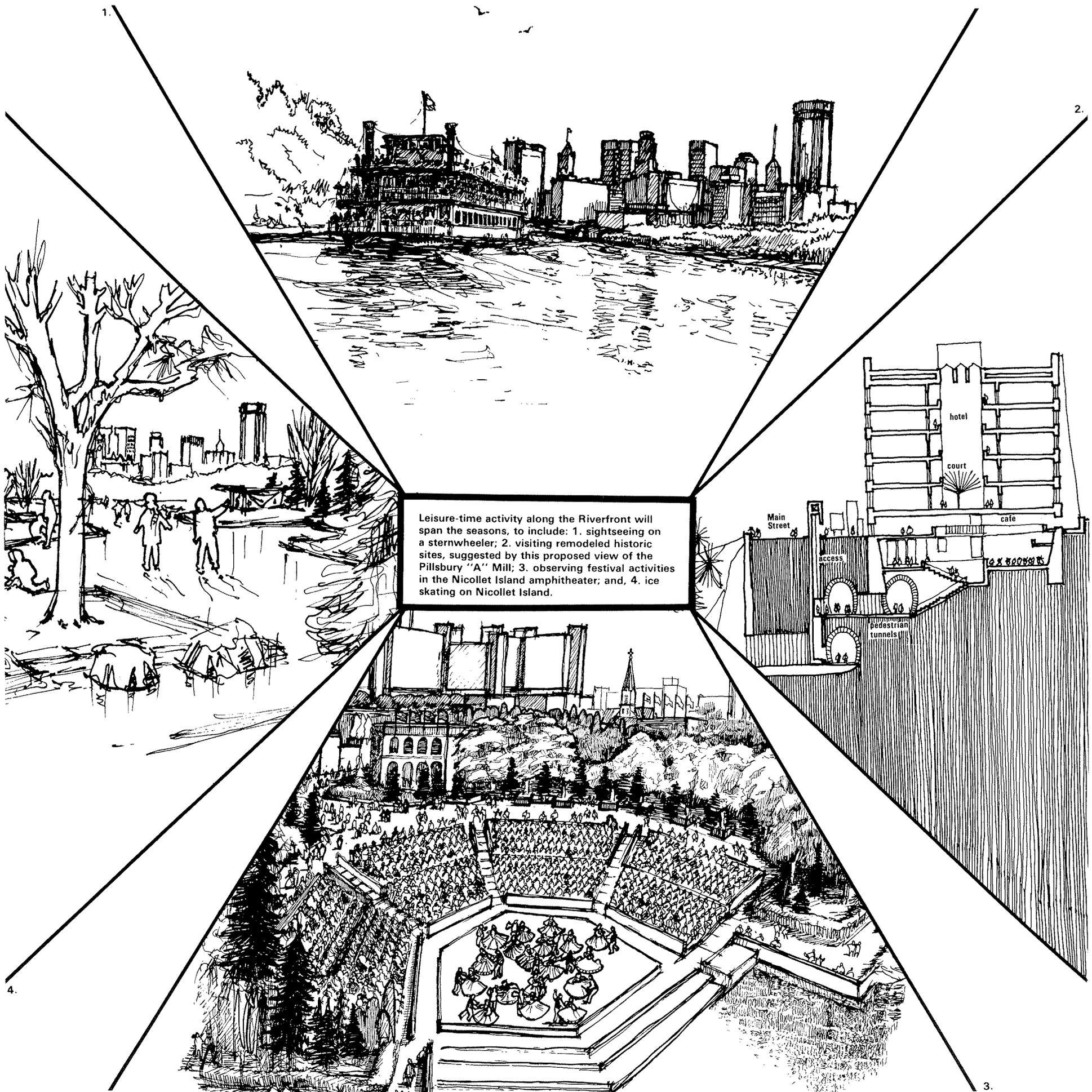
Some entertainment does not fit the river area, however. Light and sound shows, strip and burlesque places, movie houses, drive-in theaters, and drive-in restaurants cannot be accommodated within a framework of maximizing public benefit along the river. In general, however, opportunities abound for both private and public sponsorship of cultural and entertainment facilities within the unique Riverfront environment.

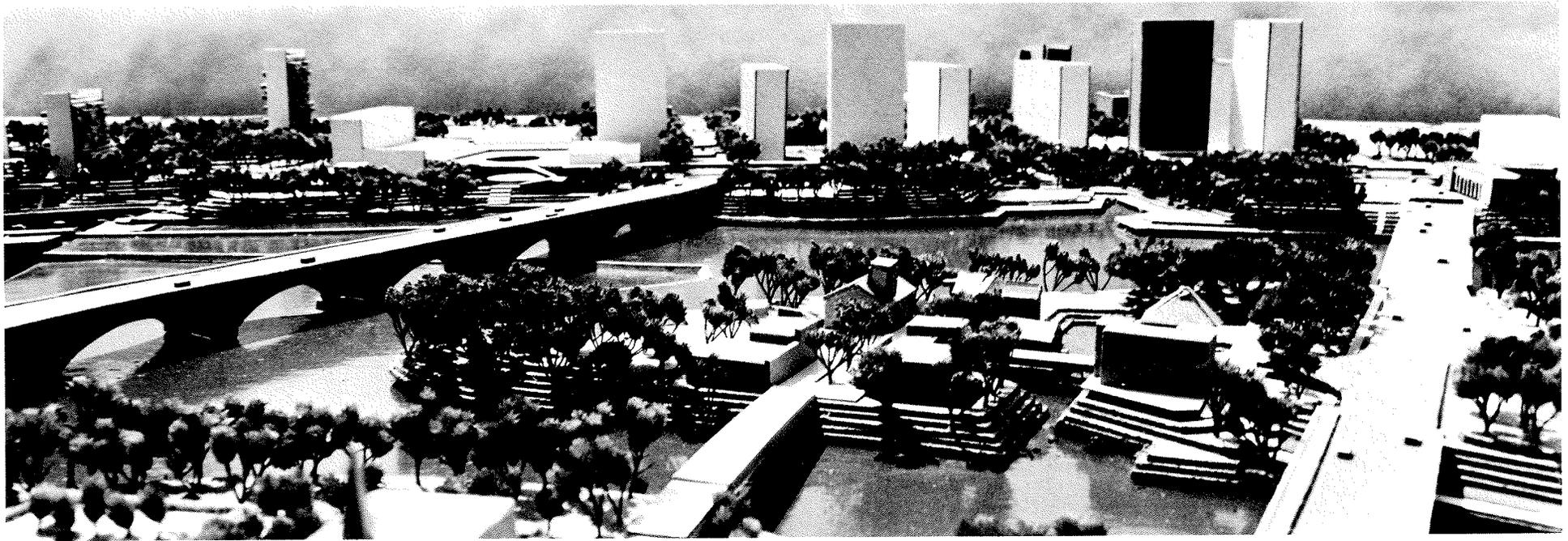
HISTORIC PRESERVATION

Visitors to Main Street will become part of a colorful re-creation of St. Anthony and Minneapolis in the mid to late 1800's; those visiting the lower tip of Nicollet Island should encounter, as a learning experience, a wide range of Minnesota history as mirrored in its architecture. In both areas, a primary objective should be to stimulate intense and varied activity within an historic setting.

Along Main Street existing historic sites, protected by Historic District legislation, may be owned and operated for commercial and other uses by private entrepreneurs. They would be combined with new residences, shops, restaurants, and tourist attractions appropriate to the setting.

Each of Main Street's historic buildings should be clearly labelled and described: The Pillsbury "A" Mill, Union Iron Works Building, 127 Main St., the Pracna Building, and Our





Existing buildings might be moved to Nicollet Island to supplement the few existing ones in a re-creation of an historic village.

Lady of Lourdes Church. The church parsonage, grain elevators, Stone Arch Bridge and Hennepin Island sluiceway should also receive adequate identification—both on tour maps and at the site.

A visual technique for leading visitors on a walking tour of historic sites might utilize a continuous pathway of bricks or cobblestones in the middle of streets and sidewalks along the route, which would lead along Main Street to Nicollet Island and on to sites on the west bank. Each special site should be set off from the surrounding environment by the use of adequate space and appropriately scaled and detailed adjacent buildings. A sensitive combination of old and new can be graceful and intriguing and can convey meaningful temporal relationships.

On Nicollet Island, selected examples of early Minneapolis architecture might be collected in an historic village incorporating an historic museum. Individual buildings within the complex would be publicly owned but might be rented to craftsmen and artists as studios in which works of art could be created, shown, or sold during specific hours.

Existing buildings from all over the City might be collected on Nicollet Island—the Ard Godfrey House now boarded up on Chute Square, the Stevens House now located on Minnehaha Park grounds, a couple of the Victorian houses from the upper

tip of Nicollet Island, perhaps one of the old city fire stations, and portions of stone buildings presently situated on the lower tip of the island. The opportunity to preserve historic relics by moving them to the Nicollet Village may be invaluable when they cannot be preserved by restoring them in their original locations.

In addition to use of existing buildings, the village might include reconstructions of a town hall and of some storefronts from St. Anthony's Hennepin Avenue in the late 1800's. Either a re-created town hall or an existing building like Dania Hall from Cedar-Riverside could be used as a museum, demonstrating with contemporary audio-visual techniques the course of Minneapolis history.

Patterns of Minneapolis growth—its development from Pioneer City to Milling City to Trade Center—should be made clear to visitors. Furniture, modes of transportation, and landscaping detail must be appropriate to the total historic experience.

The Nicollet Island village should appear not as a commercial amusement park nor as an assembly of fake structures, but as an adjunct to the Riverfront Learning Laboratory—a real, low-keyed, little St. Anthony. The primary use of Nicollet Island is public open space; the historic village should act as an activity focus within that broad and natural space and should not extend north of Hennepin Avenue.

The plan also demonstrates use of the Eastman Flats along with segments of DeLaSalle School or new, low-profile structures to house the main core of an Environmental Education Center. This small group of buildings should be placed midway on the island clustered around a recessed inlet, and divided by its difference in function from the historic village. It should also be planned to be complementary rather than competitive with island open spaces.

Historic landmarks and other prominent visual features of the City are important elements of urban form as they help people to spatially orient themselves. They must be carefully preserved.

All of the older bridges crossing the MISSISSIPPI/MINNEAPOLIS serve as historic landmarks for both residents and visitors. Unique buildings like the Grain Belt Brewery on the Upper River act in similar fashion as identifying features in the cityscape. Riverfront development should identify, incorporate, and foster clear identification of those landmarks which distinguish Minneapolis from any other midwestern city.

RIVERFRONT LEARNING CENTER

Our environment is the City. The plethora of influences affecting city

life and its continual evaluation can and should be made observable to each urban resident. Allowing both adults and children to sense the course of growth and change and the interrelationships of elements of the community would foster citizen participation in and identification with the City's future.

Along the Riverfront man-made and natural environments come together. Relationships between them should be described and explored in a Riverfront Learning Center where the history, present condition, and future possibilities of Minneapolis are graphically presented.

What could the Riverfront Learning Center offer?

A guide to Minneapolis history. Sound and sight exhibits could illustrate the geology of the Upper Mississippi, the native culture of Minnesota Indians, reconstructions of the original settlement, and graphic explanation of the sequence of forces which fostered development. Visitors would then proceed on a self-directed historic tour of Main Street and on to other major existing remnants of the Twin Cities past.

An urban observatory where the patterns of present day Minneapolis would be indexed and illustrated. A map of the existing City might cover

the floor so that visitors could stroll through the City summarily. Keyed to the walk-in map could be models and exhibits describing recreational facilities, medical facilities, social agencies, hotels, power-sewage-communications-transportation networks, school programs, industrial and housing areas (with type and cost of available housing and industrial space), and analysis of the way we use our money, land, air, and water.

□ A planning center where City plans and proposals would be introduced to the public, showing growth patterns for population, transportation, educational and recreational facilities—a view of the future subjected to public test.

□ A library of urban affairs, with space for community presentations.

□ A center for school children to learn about urban ecology, from which field trips along the river would originate. Using the natural laboratory of the Riverfront, the historic tour center, the urban observatory of today's affairs, and the planning center for tomorrow, school children could work on mapping projects, test the water—air—soils, figure out how a greater variety of fish and bird life could be tempted into the Riverfront area, and examine other cause and effect relationships between the past, present, and future.

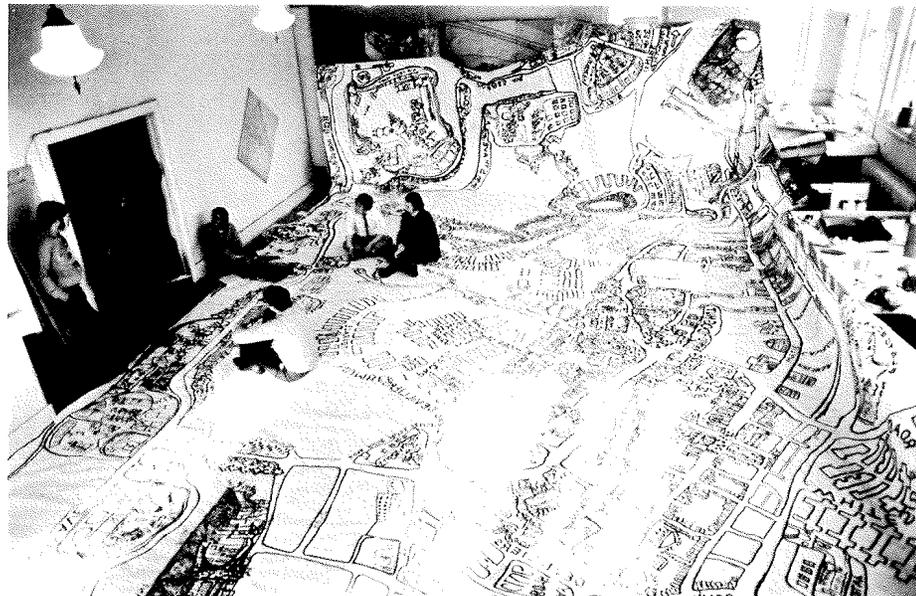


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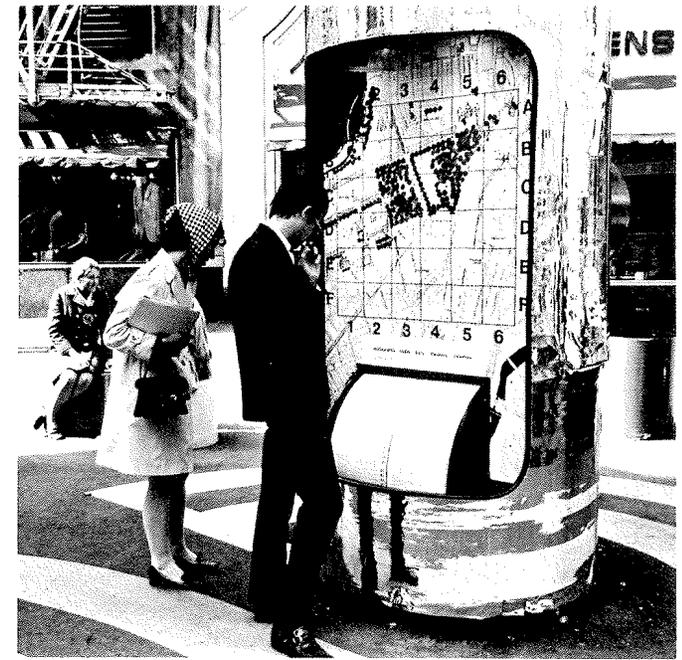
Elements of a Riverfront Learning Center might include: 1. use of the Riverfront as an outdoor classroom; 2. displays locating entertainment facilities throughout the City; 3. teaching machines responding to questions about the City; and, 4. a walk-in map graphically demonstrating the geography of the City.

Whether the learning center is located as one unit, perhaps on Nicollet Island—or divided into an urban observatory on Nicollet Island, historic center on Main Street, and an ecology center elsewhere on the river bank—the units should sufficiently close for high pedestrian interaction. All educational materials, exhibits, and spaces must be flexible—subjected to continuous change as the environment changes and the future blends into the present and past.

The newest techniques of visual and audio-communication should be used to embody the excitement of urban change. In the learning environment participation should be demanded from each visitor—perhaps by “dialing” relationships—between barges and boats locking through a dam and the lock capacity—between a school and the school-age population,

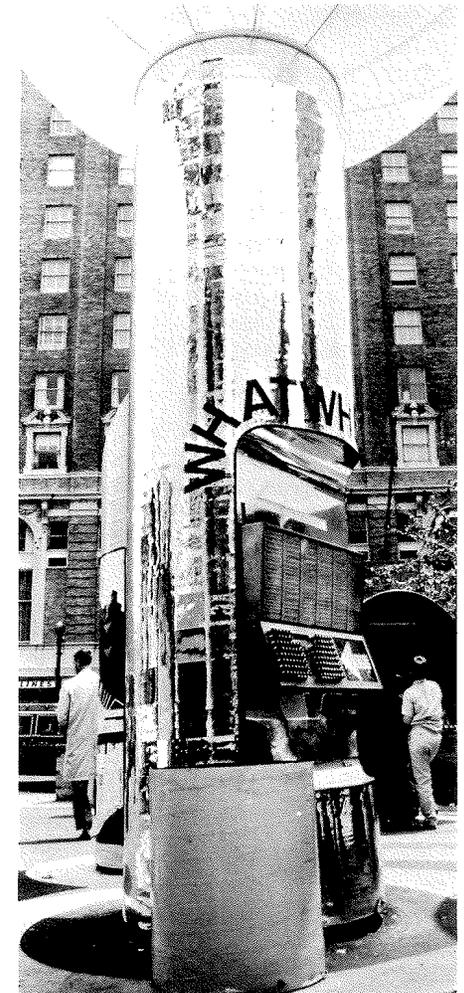


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or by responding to a survey on reaction to community programs.

Clearly the cooperation of all City agencies would determine the success of the Riverfront Learning Center in turning the river city environment into an effective learning environment.

HOUSING

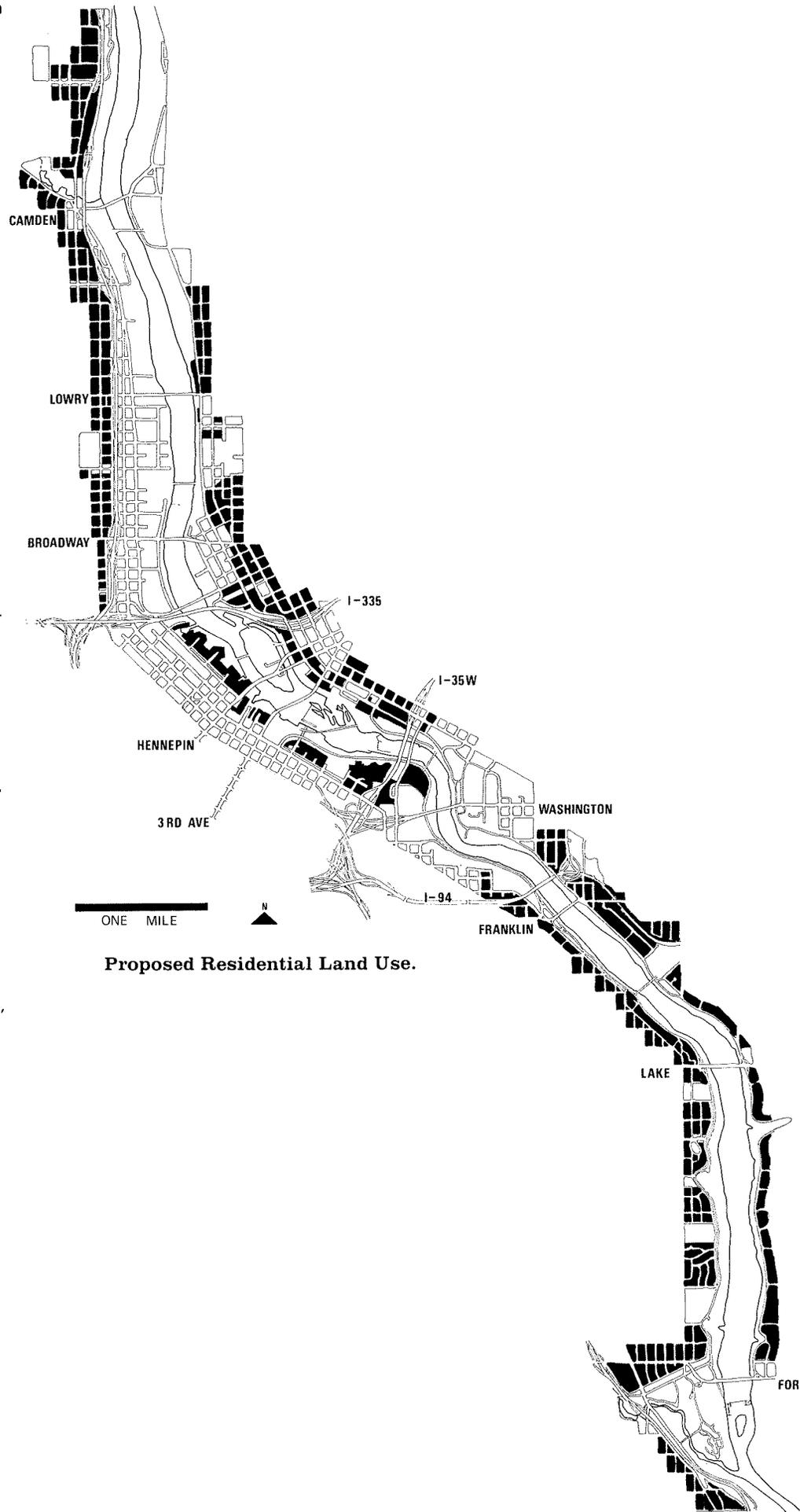
The common dream of living on the waterfront can become a reality on MISSISSIPPI/MINNEAPOLIS—watching the water's shifting reflections of the sky, walking out to join river edge or on-the-water activity, enjoying private and public open space, walking to work, to nearby shopping areas or to a concert, or paddling in a boat in front of your residence.

The Riverfront plan, in line with the concept that moderate to high density housing should surround high activity nodes, envisions the construction of 11 — 13,000 residential units in addition to those planned in the Cedar-Riverside area. The housing will be dependent in part upon unique opportunities for Riverfront activity, but the activity foci in turn, will demand the support of nearby residential uses.

Optimum housing development will come with the creation of completely integrated and balanced subenvironments. And some components of the subenvironment would be dependent on the housing such as recreation, office, and commercial activity. In several areas, notably Riverfronts East and West and Central Main Street, residential developments should be planned as relatively self-sufficient neighborhoods with all necessary services and amenities included within them. Provision should be made for safety and security, recreational opportunities, schools, restaurants, shopping, and personal and professional services.

New housing along the river should be broadly varied, oriented to the unique requirements of various life styles conditioned by age, family size, economic ability and other such pertinent criteria. All housing should be both socially and economically integrated with freedom of choice for all as one of the highest priorities.

Employment opportunities for Central area residents are plentiful—in the Downtown, Industry Square, the hospital complex, the University, the



Proposed Residential Land Use.

East Broadway district, and North Washington. Providing housing within walking distance or a short ride of all of these locations would be beneficial to the residents as well as to the City as a whole.

Large-scale planned unit development would be appropriate for Main Street, Riverfront East, Gateway, Riverfront West, and Cedar-Riverside. In addition, the plan calls for some new housing of a low and medium density in St. Anthony West and along Marshall Street on the upper east bank, and for limited high-rise development along with lower density dwellings in the Camden area. Scattered housing in industrial districts along the Upper River should be removed. And single-family housing adorning the parkways of the Lower River should continue to be protected from the incursion of other uses.

It will not be sufficient to provide housing only for those with middle to upper incomes. The mix of housing types in the river area should aim specifically at the production of at least some low-rent housing to provide for lower and lower-middle income families and individuals.

Higher construction costs and high mortgage rates have made low and lower middle-income housing difficult to finance. Federal and local assistance in land assembly and construction, low interest loans, rent subsidies and turnkey projects will be necessary. Every means of financing and constructing housing should be explored.

Experimentation with innovative design, development, and management techniques should be strongly encouraged. Recent and future innovations in pre-fabricated, quickly erected housing combined with assistance programs can make low rental units possible. An equal amount of housing should be developed, however, for purchase as for rental. Condominiums and cooperatives should also be included.

True variety in housing types should be sought. High-rise units, townhouses, garden and terraced units, stacked housing and combinations of these would all be appropriate in specific instances.

Residents of the Riverfront area should be able to find privacy in their

homes as well as participation in public activity outside. Even the patios and terracing as shown in the illustration can be accomplished with a degree of privacy. More than that though, low site coverage, good insulation between units, carefully designed room layouts so that apartment windows do not face each other—these and other aspects of sensitive architecture can assure privacy.

An even distribution of age range should be another important consideration in the more detailed project design. Families with small children may be attracted to medium density housing in St. Anthony West and Riverfront East. Elderly residents may

be particularly attracted to the high-rise housing along Upper and Lower Main Street, offering stunning views and ample space for strolling along the promenade. Single men and women working Downtown might prefer Gateway area housing or locations near Central Main Street. Playgrounds, community centers, and special programs geared to the needs of each sub-development should be provided.

The visual form and image of new Riverfront housing is an important element in MISSISSIPPI/MINNEAPOLIS. Each district should have a strong visual identity. Designed form should be coordinated to impress upon viewers from

either bank the image of housing embracing the river, leading around and into activity foci and setting off historic landmarks.

Residential use, although it may be allowed to spill over the upper edge of the bluffs, should not occupy the lower Riverfront areas below the bluffs.

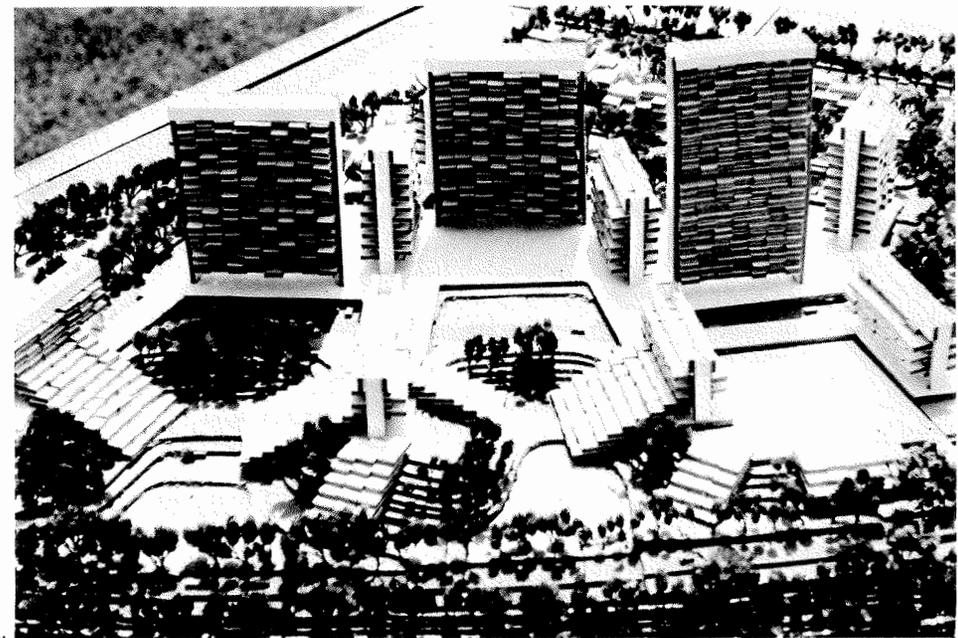
Housing units must be clearly separated from industrial development. Vehicular access should be efficiently and effectively designed to serve residential and other localized uses. Through-traffic patterns and excessive traffic should be prohibited from residential areas.

Planning for the Minneapolis climate will also play a large role in specific housing design. The sheltered, elevated walkway connecting West Bank housing to community activities; the covered mini-mall of upper Main Street are shown in the illustrations. Elaborations on the theme might include underground connections between high-rise buildings and transit stops, bus stop shelters, covered bridge walkways, and removable ceilings for terraced patios.

Climate controlling devices are of course quite fitting to the locale. At the same time, it must be recognized that the Riverfront is a more natural space than many other parts of the



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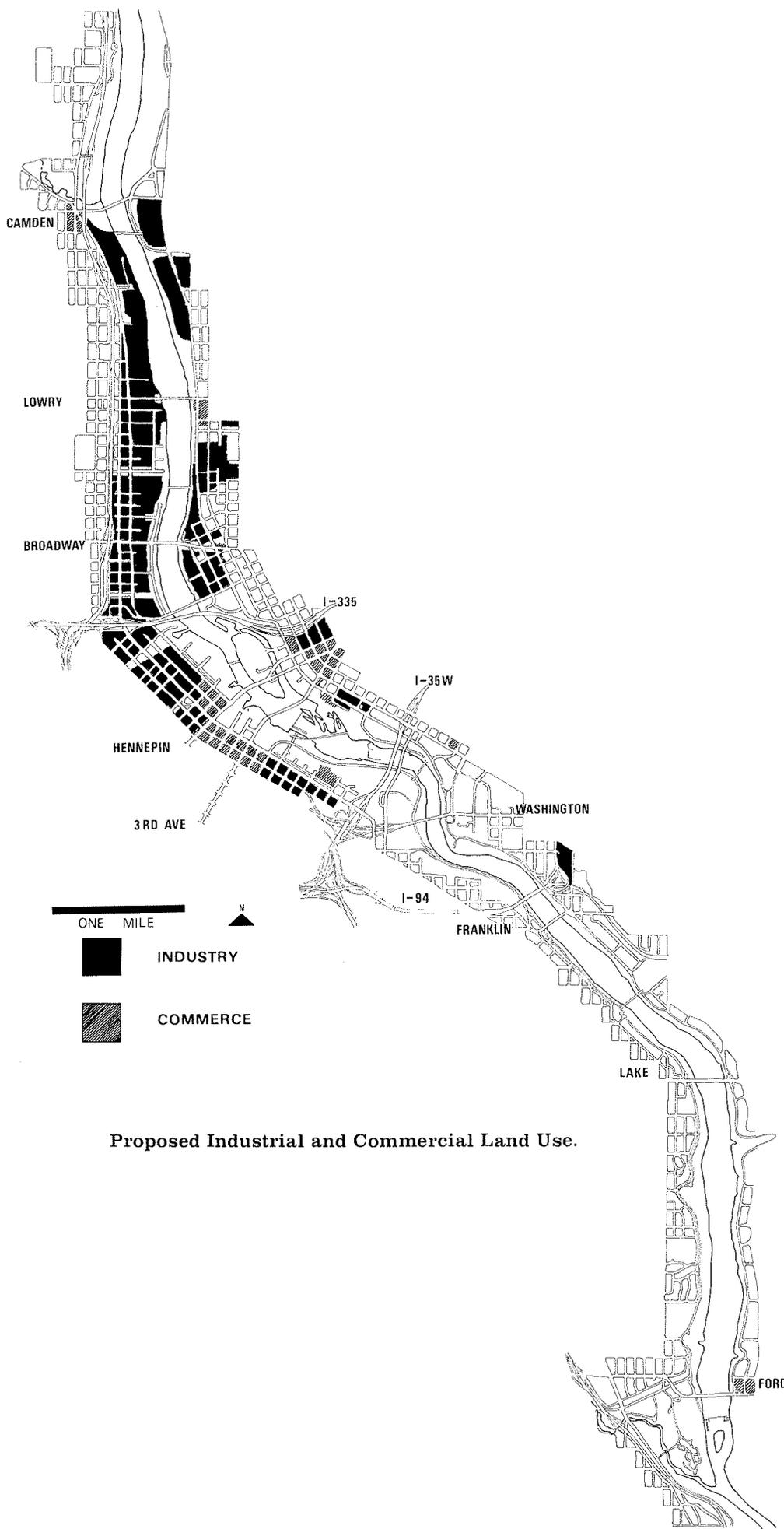


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Wide choice in Riverfront housing might include: 1. high-rise buildings; 2. terraced or stacked medium density housing; and 3. low-rise family-oriented units.



Proposed Industrial and Commercial Land Use.

City, a place where the elements are to an extent to be experienced, not to be glassed or cemented in or out. Total enclosure of spaces would be less appropriate here than in the more urban setting of the Downtown.

Industry and Commerce

The major Riverfront concepts propose that industry, warehousing, and excess railroad activity be removed from the Central Minneapolis Riverfront, and that industrial and related use in the Upper River area be consolidated and intensified. In addition the Comprehensive Plan provides for the consolidation and expansion of industry west of Washington Avenue in the Industry Square and North Loop districts.

Industry and commerce that require the use of the river for barging should have the highest priority for frontage along the Upper River. Industry with high employment potential, catering to the needs of area residents, should be encouraged to locate in remaining sites. Industry requiring proximity to Downtown for servicing or marketing should be encouraged to develop in the Industry Square, North Loop, or lower North Washington districts.

Along the Upper River area, spaces appropriate to contemporary industrial needs can be created by removing obsolete and unproductive industrial plants, by eliminating unnecessary streets, and by planning and designing for higher flexibility in parcel size—thus affording an expanded choice of sites. The railroads should be encouraged to release any unused land for new development. Various types and methods of industrial land ownership, management, and development need be explored and applied, including necessary public assistance.

Vehicular access to improved industrial areas for workers and clients, pedestrian access for workers where needed, and service access for delivering and receiving materials should be strengthened.

Industrial “incubator” facilities—multiple-use spaces where entrepreneurs initiating new industrial processes can begin a business—should be made available. Assistance should be offered in the relocation and consolidation of similar type uses. Consolidating existing junk yards, salvage yards, and scrap processors into one recycling center would, for instance, increase long run efficiency and bolster the industry’s image and identity.

The City should continue to improve its Municipal Terminal facility to meet the river transport needs of industries which lack river frontage.

The changing nature of industrial development will be made obvious along the Upper River when the chaotic and often unkempt image of manufacturing is replaced by order and attractiveness—similar to that of buildings along Minneapolis’ Industrial Boulevard. Design and performance standards and planning assistance will be required, however, to optimize the potential.

- Physical space relationships of industrial uses should be more thoroughly explored, including such possibilities as clustering or stacking buildings.
- Modular construction and functional grouping of industries should be encouraged to permit expansion, flexibility, and economy of operations.
- Where advantageous, the use of air rights above railroad rights-of-way should be utilized.
- Off-street parking and loading areas should be provided by every industry or group of industries.
- Industrial sites and structures should be designed with all exposures in mind, instead of the often-found clean front and dirty side and back yards. Industrial “back sides” when they must exist should not be oriented toward the river.
- All new or relocated auto salvage, junk and scrap processing operations of less than three acres size should be required to be entirely within enclosed buildings. And those operations that are greater than three acres in size should be carefully screened from view.
- Acceptable noise level standards and air pollution controls should be firmly enforced.

□ No signs except those attached to the related establishment and advertising that industry's name and product should be allowed. Security lighting of outside areas should be directed so as not to produce unnecessary glare.

□ Industrial districts should be clearly buffered visually and audibly from residential and other uses by distance, as in the case of Washington Avenue near the Downtown, or by berms, green screens, and attractive walls and fences in other areas.

A number of needed amenities should be incorporated into industrial areas for employees and visitors. The river area offers prime opportunities for both indoor and outdoor recreation space, and for places to eat or relax on lunch or coffee breaks.

Linkage to shopping and service facilities should be provided, consistent with necessary and desirable levels of service, in or near industrial areas. Multi-purpose centers could be developed in the larger industrial areas, containing space for job training, counselling, and child day care.

Commercial enterprises in any area along the river should be those that are required by activities in close proximity.

As demonstrated in the Upper River area, commercial services supporting residents and workers within a district can be defined as river-area related. Other Riverfront commercial uses would include special facilities for recreation, entertainment, and tourist activity as shown in specific areas.

No proper place along the river can be found for large scale commercial-retail activity or highway-oriented activity such as auto dealerships, large furniture stores, department stores, gasoline service stations, or discount houses.

Commercial activities which would be appropriate to much of the Riverfront would be eating, drinking, entertainment, and marina facilities. Where the character of historically significant buildings provides a base, boutiques of various types including cheese and wine shops, ethnic food shops, contemporary furniture studios, antique dealers, art galleries, bakeries, and import shops may be combined with restaurants and

entertainment to form a special interest area. In open space areas, indoor-outdoor cafes or river boat restaurants and entertainment or snack bars may be judiciously located for pedestrian use.

As described in the Illustrated Objectives, the Main Street complex and the Gateway Center would contain a variety of specialty shops. Commercial nodes of varying scale at Camden, Marshall Street and Lowry Avenue, Riverfront East, Riverfront West, Eastgate, Cedar-Riverside, and Dinkytown would primarily serve district residents.

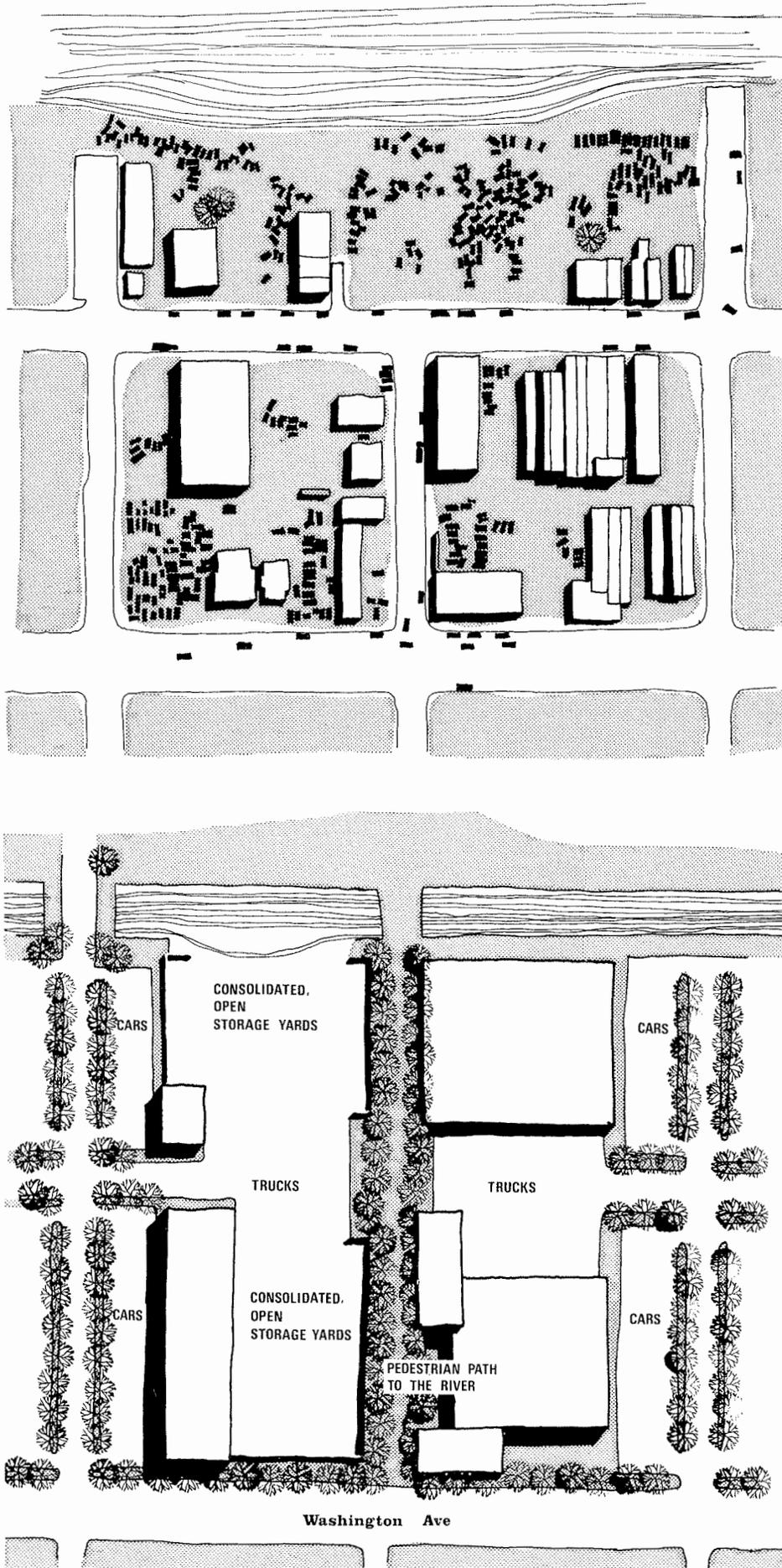
Movement

"You can move Mohammed to the mountain, but you can't move the mountain to Mohammed." However exciting leisure-time activity is along the Riverfront, visitors will be repelled rather than attracted if the route to the river is difficult to find—if, once there, one has to wait and compete for a parking space—if thoroughfares are blocked by traffic or other barriers. Freedom of movement to and along the river for both pedestrian and motorist is essential to the plan. As activities develop, the movement system must adapt to the growth and change.

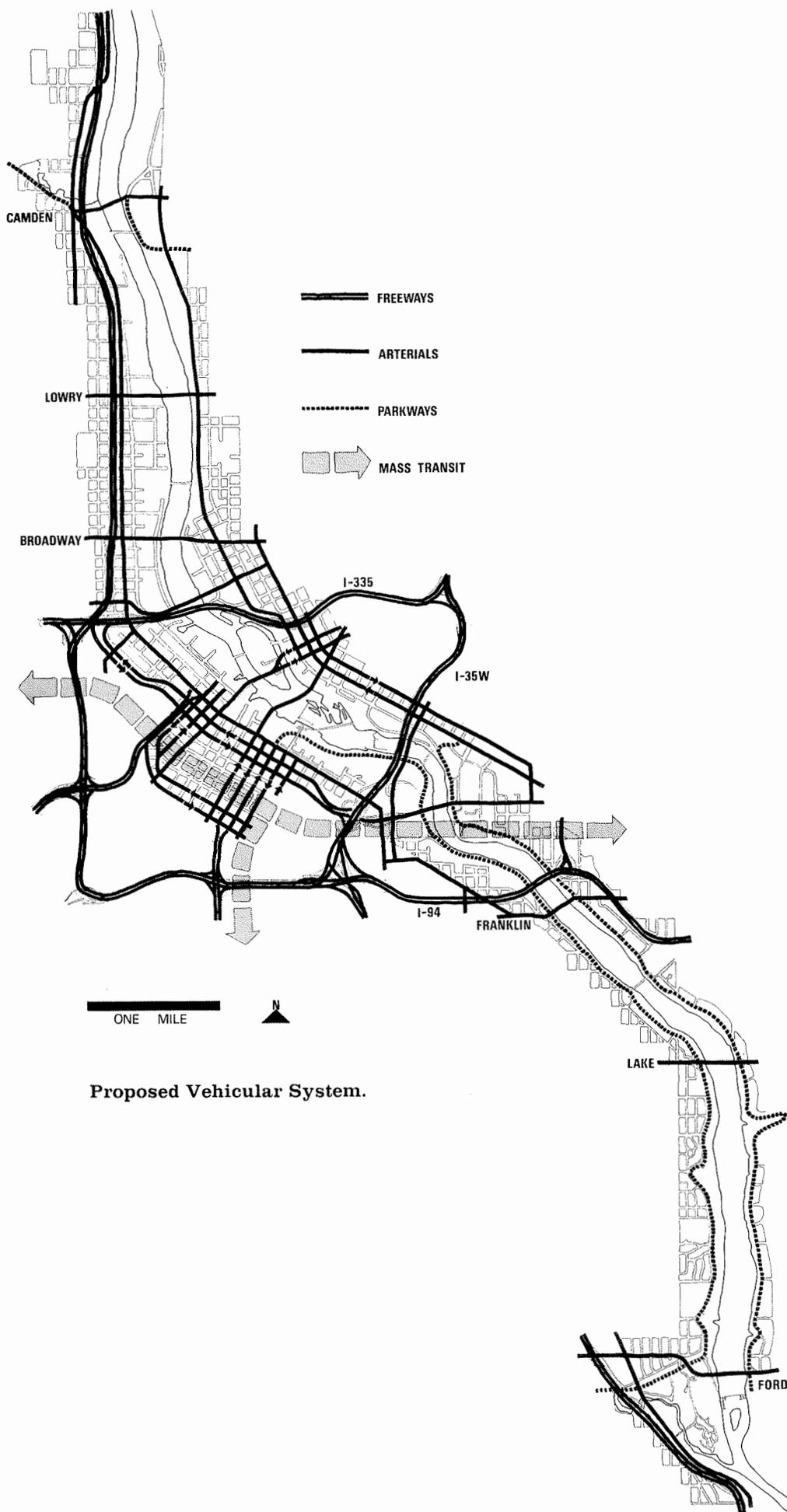
THE VEHICULAR SYSTEM

Without efficient vehicular access to all major uses on the river such as industry and housing, and without access to parking within walking distance of pedestrian activities, few of the concepts for river development would be tenable. On the other hand, non river-related activity patterns on a city-wide scale must be able to function effectively without being blocked by the river as a natural barrier.

Traffic arterials and collectors should be designed for specific purposes. They should be distinguished by width, design detail, and signing. Collector streets should be designed so they cannot function as through-streets or high speed roadways. Insofar as possible the river edge should not be used for any kind of freeway facility.



Short streets can be vacated, parking and loading facilities organized, and stored materials covered or screened on industrial sites.



Proposed Vehicular System.

Easy vehicular access between major activity centers on the river and the freeway system should exist and should be adequately identified. A unique pictograph or color might be used for all river-related signs which should be part of a comprehensive design scheme. Gateways and windows to the river should be distinguished by landscaping and outdoor furniture as well as by sign design. Directions located at frequent intervals throughout the Central River area and maps available through visitor information centers should clearly show major routes for public and private vehicles to the Riverfront and the location of parking areas.

Parking lots should be eliminated along the entire length of MISSISSIPPI/MINNEAPOLIS. No parking should be allowed on streets, in open lots, or in large parking structures that are on the immediate river banks or are easily visible from the river. On the other hand, adequate parking space for visitors to the Central River area should be found within relatively close proximity to activity centers. Multiple-purpose parking facilities—ranging from ramps to underground parking to surface lots should be integrated into the development of the Central area. Where parking is necessary, screens, planting, berms, or walls should be used.

Standard parking rates should apply throughout the Central River area at least, allowing for several hours worth of time on each meter. And parking should be well lighted and policed to provide safety and security to users.

Streets leading into residential developments must not encourage through-traffic. They should be designed to lead only to parking facilities for residents.

Truck routes should bypass the Lower and Central Minneapolis Riverfront. Along the Upper River, the routes must provide easy access to and from the freeway system, and adequately service industry and commerce in the area. Truck routes should lead as directly as possible to the industrial-commercial areas, but should be completely separated from residential areas.

A number of short streets in several locations along the Upper River can

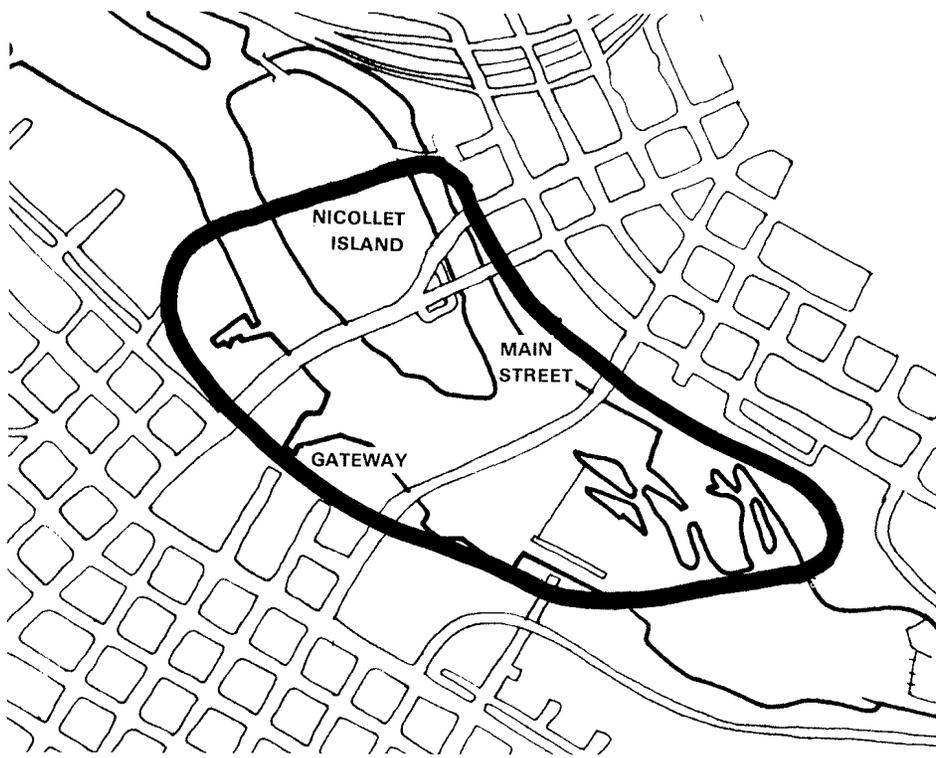
be vacated to allow for larger industrial lots. Unused sidewalks in the industrial area should be removed.

New approaches to loading, unloading, storage, and containerization should be accommodated. Loading hours in the Central area might be restricted or staggered to avoid interference with potential tranquillity at certain times of the day. Along the Upper River, off-street loading facilities should be accomplished by moving trucks onto plant sites along with employee and visitor parking.

In addition to industrial-commercial truck service, maintenance vehicles will require special service access to properly meet district needs. Screened parking for service vehicles along with pathways which avoid low clearances, sharp curves, or other vehicular hindrances will be necessary.

The Riverfront plan allows for the creation of a new loop tangent to the parkway system to increase the scenic pleasure of Riverfront vistas for motorists. As described in the University and Central district plans, the West River Road should be extended from its present terminus in Cedar-Riverside along the bluffs to Portland Avenue in the Central River area where it would connect with Washington Avenue. Motorists would thus have easy access from the Parkway to the Gateway area, and could proceed from there across either the Hennepin Avenue or Third Avenue Bridge to 2nd Avenue S.E., in turn connected to an extension of the East River Road which skirts the University East Bank campus. Connecting the Parkway to the Downtown will open up views of the St. Anthony Falls area and the lighted Central City skyline. Turnout screened parking areas should be provided at intervals along this West River Road extension.

Another form of general access to the Riverfront may come with development of a metropolitan mass transit system. A primary system will probably cross the river only at two locations, one in the vicinity of the University and another near the Downtown. It cannot be expected to serve much of the Riverfront directly, but would, however, deliver people from outlying parts of the Metropolitan area to within walking



1. Proposed Central area transit loop.

distance of the activity foci along the river.

To preserve the quality of the river environment every attempt should be made to place mass transit river crossings either under the river bed or on existing railroad bridges.

On a secondary level, however, a unique Central area Riverfront loop system may be both necessary and desirable. Such a system could proceed upriver through the Gateway, across Nicollet Island and along the East Bank returning to the Downtown via the Stone Arch Bridge. It would be both practical and scenic.

This central transit loop should run above ground—not as a subway—to take full advantage of the scenic value. The transit vehicles should be relatively slow-moving, small scale all-weather vehicles. Rubber-tired or on rails, the vehicles may be elevated, built into the river bank or on grade, whichever is complementary to the immediate environment.

The river loop system should have scheduled stops at such places as the Cultural Center, Gateway, Industrial Museum, Nicollet Island, and Upper, Central and Lower Main Street and should connect with both the major mass transit system and the Downtown

people mover. The incorporation of comfortable, weather-controlled stations would also be important to the success of the system.

Whether or not such a central river loop system is developed, the Metropolitan Transit Commission (MTC) bus system should service several specific parts of Riverfront area.

On the Upper River, bus service would deliver employees to river edge industries. Clearly, improved bus service would be needed to serve Central and University area growth, including specifically links to the Downtown and the University. The short rides, augmented by walking in good weather to the wealth of jobs, shopping, entertainment, and recreation in close proximity will undoubtedly result in greatly reduced auto use and ownership by those who will reside in the area.

Much of the planning for the river area transit, as for many other facets of Riverfront development, is dependent upon change in existing railroad land use. Although it is less likely that the railroads will implement major shifts in their use of main lines or other critical elements of their operating system, removal of unused trackage, relocation of passenger terminals, and assignment of unneeded railroad bridges to different uses will, one-by-

one, improve the opportunities for fulfilling Riverfront objectives.

In particular, the elimination of industry along the central Riverfront will mean removal of numerous industrial spurs which have inhibited both pedestrian and vehicular movement. Significant attention should be given to overcoming the separation of the Downtown from the river caused by passenger and freight lines which run along the West Bank. In addition to redevelopment of unused railroad land, multiple usage of necessary main line rail facilities should be encouraged. Use of air rights and subterranean rights over and under the tracks may in some instances be desirable.

PEDESTRIAN MOVEMENT

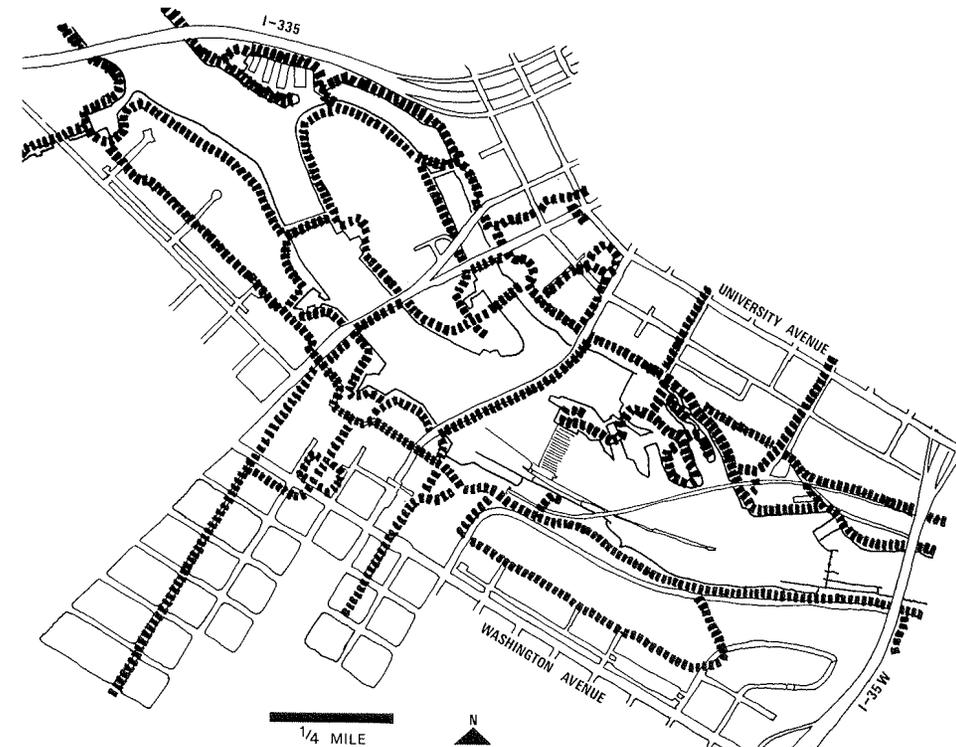
An endless variety of visual experience will await the pedestrian once he arrives at the Riverfront. The linearity of space and the continual motion of the river itself—these and other factors form the basis for a series of moving or kinetic images as one strolls, hikes, or cycles through the area. To explore the potential for variety a linear

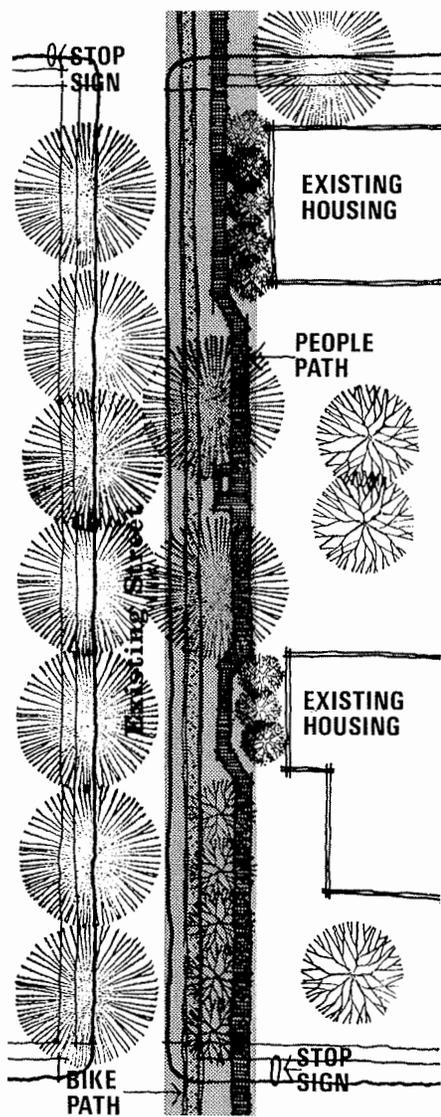
greenway system providing a choice of routes is a necessity. Unimpeded access to all MISSISSIPPI/MINNEAPOLIS activities will be gained from the greenway-window-open space network. Where river pathways in the Upper River section would otherwise be blocked by river-related industry, alternative pedestrian routes skirting the industrial site are possible. Windows from nearby inland residential or open space areas should be utilized, as shown in district plans, to provide fluid pedestrian access from such areas to the river.

Segments of the Riverfront greenway system should vary—from low-keyed, soft surface paths in rough, naturally wooded areas to manicured, landscaped, architecturally enclosed, high-keyed, hard-surface walkways or promenades in the more urban areas. The trails will at points be narrow, cozy, and intimate, and in other places be broadened and oriented to greater social interaction.

Personal security measures should be well developed in all pedestrian areas. Adequate lighting is essential to many pathways; other areas can be closed at certain hours. Where the bank drops off sharply at the edge of a path or stairway the use of railings should be employed. Ramps near hard-edge areas and in certain other locations will serve people using

2. A broad choice of pedestrian routes will characterize MISSISSIPPI/MINNEAPOLIS.





1. Where the river's edge is blocked to pedestrians, separated pathways along inland streets should connect links of the greenway system.

carriages, wheelchairs, or bicycles. Special care should be taken to scale steps and ramps in promenade and plaza areas to the capacities of the elderly. Enclosures, awnings, or overhead heating units might be located to counteract the elements on any hard-edged plazas where year round activity is feasible.

Bicycle paths should be clearly separated from pedestrian trails, either physically or through the use of pavement design and color. Where separate paths cannot be constructed, a clearly painted bicycle lane might be marked at the edge of an adjacent roadway. Bicycle routes should stretch the length of the MISSISSIPPI/MINNEAPOLIS greenway.

Conflicts between pedestrians and motorists must also be avoided. In most

cases, physical separation will be complete. But in remaining crossings pavement patterns, curb markings, posted lower speeds for vehicles and signing features can be used to direct pedestrian traffic and to warn motorists.

The signing system, later described, is all important in facilitating pedestrian movement. Directions to rest areas, activity areas, to and from the Riverfront—posted information about current functions—a signing system which clarifies confusing detail and adds visually to the life and color of the area will be needed.

BRIDGES

Vehicular bridges should be built or rebuilt with adequate pedestrian walkways. New bridges, whenever possible, should be developed for multiple use by private vehicles, public transit and pedestrians. Attaching platforms and pedestrian walkways to railroad bridges may be possible even before the railroad use is phased out.

Pedestrian access to bridges from the river edge should be improved—perhaps using ramps or spiral staircases. Design of bridge structures should include

the design of pedestrian and bicycle paths passing under either end along the river bank.

The arched forms of several older bridges crossing the river provide some of the best examples of architecture in the City. These forms should not be destroyed. Bridge rebuilding should place heavy emphasis on the retention of form and detail, including such factors as color, railing detail, and lighting.

The undesirable side effects of salts used during the winter to remove ice should be reduced through the use of less corrosive chemicals.

Planned construction of new bridges should be scrutinized so that cohesive land use districts will not be divided, so that obstruction of river vistas will be avoided, and so that design detail will blend into the environment.

ON-WATER MOVEMENT

Both recreational boating and commercial barging will steadily increase in volume through the implementation of the Riverfront plan. Marina development at the University Flats, Boom

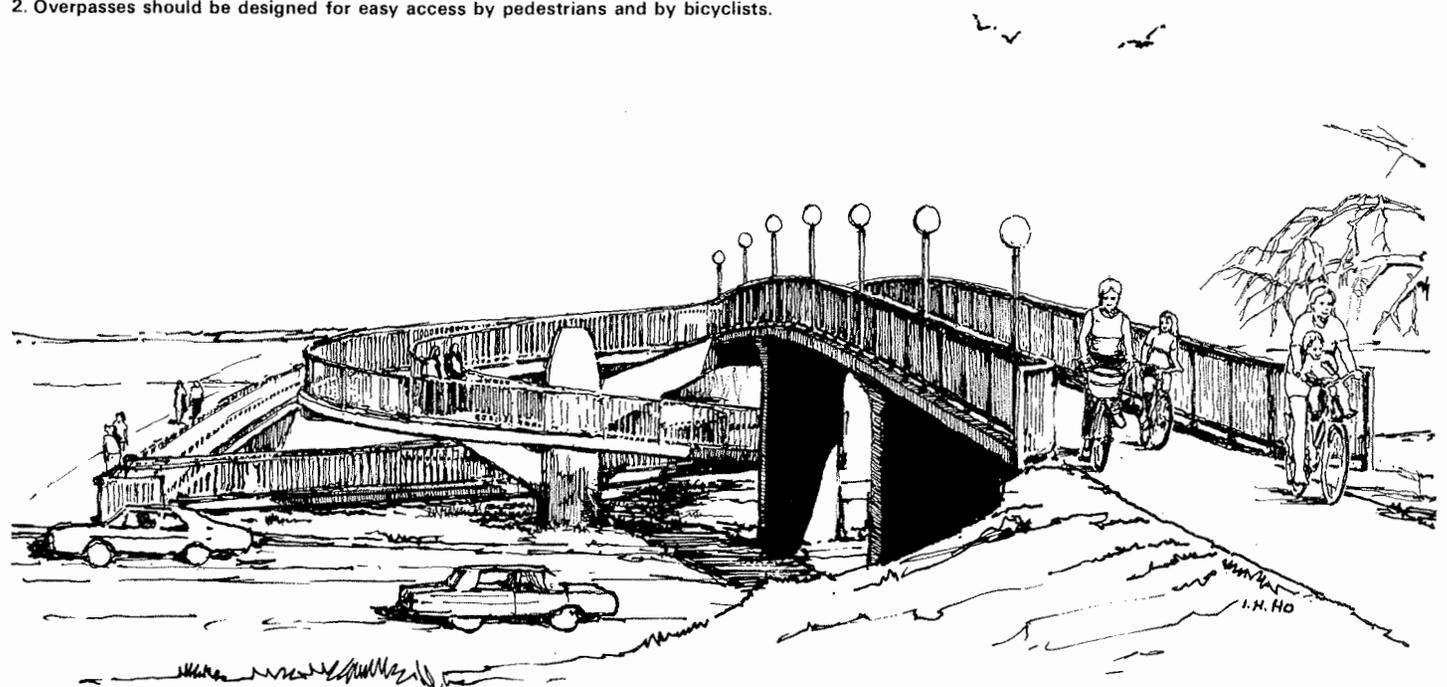
Island, and Bassett's Creek will facilitate storage and use of both privately owned and rented power boats. Short term dockage and access ramps situated near other major activity spaces will encourage additional use of small motor boats, canoes, and rowing shells. And hard-edged pools shown in the Central river area will provide dockage inlets for larger river boats to stop and pick up passengers.

Along with the growth of recreational boating will come increases in commercial barging reinforced by allotting river frontage to river-related industries along the Upper River.

Accommodations for increased boat traffic will need to be continually reassessed and adjusted. Recreational boats must now wait outside the three sets of locks along MISSISSIPPI/MINNEAPOLIS while barges pass through. Summertime water traffic envisioned by the Riverfront plan will demand a creative solution to the locking problem.

Portage ramps for small, light boats can be constructed on the East Bank to skirt the St. Anthony dam. A mechanized lift or sling could be installed to raise, shift, and lower medium-sized recreational boats around each dam. Certainly technology can thus provide effective solutions for channeling increased traffic volume as it occurs.

2. Overpasses should be designed for easy access by pedestrians and by bicyclists.



A police water patrol may also be required by the increased boat traffic—to watch for accidents, to require observation of posted speed limits, and to spot polluters. Such a service might assist in trash pickup along the portions of the river edge that are inaccessible to other service vehicles.

Environmental Quality

Improvement of environmental quality must occur before the quality of Riverfront life can improve. Present levels of water, air, solid waste, and noise pollution were described earlier in the report. It was there made clear that improved air quality is contingent not upon Riverfront activity but upon wider progress in research, funding, and administration of air pollution control programs. In the fields of water, solid waste, and noise pollution, however, specific proposals can be made for improved environmental quality along the Mississippi in Minneapolis.

WATER QUALITY

We must run fast just to stand still in controlling water pollution. Improved methods of sewage treatment barely keep pace with the growth rate of population and waste. Despite the fact that the Mississippi in Minneapolis is relatively clean in comparison with rivers in other major cities, revitalization of the Riverfront will require upgraded water quality. Action to diminish coliform levels and visible floating wastes must be continued if citizens are to be attracted to increased residential and recreational use of the river banks.

Implementation of the following recommendations based upon the aforementioned depiction of the waterway would substantially improve Mississippi water quality:

- The City should commit the necessary financial resources to complete its sewer separation program as soon as possible.
- The City should consult with federal, state and metropolitan agencies and researchers to determine

the feasibility of reducing river pollution from storm sewer outlets. Can screens, settling areas, or other primary treatment devices be fitted into the storm sewer system to reduce the magnitude of pollutants derived from urban runoff? Is there a minimum maintenance device available?

- Dumping snow into the river which has been removed from city streets and which carries with it sediment and other foreign materials should cease. Alternative dumping sites should be found.
- As pleasure boat traffic increases on the river the City should take action on boat toilet and marina regulations to eliminate polluting effects.
- Stringent regulation, guided by creek watershed districts, of outlets feeding pollution into Bassett's and Minnehaha Creeks and through them into the Mississippi, should be encouraged. Use of phosphate fertilizers and other polluting chemicals along the banks of City lakes and creeks should be curtailed.
- Barge washing operations should be carefully regulated. And release of petroleum products and other chemicals from boats using the river for pleasure and commerce should be controlled.
- Support and encouragement must be given to metropolitan, state,

and federal programs affecting upstream sources of pollution. Both reduction of agricultural pollution and further improvement of upstream sewage treatment plants become legitimate concerns of the City of Minneapolis as effluent from these sources reaches our City limits. Officials and citizens share the responsibility to press for upgraded effluent standards, for strict enforcement of pollution control regulations, and for additional research in pollution control technology.

Water pollution control is a frustrating business. One cannot isolate the task to MISSISSIPPI/MINNEAPOLIS if the river, when it reaches the City, has risen from a 20,000 square mile watershed. Nor can one easily isolate the proper governmental agency to take control initiative when jurisdictions of many agencies overlap.

Four public agencies have water pollution enforcement authority—the federal Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers, the Minnesota Pollution Control Agency (MPCA), and the City of Minneapolis. The EPA and the MPCA also establish river water quality standards. Four agencies sample the river for water quality—MPCA, Metropolitan Sewer Board, Minneapolis Water Works and Minnesota Department of Health.

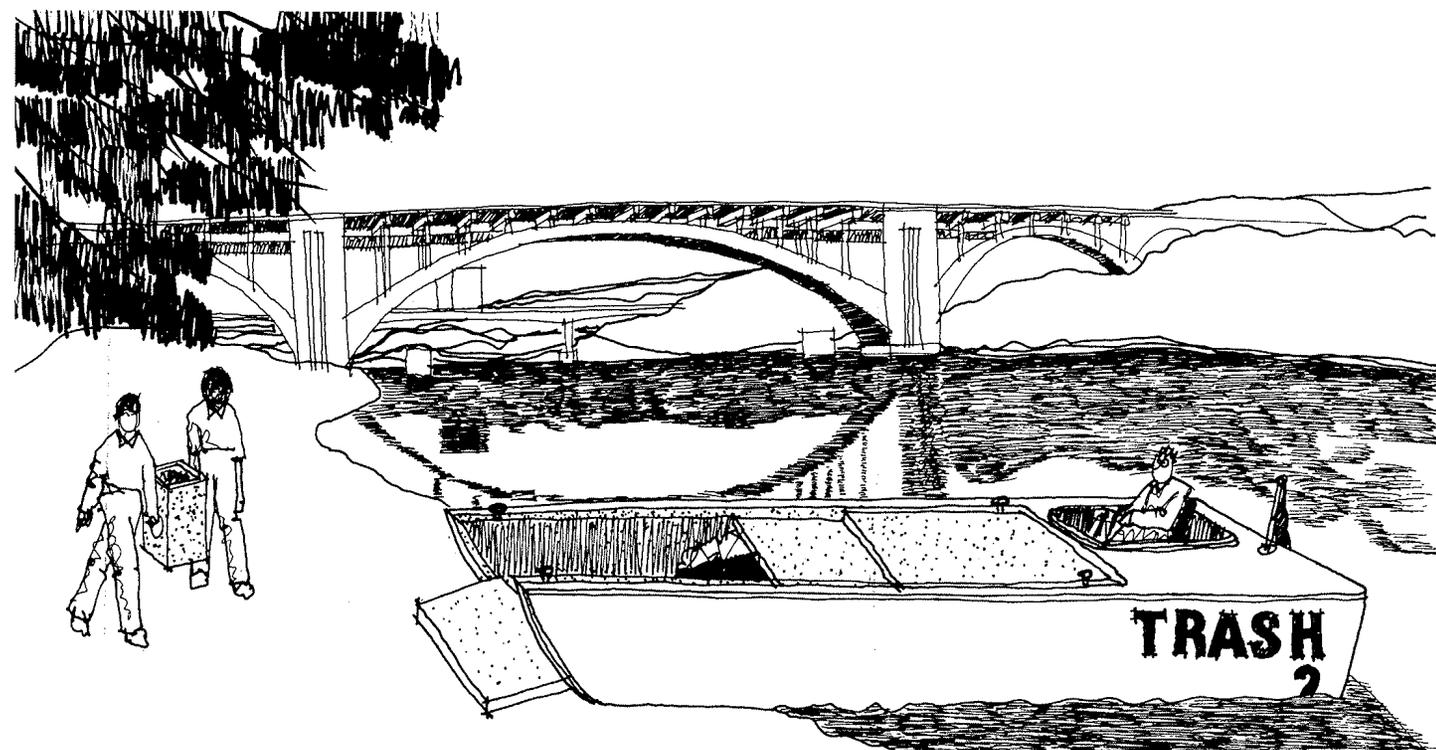
Two agencies monitor river quality—EPA and the Metropolitan Sewer Board. Three agencies analyze river samplings—the Metropolitan Sewer Board, the State Department of Health, and the Minneapolis Water Works Department. Two agencies have pollution control construction responsibilities—the Metropolitan Sewer Board and the Minneapolis Public Works Department, Sewer Division.

Wasted time and money result from such duplication of functions. For example, one coordinated sampling system using one laboratory could channel money wasted in duplication to a new sampling program at more locations, testing more parameters on a daily, monthly, and yearly basis.

Costs of comprehensive pollution control are huge. More financial relief must come from the federal government for expensive research programs and for pollution control equipment construction. The present federal subsidy for sewer construction is only 30% compared to 90% for freeway construction. A more realistic figure of at least 50% subsidy should be sought.

But criticism of administrative organization and federal financing levels will not by itself upgrade water quality in Minneapolis. Though our City is fortunate to lie along a relatively unpolluted stretch of the Mississippi, sources of pollution are found within the City

Trash collection along the river flats might best be handled by boat.



limits. Minneapolis must take the initiative to eliminate those sources, as well as to push for more upstream control by other governmental units. New life for the Riverfront and a healthier City will result.

SOLID WASTE

The City should enact a stringent no-litter ordinance and launch a public education program to increase awareness about the costs of litter. Trash containers should be distributed at frequent intervals throughout the City and Riverfront area to facilitate a successful no-litter program, and the City's street sweeping program should be upgraded.

A major river bank cleanup should take place, with citizens and City agencies cooperating to eliminate all of the junked equipment and piles of solid waste along the City's waterfront. New state legislation subsidizing removal to junkyards of abandoned motor vehicles, paid for by a tax on the sale and transfer of motor vehicles, should eliminate the abandoned autos along the river bank in the future.

Reduction of river bank litter, now swept from the banks during periods of high flow, will assist in solving problems of water pollution—just as reduction by water pollution control programs of floating waste drifting onto the banks will limit the quantity of river bank debris.

Special care must be taken as river edge industry is moved from the Central and University areas to adequately drain tanks and remove piled waste without runoff.

NOISE

Noise problems must be treated at their source—in the planning and design of Riverfront uses and facilities. In general, clear division of residential and industrial areas is demanded by the plan. Because projected housing is occasionally close to major vehicular arteries however, designers must utilize all available techniques to reduce noise level in residential structures.

Extension of the distance from major sound sources is shown in the illustrated site plans which locate buildings as far away from arteries as possible on sites—and which place buildings in

such a way as to deflect rather than to absorb sound waves.

Landscape detail can also reduce noise pollution. Earth mounds and foliage located between roadways and residential buildings will help to absorb and cushion sound waves. Platforms may be built over some streets both to cut noise and to serve as additional space for parking or plazas.

Construction of the buildings themselves should utilize materials designed to reduce sound dissemination.

If architectural concern about noise pollution along the Riverfront is matched with stringent legal control over vehicular noise levels and limitations on use of construction equipment and outdoor implements, sound along the river bank will be appropriate to each activity area yet unobtrusive to nearby residents.

Environmental Design

"Beauty in cities is not an afterthought. It is a necessity. Man cannot live long without beauty without becoming distorted as a human being."¹³

LANDSCAPING

To balance or juxtapose man-made and natural elements in order to maximize man's harmony with his environment is the goal of landscape architecture.

In a narrow sense, we understand landscaping to mean combining living elements—trees, lawns, shrubbery—with manufactured elements to create usable outdoor space with an aesthetically pleasing atmosphere.

But in a broader sense, the task is to uncover the existing assets of the river terrain—to integrate the functions of Riverfront design so that the unique attributes of the natural terrain can be appreciated and enjoyed—to reflect through conscious design the specific character of MISSISSIPPI/MINNEAPOLIS.

Environmental details are geared to refresh the participants' involvement in Riverfront functions—whether those

participants are residents, workers or visitors seeking recreation in the area. When designing lighting or foliage, outdoor furniture or other man-made forms, the objective is to enhance personal congruence with the living Riverfront elements.

A broad variety of land contour and texture in itself conveys the uniqueness of the Minneapolis riverscape.



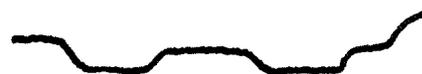
Steep bluffs form the gorge along the Lower River. In order to create an awareness of proximity to the river, all travellers along the bluffs should be able to see the opposite bank and the water intermittently. Judicious trimming of trees at the edge of the bluff and a linear quality to lighting along the rim would make this possible.



Gradual slopes provide access to more usable open space further up the river. These havens of peace filled with animal life, sheltering trees, and good climbing rocks are invaluable assets.



The river flats, though occasionally serving as a spring flood plain, provide great recreational potential. Wading, fishing, digging in the sand, picnicking, sliding down the dunes, landing small boats—are unusual and prized urban pleasures.



The river's islands should become oases of planned open space for the community. Along their perimeters one is, more than anywhere else, conscious of being part of the riverscape.

Choices must be made in Riverfront planning and design among a wide variety of techniques of landscaping. But before those choices emerge, the function of each subarea must be determined—as part of a design with nature.

Design of an aesthetically pleasing environment should utilize materials appropriate to each setting—



1.

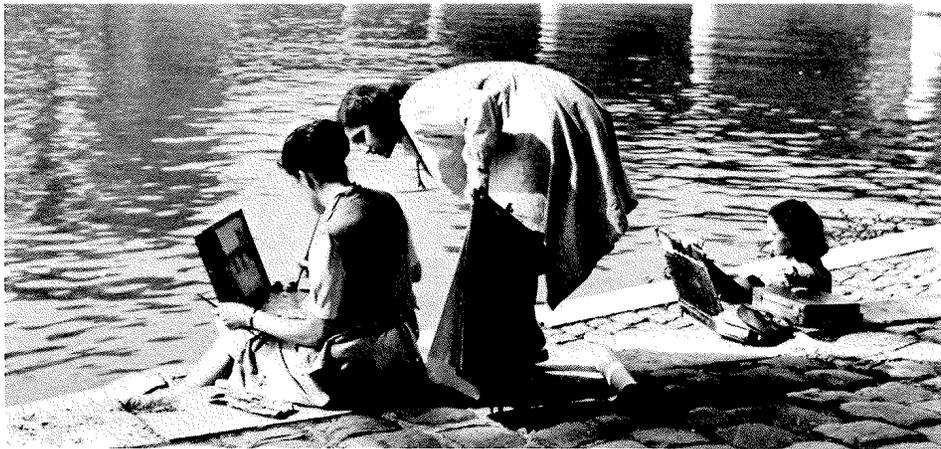
FROM NATURAL MATERIALS FOR A NATURAL SETTING—



2.

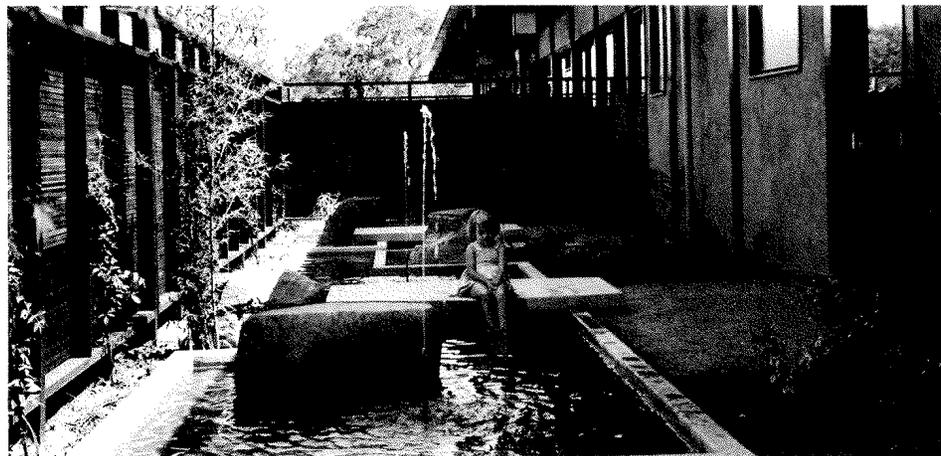


1.



2.

TO MAN-MADE MATERIALS FOR MORE
HIGHLY URBAN LOCATIONS.



3.



4.

In some districts and subdistricts, particularly in the Central area, the holding capacity—number of users per acre relative to the nature of the area and its intended function—should be high. This may be accomplished by designing proportionately larger amounts of space for social activity and by equipping such space with more hard surfaced areas. In this way the use pressure on the more natural areas, where the landscape cannot withstand large numbers of people, can be reduced.

Will vehicles or pedestrians and bicycles be the dominant form of movement in an area? Or is the terrain better suited to people staying, sitting, strolling? Or perhaps the land should be readied for more flexible use—adaptable to movement or to rest.

Landscaping will nurture implementation of function, once the function is defined. A hedge along a river bank, for example, separates foreground and background elements, and at the same time provides for pedestrian safety.

Both natural "soft" and man-made "hard" materials should be utilized to accomplish functional and aesthetic landscaping goals.

Carpets of lawn, the reflecting water of the river, the varied foliage of trees and bushes, accumulations of rocks and sand—these natural materials are already extant along the riverscape.

The primary challenge is to use man-made materials which will blend into and enhance the natural setting.

Paving for strolling pedestrians, for pedestrian groups and activities, for vehicular transportation, must be unique to its function, keyed to an integrated theme, and attractive to the eye.

Land form should be designed to supplement available flat open space in some areas, and to accent topographic variation in others. Terraces should reflect the slope of the river bank extending dimensional views of the river and increasing private and public residential and entertainment potential. Ramps and steps providing access to landings, plazas and amphitheaters, should add contour and variety to the scene.

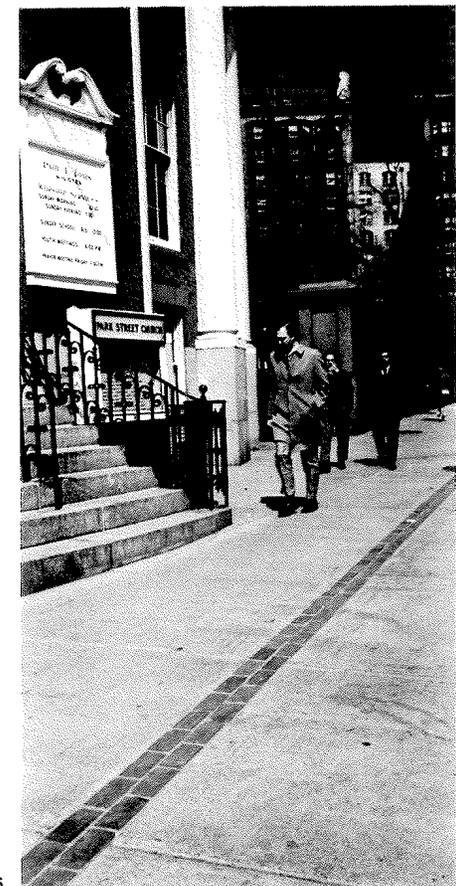
Vertical elements designed for visual regulation as well as for safety should include fences and railings, parapets and retaining walls. Slanting pavement, curves, turns, obtuse and acute angles will reflect the changing directions of the river and avoid regimented form.

5. Even pavement textures—an important part of the sub-environment—can be keyed to an integrated theme.

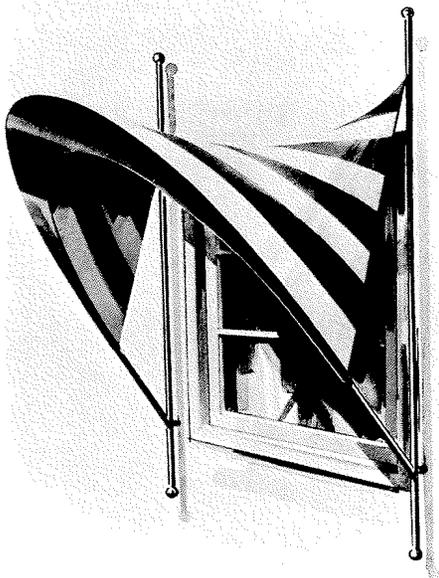


5.

6. Pavement texture can give direction to pedestrians. Bricks laid in Boston sidewalks lead visitors on a walking tour of "Freedom Trail" historic sites.



6.

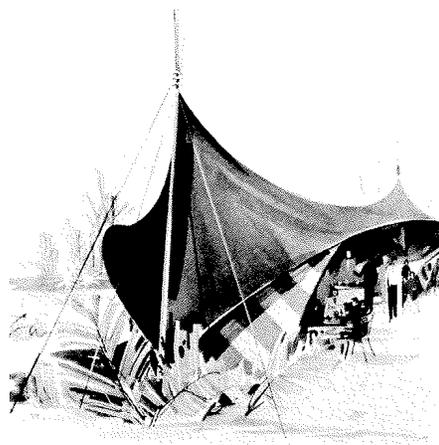


1.



2.

Bright colored awnings, umbrellas, and canopies perform a useful function as well as adding a festive air to the landscape.



3.

GROUND COVERS

For low maintenance sites:

	Height	Shade Tolerance	Drought Tolerance	Soil	Notes
HERBACEOUS PLANTS					
Barrenstrawberry (<i>Waldsteinia fragarioides</i>)	6"	++	++	Dry sandy soil	Strawberry-like with inedible fruit
Cinquefoil Wineleaf (<i>Potentilla tridentata</i>)	6-12"	—	++	Poor acidic soils, rocky or sandy soils	Almost prostrate. Turns wine-red in fall.
Trefoil, Birdsfoot (<i>Lotus corniculatus</i>)	1'	+	++	Tolerates very poor soils. Heat-resistant. Salt tolerant.	Fast growing. Attractive yellow flowers.

WOODY PLANTS

Bush-honeysuckle (<i>Diervilla lonicera rivularis</i> & <i>D. sessilifolia</i>)	3-4'	+	+	Dry banks in open woods or in full sun.	Inconspicuous flowers.
Chokeberry (<i>Aronia melanocarpa</i>)	1-2'	++	++	Use on steep dry banks. Tolerates acid soils.	Attractive foliage, flowers and fruits.
Creepers, Virginia and Thicket (<i>Parthenocissus quinquefolia</i> and <i>P. inserta</i>)	1'	++	+	Shaded dry banks.	Large, handsome leaves. Will climb.
Snowberry (<i>Symphoricarpos albus</i>)	3'	+	+	Steep dry banks.	Inconspicuous flowers.
Sumacs, smooth and staghorn (<i>Rhus glabra</i> and <i>R. typhina</i>)	10'	+	+	Poor soils and sandy gravelly knolls	Needs grass or herbs beneath. Good fall color.
Sweetfern (<i>Comptonia peregrina</i>)	2'	+	++	Most poor soils but will grow on good soils too. Salt tolerant.	Fern-like aromatic leaves.

GRASSES

For permanent cover in poor sites and low maintenance situations:

	Shade Tolerance	Drought Tolerance	Spreading Speed	Soil
Canada wild rye (<i>Elymus canadensis</i>)	+	+	++	
Sheep fescue (<i>Festuca ovina</i>) Red fescue (<i>Festuca rubra</i>)	+	+		Sandy
Side-oats grama (<i>Bouteloua curtipendula</i>) Sand dropseed (<i>Sporobolus cryptandrus</i>)	—	++	+	Does well on steep slopes Sand or heavier soils
Smooth brome grass (<i>Bromus inermis</i>)		+	++	Invasive, will replace native vegetation

++ excellent; + good; — intolerant
Source: Agricultural Extension Service, University of Minnesota.
Horticulture Fact Sheet #27-1971,
GROUND COVERS FOR ROUGH SITES.

EVERGREENS

GROUND COVER—BANK AND SLOPE COVER	Wind Tolerance	Shade Tolerance	Sun Tolerance	Drought Tolerance	Height*	
Prostrate or Oldfield Common Juniper (<i>Juniperus communis depressa</i>)					2-3'	Does well in sandy soil; bright brown in Fall & Winter.
Golden Prostrate Juniper (<i>J. communis depressa</i> "Aurea")					2-3'	Golden-yellow in Spring & Summer; bronze-brown in Winter.
Creeping Juniper (<i>Juniperus horizontalis</i>)					1'	Many varieties with different color and form
Savin Juniper (<i>Juniperus sabina</i>)		— (need sun)	+	—	3-5' (1-5)	All selections need full sun and protection against "spider mites"
GROUND COVER OR FLOWER BEDS						
Blaauw Juniper (<i>Juniperus chinensis</i> 'Blaauw')		—	+	+	2'	Informal dark green all year
Sargents Juniper (<i>Juniperus chinensis</i> 'sargentii')		—	+	+	3'	Best low growing Juniper, spreading and resists winter discoloration
FLOWER BEDS OR POTS (TERRACES)—ROOF TOPS						
Dwarf Alberta Spruce (<i>Picea glauca</i> 'Albertiana')		++			2-3'	Need shade; best for rock garden, terraces facing north
Canada Yew (<i>Taxus canadensis</i>)		++		—	2-3'	Tolerate pruning; best for small space terraces without sun
Dwarf Japanese Yew (<i>Taxus cuspidata</i> 'Nana')						More resistant to winter browning; slow growing
WINDBREAK, SHELTERBELT, SCREENINGS						
Douglas Fir (<i>Pseudotsuga menziesii glauca</i>)	++		+		12-15'	Grows well in most Minnesota sites
Silver Redcedar (<i>Juniperus Virginiana</i> 'Glauc')	+		+		12-15'	Best selection of redcedar. Its silverblue is the brightest in the spring.
Austrian Pine (<i>Pinus nigra</i>)	+		++		12-15'	Over 50' when mature
Black Hills Spruce (<i>Picea glauca densata</i>)	+		+	+	10-12'	Similar but grows slower than white spruce
WINDBREAK OR FOR PARK, ROADSIDE						
Jack Pine (<i>Pinus banksiana</i>)	++		+		12-15'	Irregular form; yellowish winter color; grows rapidly on poor sandy soil
Norway or Red Pine (<i>Pinus resinosa</i>)	++		+		15-18'	State tree, grows rapidly; large when mature
Ponderosa Pine (<i>Pinus ponderosa scopulorum</i>)	++		+		12-15'	Fast growing over 50' when mature; best pine for windbreak
Black Spruce (<i>Picea mariana</i>)	+		+	—	12-15'	Fast growing; native in swampland; best at water edge
Norway Spruce (<i>Picea abies</i>)	+		+	—	70' when mature	Needs adequate moisture supplies
White Spruce (<i>Picea glauca</i>)	+		+	—	12-15'	Over 50' when mature; does well except in dry high lime soils; best in rich, moist soil
PARK, ROADSIDE, ETC.—FAST GROWING, LARGE SIZE						
White Fir (<i>Abies concolor</i>)	—			—	12-15'	Best fir for southern Minnesota
European Larch (<i>Larix decidua</i>)	+				15-20'	Pale green in spring, golden yellow in fall, sheds needles in Winter.
Scotch Pine (<i>Pinus sylvestris</i>)	+		+	—	15-18'	Fast growing
SPECIAL CHARACTERISTICS						
Balsam Fir (<i>Abies balsamea</i>)	—			—	12-15'	Pleasantly aromatic; prefer moist sites; avoid coarse sandy soils
Canada or Eastern Hemlock (<i>Tsuga canadensis</i>)	—	++		—	12-15'	High shade tolerance; best for planting under large existing deciduous trees
Maney Juniper (<i>Juniperus thinensis</i> 'Maney')		+	+		4-5'	Informal blue-green color; exceptionally resistant to winter bronzing
Eastern Larch or Tamarack (<i>Larix laricina</i>)				—	15-20'	Native in swampy area; grows more rapidly on upland soil

*Heights indicate approximate growth for landscape grade material after 10 years under normal conditions.
Source: Agricultural Extension Service, University of Minnesota. Bulletin #258, EVERGREENS, 1968.

++ excellent; + good; — intolerant

Free flow between the indoors and outdoors should be promoted for all seasons with building canopies, banners, awnings and umbrellas augmenting the natural canopy of tree and sky.

Existing trees along both banks of the river should be preserved through a regular City maintenance program. Where a pedestrian's eye-level view of the river and opposite bank is blocked, overgrown foliage along the bank should be carefully pruned so that a series of tree-framed views may be opened up. Where a tree must be removed in open space areas or along the bank, a new tree should be planted. Choice of species should take into account the hazards of the City environment, the need to mix and balance deciduous and evergreen trees, and the need for a buffer between the river bank and the highly urban character of the Central City.

1.



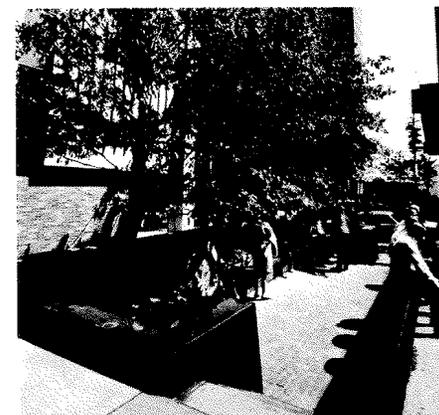
2.



3.



4.



Seating must also be adapted to its setting. Railroad tie benches blend into a natural background whereas, on the other end of the scale, recessed seating can help to order formal urban spaces.

Where there now is bare dirt along the river bank—not sand, not trees, not rocks—grasses or ground cover should be planted and maintained. In sub-areas like Main Street, grass as wide as the street may occasionally divide the paved area from the river to add to the soft-edge character of the river bank. A continuous program of increasing the variety of natural vegetation in existence should include the use of self-seeding wild flowers and ground covers.

Encouragement of the use of flowers in and around building openings (doors and windows) and on the terraces of both private and public structures would add to the color of the river area.

In the Central area of the Riverfront tree planting will be needed to emphasize major paths, buildings, vistas, or special areas of activity. A careful choice of the colors, shapes, sizes, and spacing of trees can produce interesting and dramatic effects—accents, walls, canopies, and frames for window views out of living materials.

Tree planting will be necessary specifically:

- when areas such as Riverfront East and Riverfront West are developed for housing;
- on Nicollet Island when industrial and warehousing land is turned into open space;

when pedestrian windows to the Riverfront are extended from residential areas or neighborhood parks;

when greenways are developed along the Upper River area.

Trees chosen for the Central area should frame rather than interfere with views of the river, should be scaled to a pedestrian environment and should be varied to include ornamental, lacy deciduous, and evergreen species. Appropriate standards for choice of deciduous boulevard trees are mentioned in METRO CENTER '85. In that report are listed the evergreens which may be used in both soft and hard-edge areas to produce year round effect.

OUTDOOR FURNITURE

Until the industrial revolution, outdoor furniture in most cities included the lantern, the hitching post, and an occasional bench. When used, street identification consisted of hand-made plaques frequently of great artistry applied to the walls of buildings at street intersections.

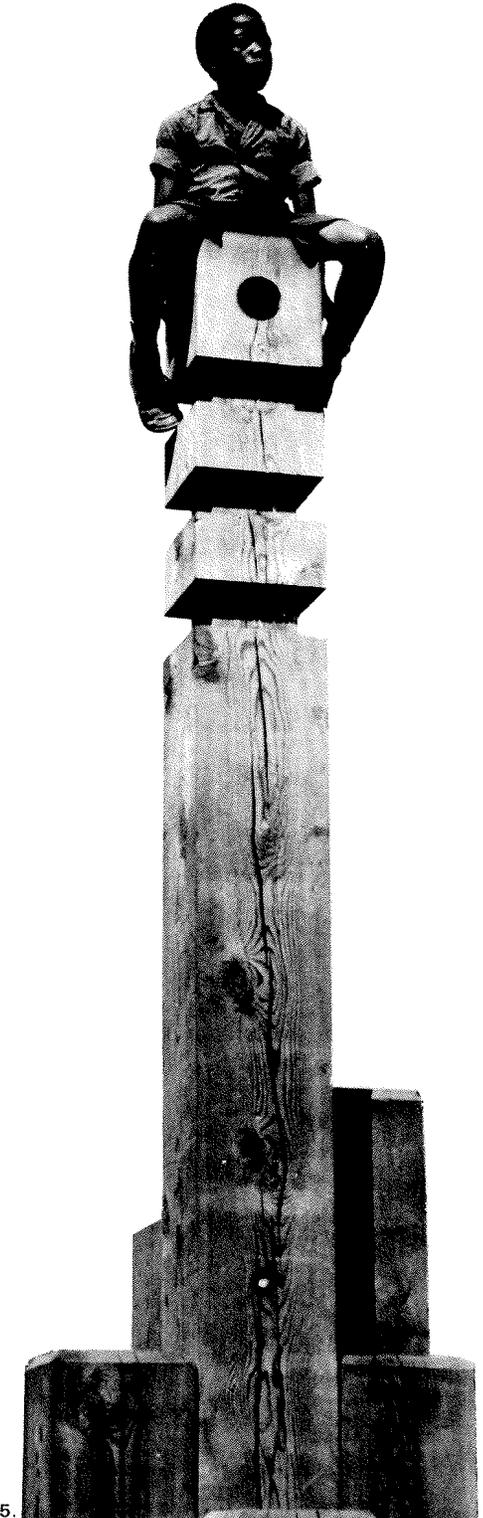
In contrast, a 1967 inventory of downtown Cincinnati outdoor furniture, in an area of approximately 70 city blocks, showed 300 pedestrian signals, 250 traffic signals, 70 emergency vehicle signals, 1,000 traffic regulation signs, 2,000 parking regulation signs, 935 light fixtures, plus uncounted mailboxes, trash receptacles, benches, clocks, phone booths, fire hydrants, police call boxes, fire alarm boxes, parking meters and landscaping. "Uncoordinated procurement, installation and maintenance of outdoor furniture is the rule."

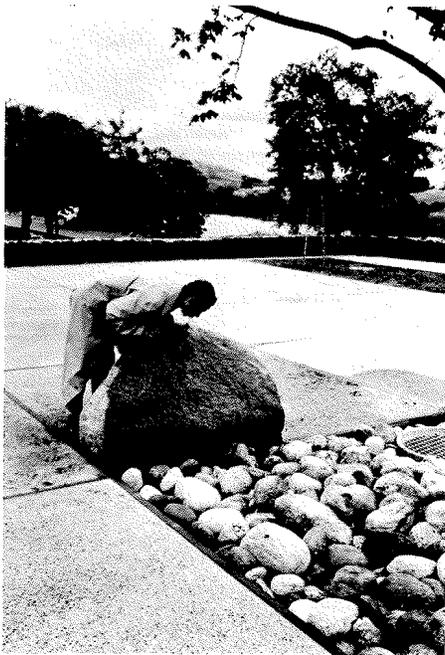
Outdoor furniture may be defined as all of the necessary stable and portable articles in the outdoor space necessary for 24-hour-a-day outdoor living. The man-made floor of the City (streets and sidewalks), lights, traffic signs, landmarks, kiosks, bus shelters—all of those items listed in the preceding paragraph—are included as outdoor furniture.

Regardless of the existing motley reality, outdoor furniture should be selected to meet several general principles:

- All items of outdoor furniture should be integrated into the total

5.





1.

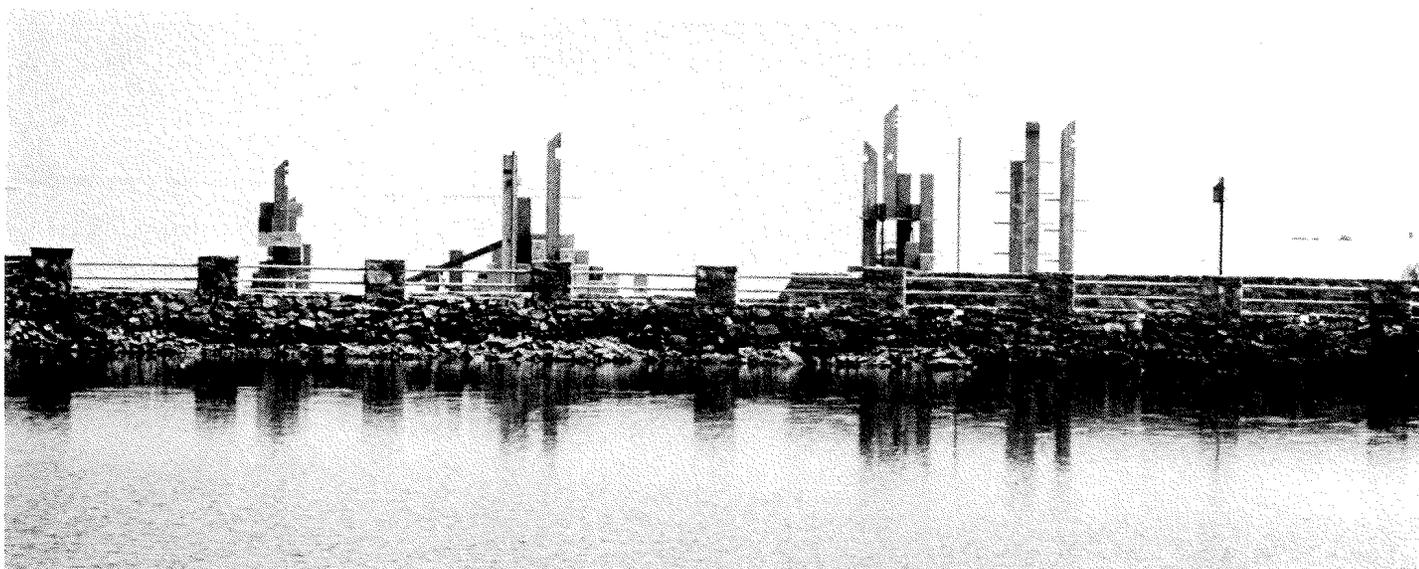
An enormous variety in outdoor furniture design is available for making a special place out of each public area. 1. The focal element of a rock garden is also a drinking fountain. 2. Soap box oratories are facilitated by a pulpit. 3. A chess-checker table has many uses. 4. (and 108-5) Carved wooden beams fill both sculptural and play-yard functions.



2.



3.



4.

design—to harmonize with the identity of the environment.

□ Whenever possible, individual pieces of furniture should be combined to form a group or sculptural unit.

□ All furniture should be appropriately designed to fulfill a specific functional need. Furniture which will not be used need not exist.

□ Use of organic materials for natural or semi-natural settings, such as poles, wooden ties, rough dimension lumber, rough cut stone, should be combined with the use of safe, durable, low maintenance materials.

□ A maintenance program should be developed which, in addition to keeping outdoor furniture in good usable condition, will include its removal in case of misuse or lack of use.

The importance of lighting the Riverfront and of a unified signing system for both pedestrians and vehicles renders these elements worthy of separate discussion.

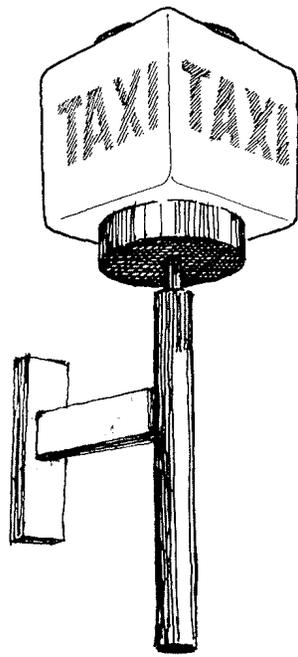
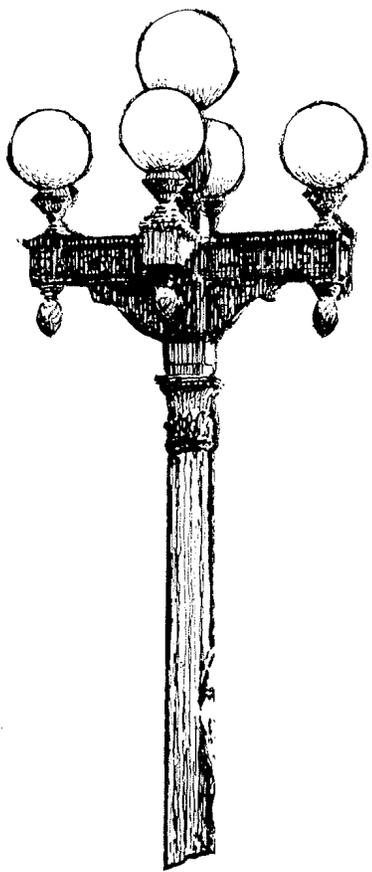
LIGHTING

At nightfall the river is dark as it courses through the heart of the City. Headlights on the bridges, some lighted signs, residential lighting along the lower bluffs suggest distant activity, but thick darkness along the river's perimeter suggests danger, prohibiting pedestrian activity.

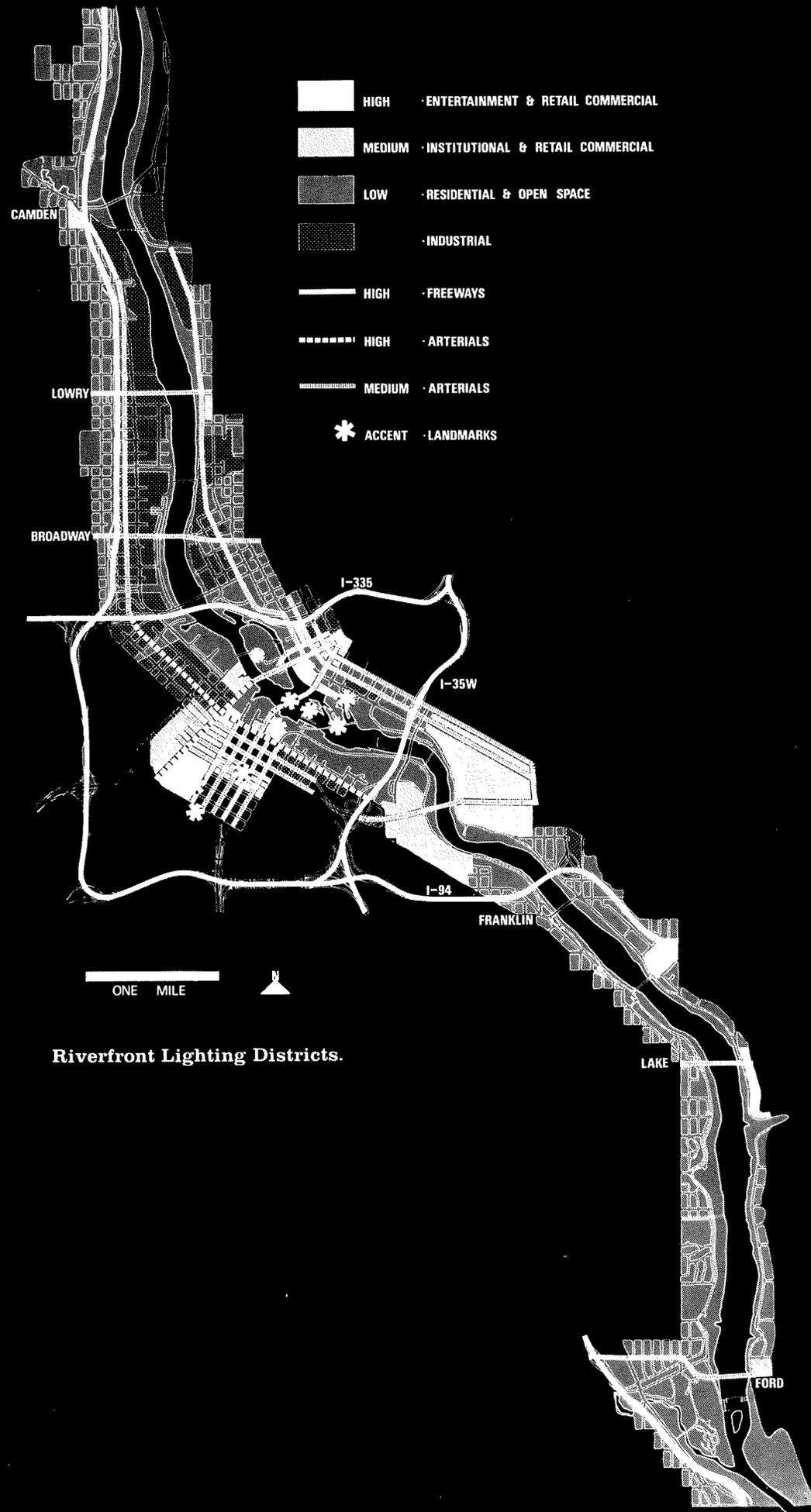
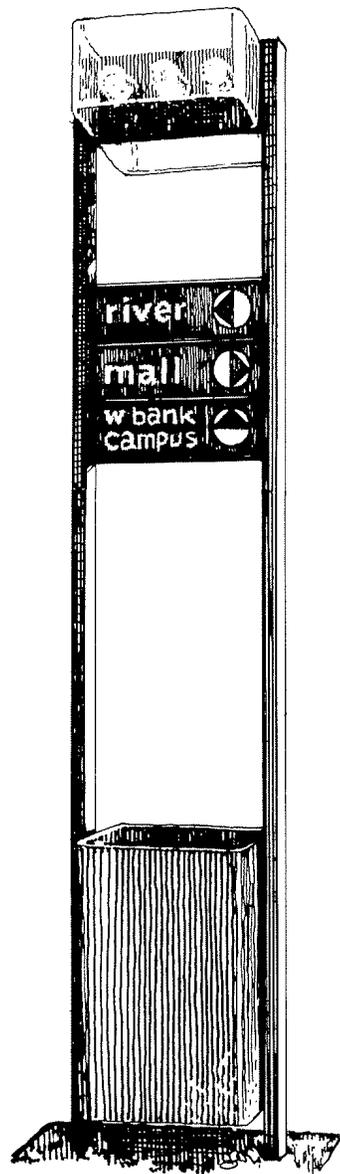
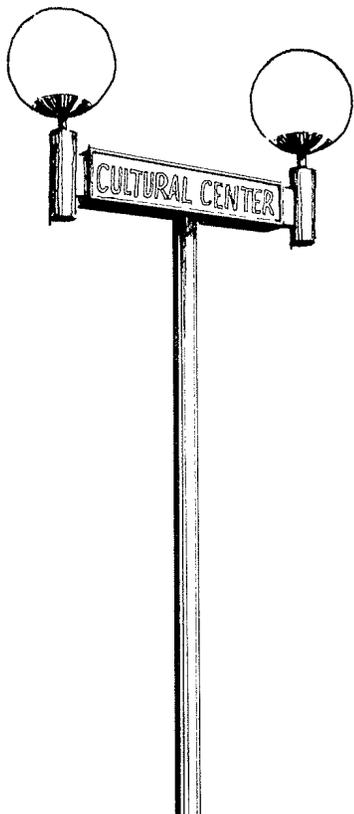
Appropriate lighting will add hours to Riverfront activity and will add reflective beauty to the nighttime river view. Hence a lighting plan is of major importance to Riverfront development.

Lighting up an area or activity or subject will provide safe paths and streets and a desirable atmosphere for pedestrian and driver. Planned lighting also serves as visual sculpture—delineating architectural and natural forms by night, and camouflaged or integrated into the total landscape by day. Lighting fixtures must be scaled to their users, whether pedestrian or vehicular. They are an important part of an integrated design for outdoor furniture.

Appropriate illumination of the river's perimeter will reflect each



Main Street gas lights should be 19th century originals. Elsewhere, simple, contemporary lighting can include portions of a signing system.

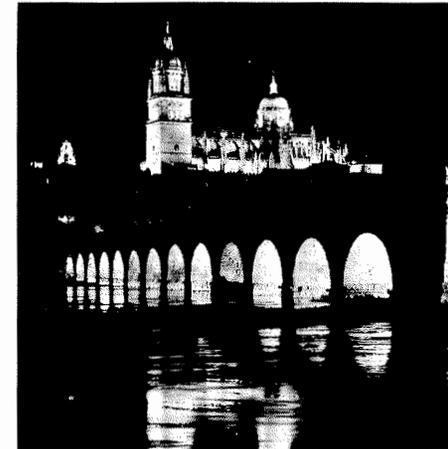


Riverfront Lighting Districts.

LIGHTING DISTRICTS

DISTRICT	ORIENTED TO	INTENSITY DESIGNATION	AVERAGE HORIZONTAL FOOT CANDLES *	HEIGHT AND MOUNTING	APPROXIMATE SPACING *
Main Street	Ped.	Mall shopping	0.8-1.0	8'-10' or wall mounted	20'-40'
Park and other soft-edge	Ped.	low (min. safety)	0.25 along river banks	8'-10' or low wall mounted	20'-40' varies
Cultural Center U. and other hard-edge	Ped.	Promenade (medium)	0.25-3.0	8'-12' or wall mounted and special	20'-40' varies
Residential	Ped.	low	0.25	8'-10' pole mounted; or low mounted (wall, terrace, steps)	varies
Streets	Veh.	high	5.0	35'	75'
Streets	Veh.	medium	2.0	35'	54'
Streets	Veh.	low	1.5	30'-35'	75'
Residential Street	Ped. & Veh.	low	0.25 or higher	12'	75'
Industrial Area	Veh.	min. safety	0.25 or higher		varies
Eastgate	Ped.	Residential	0.25-0.8	8'-10' pole mounted; or low mounted (wall, terrace, steps)	varies
	Ped. Veh.	Ped. shopping medium (street)	0.8-1.0 2.0	8'-12' 35'	20'-40' 54'

* Refer to Metro Center '85



Bridge lighting is crucial to the nighttime skyline, outlining handsome structural lines as well as providing for both pedestrian and vehicular safety.

area's activity in the water, to be read as a catalog of function from the opposite bank, and will thus add another echoic dimension to the riverscape.

MAIN STREET. Restoration of the "old town" must rely on re-creation and contemporary re-use of a 19th century atmosphere. Lighting of the old town should be totally pedestrian-oriented from within, and should be easily identifiable from a distance as distinct and unique. Correlated with the historic character of the area, lighting from the inside of buildings rather than intensive street lighting will bolster the district's identity.

Incandescent lights or gas lamps of special design may be used outside to further distinguish the area. If enough antique lamps previously used in the Twin Cities area can be collected, they would be ideal as a part of the living restoration of Main Street. If not, a modern design of comparable and compatible elegance, rather than a replica of the antique, should be used to create the proper atmosphere.

Primary concerns in "soft-edge" lighting design for such areas as parks and river edge open space are for the provision of optimum levels of pedestrian safety and for integration of lighting fixtures into the natural setting. Low lights evoking a warm and quiet atmosphere should shed light on paths and outline the river's edge in open space areas.

RESIDENTIAL DISTRICTS. Within new residential areas pedestrian-oriented rather than vehicle-oriented lighting should prevail. Where major streets abut the residential areas, vehicular needs must, however, be balanced with those of pedestrians. The challenge in an area such as Eastgate is to use lighting to separate mixed vehicular, pedestrian, and residential quarters.

CULTURAL CENTER, UNIVERSITY AND HARD-EDGE PLAZAS. Predicted volume of pedestrian movement and activity around the Cultural Center, the Industrial Museum, and other hard-edge areas demands a higher level of

pedestrian lighting than in the residential or park sites. Parts of the University area now stand out as the only properly lighted high activity places along the Central portion of the river. As the river flats are developed for greater recreational usage for instance, lighting comparable to present University illumination should be utilized.

INDUSTRIAL DISTRICTS. Except for vehicular lighting along streets and focused storage area lighting required for safety, special illumination within the industrial districts will be needed only along the "windows" designated for pedestrian access to the Riverfront. Along these corridors a compatible level of pedestrian lighting reflecting the type used along the soft-edge banks should connect residential areas, greenways, or parks to the river.

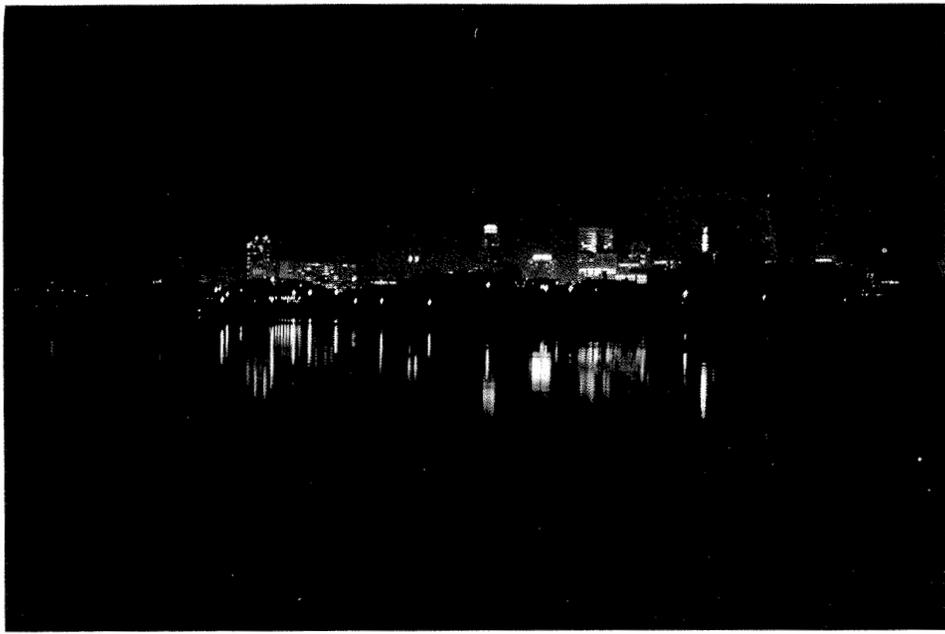
Industrial area security lights should focus inward to light buildings and grounds as necessary, without casting a glare directly onto the river or its immediate banks. Security spotlighting should not throw direct light onto

residential areas, the river's edge, or river boats.

VEHICULAR LIGHTING, GATEWAYS. Major and minor vehicular paths are designated on the movement system map. To reflect the needs of a motorist, graduated intensity of vehicular use demands graduated height of light source and intensity of light. The standards for high, medium, and medium low intensity roadway illumination to be applied in the Riverfront area are shown in the diagram of lighting districts.

Those gateways to the river which lead to bridges tend to carry high volumes of vehicular traffic. The Hennepin Avenue and Third Avenue bridges, for instance, now accommodate 24,000 vehicles a day and are projected to accommodate 37,000 and 30,000 vehicles respectively in 1985.

It would be desirable to distinguish these gateways, as vehicular windows to the river, from other streets in the City. Such a distinction could be produced by changing the



1.

color of the light source, to incandescent perhaps, within at least a 2-block distance from the river.

Alternatively, these gateways might be distinguished by wide pedestrian walks leading to open space paths, flanking the roadway and separated from it by a curving, color-keyed wall into which low lights could be set to shine on the walkways. Numerous design alternatives to distinguish Riverfront approaches are feasible. Supplemental signs designating gateways would also bring the river closer to City residents.

ACCENTS. Spotlighting and/or flood-lighting of the gushing falls, the elegant Stone Arch Bridge, the curving grain elevators, and other landmarks will accentuate the nighttime magic generated by other district lighting. With the varying darkness of the sky, the moving lights of vehicles and barges, flashing neon in the City, spotlighted landmarks, occasional festival fireworks, and river edge lighting, nighttime at the Riverfront will be exciting and dramatic. Movement will be visually contrasted with stillness—light with shadow—reality with reflection.



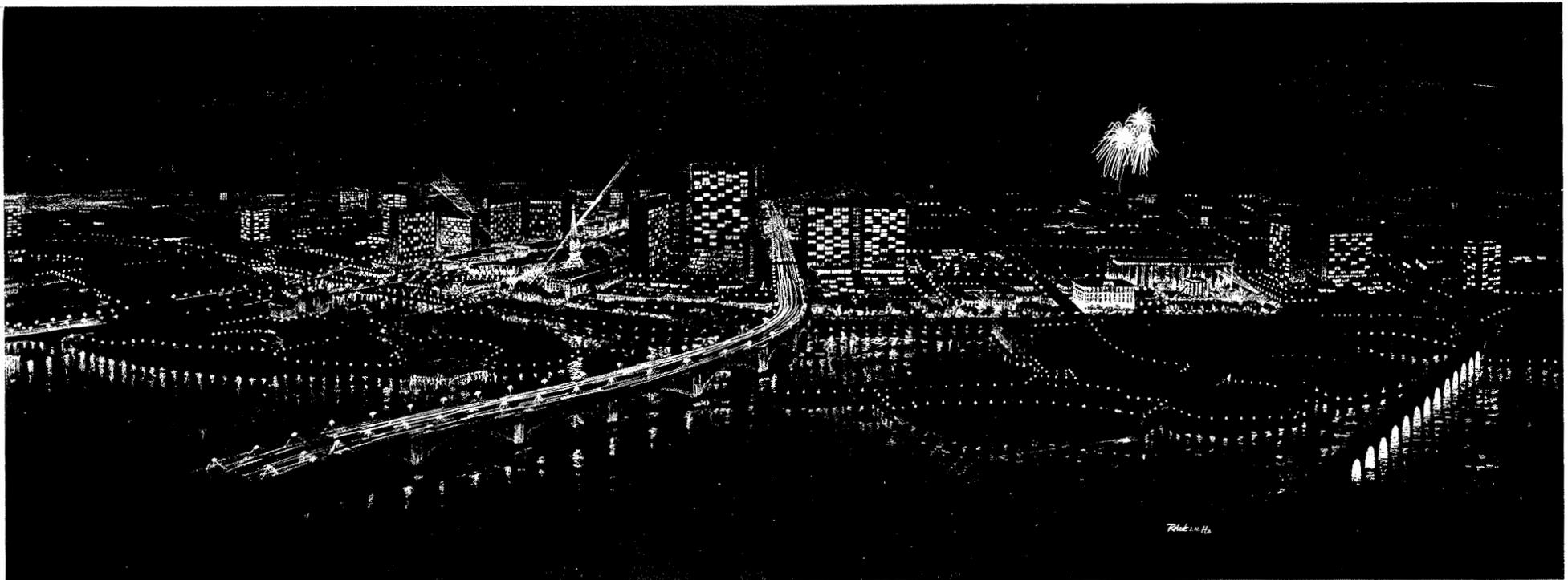
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1. The existing skyline leaves the Riverfront in shadow—unexciting—unsafe. 2, 3. Other cities have strengthened their nighttime image by spotlighting historic monuments and edging waterways with pedestrian lighting. 4. The future East Bank skyline cannot mimic that of Athens or London, but it can be dramatically exciting.

4.



□ For functional effectiveness, safety, and visual balance, all areas should have a minimum level of illumination as indicated. The level and distribution of illumination reflect the kind and intensity of use within each district.

□ In certain cases, maximum levels of illumination and direct glare should be imposed to protect against unpleasant lighting effects.

□ Except for streets designated for vehicular use and industrial sites, all lighting and lighting fixtures should be pedestrian scaled.

□ The form of lighting fixtures should be integrated with the total subenvironment, and should conform in style to other elements of outdoor furniture within the area.

□ Whenever necessary, foliage or man-made shields should be used to control the focus of lights in order to separate conflicting lighting areas—pedestrian sidewalk from high volume vehicular street; high intensity pedestrian area from residential quarters; industrial security from residential and river bank areas.

SIGN LANGUAGE

Sign language may confuse or disturb when outsourcing competitive messages in a frenzied environment—or it can concisely communicate information and enhance the urban atmosphere when coordinated and subjected to design standards.

Street graphics express a community's culture. "They announce—or scream or mumble, inform—or confuse, delight—or depress, infer—or insult, stimulate—or imitate, designate—or obfuscate." If they perform well their chief function of indexing the environment, they facilitate movement and create in their viewers a sense of confidence.

Signs in the Riverfront plan fall into these categories: directional-orientational signs guiding people to and through the area; regulatory signs describing traffic and park rules; and pedestrian information signs identifying areas, buildings and activities.

When integrated with lighting and other outdoor furniture, Riverfront signs can become an attractive part of the total visual scene. To accomplish this variety of functions, a signing system must conform to basic principles.

A sign must be legible under the circumstances in which it is to be seen. All signs read by a motorist, for example, should be mounted at a height which will always be visible to him while driving and should be sufficiently concise to avoid visual overload. Pedestrian information signs may include more items but should also be mounted at heights geared to maximum legibility and should be concise. Visual pollution and strain result from sign clutter or information overload.

According to a Baltimore, Maryland county study, the occupant of a moving car can seldom handle more than ten items of information at one time. METRO CENTER '85 offers a further limitation, suggesting that no more than seven message items be mounted at one place. At no time should a sign be placed so low that it can be obscured by parked cars or snowbanks. Lettering must be legible at the distance from which the sign is designed to be read.

A sign must be easily comprehensible. Consistency in sign language aids comprehension. A standard type face, uniform spacing of letters and words, and consistent use of graphic symbols or worded messages (following the recommendations of METRO CENTER '85) will effect ready recognition by the viewer. Consistency in lettering and color of Minneapolis street signs, as initiated under a 1969 program, forecasts governmental concern for increased legibility and directional guidance.

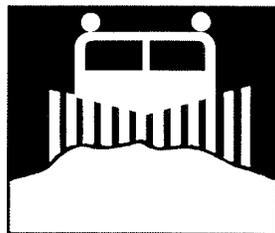
Pictorial symbols were evolved as a result of multilingual use demands in Europe, where the international signing system standardizes both color and pattern of all pictographic traffic signs.

Once the meaning of a pictorial symbol is well known, it can be recognized and recorded faster than a verbal message. A barbershop pole or the bull's-eye of Target stores demonstrates this lesson. On the other hand, before the symbol becomes well-known and for new residents of an area, pictographs can create greater confusion than simple legends.



9 am - 4 pm

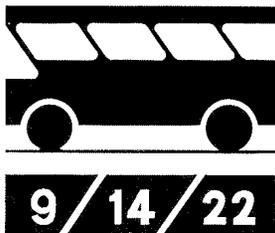
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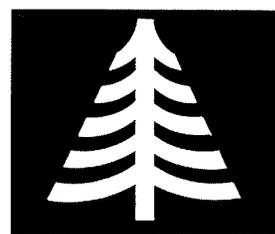
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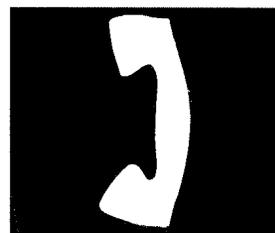
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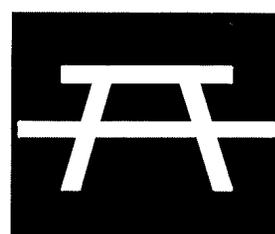
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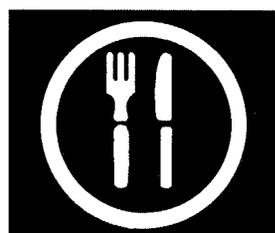
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12.

A pictogram is attractive, but must be designed carefully and tested for unanimous understanding of its message. Are the messages of these pictograms clear? 1. Parking hours. 2. Snow emergency route. 3. One-way route. 4. Bus routes. 5. Recreation area. 6. Bicycle route. 7. Facilities for handicapped. 8. Telephone booth. 9. Picnic area. 10. Marina. 11. Gas station. 12. Restaurant. The pictograms in the left row are proposed for City use in METRO '85.

Choice of a worded message, pictograph or symbol for a particular category of message should follow careful experimentation to determine levels of citizen comprehension. Presentation of any new motorist signing system, now governed by federal and state law, must be preceded by an extensive program of public education. Though pictographs on pedestrian information signs may be simpler and more attractive than worded signs, they should be supplemented by a brief worded explanation (perhaps written small) for the benefit of all new viewers.

Signs must be designed as part of the urban scene, not as individual elements separated from the total environment. Signs should be grouped together and be physically and visually integrated with a lighting system, other outdoor furniture, and neighboring architecture.

Street graphics should also reflect in their design the characteristics and activity of their district. Signs should harmonize with the architectural style of a building or neighborhood.

Use of a wide variety of graphic design in Riverfront sign language should be encouraged. Architectural emphasis should derive from heterogeneity of wall graphics, 2-dimensional signs, banners, flags and 3-dimensional sign sculptures or sign towers.

Strict regulation of sign language should be based on performance standards, but such standards must also allow freedom and flexibility where possible to express personal or community identity.

The European concept of providing for aesthetic review of informational signs on a case-by-case basis has not yet won legal acceptance in the U.S. Although existing City regulations

clearly cover general content, height, lighting, and size of signs, high design quality can hardly be insured except through a case-by-case review.

Starting from scratch with a Riverfront signing system offers a rare opportunity for development of a unifying design concept for the entire planning area—as well as for adaptation of the system to the unique character of each river bank subarea.

Many of the Riverfront design districts, activity areas, landmarks, and historic buildings should be clearly identified on directional signs and area markers. For example:

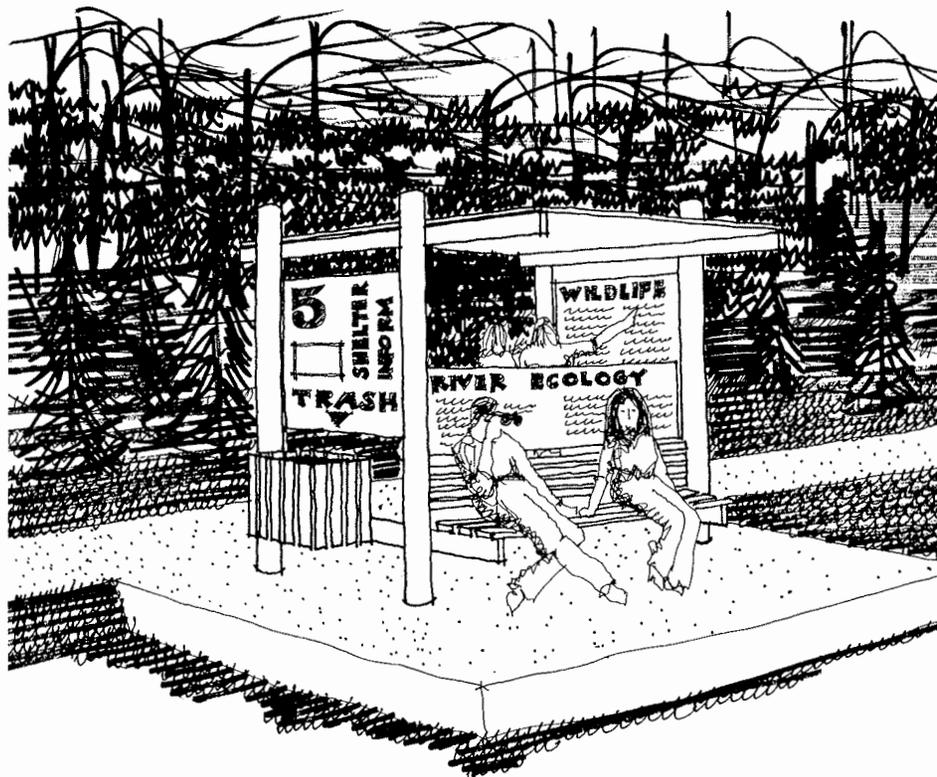
- A sculptural composite of identification and information signs might be located in one of the Main Street plazas.
- A small sign-sculpture might denote the Gateway Center area or the Civic Center.
- A contemporary lighthouse type sign-sculpture might identify the Boom Island marina.
- A directory of signs pointing to activity areas might be located on Hennepin Island.
- Signs directed toward each of the island's attractions could greet the Nicollet Island visitor.
- The Riverwalk, Eastgate Center, the University campus, etc. should all be designated by graphics that are harmonious with their area identities.

Directory maps should be displayed to guide visitors to the locations of activities, landmarks, districts and routes. Boat owners navigating the Central area should find directional signs also.

Night lighting of signs should be well-integrated with other street and area lighting and should be suited to the specific purpose of each sign.

MAIN STREET. Street graphics on the Main Street promenade should be colorful and lively. Flags, banners, advertising signs, and posters will help to strengthen the image of high activity in the area. Limitations on the number of graphic items may be expanded here, except along vehicular streets near the district. Signs on Main Street must, however, be an integral part of its historic character.

In order that such areas achieve the desired effect of vitality with charm, more attention must be paid to



1. Illustrated proposal for integrated rest and information area along the Riverfront greenway.

2. Displays can attract attention to the natural environment as well as distract the viewer.



3. Even vehicular signals can serve pedestrian functions.





1. Map plazas might be designed to direct visitors to public facilities along the Riverfront.

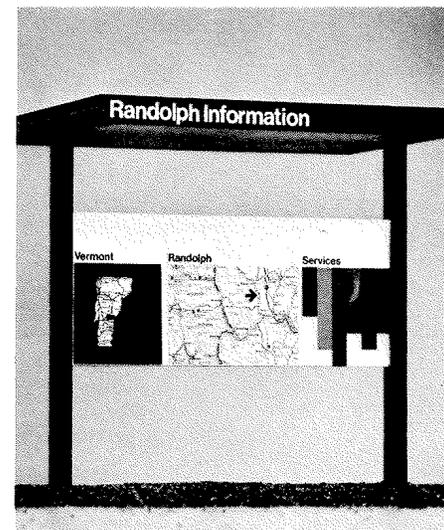
integrated spatial design and encouragement of variety than to standardized controls on graphic design.

INDOOR WALKWAYS. Signs and maps comparable to those found in area shopping centers should direct visitors along the walkway system—indoor walkways, underground or elevated plazas, or concourses at the Riverfront. Such visual guidance is now provided through the downtown Minneapolis skyway system. In addition, however, the signing system should include a map mounted at key locations which

would show major and minor paths and accessways.

GATEWAYS AND WINDOWS. Providing access and visual direction to the Riverfront area is an important objective of the Riverfront plan. An effort should be made, therefore, to extend a visual welcome to Riverfront visitors through directional signs located at intersections of major streets with vehicular gateways and pedestrian windows.

To accomplish this a well-designed graphic symbol suggesting "River-



1.

2.

front," perhaps of a color unique to Minneapolis traffic signs, might be utilized.

REMAINING AREAS. Billboard and permanent non-related signs should be prohibited within 600 feet of the river, and within 200 feet of pedestrian windows. Temporary non-related signs, however, may be allowed in high pedestrian use areas such as Main Street, Eastgate, Nicollet Island event center and the University—provided that they appear only on kiosks or other designated mountings.

3. Graphic variety along Main Street would attract visitors to the recreation-commercial environment.



Related signs identifying business establishments will, of course, appear throughout the Upper River industrial areas and at major intersections near the river. Regulation will be required to prohibit signs that are disconnected from their related establishments, or which do not conform to the principle previously described of avoiding glaring focus from industrial lighting on the river's edge. No roof signs facing the river should be allowed. Other elements as discussed in METRO CENTER '85 are equally appropriate along the river, such as use of modular sign components and consistent design of backs of signs.

SAFETY

Personal safety can nowhere be guaranteed—but it can be fostered by architectural design, governmental regulation, and security maintenance.

ARCHITECTURAL DESIGN. Parapet walls or railings should divide heavily used pedestrian areas and bridges from the river. Railings should also be used on viewing promontories either along the bluffs or in the Central area.

These and other physical barriers should serve also as visual and psychological dividers of hard-edge areas from the river's edge where water is deep and currents are fast. Such retaining devices may be formed of hedges, railroad ties, logs, rough dimension lumber, iron, or concrete depending upon the protective requirements and the atmospheric design of the area. Rescue devices should be provided at key locations along the river's edge.

Architectural design for steps, paths, and outdoor furniture must take into account the unique hazards of construction with rough, natural materials and should avoid developing unnecessary risk. Play areas for children should not be located adjacent to dangerous segments of the river bank.

Industrial areas and vehicular routes must be clearly and properly separated from greenways and Riverfront paths to avoid danger to pedestrians and bicyclists. Observation areas should be designed to encourage the fascinating activity of watching industry at work—from a safe distance.

As discussed previously, lighting is planned along public walkways in both hard and soft-edge areas to reduce personal danger along the river. Walkways that cannot be well lighted should be posted as closed after a certain hour.

GOVERNMENT REGULATION. The quality of river water is insufficient to sustain water contact sports throughout most of the year. And other dangers emanating from the undertow of the current and from heavy boating and barging usage further prohibit such activities. River swimming and water skiing specifically should not be condoned.

As recreational and commercial river boat traffic increases, potential conflict may require locking regulations which establish priorities during certain hours of the day or week for different types of navigation.

Boat operator licensing should require testing those who would boat on the river for their knowledge of safe operating procedures and regulations. Educational materials and courses concerning piloting, seamanship and small boat handling are presently available through local power boat squadrons.

SECURITY MAINTENANCE.

Adequate maintenance of all Riverfront facilities is essential for the safety and security of residents and visitors.

A river patrol, charged with maintaining water safety and security as well as with the duty of checking the banks and flats for damage, visible pollution and other problems, may be required as the river is revitalized.

Police or park board surveillance of these and other Riverfront areas will be necessary. Such efforts may be

aided by using some form of small, perhaps electric, vehicle that can use the pedestrian paths.

Security systems along the Riverfront should vary in intensity and quality as do the area's activities. Too many railings in an open space can create an unpleasing environment. On the Riverfront as elsewhere, individual precaution and personal assessment of risk is necessary. Activity spaces for both the less physically able and for the agile should be available with corresponding safety precautions.

THE TOTAL OUTDOOR SPACE

The total outdoor space is perceived through all the senses. Although the first and primary impression of the Riverfront will be visual, the sounds of birds or boats or bustle, the feel of pavement or sandy paths or rough-hewn benches, the sense of privacy or participation in activity will all contribute to the quality of one's total impression. The individual design of an individual element in the plan is important only as it contributes to the total atmosphere of the integrated whole.

"The life of cities is of two kinds—one is public and social, extroverted and interrelated. It is the life of the streets and plazas, the great parks and civic spaces and the dense

activity and excitement of shopping areas.

"There is, too, a second kind of life in the city—private and introverted, the personal, individual, self-oriented life which seeks quiet and seclusion."

Our urban open spaces are the matrix of this two-fold life. Along the Riverfront every kind of activity space should be discovered and repeated—a quiet corner in the park, a plaza at the edge of the river water, a private terrace on the rooftop of an active shopping mall.

As the participant moves from one use and one space to another, indoor or outdoor, he should follow a sequence of experience—with the two-fold sensation of being part of an immediate, readily identified environment and at the same time a part of the larger MISSISSIPPI/MINNEAPOLIS.

And finally, it is people that bring life to space. As plans, architectural designs, and the resulting total landscape invite participation in a full range of activity and re-establish personal identity with the Riverfront, the task will be accomplished. And at the center will be the crucial element—people—living and enjoying a part of the City that for decades has been hidden in the lifeless backyard of a foregone era.

It is people that bring life to space.

